How to Use Over-The-Counter Products

A Guide to the Drug Store

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First Edition

Mini-Medical School
North Ridgeville, Ohio
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About the Author

Raymond Lengel, a certified family nurse practitioner, has worked in multiple fields of nursing. For the last seven years he has worked in primary care. In addition to being a certified family nurse practitioner he is a registered nurse with the state of Ohio.

Initially, Raymond received a Bachelor of Science degree in exercise science from the Ohio State University. Then he attained a Bachelor of Science degree in nursing from the Allen College of Nursing in Waterloo, Iowa. After working for a number of years as an exercise physiologist/registered nurse he enrolled at Otterbein College in Westerville, Ohio and got a Master of Science degree in nursing.

His writing career includes over 80 on-line continuing educational courses developed for nurses. Two articles in the magazine *Long Term Care Interface* and one in *Clinical Reviews* have been published.

He is also the author of one print book and eight ebooks.

Raymond has also presented a number of lectures on a multitude of health care topics including influenza, cardiac risk reduction, stress management, exercise and nutrition.
Disclaimer

This book is designed to provide basic information about the health care system and the patient’s role in helping to manage his or her own health. It is sold with the understanding that each individual is unique and the book cannot provide individual advice to any one person.

This book is meant to compliment and enhance your interaction with the health care system not to serve as an alternative to medical advice or care. Utilize the system presented in this book, but be sure to work with your doctor. Your doctor is the best source of health care information for you and the unique set of conditions that are present in your body. The goal of this book is to help you with the interaction between you and your doctor, not replace it.

The author has extended every effort to make sure this book is complete and as accurate as possible. Medicine is an evolving field and ongoing research may raise some questions about some of the data in the book. There may be mistakes, both in content and typographical. The book should be used as a general guide and not as the final source for your health care information. Information is current only up to the printing date.

The goal of this book is to educate and entertain. The author and publisher will not have liability or responsibility to any person or entity for any loss or damages that have been caused by information in this book.
Introduction

Running to the doctor for any cough, sniffle or sneeze is commonplace in America. People have a strong desire to take antibiotics to help themselves get back on their feet. Most of the time antibiotics are not helpful in the management of most health problems.

Today's health care system is fraught with problems. Even though the United States has top-notch hospitals and doctors, we rank very low in the industrialized world in the quality of our health care.

The resources to get great health care are available, they just need to be tapped. *How to Use Over-The-Counter Products: A Guide to the Drug Store* is a book that is meant to improve your knowledge about how to take care of yourself without running to the doctor.

It is not practical or wise to rely on the health care system to care for all of your medical needs. You have to take responsibility.

One part of taking care of yourself is learning how to use over-the-counter products safely and effectively. It is confusing and difficult. Knowing how to use over-the-counter medications is a skill that has not been mastered by many health care providers.

This ebook will help you understand how to use over-the-counter medications. After reading this book, you will understand how to use over-the-counter medications more effectively and safely. Your ability to use over-the-counter medications will reduce your reliance on health care.

Reading this book and saving it as a resource will save you money and many headaches. Knowing how to use over-the-counter medications will improve your ability to manage common health problems and reduce visits to the doctor and those pesky co-payments that go along with doctor visits.

It will also save you money in prescription drugs. Problems that are taken care of early do not need to be managed with more expensive prescription medications.

Lastly, it will save you money in over-the-counter products. You will learn how to use over-the-counter medications properly and consequently not need to buy multiple ineffective products.

Most importantly this book will improve your health.
The origins of this book

I have worked as a nurse practitioner for the last seven years. For the last two of those years, I have worked in the retail health setting. Working in this setting opened my eyes to many problems with health care.

One of the major problems that I saw was people running to the doctor for the common cold. One of the most common scenarios that I encounter is people coming into my clinic and telling me that they have had the sniffles for three days and today they starting coughing up some yellow mucus and now they need an antibiotic.

They often go on to mention that they have tried over-the-counter (OTC) medications without any relief. The problem with their attempt to try OTC medication is that it was the wrong medication. For example, people will have nasal congestion and take antihistamines (Benadryl), which will help with their runny nose, sneezing and watery eyes – if they had those symptoms. Antihistamines do not help nasal congestion.

Over-the-counter medications are generally deemed safe for healthy people, but this assumes that people read and follow all of the labeling of the medication. This is rarely done. Most people just read the label or at most a couple of sentences on the box and buy it.

I can empathize. The first day on my new job in retail health, I walked out on the drug store floor and was blown away by the number of products available. I had been a nurse practitioner for over 5 years and a nurse for many years before that, I should have known that stuff. I was clueless.

Over my next year on the job, I realized that it was not only I, but also many of my co-workers and even pharmacists that were quite confused by the many over-the-counter products.

In an attempt to improve the health care system it is important for health care consumers and health care workers, to know how to use the drug store to stave off illness and reduce visits to the doctor’s office.

This book was written to answer the many questions I get on a day-to-day basis at my job. I hope the book will help educate the public to use the drug store and home remedies better and reduce their number of doctor visits.
**Problems that I see**

Not everybody went to medical school, but people need to have a basic understanding of health in order to get good health care. Misinformation runs wild.

At my current job people come in all day and spew off misinformation that makes me inwardly smile. Sometimes this misinformation makes my job much harder, though. Below is a list of statements that people make. Many people strongly believe these statements but most have only hints of truth in them. Wholly believing these statements can harm your health.

- “My wife told me I should have went to the doctor sooner, from keeping this cold from getting worse.”
- “I need to get on an antibiotic to prevent my bronchitis from turning into pneumonia.”
- “My nasal discharge is green, I have a sinus infection.”
- “My ear hurts. I know this is another ear infection.”
- “Amoxicillin did not work for my sinus infection last year, I need something stronger.”
- “I need an antibiotic for my tonsillitis”
- “I heard that Levaquin will knock out any infection. Can I have it for my bronchitis?”
- “I have many health problems and I want to take an antibiotic because they are safer than over-the-counter products.”

These are just a few examples of the statements that I hear on a day-to-day basis. These statements significantly increase the risk of having problems with the health care system such as developing antibiotic resistance, wasting money and time on doctor visits and increasing your risk of having a negative reaction to antibiotics.

**What this book will accomplish**

The objectives of this book are to

- Help you evaluate your symptoms
- Help you understand over-the-counter products
- Help you determine which over-the-counter products will help your symptoms
Help you understand what home remedies will also help your symptoms
Help you understand when you need to go to the doctor
Reduce the number of doctor's visits you need to make as you learn to care for yourself better
Chapter 1: Know how to take inventory of your symptoms

You don't need to run to the doctor for every health problem. This is a waste of time and money.

You also do not need to go, just because it's convenient. Working in retail health, I have had many people make this statement. “I was just coming in here to get some medication for my cough/congestion and I saw your clinic and thought I would just stop in and get something stronger.”

Most of these people should not have wasted the health care system's money. They should have done a better job at evaluating their symptoms and determine how to best manage their symptom with over-the-counter medications. The drug store has many products that if used correctly, can stave off many doctor visits.

You can handle many problems with the drug store. This book looks at 30 problems that can often be managed with products picked up at the drug store. Sometimes you need further assistance than the drug store and this is outlined in each chapter as to when you need a doctor.

Categorize your problems – are you sure this is the problem?

The first step in evaluating your problem is to determine what is wrong. This ebook will help. When you have a complaint you can go to the chapter on that complaint and review. Each chapter is short and packed with essential information that you need to know to safely manage your condition.

Determine the cause

To describe your symptoms here is a worksheet that will help you define your problem. This is a general form, but can be used for many complaints. Each chapter will review some of the things to look out for that are specific to the symptom that you are experiencing.

By taking an inventory of your symptoms you will be better able to determine how to classify it and how to treat it. It will help you determine if you have a red flag that will require a doctor's visit.
**Table 1: How to define a problem**

1. Describe your problem in one sentence. This may include, “My nose is stuffy or I have a rash on my leg or I have diarrhea”.
2. Read the chapter on that problem.
3. Do you have any signs or symptoms that excludes yourself from self-treatment (red flags)? If yes, go to the doctor, if no move on to step 4
4. When did your symptoms start?
5. How frequently does it occur? Does it come and go? Is it constant?
6. Where is the problem located?
7. What makes the problem better? What makes it worse? Some key considerations include: Does movement make the pain worse? Does rest make it better? Do any particular positions, activities or foods make the symptoms better?
8. How severe is the pain/symptoms. Rate the pain on a scale from 0-10. (See pain scale)
9. List any associated symptom? These could include: fever, chills, pain, nausea, vomiting, burning with urination, etc
10. When did your symptoms start? What were you doing? What were you doing that day? Right before?
11. What is the cause of your symptoms?
12. Determine which product to use?
13. Determine how to use those products.
14. What would indicate you are getting better?
15. What would indicate you are getting worse and need a follow up with the doctor?
**Symptom evaluation**

1. Describe your problem in one sentence.

________________________________________________________________
________________________________________________________________

2. Read the chapter on that problem.

3. Do you have any signs or symptoms that excludes yourself from self-treatment (red flags)? If yes, go to the doctor, if no move on to step 4

4. When did your symptoms start?

________________________________________________________________
________________________________________________________________

5. How frequently do they occur? Does it come and go? Is it constant?

________________________________________________________________
________________________________________________________________
________________________________________________________________

6. Where is the problem located?

________________________________________________________________
________________________________________________________________
________________________________________________________________

7. What makes the problem better/worse?

________________________________________________________________
________________________________________________________________
________________________________________________________________

8. How severe is the pain? Rate the pain on a scale from 0-10. (See pain scale).

__________________________________
9. List any other symptoms?

________________________________________________________________
________________________________________________________________
________________________________________________________________
________________________________________________________________

10. When did your symptoms start? What were you doing? What were you doing that day? Right before?

________________________________________________________________
________________________________________________________________
________________________________________________________________
________________________________________________________________
________________________________________________________________

11. What is the likely cause of your symptoms?

________________________________________________________________
________________________________________________________________
________________________________________________________________
________________________________________________________________
________________________________________________________________

12. Determine which treatments (home remedies/OTC products) you need to manage your problem and how to use it.

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<thead>
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<th>Home remedies</th>
<th>How to use</th>
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<table>
<thead>
<tr>
<th>OTC product</th>
<th>How to use</th>
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13. Review how to use those products appropriately.

14. What would indicate you are getting better?
   ________________________________________________________________
   ________________________________________________________________

15. What would indicate you need to follow up with your doctor?
   ________________________________________________________________
   ________________________________________________________________
   ________________________________________________________________
Pain Scale

0. No pain
1. Extremely mild pain
2. Very mild pain
3. Mild pain
4. Mild/moderate pain
5. Moderate pain
6. Moderate/severe pain
7. Severe pain
8. Very severe pain
9. Extremely severe pain
10. The worst pain you have ever felt
Summary

This chapter helps you to define your problem. Before you run to the doctor, think. The doctor's office will result in a lot of frustration and poor care, if you do not think about your problems before your go.

The most important step is to determine if you can handle the problem without a health care provider. Most health care problems can be handled without the doctor. If you can than do what you can to get yourself feeling better and try to avoid the health care system.

Monitor your progress – if you worsen have a plan to get to the doctor. Know when you need to see your doctor, but realize that many problems can be managed without running to the health care system.
Chapter 2: Over-the-counter products

An over-the-counter (OTC) drug is one you can buy without a prescription. Contrary to what many think, they are not necessarily safe medications, but they do have some proven degree of safety.

Each OTC product has a Drug Fact Label. This helps assure that you choose the correct medication. The drug fact label will tell you the active ingredient, the use of the medication, how to use the medication, if the medication will help your problem and who should talk to their doctor before taking the medication.

Generic vs. Name brand

Generic drugs are copies of the brand medications. They have the same use, side effects, dosages, risk and safety associated with it. Generally speaking generic medications and brand medications are equally effective.

It is important to look at the active ingredient list. A product that has the same active ingredient to a brand name product is similar. If the active ingredient is the same, there is likely similar effectiveness.

The Food and Drug Association assures that generic medications are equal to brand name drugs. In fact, the same companies that make many of the brand name medications make many of the generic drugs.

The other advantage of generic medications is that they are cheaper. These drugs are cheaper not because they are inferior products but because the company that makes the drug does not have to incur the cost of making and marketing a new medication.

Active ingredient

The active ingredient is the substance in the medication that is performing the desired action in the body. Knowing the active ingredient will help you determine what the medications are going to do. The active ingredient is often the same as the name if you are buying a generic product. For example, children's ibuprofen is the name of a product and the active ingredient is ibuprofen.
It is important to know what the active ingredient in the medication that you are taking. Some medications have multiple active ingredients. I generally do not recommend using products with too many active ingredients. Products with multiple ingredients are commonly seen in cold and flu preparations, cold and cough preparations and some allergy medications. Be sure to read labels carefully.

As a general rule products with multiple active ingredients are less desirable because they are associated with more side effects.

Examples of active ingredients include:
In Tylenol the active ingredient is acetaminophen
In Advil or Motrin the active ingredient is ibuprofen
In Sudafed the active ingredient is pseudoephedrine

**Safety of over-the-counter medications**

Are OTC medications safe? When used in healthy individuals as directed they are generally safe – but that is assuming a lot. Many people use over-the-counter medications inappropriately. OTC drugs are generally safe, just make sure you follow the label.

Here is a list of tips for safe use of OTC medications

- Read and follow labels
- Use over-the-counter medications for short-term use
- If the box directs you to, talk to your doctor before taking the medication
- Record all medications that you take
- If you take other medications check with your doctor or pharmacist to assure there is no interaction
- Generally avoid multi-symptom medications. Treat only the symptoms that you are having.
- Keep medicine in the box, tube that it came in so you do not mix up medications
- Keep medications away from dogs and children
- Keep medicines in a dry cool place
- Do not keep expired medications
- Make sure you measure medications correctly
- Be careful about crushing or chewing pills
Healthy adults can generally use medications safely, but other groups of people have more risk. This is particularly true among children and adults with multiple medical problems.

The use of many over-the-counter medications in children under 12-years-old has proven ineffective and not safe. Many of the problems in children have risen out of incorrect dosing. Using the measuring devise that came with the product is the safest option. It is critically important to use the proper doses of medication in children.

Patients with multiple health care problems have many risks with multiple over-the-counter medicines.

**How to choose a product**

Choosing a product is challenging. One look at the cough and cold section of a drug store is enough to give anyone a headache.

The first step in choosing a product is to identify your most troubling symptom and pick the product that targets that symptom. Every once in a while you may need a product that targets two symptoms. Rarely will you need to target more than 2 symptoms. The major time targeting more than 2 symptoms may be appropriate is when you are afflicted with the flu.

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**Sam** is a 23-year-old male who has had a cold all week. His major complaint is nasal congestion. “This stuffy nose is going on a lot longer than I thought it should.” He also complains of mild head pressure and a sore throat.

Treating Sam for his major complaint – nasal congestion – is likely all he needs. Clearing up the stuffy nose should help reduce nasal congestion, head pressure and maybe even the sore throat.

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**Anna** is 17-year-old-girl who has the flu. Her major complaint is that she has a fever, chills, achy muscles, headache, some nasal congestion and a non-productive cough. She has been taking Nyquil Cold and Flu. Nyquil Cold & Flu has acetaminophen, a cough suppressant and an antihistamine. It has provided her some relief, but she has been extremely tired, nauseated and has a dry mouth.
When her symptoms were evaluated it was determined that feeling run down, achy and headache were her worst symptoms.

Based on these symptoms she is getting some relief from the acetaminophen, but the antihistamine and cough suppressant are probably not helping much. The sleepiness, dry mouth and nausea may be related to the antihistamine and cough suppressant.

She switched over to taking 400 mg of ibuprofen and using nasal saline and felt better almost immediately. The sleepiness, nausea and dry mouth stopped and the aching muscles and headache were better relieved with the ibuprofen than with the acetaminophen.

When choosing a drug make sure that you note its:

* Name
* Active ingredients and what those active ingredients treat
* The dose of the medication
* How often it should be taken
* How long it should be taken
* If it should be taken with food
* Any precautions with the drug
* Drug interactions with any of the drugs you already take. You may need to ask a pharmacist.
* Side effects

Take a drug that targets the major symptoms that you are having. Be very cautious of multi-symptoms medications - you risk more side effects.

**Summary**

Over-the-counter products are confusing. It can be overwhelming to look at the medicine isle and notice that there are over 20 different products to help with your sinus issues.

OTC medications can very effectively treat many common health problems, but they need to be used carefully. Make sure you read the label on each medication that you take.

The next few chapters will help you put together information on common problems that can be managed with OTC products. The book will look at 30 common issues and discuss how you can treat them without a doctor and when you need to go to the doctor.
Chapter 3: Fever

A fever is an increase in body temperature. Normal body temperature is often quoted as 98.6 degrees Fahrenheit, but a range of temperatures between 97 and 99 degrees Fahrenheit may be considered normal. Many people's body temperature will even fluctuate throughout the day, with fever being higher at night and lower in the morning.

A fever is an adaptation that the body makes in response to some sort of stressor such as an infection or another illness. The increased body temperature may be the body’s way of trying to fight the stress.

Many times a parent or health care provider can tell if there is a fever by just touching the skin, but ideally the degree of fever should be quantified.

Temperature above 99.5 degrees Fahrenheit when taken orally or 100.4 when taken rectally is a fever. The severity of the fever needs to take into account the age of the individual, the degree of fever, and what other symptoms they are having.

The individual needs to see the doctor if any of the conditions listed under “who needs to see a doctor” is present. Children less than 3 months old with a fever need to see a doctor. Kids between 3 months and 3 years old should see a doctor if the temperature is greater than 102 degrees Fahrenheit.

Severe illness with a fever is often indicated when: someone is not eating or drinking, doesn't want to play or do regular activities, is drowsy, is pale and clammy. Individuals who are not as sick will look much better when the fever dissipates.

What is the cause of fever

Many things can cause a fever.

- An infection is the most common cause
- Other illnesses such as cancer or autoimmune diseases (Lupus or rheumatoid arthritis)
- Overdressing – more common in very young children
• Immunizations

**Who needs to see a doctor**

Red flags are situations that require urgent and sometimes emergent medical care. Red flags for fever vary depending on age. The list is long, but most red flags are not common. Anyone with the following complaints should see a doctor.

- Stiff neck
- Abdominal pain
- Persistent vomiting
- Extreme sleepiness
- Excessive crying or fussiness in a child
- Severe headache
- Sensitivity to bright light
- Shortness of breath
- Chest pain
- Difficulty swallowing/drooling/severe sore throat
- Severe heart or lung disease such as severe emphysema or heart failure (usually in adults).
- Confusion
- Immune system dysfunction (for example, those with cancer or AIDS)
- Anyone with head trauma
- Newborns who have a temperature less than 97 degrees Fahrenheit
- A child with a purple rash
- Children with a history of febrile seizures
- Risk for hyperthermia (someone who has participated in extreme exercise or who has been left in a hot environment such as a car)
- Any fever over 105 degrees Fahrenheit, fever above 106 degrees Fahrenheit often occurs with bleeding into the brain
- Anyone under 6 months-old who has a rectal temperature equal to or greater than 100.4 degrees Fahrenheit
- Anyone under 2 years-old who has a rectal temperature greater than or equal to 102 degrees Fahrenheit
• An adult or older child with a persistent fever above 103 degrees Fahrenheit
• Fever that persists beyond five days
• Individuals who cannot describe the symptoms need evaluation (young child or older adult with confusion)

**How to treat a fever**

**What to do?**
1. If you suspect a fever, you should quantify the fever by measuring the body temperature.
2. Are there any red flags? If yes, contact your health care provider.
3. Take inventory of your symptoms to help determine the possible cause of your fever (see fever worksheet at the end of the chapter). Refer to other sections on those other symptoms.
4. Not every fever needs to be treated. The fever is there for a reason and may be helping the body fight the cause of the fever.
5. If temperature is above 102 degrees Fahrenheit or the individual is uncomfortable use drug and non-drug methods to reduce fever.

**Over-the-counter products**

Any fever that creeps above 102 degrees Fahrenheit should probably be treated.

The three most common medications used in the treatment of fever are:

- Aspirin
- Acetaminophen
- Non-Steroidal Anti-Inflammatory Medications (NSAIDS)

Aspirin is a pain reliever as well as a medication that will help bring down fever. It may upset the digestive tract in some people and has been linked to ulcers. One advantage is that it is inexpensive. Aspirin is not recommended in those who are under 18 as there is a risk of a rare neurological disease called Reye's syndrome.

While children should not use aspirin or naproxen sodium (Aleve) they can use both acetaminophen and ibuprofen. The dose of acetaminophen and ibuprofen is based on weight – see the table: Pain Medication/Fever Reducers: Dosages in Children.
Acetaminophen, known under the brand name Tylenol, is a common medication to treat both pain and fever. When used for short periods of time it is a very safe drug. It lacks major drug interactions.

One drawback with this medication is that it lacks anti-inflammatory effects. This means that when there is inflammation, which often contributes to certain types of pain, acetaminophen may not be the best option.

It is toxic in high doses and should be minimized to less than 4 grams a day in the adult. If you follow the labeling on the bottle, you will not overdose. In overdose, acetaminophen has its toxic effect on the liver. Combining acetaminophen and alcohol is not recommended.

Acetaminophen will provide relieve for 4-8 hours depending on which formulation is taken.

Non-Steroidal Anti-inflammatory (NSAIDs) medications are another group of medications that are commonly used in the treatment of pain and fever. Like acetaminophen, it is safe when used for a short period of time.

NSAIDs have more side effects and needs to be used cautiously in certain groups of people, especially when used for extended periods of time. People at risk included those with kidney disease, heart disease, heart failure, high blood pressure and stomach ulcers.

NSAIDs have more side effects than other pain medications. They should not be used in combination with alcohol. In addition, their regular use may interact (see table) with some blood pressure medications (the table that leads to the link provides information about interactions of many commonly used drugs).

Naproxen sodium is another pain/fever reducer that is classified as a NSAID. It is not indicated for the child less than 12 years old and has similar side effects as ibuprofen.

Summary

- Try to determine what is causing the fever
- Not all fever needs to be treated
- Fever above 102 degrees Fahrenheit or in a patient who is uncomfortable or in pain should be treated
• Three classes of medications are useful in the treatment of fever: Aspirin, acetaminophen and NSAIDs
• Acetaminophen and ibuprofen are the recommended fever reducers in children.
Fever worksheet

1. How high is the fever? _____________________________________________

2. Do you have any red flags? _________________________________________

3. Are there any associated symptoms? ________________________________

4. Describe your associated symptoms?
   __________________________________________________________________
   __________________________________________________________________

5. Evaluate your associated symptoms? How can they best be treated?
   __________________________________________________________________
   __________________________________________________________________
   __________________________________________________________________
   __________________________________________________________________

6. Are you feeling sick? (If yes, a medication to lower fever may be helpful)
   __________________________________________________________________
   __________________________________________________________________

7. Is your fever over 102 degrees Fahrenheit? (If yes, a medication to lower fever
   may be helpful).
   __________________________________________________________________
## Pain Relievers/Fever Reducers

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<th>Brand names</th>
<th>Dose</th>
<th>Side effects</th>
<th>Notes</th>
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<tr>
<td><strong>Acetaminophen</strong></td>
<td>Acetaminophen</td>
<td>325 mg – 12 and older take 2 pills every 4-6 hours, children 6-11-years-old take 1 tablet every 4-6 hours</td>
<td>Few when used as directed for a short period of time</td>
<td>Overdose will affect the liver, do not use with alcohol; Is not an anti-inflammatory drug</td>
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<tr>
<td></td>
<td>Extra strength</td>
<td>500 mg – 12 and older take 2 pills every 6 hours</td>
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</tr>
<tr>
<td></td>
<td>Liquid acetaminophen</td>
<td>see package for dosing</td>
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<tr>
<td><strong>Ibuprofen</strong></td>
<td>Ibuprofen</td>
<td>200-400 mg every 6-8 hours as needed</td>
<td>Stomach bleeding, upset stomach, abdominal bloating</td>
<td>Do not use during the last 3 months of pregnancy; Use caution in those with bleeding problems, on a blood thinner, those with asthma, a stomach ulcer, high blood pressure, heart or kidney problems or those over 60 years-old</td>
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<td></td>
<td>Advil</td>
<td>200-400 mg every 6-8 hours as needed</td>
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<td></td>
<td>Liquid ibuprofen</td>
<td>see package for dosing</td>
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<tr>
<td><strong>Naproxen sodium</strong></td>
<td>Naproxen sodium</td>
<td>12-years-old and older – take one tablet (220 mg) every 8-12 hours, 2 pills may be taken for the first dose</td>
<td>Stomach bleeding, upset stomach, abdominal bloating</td>
<td>Do not use during the last 3 months of pregnancy; Use caution in those with bleeding problems, on a blood thinner, those with asthma, a stomach ulcer, high blood pressure, heart or kidney problems or those over 60 years-old</td>
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<td></td>
<td>Aleve</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Aspirin</strong></td>
<td>Aspirin</td>
<td>Take as directed on the label</td>
<td>Stomach bleeding, upset stomach, abdominal bloating</td>
<td>Do not use in children especially those with the flu, chickenpox or another viral illness</td>
</tr>
<tr>
<td></td>
<td>Bayer/Ecotrin/St. Joseph</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
### Pain Medication/Fever Reducers: Dosages in Children

**Children Dosing**

<table>
<thead>
<tr>
<th>Drug</th>
<th>Weight in pounds</th>
<th>Single dose (in mg)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Acetaminophen</strong></td>
<td>6 to 11</td>
<td>ask doctor</td>
</tr>
<tr>
<td></td>
<td>10-15 mg/kg</td>
<td>12 to 17</td>
</tr>
<tr>
<td></td>
<td></td>
<td>ask doctor</td>
</tr>
<tr>
<td></td>
<td></td>
<td>18 to 23</td>
</tr>
<tr>
<td></td>
<td></td>
<td>ask doctor</td>
</tr>
<tr>
<td></td>
<td>24 to 35</td>
<td>160</td>
</tr>
<tr>
<td></td>
<td>36 to 47</td>
<td>240</td>
</tr>
<tr>
<td></td>
<td>48 to 59</td>
<td>320</td>
</tr>
<tr>
<td></td>
<td>60 to 71</td>
<td>400</td>
</tr>
<tr>
<td></td>
<td>72 to 95</td>
<td>480</td>
</tr>
<tr>
<td></td>
<td>96 and over</td>
<td>see adult dose</td>
</tr>
<tr>
<td><strong>Ibuprofen</strong></td>
<td>6 to 11</td>
<td>ask doctor</td>
</tr>
<tr>
<td></td>
<td>7.5 mg/kg</td>
<td>12 to 17</td>
</tr>
<tr>
<td></td>
<td></td>
<td>62.5</td>
</tr>
<tr>
<td></td>
<td>18 to 23</td>
<td>75</td>
</tr>
<tr>
<td></td>
<td>24 to 35</td>
<td>100</td>
</tr>
<tr>
<td></td>
<td>36 to 47</td>
<td>150</td>
</tr>
<tr>
<td></td>
<td>48 to 59</td>
<td>200</td>
</tr>
<tr>
<td></td>
<td>60 to 71</td>
<td>250</td>
</tr>
<tr>
<td></td>
<td>72 to 95</td>
<td>300</td>
</tr>
<tr>
<td></td>
<td>96 and over</td>
<td>see adult dose</td>
</tr>
</tbody>
</table>
## Drug interactions

<table>
<thead>
<tr>
<th>Drug A</th>
<th>Drug B</th>
<th>What could happen</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Antacid</td>
<td>Quinolone antibiotic, tetracycline</td>
<td>Decreased absorption of the antibiotic</td>
<td>Give antibiotic 2 hours before or 6 hours after the antacid</td>
</tr>
<tr>
<td>Warfarin</td>
<td>Antibiotic</td>
<td>Decreased or increased warfarin level</td>
<td>Doctor should watch INR (warfarin level)</td>
</tr>
<tr>
<td>Warfarin</td>
<td>NSAID, ASA</td>
<td>Bleeding</td>
<td>Avoid use together</td>
</tr>
<tr>
<td>Warfarin</td>
<td>Tylenol</td>
<td>Bleeding</td>
<td>Risk is not as great as NSAID, minimal risk with one or two doses but ideally should be avoided</td>
</tr>
<tr>
<td>Clarithromycin (Biaxin)</td>
<td>Statins</td>
<td>Increased statin level/muscle damage</td>
<td>Consider other antibiotics</td>
</tr>
<tr>
<td>Quinolones</td>
<td>Prednisone</td>
<td>Tendon Rupture</td>
<td>Avoid use together, especially in older adults. Patient should watch for any muscle pain, swelling, or rupture of a tendon.</td>
</tr>
<tr>
<td>Antibiotics</td>
<td>NSAID</td>
<td>Increased risk of bleeding</td>
<td>Pt should watch for any increase in bleeding. APAP is a safer option for pain/fever control</td>
</tr>
<tr>
<td>Theophylline</td>
<td>Antibiotics</td>
<td>Increased levels of Theophylline</td>
<td>Theophylline levels should be watched</td>
</tr>
<tr>
<td>ASA</td>
<td>Some anti-seizure medications</td>
<td>ASA may increase the amount of seizure medication in the blood</td>
<td>Levels of anti-seizure medication may need to be monitored and any signs or symptoms of toxicity need to be watched for</td>
</tr>
<tr>
<td>NSAIDs</td>
<td>Blood pressure medications called beta blockers (propranolol, metoprolol, atenolol)</td>
<td>NSAIDs may decrease the ability of the blood pressure medications to lower the blood pressure</td>
<td>Blood pressure needs to be monitored or medications adjusted</td>
</tr>
<tr>
<td>Antihistamines</td>
<td>Sedatives, anti-anxiety medications, sleeping pills and muscle relaxants</td>
<td>May increase sedation</td>
<td>Avoid use together</td>
</tr>
<tr>
<td>Pseudoephedrine (Sudafed)</td>
<td>Blood pressure medications</td>
<td>Reduced effect of the high blood pressure medications</td>
<td>Other methods to decongest the nose should be sought</td>
</tr>
<tr>
<td>Dextromethorphan (Robitussin DM)</td>
<td>Sedatives</td>
<td>Increased sedation</td>
<td>If used together monitor for sedation</td>
</tr>
<tr>
<td><strong>Antacid</strong> – Tums, Rolaid; NSAID – Non steroidal Anti-inflammatory drugs (ibuprofen, naproxen); ASA – Aspirin; <strong>Quinolone antibiotics</strong> (Ciprofloxacina (Cipro), levofloxacin (Levaquin), moxifloxacin (Avelox))</td>
<td><strong>SSRI – Selective Serotonin Reuptake Inhibitors</strong> [antidepressants – sertraline (Zo'ft), citalopram (Celexa), fluoxetine (Prozac)]; <strong>Statins</strong> – cholesterol lowering drugs (simvastatin (Zocor), atorvastatin (Lipitor))</td>
<td>Sedatives – some anxiety medications and sleeping pills</td>
<td></td>
</tr>
</tbody>
</table>
Chapter 4: Pain

Pain is an unpleasant sensation or experience that is linked to real or potential tissue damage. There are two broad categories of pain: nociceptive pain and neuropathic pain.

Nociceptive pain is usually related to tissue injury. Neuropathic pain is nerve pain. I will not bore you with a detailed discussion of these two types of pain, but the most common type of pain is nociceptive pain. Almost any disease process can cause pain.

This section will look at pain caused by minor muscle or bone injury and low back pain and how it can be treated with non-prescription medications.

Who needs to see a doctor

The following groups of people need a doctor

- Severe pain
- Increasing pain
- Changing character of the pain
- Significant stomach pain
- Deformed joint – swelling
- Inability to move a joint
- Associated nausea, vomiting, diarrhea or fever
- Back or stomach pain
- Pain in the last trimester of pregnancy
- Pain associated with weakness in the limb

Treatments

Treatment involves identifying the cause of the pain and trying to treat its underlying cause. While the underlying cause is being treated, the management of pain is important, with over-the-counter medications. Self-management of pain is appropriate
for those who have a self-limiting condition that does not meet the criteria for “who needs a doctor”.

**Over-the-counter products**

Like fever, there are three main types of oral over-the-counter medications for the treatment of pain: aspirin (ASA), acetaminophen (APAP), and nonsteroidal anti-inflammatory drugs (NSAIDs) which include ibuprofen and naproxen sodium.

**Topical products** are also available for the management of pain. Topical agents work directly in the soft tissue and nerves just below the soft tissue. They should be applied no more than 4 times a day. Do not use heating pads on top of the rubs.

Topical pain medications are useful for minor pain. They work by counter irritation. This means that they produce a less severe pain to counter the effects of the more severe pain. These medications distract the body from the more severe pain in the muscles, joints or tendons.

These products come in a variety of vehicles including cream, ointments, gels, lotions and patches. Ointments have greater potency, but are greasy and not tolerated as well. Patches do not allow one to rub in the medication, which may be one of the beneficial effects of the medication,

Rubefacients cause the blood vessels to dilate and blood to pool. This is accompanied by an increase in the skin temperature. These products give a feeling of cold or heat over the painful area resulting in a soothing of the underlying pain.

Camphor and menthol products excite the nerves and make them feel cold and then warm which will decrease the pain sensation.

Some products contain a product that is similar to aspirin. These include products such as: Aspercreme, BenGay, Flexall, and Sportscreme.

**Capsicum** – an ingredient in Cayenne peppers - depletes a substance called substance P in the nerves, which is believed to cause pain. It blocks this chemical, which is believed to deliver pain messages to the brain. Studies are variable on this product, but some studies in arthritic patients have shown nice results in regards to
reduction of pain. It is recommended that this product is applied while using disposable gloves and avoid contact with the mouth, eyes or nose.

Which is the most effective topical product? The answer to this question is not known. No research compares the products. These products are likely not as potent as oral medications, but may provides some relief. They can be used in combination of with oral products.

Topical products are not associated with too many side effects. Irritation to the skin is one of the more common side effects. It may cause the skin to burn and get red. Severe allergic reactions – which present with hives, swelling of the lips, breathing troubles – are rare. If this happens seek emergency care immediately.

Some topical products are available by prescription. A pharmacist can make products that contain NSAIDs. These may be options for people who cannot take the side effects of oral NSAIDs and have localized pain. These products provide only short-term relief.

Patches with lidocaine are available by prescription and work by blocking the transmission of pain impulses.

**What to do**

1. Do you need to see a doctor (see list above). If you have any of the criteria for “who needs to see a doctor” – visit a health care provider.

2. How did you injure your self? (Use new pain worksheet to evaluate your pain)

3. If pain occurred from muscle/joint injury or over exertion than use RICE therapy (table 2)?

4. Add non-prescription pain medications (see previous chapter) to help with pain. Theoretically NSAIDs are more effective because they have anti-inflammatory effects, but in reality they are equally effective choices. Routine pain medication should be given for 1-3 days.

5. The addition of topical products is an appropriate strategy for those who do not get relief from oral medications
6. If pain remains after 10 days or pain is worsening after the initial injury follow up with your doctor.

Table 2: RICE therapy

RICE therapy is an acronym that describes four steps to help in the management of an acute muscle or joint injury.

- Rest the injured area
- Ice – apply ice to any injury up to 48 hours after the injury. Ice is applied for 10-minute intervals four times a day. You may use heat after the first 24-48 hours.
- Compression – wrap the injured area with elastic support or bandage
- Elevate the injured area above the heart.
## Topical Pain Medications

<table>
<thead>
<tr>
<th>Product</th>
<th>Medication</th>
<th>Directions</th>
</tr>
</thead>
<tbody>
<tr>
<td>BenGay – Vanishing Scent</td>
<td>Menthol 2.5% - Topical analgesic</td>
<td>12-years-old and older apply to affected area 3-4 times a day</td>
</tr>
<tr>
<td>BenGay – Ultra Strength</td>
<td>Camphor 4%; Menthol 10%; Methyl Salicylate 30% - Topical analgesic</td>
<td>12-years-old and older apply to affected area 3-4 times a day</td>
</tr>
<tr>
<td>BenGay – Ultra Strength – pain relieving patch</td>
<td>Menthol 5%</td>
<td>12-years-old and older apply to affected area 3-4 times a day</td>
</tr>
<tr>
<td>Flexall – Maximum Strength</td>
<td>Menthol – topical analgesic</td>
<td>12-years-old and older apply to affected area 3-4 times a day</td>
</tr>
<tr>
<td>BioFreeze</td>
<td>Natural Menthol USP – 3.5%</td>
<td>2-years-old and older apply to affected area 3-4 times a day</td>
</tr>
<tr>
<td>IcyHot Gel</td>
<td>Menthol 2.5% - Topical analgesic</td>
<td>12-years-old and older apply to affected area 3-4 times a day</td>
</tr>
<tr>
<td>IcyHot Balm – Extra Strength</td>
<td>Menthol 7.6% and Methyl Salicylate 29%</td>
<td>12-years-old and older apply to affected area 3-4 times a day</td>
</tr>
<tr>
<td>Mineral Ice</td>
<td>Menthol 2%</td>
<td>2-years-old and older apply to affected area 3-4 times a day</td>
</tr>
<tr>
<td>ActivOn – Joint &amp; Muscle</td>
<td>Menthol 4.127%</td>
<td>12-years-old and older apply to affected area 3-4 times a day</td>
</tr>
<tr>
<td>ActivOn – Arthritis</td>
<td>Histamine Dihydrochloride 0.025 and Menthol 4.127%</td>
<td>12-years-old and older apply to affected area 3-4 times a day</td>
</tr>
<tr>
<td>Tiger Balm Ultra</td>
<td>Camphor 11% and Menthol 11%</td>
<td>12-years-old and older apply to affected area 3-4 times a day</td>
</tr>
<tr>
<td>IcyHot – Cream</td>
<td>Menthol 10% and Methyl Salicylate 30% - Topical analgesic</td>
<td>12-years-old and older apply to affected area 3-4 times a day</td>
</tr>
<tr>
<td>Capzasin HP</td>
<td>Capsaicin 0.1% - Topical analgesic</td>
<td>18-years-old and older apply 3-4 times a day</td>
</tr>
<tr>
<td>Myoflex</td>
<td>Trolamine Salicylate 10% - pain reliever</td>
<td>2-years-old and older apply to affected area 3-4 times a day</td>
</tr>
<tr>
<td>Sportscreme</td>
<td>Trolamine Salicylate 10% - pain reliever</td>
<td>10-years-old and older apply to affected area 3-4 times a day</td>
</tr>
<tr>
<td>IcyHot Patch</td>
<td>Menthol 5% patch</td>
<td>12-years-old and older apply to affected area for up to 8 hours – up to four times a day</td>
</tr>
</tbody>
</table>
New Pain Worksheet

1. When did the pain start?

________________________________________________________________
________________________________________________________________

2. Where is the pain located?

________________________________________________________________
________________________________________________________________

3. Is the pain constant or intermittent?

________________________________________________________________
________________________________________________________________

4. How would you describe the pain (sharp, dull, nagging, aching, pins/needles)?

________________________________________________________________
________________________________________________________________

5. Are there any associated factors (nausea, shortness of breath, sweating, weakness, skin changes, chills, fever, loss of appetite, numbness and tingling etc.)?

________________________________________________________________
________________________________________________________________

6. What makes the pain better?

________________________________________________________________
________________________________________________________________

7. What makes the pain worse?

________________________________________________________________
________________________________________________________________

8. Does the pain radiate? Where?

________________________________________________________________
________________________________________________________________

9. How severe is the pain on the 0-10 scale?

________________________________________________________________
Chapter 5: Dry skin

Dry skin is an uncomfortable skin condition that causes the skin cells to shrivel and develop fine lines. It usually is only a temporary problem, but some people have recurrent problems with dry skin.

Symptoms are often noticed most on the arms, sides of the stomach and lower legs. Dry skin may cause

- Skin tightness
- Dehydrated skin
- Symptoms worse after bathing
- Itching
- Rough skin
- Redness of the skin
- Flaking, peeling or scaling of skin or cracks in the skin (some cases may show

What causes dry skin

- Most cases of dry skin are from the environment such as hot or cold weather with low humidity. Winter exacerbates dry skin. Dessert areas are associated with high temperatures and low humidity.
- Reduction in humidity from central air conditioning or central air
- Excessive exposure to sun dries the skin
- Hot baths or showers
- Harsh soaps and detergents
- Excessive bathing especially when combined with some soaps and detergents. Deodorant and antibacterial soaps are most problematic
- Some disease states: psoriasis or thyroid disorders
- The incidence of dry skin increases with age above 65

Who needs to see a doctor

- Individual who have no improvement with over-the-counter products
• Any indication of infection: red, painful, hot skin that may ooze fluid
• Symptoms that interfere with sleep
• Large areas of peeling skin
• Open wounds from scratching
• If complications set in: eczema, infection of the hair follicles or infection of the skin
• The presence of a more problematic disease such as psoriasis

Treatment strategies

1. Determine the cause of the dry skin and attempt to eliminate the cause
2. Avoid long, hot baths or showers, use warm water and limit time to 15 minutes
3. Do not use harsh soaps or deodorizing/antibacterial soaps; instead use gentle skin cleansers, cleansing creams, or gels with added moisturizers. Skin should feel soft and dry after bathing. Mild soaps with added fat and oils include Basis, Dove and Neutrogena.
4. When bathing using oatmeal baths (Aveeno may help soothe the dry skin).
5. Use over-the-counter moisturizers to help keep water from escaping the skin. Good products include Cetaphil and Eucerin. Oily moisturizers (ointments) are most effective, but are difficult to use due to their greasiness. Creams are easier to use but less effective.
6. The use of oil (such as baby oil) can be applied to moist skin for more severe symptoms
7. Apply moisturizer right after bathing, after you blot the skin dry (there should still be a little moisture on the skin). Moisturizers should be hypoallergenic.
8. Can apply moisturizers 3-4 times a day.
9. Dry hands can be treated with Vaseline covered by cotton lined gloves right before bed.
10. Use a humidifier. The humidifier can either attach to your furnace or be portable.
11. Dress properly. Cotton and silk are best for dry skin as it allows air in. Avoid products like wool. Use detergents without perfumes or dyes.
12. Cool compress can be used to areas that itch.
13. Inflamed areas can be treated with OTC hydrocortisone cream or ointment
Over-the-counter Products

Topical treatment is the ideal way to treat dry skin as it delivers medications directly to the target organ – the skin – and thereby decreases side effects. Below are multiple products that can be used.

Which one should be chosen? Studies do not show one product being better than others. Creams are less effective, but are easier to use. Ointments are more difficult to use.

Determining which product will work best is not always easy. Trial and error are often needed to see which product works and feels the best.

Most products are equally effective if used as directed. AmLactin is a unique product that is applied twice a day and may be more effective than other medications. It has been reported to treated dry skin when other products have been effective.

But be careful. It may cause more side effects. It may lead to more stinging and burning. It should not be applied to the face. It should not be applied to sunburned, irritated or broken skin. It may lead to increased risk of sunburn. It should not be used in children or pregnant women.
Questions to consider when faced with dry skin

1. Where is the dry skin located? What does the skin look like? What are your main symptoms
2. Are there any reasons to see a doctor? If yes – make an appointment
3. Implement treatment strategies.
4. If there is no improvement see a doctor.
Chapter 6: Skin Bumps

This chapter will look at three common skin conditions that present with skin bumps – warts, corns and calluses.

Who needs to go to the doctor

- Warts, corns or calluses that are not responsive to over-the-counter treatment
- Warts, corns or calluses on the feet of someone who is diabetic or has poor circulation to the feet
- Anyone with an infection. An infection may be present when the area is red, hot, tender or oozing fluid
- Warts on the face that you want to treat

What are warts

A wart is a small, rough growth that usually presents on the feet or hands. Different warts look differently. It may look like a solid blister or even a cauliflower. They typically disappear after a few months but can last for years and can reoccur.

A wart is typically not dangerous but can be painful and aesthetically unpleasing.

What causes warts

The human papilloma virus (HPV) causes warts. Warts are contagious when in contact with the skin of an infected person. They can be transmitted from towels and other items used by someone infected.

What do warts look like

Common warts have an irregular surface and are dome shaped. There are multiple types of warts.
- Plantar warts occur on the bottom of the feet and can be painful when walking on them. They can feel like you are walking on a pebble.
- Periungual warts are seen at the margins of nails. They have a rough surface. They can cause a partial detachment of the nail
- Flat warts are smooth, flat and small
• Some warts are seen on the face

How do you treat warts

Warts often go away on their own. Warts can be treated by multiple methods but no method is guaranteed to make the warts go away. Spontaneous regression is common. Therapy with compounds that freeze the wart are commonly employed. A common example of this is Dr. Scholl’s Freeze away.

In addition to the products that freeze the warts, there are products that can be used to deliver medications to destroy the wart. The active ingredient in these products is salicylic acid. Salicylic acid is likely more effective than freezing in its ability to get rid of warts. The downside is that it takes weeks of treatments to be effective.

Over-the-counter wart products

<table>
<thead>
<tr>
<th>Name</th>
<th>Use</th>
<th>Age</th>
<th>Note</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dr. Scholl's Freeze Away</td>
<td>Common and Plantar Warts</td>
<td>4 and older</td>
<td>Wart will fall of in as few as 10 days, if still there after 14 days, it may be retreated – do not use more than 4 applications on one wart</td>
</tr>
<tr>
<td>Wartner</td>
<td>Plantar Warts</td>
<td>4-years-old and older</td>
<td>Wart falls off in 10-14 days</td>
</tr>
<tr>
<td>Dr. Scholl's Clear Away</td>
<td>Plantar Warts</td>
<td>No age on box - don't use under 4</td>
<td>Salicylic acid patches, need to reapplied every 48 hours, may use up to 12 weeks</td>
</tr>
<tr>
<td>Wart Stick</td>
<td>Plantar Warts</td>
<td>No age on box - don't use under 4</td>
<td>Daily application of salicylic acid to wart that is to be covered with a bandage.</td>
</tr>
</tbody>
</table>
Plantar Warts

4 and older will fall off in 10-14 days, if still after 14 days, it may be retreated—do not use more than 4 applications of salicylic acid patches, and reapply every 4 hours may use up to 10 treatments. Use Scholl brand or Scholl Clear brand and use under the care of a healthcare professional.
What is a Corn/Callus

Calluses and corns are hard, thick areas of dead skin that develop to protect the underlying skin or structures due to friction, pressure or injury.

Calluses are most often seen on the feet and hands, but can occur anywhere. Calluses are commonly seen at the base of the fingers. They also develop on the foot at the heel, under the big toe or the ball of the foot.

Corns are found where toes rub together. Corns inner core can be hard or soft. A hard corn is seen over a bony toe. A soft corn is seen between the toes.

Pain may occur when there is pressure on it.

What causes Corns/Callus

Repeated friction or pressure on any area of the skin can cause a corn or callus. Ill fitting shoes often cause them as pressure is put on the feet.

What do Corns/Calluses look like

Calluses are thick, hard, dry and bumpy. The coloring is yellowish to gray. They are not sensitive to the touch. Calluses and corns retain their normal fingerprint lines.

Hard corns are thick and firm. They can have a gray center with a yellow ring. A soft corn looks like an open sore.

How do you treat Corns/Calluses

The first step in treating a callus is to get the area clean by taking a shower or bath. Next, immediately after washing the area use a pumice stone to gently exfoliate the area around the corn or callus. Do not aggressively rub the area as this may increase the risk of infection. Pumice stones are available as multiple over-the-counter products. Stones are typically moistened and the area is rubbed in a circular motion with light pressure.

Over-the-counter products for corns and calluses come in two major forms: protection or treatment. If there is discomfort secondary to the corn or callus a protective donut pad can be placed on the corn or callus to relieve pressure. These products are sold as corns/callus cushions.
Corns or calluses are treated with medicated pads or liquids that contain salicylic acid to help remove the corn or callus. Generally these products are recommended if you desire to get rid of the corn or callus. If you want to both protect and get rid of the callus/corn than a medicated pad to treat corns and calluses provide both protection and treatment.

**Common examples of over-the-counter products include:**

- Dr. Scholl’s Corn Remover
- Dr. Scholl’s Callus Remover
- Dr. Scholl’s Liquid Corn and Callus Remover
- Corn/Callus Cushions

**Questions to consider when faced with a wart, corn or callus**

1. What do you have? Evaluate the bump to determine if it is a corn, callus or wart. If you are unsure see your doctor.

2. **Determine if you need to go to the doctor.**

3. Choose an over-the-counter product to treat manage as outlined above.
Chapter 7: Rash

A rash is an eruption of bumps and redness on the body that changes the appearance and the feel of the skin. Rash is a complicated diagnosis for many doctors. The role of the individual with a rash is to:

1. Determine if there is any life threatening cause or another cause that warrants medical attention
2. Determine the possible causes of the rash
3. Determine how to manage the rash
4. Know when to follow up with the health care provider.

When to go to the doctor

Most rashes are not dangerous, but a physician should evaluate rashes when:

- The rash is suspected of being a bacterial infection. This is indicated by heat coming of the rash; the rash is surrounded by tenderness and swelling; a fever; or the rash that is oozing pus.
- There is associated fever or the person feels sick.
- There is a purple rash that when pressed on does not change colors.
- There is severe itching or discomfort.
- The person is less than 2 years old.
- The rash worsens.
- A large part of the body is involved.
- You are unsure of the cause.
- Initial treatment is unsuccessful.
- The rash is on the face.
- Rash that does not go away in 2 weeks
Causes of rash

Many things can cause a rash. This section will look at some common causes of rash and give the reader an understanding of what could be causing the rash.

- Contact dermatitis. Contact dermatitis is a rash that is caused by contact with a specific substance. A common example is poison ivy or contact with a new soap. Contact dermatitis presents with skin redness, itching, burning, swelling, stinging and blisters.

- Atopic dermatitis also known as eczema. Atopic dermatitis is a genetic skin condition that affects children and is associated with skin that is red, swollen, itchy and cracked. Fluid can sometimes ooze out of the skin. See table 3 for factors that trigger atopic dermatitis

- Dry skin (see section on dry skin)

- Psoriasis usually presents with a rash that is itchy with thick red patches of red skin with silvery scales. It commonly occurs on the knees, elbows, top of the head, back, palms, face and feet.

- Fungus - Like eczema rashes, fungal rashes are scaly. Fungal skin infections occur in areas where there is moisture such as the groin, under the arms, feet or the scalp. It is associated with itching and pain and the rash may look differently: 1. Fine scales with inflammation; 2. Cracks and fissures 3. Blisters 4. Smelly, soggy and thickened skin

- Bacterial infections can cause rashes, including: Impetigo (an infection in the superficial layers of the skin), cellulitis (serious bacterial infection of the skin – deeper) and folliculitis (infection of the hair follicles).

- Viruses also cause rashes. Viruses cause rashes that are red and itchy and present all over the body. They present with bumps or patches. These rashes are symmetrical and everywhere.

- Drug allergy. Allergy rash begins within 14 days of starting a new medication.

- Hives. Hives are red itchy welts that come and go.
Table 3: Factors that trigger atopic dermatitis

- Soaps
- Molds
- Pollens
- Sweat
- Cigarette smoke
- Animal dander
- Stress
- Anxiety
- Daily bathing

Treatment options

Treatment depends on the cause. Most rashes are not dangerous. Most rashes will go away on their own and the role of the individual with the rash is to treat the symptoms of itch or dry skin. The rashes that this section will focus on are:

- Contact dermatitis
- Atopic dermatitis
- Fungal infections

Over-the-counter products

Hydrocortisone, which became an over-the-counter product in 1979, comes in a variety of products including Cortaid, Cortisone and Aveeno. It can be used for many things, but one of the major uses is for contact dermatitis (inflammation of the skin). This dermatitis is caused by a variety of things including: poison ivy, soaps, jewelry, lotions or cosmetics. Hydrocortisone helps stop itching.

It is used three to four times a day. It should not be used (unless Ok’ed by your doctor) for diaper rash, vaginal itching when there is discharge, fungal infection, acne, hair loss, warts, sunburn or dandruff. Hydrocortisone should not be used for longer than 7 days without a doctor’s consult.
Those under 12 should not use it for hemorrhoids unless a doctor has recommended it. It should not be used in those less than 2-years-old should. Women who are pregnant or breastfeeding should not use it. A doctor should be consulted if the rash goes away but comes back a few days after the hydrocortisone was stopped.

Hydrocortisone comes in a variety of formulations including creams, ointments, sprays and lotions. Ointments are more greasy and do not come off as easily. Creams are more tolerable and are better for moist lesions. Lotions spread better than creams and ointments, but are easily removed by water.

Hydrocortisone is approved for:

- Allergic reactions
- Insect bites
- Rashes
- Poison ivy, sumac or oak
- Eczema
- Seborrhea dermatitis or psoriasis

**Anti-itch creams**

Anti-itch creams (page 74) contain topical steroids, topical antihistamines or topical anesthetics. Topical steroids were discussed above with hydrocortisone and may be the best topical treatment for itching. Other products, such as Benadryl cream, contain antihistamines that treat itching. Many people are sensitive to this type of product and they may lead to itching or red skin

**Oral Antihistamines**

Oral antihistamines are often the initial treatment for itching, mainly because of their availability and ease of use. They are associated with more side effects when compared to topical treatments. The first-generation antihistamines (older antihistamines) are particularly associated with side effects.

Older antihistamines - chlorpheniramine (Chlor-Trimeton), diphenhydramine (Benadryl) and hydroxyzine (Atarax) - are associated with more side effects, particularly
sedation, and are less commonly used when compared to newer medications. The most common over-the-counter first-generation antihistamine is diphenhydramine.

Second-generation medications have improved dosing schedules and are less commonly associated with sedation. There are five, second-generation antihistamines available. Multiple studies have demonstrated that cetirizine (Zyrtec) is the most potent of the OTC second-generation antihistamines. These products are only mildly effective in treating the itch from a rash.

Cetirizine and loratadine are the two over-the-counter second-generation antihistamines.

**Specific conditions**

**Atopic dermatitis (Eczema)** treatment involves reducing aggravating factors, keeping the skin hydrated and reducing itching.

First, avoid the triggering factors as described in table 3.

Reduce the amount of bathing. Bathe every other day (if possible). Use non-soap cleaners (such as Cetaphil). Keep baths or showers to 3-5 minutes and use tepid water. After getting out of the bath place a moisturizer on the skin within three minutes. When bathing the addition of an Aveeno product (such as Soothing Bath Treatment, which is a colloidal oatmeal skin protectant) may be helpful in reducing itch and skin irritation.

Using lotion once a day after baths may prevent flare-ups of atopic dermatitis.

Any areas that are open and draining fluid can be dried with cool tap water compresses every 4-6 hours. The use of aluminum acetate solutions (bought as an OTC product – Domeboro Aluminum Acetate Astringent Solution) for compresses can be used as well. Aluminum acetate solutions soaks are expensive and not much more effective than placing a rung out washcloth with cool water on the area. Compresses are made by soaking a clean, soft cloth in cool water or a solution made by mixing Domeboro Packets with water and applying the cloth to the affected area for 15-30 minutes.

The use of OTC hydrocortisone is the best treatment choice for those who are afflicted by itching. It should be applied every 6-8 hours to affected areas. The use of
creams is the best initial choice, but for those who are not responding to creams they can use ointments.

Dry skin can be treated with dry skin treatment – see section on dry skin.

While it may take some time for the treatment to be effective. It is important to know when to go the doctor. When home-remedies and OTC medications do not provide relief than the physician can prescribe other medications that have proven more effective for atopic dermatitis. This includes Pimecrolimus (Elidel), Tacrolimus (Protopic) and/or stronger hydrocortisone products.

**Contact dermatitis** will go away in 2-3 weeks, with or without treatment. Treatment should focus on protecting the skin, reducing itching and preventing the spread of the rash.

The first step in the treatment of contact dermatitis is to wash the area to remove the offending substance and prevent the spread. The area should be rinsed before it is washed with soap, as soap can spread the rash. Tecnu is an outdoor skin cleaner (bought over-the-counter) that is rubbed on the affected area and than rinsed with cool running water. Those who are exposed to poison ivy should wash the area under the fingernails as some of the irritant can get trapped under the fingernails.

Baths can help relieve the itching. Cool water (around 90 degrees Fahrenheit) is ideal. The addition of colloidal oatmeal skin protectant to the bath can help soothe the skin further.

Lesions that are open can be treated with a cool compress with cool tap water or aluminum acetate.

A paste can be made with sodium bicarbonate powder (Baking Soda) and water to apply directly to the rash. It should be applied for 15-30 minutes and not applied near the eyes.

Medications are needed for many cases of contact dermatitis. Hydrocortisone is the best treatment available over-the-counter. Cream is best for any open or weeping areas. When the area is dry either an ointment or cream is acceptable.
Do not use topical antihistamines (Benadryl), antibiotics or anesthetics. These agents have the potential to cause a worsening of the dermatitis. Some people may choose to use agents that contain a topical antihistamine or benzocaine if other agents do not work, but they should be used with caution.

When over-the-counter products do not help a doctor can:

- Prescribe a stronger cream
- Prescribe oral corticosteroids

**Fungal infections**

Treatment involves a combination of antifungal medications and non-drug treatments. Treatment takes time. It may take up to one week before an improvement is noticed and up to four weeks for a complete eradication. Some people with more severe cases need to treat up to 6 weeks.

When treatment is delayed the infection can spread and become harder to treat.

Daily cleaning with a soap and water should be done. The area should be dried with a separate towel than other areas of the body. On the same note, patients should not share items that touch infected areas.

Clothing in the infected area should allow the skin to breathe. Do not wear occlusive clothing.

Soaking fungal infections of the feet in aluminum salts helps antifungal medications to work more effectively. Burrow’s solution should be used and the foot is immersed for 20 minutes three times a day.

Creams and solutions are the most effective ways to treat disease (see chart below). Use caution with antifungal medications, as the labeling is confusing. Many products with the same brand name have different active ingredients and therefore may be indicated for different fungal infections, different ages and different methods of treatment.

For example, Lamisil has multiple products that treat fungal infections. Lamisil Cream has the active ingredient Terbinafine hydrochloride that can treat athlete's foot, ringworm and jock itch. This product is indicted for one week of treatment for most fungal infections.
Another Lamisil product called Lamisil Defense contains Tolnaftate as an active ingredient and this product is not labeled for jock itch and needs to be used for four weeks. This product is labeled for use in those over the age of 2 and Lamisil cream is indicated for use in those over 12-years-old.

Antifungal medications come in a variety of different formulations such as creams, solutions, gels and powders. Sprays or Lotrimin Ultra Cream may be more effective if you have an infection between you toes. Powders should be used for only mild cases. Lotions, creams and gels should be rubbed in well.

### Antifungal Medications

<table>
<thead>
<tr>
<th>Generic Name</th>
<th>Brand Name</th>
<th>Directions for use</th>
<th>Age</th>
</tr>
</thead>
<tbody>
<tr>
<td>Butenafine</td>
<td>Lotrimin Ultra Cream</td>
<td>For athlete's foot (most effective for athlete's foot between the toes) apply twice daily for one week or once daily for 4 weeks. The 4 week treatment is more effective. Those with jock itch or ringworm should use the product once a day for 2 weeks. Few side effects</td>
<td>12 and older for athlete's foot, ringworm and jock itch</td>
</tr>
<tr>
<td>Tolnaftate</td>
<td>Tinactin, Lamisil Defense</td>
<td>Approved for the treatment and prevention of athlete's foot. It is applied twice a day for 2-4 weeks to treat athlete's foot and ringworm and to prevent athlete's foot apply once or twice a day</td>
<td>2 and older for athlete's foot and ringworm</td>
</tr>
<tr>
<td>Miconazole</td>
<td>Lotrimin A, Zeasorb-AF,</td>
<td>This product is used twice a day for four weeks for athlete's foot and ringworm; twice day for two weeks for jock itch</td>
<td>2 and older for athlete's foot, ringworm and jock itch</td>
</tr>
<tr>
<td>Desenex</td>
<td></td>
<td>This product is used twice a day for four weeks for athlete's foot</td>
<td>2-years-old and older for athlete's foot</td>
</tr>
<tr>
<td>Clotrimazole</td>
<td>Lotrimin AF</td>
<td>This product is used twice a day for four weeks for athlete's foot and ringworm; twice day for two weeks for jock itch</td>
<td>2-years-old and older</td>
</tr>
<tr>
<td>Terbinafine</td>
<td>Lamisil cream, Lamisil gel</td>
<td>Lamisil cream – apply twice a day for one week; on the bottom or sides of the feet apply twice a day for 2 weeks; for jock itch/ringworm apply once a day for one week</td>
<td>12-years-old and older</td>
</tr>
<tr>
<td></td>
<td>Lamisil gel</td>
<td>Same as cream except not labeled for bottom or side of the feet</td>
<td></td>
</tr>
</tbody>
</table>
Chapter 8: Sunburn

Sunburn occurs after exposure to sun or another form of ultraviolet light. It manifests as a reddening of the skin if the protective pigment – melanin – is unable to protect the skin. It occurs more commonly in those with light skin and may manifest after as little as fifteen minutes in the sun.

Sunburns may not show up for 6 hours to two days after exposure to the sun.

A sunburn will manifest with red skin that may be swollen, sometimes low-grade fever and skin peeling will follow a sunburn in about 3-8 days.

Risks of sunburn

Most risk of sunburn is long-term, but there have been cases of death from acute sun exposure. The sunburn can cause significant pain and limit function.

Long-term risk of sunburn occurs after years of exposure or sometimes even one bad sunburn. One case of blistering sunburn significantly increases the risk of the worst type of skin cancer – malignant melanoma.

Chronic exposure to sun also increases the risk of skin cancer as well as premature aging of the skin, such as age spots. Long-term exposure is linked to the two less deadly forms of skin cancer – basal cell carcinoma and squamous cell carcinoma. Chronic sun exposure also increases the risk of cataracts.

How to prevent sunburn

There are two strategies to preventing sunburn.

1. Avoid the sun. This can be done by staying indoors (especially during peak hours of 11-3 in the morning/afternoon). When going outside it is important to wear clothes that will protect the skin. Long-sleeve shirts and pants along with a wide-brimmed hat will protect the skin. In addition, wearing sunglasses can help protect the eyes from the sun.

2. Use sunscreen on exposed areas. For those individuals who do not want to wear long-sleeve shirts and long pants when out in the sun, the use of sunscreen
may be helpful. There is no such thing as a safe tan. See the table for the best sunscreens.

- Buy a sunscreen that is very water resistant or waterproof and with a sun protection factor (SPF) of at least 30.
- Apply sunscreen 15 to 30 minutes before going in the sun to allow it be fully absorbed. Reapply after 2 hours, after swimming or sweating heavily.
- Sunscreens can stain clothes, so be careful.
- Throw away sunscreen that is more than two-years-old.

**When do you need to go to the doctor**

You should go to the doctor if you have any of the following:

- Fever with sunburn
- Fluid-filled blisters
- Vision problems
- Dizziness
- Any indication of dehydration

**How to treat sunburn**

If you get a sunburn there are certain steps that will help you treat the burn.

- Use cool water to ease the discomfort. This can be done in the form of a bath or shower or putting a cool washcloth on the burn.
- Do not break blisters. Apply dry bandages to blisters loosely if the are rubbing up against clothes, otherwise just leave them open.
- When the blister breaks apply an antibiotic ointment such as bacitracin and put a bandage over the blister. Change the bandage every day.
- Use a lotion to soothe the sunburned skin such as aloe vera
• When there is pain and swelling the use of 1% hydrocortisone cream may be helpful
• Do not use topical products that contain petroleum, benzocaine or lidocaine
• A moisturizing cream can be soothing to skin without blisters
• Pain medication such as ibuprofen or acetaminophen may be helpful
• Monitor for any indication of infection (increased redness, pain, warmth)

**Sun Blocking Lotion**

<table>
<thead>
<tr>
<th>Best overall</th>
<th>Neutrogena Ultra Sheer Dry-Touch sunblock SPF 55</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Walgreen’s Continuous Spray Sport SPF 500</td>
</tr>
<tr>
<td></td>
<td>Aveeno Continuous Spray Protection SPF 45</td>
</tr>
</tbody>
</table>

| Best for sensitive skin | Blue Lizard Sunscreen – Sensitive SPF 30 |

<table>
<thead>
<tr>
<th>Best for sportsman</th>
<th>Banana Boat Sports Performance – SPF 30</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Target Sport Continuous Spray SPF 30</td>
</tr>
</tbody>
</table>

| Best value            | No-Ad Sunblock Lotion SPF 45                   |

<table>
<thead>
<tr>
<th>Best kids product</th>
<th>California Baby No Fragrance SPF 30 – expensive</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Coppertone Waterbabies SPF lotion SPF 50</td>
</tr>
<tr>
<td></td>
<td>Blue Lizard Baby Sunscreen – Sensitive SPF 30</td>
</tr>
</tbody>
</table>
Chapter 9: Blister

A blister is caused by friction resulting in soft tissue breakdown that does not cause an opening in the skin. They are bumps that are filled with fluid that look like bubbles. They commonly occur in areas of friction, such as when you are wearing a tight shoe or when you are shoveling without a glove. Most blisters can be treated without the help of a doctor.

Many different skin diseases can cause blisters, such as shingles, cold sores, impetigo, chickenpox and scabies. This section will look at blisters caused by friction.

Risk factors for blisters

- Temperature
- Exposure to friction
- Moisture
- Older age
- Smoking
- Anemia
- Swelling
- Infection

Who needs to go to the doctor

Most blisters do not require the care of a physician. Most small blisters heal on their own. Some cases do require the input of a health care provider, including:

- Any sign or symptoms of infection: redness, tenderness or swelling of the skin around the blister
- When you are unsure of the cause of the blister. Friction blisters are recognized easily, but when the there is no apparent cause or there are multiple blisters other conditions may be present that require a doctor’s input.

How to treat a blister

1. Do not puncture intact blisters the blister protects the underlying area from infection.
2. Clean the area around the blister with soap and water and then apply an antibacterial cream. The area can be covered with a gauze to prevent infection. Change the dressing once a day.

3. Protect the blister. Cut a hole in a moleskin and place it around the blister and then place another moleskin over the blister. Moleskin can be bought at any drug store.

4. There are multiple over-the-counter products that help with the treatment of blisters. Dr. Scholl makes a product called Blister Treatment that can be used to help heal and protect a blister. It is applied after the area is cleaned. Band-aid makes a product called Advanced Healing Blisters that can be used on open blisters. It protects the blister while the body heals it. Band-aid also makes a product for between the toes and finger called Advanced Healing Blisters for fingers and toes that can be used on open blisters.

Prevention

- Wear gloves when you are doing jobs you are unaccustomed to such as raking leaves or shoveling snow.
- Break in new shoes gradually. Wear them around the house for an hour or two and gradually increase the time you wear them before you engage in any significant activity.
- Wear socks with heels – not tube socks. Tube socks bunch up and increase friction.
- Acrylic fiber and polyester socks are low-friction socks.
- Band-aid makes a product called friction block that works to reduced friction on areas likely to develop blisters. They can be applied to the feet when breaking in new shoes.

It is not recommended to pop a blister, but if one is large and painful it will burst on its own. The area should be washed and a bit of antibiotic ointment should be placed over the blister.

Discharge should be clear and thin, if it is thick, yellow or white there may be an infection and it needs medical attention. The remaining skin should remain as a protective barrier. The area should be watched closely for infection such as redness,
tenderness or heat from the area, a red streak going away from the blister or pus drainage.
### Over-the-counter products

<table>
<thead>
<tr>
<th>Products</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Moleskin</strong></td>
<td></td>
</tr>
<tr>
<td>Dr. Scholl's Moleskin</td>
<td>Pad should be cut around the blister and than covered with another moleskin</td>
</tr>
<tr>
<td>Plus</td>
<td></td>
</tr>
<tr>
<td><strong>Band-Aids</strong></td>
<td></td>
</tr>
<tr>
<td>Advanced Healing Blisters</td>
<td>Use on open or intact blisters. It protects the blister while the body heals it.</td>
</tr>
<tr>
<td>Advanced Healing Blisters for Fingers and Toes</td>
<td>Use on open or intact blisters. It protects the blister while the body heals it.</td>
</tr>
<tr>
<td>Friction Block</td>
<td>Apply to areas where there is risk of blister formation to reduce friction</td>
</tr>
<tr>
<td><strong>Dr. Scholl's</strong></td>
<td></td>
</tr>
<tr>
<td>Blister treatment</td>
<td>Heals and protect a blister. It is applied after the area is cleaned</td>
</tr>
</tbody>
</table>
Chapter 10: Insect Bite

Insect bites and stings are common. A sting or bite from an insect injects venom into its victim. An insect bite will result in redness, itching and swelling at the site of the bite. More severe allergic reactions can occur including a life-threatening anaphylactic reaction. Deaths from bee stings are more common than deaths from snakebites.

Most insect bites are done out of self-defense. Don’t provoke a bug that bites or stings. Honeybees and Wasps and the least likely to sting if unprovoked.

Mosquitoes usually do not give severe illness when they bite, unless they transmit malaria or West Nile virus. Mosquito bites present with a red itchy bump. They often are raised in the center. They can be as large as ½ of an inch.

Fire ant bites produce a pimple-like sore that is painful and itchy. They may turn into a blisters. They bite multiple times, most commonly on the legs and feet.

Bee stings present with redness, itch, pain and swelling. Rarely is there a severe reaction. Honeybees leave the stinger behind that you can tell because there is a black dot in the center of the sting. Removing the stinger will help the symptoms from worsening. Use a credit card to scrape it out – do not pull the stinger or squeeze it.

Bedbug bites are not painful, but become itchy later. They usually bite at night.

Spider bites rarely cause a serious reaction. Two spiders in the United States can cause serious reactions: the brown recluse and the black widow. The black widow has a red/orange hourglass shape on its abdomen. The brown recluse has violin shaped markings on its back. Most bites are only mildly irritating, but serious reactions occur within 3-12 hours. Serious reactions are associated with muscle pain, sweating, headache nausea and vomiting.

Reactions that remain localized to where the bite occurred are rarely serious.

When do you need to go to the doctor

Most insect bites can be handled at home. Some bites/stings requires the input of a health care provider.

- When there is any difficulty breathing, dizziness, hives, sweating, chest tightness, sensation of the throat closing or wheezing, 911 should be called. This reaction usually occurs within 30 minutes
Stings in the mouth or on the tongue can cause swelling and compromise breathing.

Infected bites. Bites that are scratched too often may become infected (redness, heat, fever, a spreading red streak) should be evaluated by a doctor. The initial reaction is often confused for an infection. The initial reaction occurs within 24 hours. If the area becomes infected there is increased redness, streaks and fever noted after the first 24 hours.

Treatment

The first step in treating a bite/sting is to remove anything left over by the insect. Remove the stinger as outlined above if stung by a bee.

Those who are stung on the arm or leg should lower the limb below the level of the heart. This will slow the spread of venom. If there is swelling in the area, the area may be elevated a couple of hours after the sting.

The next step is to wash the area with soap and water.

Ice application to a insect bite that is red and painful should be done after the area is cleaned with soap and water. Ice can be applied every hour for the first 6-8 hours to help reduce pain and swelling. Ice should be left on about 15 minutes. The use of a cool-compress can also be tried to relieve discomfort.

Do not itch wounds as this may lead to infection. A multitude of OTC medications can be used to provide comfort and reduce the drive to itch (see anti-itch medications at the end of the chapter).

- Topical corticosteroids can bring down inflammation and reduce itching
- Topical antihistamines
- Calamine lotion
- First-generation oral antihistamines such as diphenhydramine (Benadryl)

Infected wounds may need antibiotics and will require a visit to the doctor. Increasing pain, redness, swelling, or a thick discharge indicates an infected wound.

Prevention of insect bites

There are multiple steps you can take to prevent insect bites. This will prevent problems before they occur.
- Avoid being outside at dawn or dusk as these times are worst for mosquitoes.
- Wear long-sleeve shirts and long pants. Do not wear bright colors.
- Wear socks and shoes – not sandals.
- Do not use scented soaps and lotions – bugs are attracted to this.
- Use insect repellents. Permethrin repellents such as Permanone are effective insect repellents. DEET repellents can be used (OFF). Products should contain less than 35% DEET. The higher the concentration of DEET means that the spray will last longer, not necessarily that it is stronger. If you are going to be outside for a long period of time use a product with a higher concentration of DEET.
- Products with DEET should not be applied more than once a day in children.
- Do not apply insect repellants to cuts or open skin.
- Do not use combination products that contain sunscreen/insect repellents. Sunscreens should be reapplied multiple times a day whereas most insect repellants should not be reapplied any more than once a day.
- Wash off insect repellants after you will no longer be exposed.
## Insect Repellents

<table>
<thead>
<tr>
<th>Insect repellent</th>
<th>Active ingredient</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>OFF</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>OFF – Deep Woods – spray</td>
<td>DEET – 25%</td>
<td>Provides protection from mosquitoes, flies, ticks, chiggers, fleas, gnats</td>
</tr>
<tr>
<td>OFF – Deep Woods Sportsmen – spray</td>
<td>DEET 30%</td>
<td>Provides protection from mosquitoes, flies, ticks, chiggers, fleas, gnats</td>
</tr>
<tr>
<td>OFF Outdoor Candle</td>
<td>Citronella scented oil</td>
<td></td>
</tr>
<tr>
<td>OFF- Active</td>
<td>DEET 15%</td>
<td>Provides protection from mosquitoes, flies, ticks, chiggers, fleas, gnats</td>
</tr>
<tr>
<td>OFF Familycare</td>
<td>DEET 5%</td>
<td>Provides protection from mosquitoes, flies, ticks, chiggers, fleas, gnats – for 2 hours</td>
</tr>
<tr>
<td><strong>Permanone</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Backwoods Cutter – Mosquito Wipes</td>
<td>DEET 23%</td>
<td>Provides protection from mosquitoes, flies, ticks, chiggers, fleas, gnats</td>
</tr>
<tr>
<td>Backwoods Cutter – Spray</td>
<td>DEET 23%</td>
<td>Provides protection from mosquitoes, flies, ticks, chiggers, fleas, gnats – for 8 hours</td>
</tr>
<tr>
<td>Cutter Mosquito Repellant</td>
<td>DEET 10%</td>
<td></td>
</tr>
<tr>
<td>Insect Repelling Super Band</td>
<td>Philippine Geraniol Oil - Lasts up to 200 hours</td>
<td>15%, Indonesian Lemongrass Oil – 5%, Citronella oil – 2%</td>
</tr>
</tbody>
</table>
## Anti-Itch Medications

<table>
<thead>
<tr>
<th>Product</th>
<th>Active ingredient</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cortisone 1%</td>
<td>Hydrocortisone</td>
<td>Use in those 2-years-old and older, no more than 4 times a day</td>
</tr>
<tr>
<td>Cortaid</td>
<td>1% hydrocortisone</td>
<td>Use in those 2-years-old and older, no more than 4 times a day</td>
</tr>
<tr>
<td>Cortaid - spray</td>
<td>1% hydrocortisone</td>
<td>Use in those 2-years-old and older, no more than 4 times a day</td>
</tr>
<tr>
<td>Cortizone - 10</td>
<td>1% hydrocortisone</td>
<td>Use in those 2-years-old and older, no more than 4 times a day</td>
</tr>
<tr>
<td>Calamine Lotion</td>
<td>Calamine 8% and zinc 8%</td>
<td>Use in those 6-months and older, no more than 4 times a day</td>
</tr>
<tr>
<td>Benadryl cream</td>
<td>1% diphenhydramine and zinc</td>
<td>Use in those 2-years-old and older, no more than 4 times a day</td>
</tr>
<tr>
<td>Benadryl gel</td>
<td>2% diphenhydramine</td>
<td>Use in those 2-years-old and older, no more than 4 times a day</td>
</tr>
<tr>
<td>Benadryl cream extra strength</td>
<td>2% diphenhydramine and zinc</td>
<td>Use in those 2-years-old and older, no more than 4 times a day</td>
</tr>
<tr>
<td>Benadryl spray - extra strength</td>
<td>2% diphenhydramine and zinc</td>
<td>Use in those 2-years-old and older, no more than 4 times a day</td>
</tr>
<tr>
<td>Children's Benadryl anti-itch gel</td>
<td>Camphor 0.45%</td>
<td>Use in those 2-years-old and older, no more than 4 times a day</td>
</tr>
<tr>
<td>Aveeno</td>
<td>Calamine 3% and Pramoxine 1%</td>
<td>Use in those 2-years-old and older, no more than 4 times a day</td>
</tr>
<tr>
<td>Sarna</td>
<td>Camphor 0.5% and Menthol 0.5%</td>
<td>Use in those 2-years-old and older, no more than 4 times a day</td>
</tr>
<tr>
<td>Sarna Sensitive</td>
<td>Pramoxine hydrochloride 1%</td>
<td>Use in those 2-years-old and older, no more than 4 times a day</td>
</tr>
</tbody>
</table>
Chapter 11: Wounds

A wound is an injury where the skin is cut, torn or punctured. It may also include an injury where a trauma causes a bruise. This section will focus minor wounds.

Abrasion: Wearing away of the top layer of skin from trauma
Incision: An injury caused by a sharp object that causes an opening in the skin – they have smooth edges
Laceration: Opening on the skin that is irregular in shape
Puncture: The item that caused the wound goes in and out
Skin Tear: Separation or loss of the top layer of skin due to an injury

When to see a doctor

- Deep wound
- Unable to stop the bleeding
- Wounds around the eyes
- Any bites
- When there is pus under the skin
- Infection – which is indicated by redness, tenderness, heat coming from the skin around the wound or pus coming out of the wound

What will happen when you get a wound

Multiple things will be noticed around the wound when you get a wound. This will include:

- Pain/tenderness
- Redness
- Bleeding
- Swelling
These things should improve over the first 24 hours. If they worsen and there is associated fever or red streaks around the wound than infection may have set in. Numbness, tingling or loss of function indicate possible nerve damage.

How to treat

1. Stop the bleeding with direct pressure
2. Flush the area with water – remove any foreign products (do not flush a puncture wound).
3. Wash the wound with soap and water or saline
4. Antibiotic wound ointment can be used on wounds
5. If edges of the wound are together – it may be covered with a non-adherent dressing/liquid bandage to keep it clean
6. If the edges of the wound are not together the use of steri-strips may be needed
7. May need a tetanus shot if you are not up to date. If you have not had a tetanus shot in the last five years you may need a booster after a wound.

OTC Products

Washing the wound can occur with plain soap and water, but a popular OTC product is saline wound wash sprays. These sprays are normal saline in a bottle that effectively removes dirt from wounds and causes less discomfort than soap (as plain water has a tendency to sting).

Over-the-counter antibiotic creams or ointments are helpful to prevent a wound infection. There are essentially three antibiotic ointments:

1. Neosporin
2. Bacitracin
3. Polysporin

Neosporin and its generic counterparts is an ointment that contains three active ingredients used to prevent bacterial infections of the skin. Neosporin contains a
combination of bacitracin, neomycin and polymyxin B. Bacitracin fights bacteria known as gram-positive bacteria. Gram-positive bacteria are the most common type of bacteria that can lead to skin infections. Polymyxin B and neomycin are other antibiotics that provide coverage against other bacteria that are less likely to cause infection of the skin.

Neomycin is the most likely antibiotic to cause an allergic reaction. It is a common cause of contact dermatitis. Because there is little extra benefit of neomycin and there is a risk of an allergic reaction, it is a product that is often not favored by doctors in the prevention of wound infection. Instead bacitracin or polysporin are used.

Bacitracin contains one product bacitracin, which is active against the most common causes of skin infections.

Polysporin contains two active ingredients – bacitracin and polymyxin B. It is likely not more effective in preventing infection than bacitracin.

**Dressings**

A wound should not be covered until it is cleaned properly. If you cannot clean a wound properly do not cover it – seek the advice of a health care provider. A wound should also not be dressed until the bleeding has stopped.

Dressings are used to cover an open wound to prevent infection. They should be changed about every 12 hours.

Lacerations or incisions where you can see the fatty tissue may require stitches. If you want to treat these without stitches you will increase the risk of infection and scaring. To manage them at home you need to pull the edges together and apply steri-strips. Place the antibiotic ointment over the steri-strips and than a band-aid or dressing over top.

The easiest dressing to use for small and even medium sized wounds are band-aids. They come in a variety of shapes and sizes, but their main job is to cover a wound and help prevent infection. Some band-aid products come as large adhesive pads and are good for large wounds.
Avoid sticking the adhesive tape to the base of the wound. The band-aid should be big enough that the pad covers the wound. Band-Aids have an absorbent pad that will not stick to the wound and allow for better healing.

Gauze products can also be used for wounds. They are a little bit more difficult to use as they do not self-adhere. They need to be wrapped or taped to the wound. They serve the same purpose, but are a little harder to use.

Key points:

- Keep any open wound covered to keep it clean, dry and non-irritated
- Watch for infection (increasing pain, drainage from the wound, increased redness, increased swelling or an odor from the wound or fever)
- Steri-strips fall off in about five days – don’t peel them
- Certain situations are at greater risk for complications and warrant input from a health care provider including: any diabetic, any wound associated with numbness or reduced ability to move the area around the wound, uncontrolled bleeding (Call 911), bite wounds, dirt that will not come out of the wound and wounds that meet criteria for stitches.

Do you need stitches?

Stitches can be used for wounds that are lacerations, incisions and some punctures. Ideally you should get stitches within 6-8 hours of the injury to reduce the risk of infection. Stitches do not work for abrasions.

Stitches are used to:

- Close a wound to help the healing process
- Prevent infection
- Decrease the risk of a scar

Stitches may be necessary when:

- The wound is deep enough to see fatty tissue
- If the wound cannot be pulled together easily
- Scarring would be obvious
- Certain areas of the body heal better with stitches. Areas of the body that have a lot of movement should be stitched. A wound in the middle of the forearm does
not move a lot and may not require stitches, whereas a wound on the forehead, where there is more movement, would.
Chapter 12: Burns

This section will look at minor burns. Some burns can be very serious and result in prolonged hospitalization and even death. Most burns are managed outside of the hospital. The majority of burns that occur at home result from contact with hot objects, hot liquids or flames.

Burns are classified as superficial, superficial partial-thickness, deep partial-thickness and full-thickness. Minor burns are superficial burns and superficial partial-thickness burns.

Superficial burns involve only the top layer of the skin and are red, warm, mildly swollen and painful. When these burns are touched lightly they turn white.

Superficial partial thickness burns are more serious. These wounds can often be managed at home, but more serious superficial partial-thickness burns may need a doctor’s input. They are painful to not only touch, but temperature and air. There is often blistering. They are moist and sometimes leak fluid. Like superficial burns they turn white when touched.

What causes a burn

Burns can be caused by:

- Heat
- Electricity
- Cold
- Radiation
- Chemicals
- Friction

This section will focus mainly on burns caused by heat. Radiation burns are most commonly caused by the sun – sunburns were already discussed. Many of the other causes of burns such as electricity or chemicals require medical attention and are outside the scope of this section.
**Who needs to go to the doctor**

Many burns can be treated at home, but some need a health care provider’s input. The following is a list of patients who need a health care provider’s input.

- Any electrical or chemical burn
- Burn that cover over 2% of the body
- Burns of the face, eyes, ears, hands, feet or groin
- Inhalation burns
- Individuals with diabetes or another immunocompromised state such as cancer or HIV
- Burns that worsen over 1-2 days after the injury
- Infection – increased pain, redness, swelling, fever, discharge and heat
- Burns that have not healed in seven days

**How to treat**

The goals of burn treatment are to improve comfort, protect the burn, prevent scarring and infection. Burns should be watched closely because the full extent of the damage may not be apparent for a up to 2 days. Wounds that progress need to be evaluated by a health care provider.

Remove any clothing or jewelry from the area that was burned. The area may swell and make it hard to remove later. Do not remove clothing that is stuck to the skin.

When the minor burn occurs the most important step is to cool the wound by running cool tap water over it for 10-30 minutes. Do not use ice or ice water – this may cause the wound to get worse as it closes the blood vessels to the burn.

After the area has been cooled it should be cleaned with soap and water. Use a mild soap such as a baby wash. Do not use alcohol based products or hydrogen peroxide.

If the wound is weeping it should be soaked for 15-30 minutes in cool tap water 3-6 times a day. Wet burns can be protected by a cream and/or an absorbent dressing
Do not burst the blisters as they are protective. When the blisters break spontaneously the area is cleaned with soap and water 1-2 times a day and an antibiotic cream can be applied. If the blister is open and/or draining it can be covered with a non-adherent dressing.

Lotions may be applied to ease the pain. The use of aloe vera, hydrocortisone can be used for minor burns. Topical antibiotics may provide some protection against infection if the skin is broken. A lotion use as Lubriderm can be used on minor burns. Do not apply any lotions if there are scabs, open areas or fluid draining from the burn.

Any pain that is present can be treated with over-the-counter medications such as acetaminophen, aspirin, ibuprofen or naproxen. Medications with anti-inflammatory action (aspirin, ibuprofen or naproxen) may be more effective. Multiple products contain lidocaine, which is a medication that is locally applied to reduce pain. The length of time that this product works is usually less than one hour.

Superficial partial-thickness burns should be soaked in cool water for about 15 minutes. It should than be washed in soap and water and an antibiotic ointment can be used and then a dressing that does not stick to the wound can cover the area. The dressing should be changed every day.

Superficial burns heal in about 3-6 days while superficial partial thickness burns heal in 2-3 weeks. More severe burns take even longer.

Burns caused by chemicals should be rinsed well with vast amounts of clear water to remove the chemical and any other substances that are in the wound. If an individual has a large burn than cold water should not be applied as it may adversely affect the person’s temperature status.

Any one involved in a fire accident should be evaluated by a health care provider, as there is high risk of smoke inhalation and damage to the lungs.
Chapter 13: Acne

Acne is a skin disease that predominantly affects the face, but also affects the upper back and chest. Acne is contributed to by:

- Increased sebum production – Sebum is a chemical that is increased by hormones that occur after puberty.
- Abnormal keratinization of follicles. This contributes to the plugging up of the hair follicles.
- Bacterial growth – The two previous factors increase the growth the bacteria which is called Propionibacterium acnes
- Inflammation. Inflammation results from the bacteria.

Acne is an important condition and it is more than just cosmetic. Those with acne are emotionally and psychologically affected. It can reduce quality of life and lead to depression, anxiety, lack of confidence, social isolation and even unemployment.

Acne affects 40-50 million people in the United States. Most of those affected are adolescents. Males and female adolescents are equally affected, but in adults it is more common in females.

**Key features of acne**

Key features of acne include:

- Whiteheads – bumps on the skin with a whitish plug
- Blackheads – a black plug
- Small round, red, raised lesion sometimes with a pocket of pus
- Tender, mass with poorly defined borders
- Painful solid bumps - nodules
- Deep bumps with pus inside - cysts
- Nodules and cysts are more likely to leave scarring.
What are the causes of acne

Acne is caused by:

- Excessive androgens (hormones that occur after puberty)
- Some diseases: Polycystic ovary syndrome and Cushing's disease
- Blocking of the hair follicles: face masks, make-up (especially oil-based), etc.
- Risk factors include: high humidity, occlusive clothing or equipment and friction (rubbing hands on face)
- The use of oil-based cosmetics or hair products
- Over-the-counter products for tanning or moisturizers that contain lanolin, cocoa butter or mineral oil
- Certain medications: steroids, some oral contraceptives (some oral contraceptives are used to treat acne), seizure medications and lithium
- High carbohydrate diets
- Stress
- Hormonal shifts (commonly seen after puberty)
- Genetics
- Excessive sweating

Who is at risk

Risk factors are essentially the same as any of the causes above. The most prevalent risk factor is being between the ages of 11 and 18.

Who needs to see a doctor

Some individuals will likely need to see a doctor to manage their acne. The following conditions are not safely managed without the input of a health care provider:

- Infection on the face. This will be evident by significant redness, tenderness and heat coming off an area of the face.
• Hidradenitis suppurativa. This is known by small-pitted areas of the skin with blackheads, tender small nodules under the skin with foul smelling drainage or red tender pustules. Usually seen in the groin, in the armpit on the buttock or under the breast

• More severe acne. Moderate to severe acne or evidence of cysts, nodules or scaring.

Some patients need to see a doctor with acne on a less urgent basis. This includes those with a sub-optimal response to over-the-counter medications. When over-the-counter medications fail, there are multiple prescription medications including retinoids, antibiotics and Accutane that may help manage acne.

**How to you prevent acne**

The primary step to prevent acne is to reduce risk factors.

• Do not place pressure on the face (no face masks, resting hands on face or use of head bands)
• Do not use oil-based cosmetics
• Minimize exposure to dirt and chemicals
• Dietary restriction does not prevent or treat acne, but avoiding high carbohydrate diets may be helpful
• Wash twice a day with a gentle cleanser, avoid pumice, anti-microbial soaps, aluminum oxide or polyethylene
• Do not scrub the face – this may worsen acne

**How do you treat acne**

Implementing the prevention strategies listed above, in combination with topical over-the-counter products treats acne. There are multiple over-the-counter products. Medications should be applied to skin after it as been completely washed and dried.

It often takes 4-8 weeks of treatment until there is improvement. The skin should be washed twice a day. When applying medications the vehicle you use will depend on your skin type.

If you have:
- Dry skin use creams or lotions
- Oily skin use gels or solutions
- Sensitive skin use a cream or lotion

**Over-the-counter products**

Over-the-counter products come in two major forms: cleansers and medications.

Medications should be applied to the whole area and not just to the areas of acne. Medications used to treat acne are preventative and it may take 6-8 weeks until they are effective. Do not expect immediate results. Some topical medications cause the skin to look worse initially as they can be quite drying. Many prescription medications can also lead to initial worsening of the acne.

Benzoyl peroxide (BP) is a popular product for acne. This comes in concentrations up to 10% over-the-counter, but as high as 20% for prescription. The efficacy of the different strengths is not that different. The gel formulation may be most effective at the equal strengths.

BP is applied once to twice a day. It may take up to 6 weeks until effect is noticed.

Benzoyl peroxide has antibacterial properties as well as anti-inflammatory properties. This works well if there is inflammation. It is likely as effective (if not more) than oral antibiotics. It can be combined with some prescription medications such as topical or oral antibiotics or retinoids. While it has anti-bacterial properties, there is no noted bacterial resistance to BP.

Side effects include burning or stinging. Other side effects include peeling of the skin, redness or swelling of the skin. If this happens, decrease the strength of the formulation and decrease the frequency of application. It may lead to bleaching of clothing or hair. Some people also have allergic reactions to this product. This usually presents with itching.

Initially the product should be left on for about 15 minutes and then washed off. Starting off with the 2.5% is recommended. If this is tolerated a longer duration of application and/or higher strength can be tried.

BP is also associated with sun sensitivity, so if you go out in the sun use caution. The application of sunscreen is encouraged.

**Proactiv**
Proactiv is a popular over-the-counter product that has three steps in it. The active ingredient in 2 of the 3 steps is benzoyl peroxide. In addition it combines a product called allylamine. One study showed that the combination of BP with allylamine may be more effective that BP alone$^1$. The product is not magic. While it MAY be more effective that other acne products (at least theoretically), it may not be.

**Salicylic Acid**

Salicylic Acid works by penetrating the skin, thins the skin on the acne lesion and around the lesion causing the skin to shed. Salicylic Acid comes in concentrations of 0.5% to 2%. It is not recommended as a first line agent as it is not as effective as BP. It comes as washes, cleaners, gels and creams. Utilizing gels and creams are preferred as this medication takes contact time with the skin for it to be effective. Consequently, the use of cleaners and body washes are not as effective. Side effects are similar to BP and include: redness, swelling, stinging and burning of the skin.

**Sulfur**

Sulfur based drugs are not commonly used as they are not cosmetically pleasant agents due to their ability to discolor (yellowish) the skin and the odor of sulfur. They also can cause the skin to develop dark bronze scales (more common when sulfur is combined with resorcinol).

Sulfur comes in products with concentrations of between 3 and 10%. It is combined with resorcinol 2% in some products. Sulfur based products are most effective when used on a short-term basis for localized treatment.

Some alternative products are purported to manage acne. Common products include: tea tree oil, glycolic acid, and alpha hydroxy acids.

Tea tree oil is not as effective as BP, but does show some benefit. It is also associated with fewer side effects.

Glycolic acid in high concentrations is found in facial peels and may reduce acne scars. Lower concentration are found in acne washes and may be somewhat effective in the management of acne.

Homeopathic products do not have good evidence to support their use. Selected products include Acne by Nature's Sunshine and Acne Formula by HERBALmax.
**Prescription medications**

Prescription medications are used when risk factor avoidance and OTC medications do not manage symptoms. Retinoids (Tretinoin [Retin A] and Adapalene [Differin]) are topical medications that are often combined with BP or topical antibiotics to manage acne. They can be quite irritating and are usually applied once at night.

Topical antibiotics are often used. The two most common are clindamycin and erythromycin. Topical antibiotics come in a variety of formulations including lotions, gels, solutions and ointments. These products come with a risk of the development of antibacterial resistance (as opposed to BP).

Oral antibiotics are often tried in the treatment of acne. They work best when there is a lot of inflammation. Antibiotics are taken for months and there is a risk of antibacterial resistance.

Isotretinoin (Accutane) is used for severe acne that has not responded to other treatments. It cannot be used in those who are pregnant and is associated with some significant side effects such as: increased triglycerides, liver problems and vision problems.

<table>
<thead>
<tr>
<th>Name</th>
<th>Medication</th>
<th>Directions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Benzoyl Peroxide</td>
<td>Benzoyl Peroxide 10%</td>
<td>Clean skin, apply to affected area 1-3 times a day</td>
</tr>
<tr>
<td>Oxy- Spot Treatment</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Stridex - Power Pads</td>
<td>Benzoyl Peroxide 2.5%</td>
<td>Wipe entire area 1-3 times a day</td>
</tr>
<tr>
<td>PanOxyl – Cleansing Bar</td>
<td>Benzoyl Peroxide 10%</td>
<td>Wash affected area for 1-2 minutes, use 1-3 times a day</td>
</tr>
<tr>
<td>Salicylic Acid</td>
<td>Salicylic Acid 0.5%</td>
<td>Massage gently in wet face, rinse well</td>
</tr>
<tr>
<td>Acne Stress Control – Power Wash Foam</td>
<td>Salicylic Acid 2.0%</td>
<td>Use daily, massage over wet skin, rinse well</td>
</tr>
<tr>
<td>Acne Stress Control – Power-Cream Body Wash</td>
<td>Salicylic Acid 0.5%</td>
<td>Clean skin, wipe affected area 1-3 times a day</td>
</tr>
<tr>
<td>Stridex – Sensitive</td>
<td>Salicylic Acid 2.0%</td>
<td>Clean skin, wipe affected area 1-3 times a day</td>
</tr>
<tr>
<td>Stridex – Max</td>
<td>Salicylic Acid 2.0%</td>
<td></td>
</tr>
<tr>
<td>Sulfur</td>
<td>Sulfur 8% and Resorcinol 2%</td>
<td>Apply to affected areas 1-3 times a day</td>
</tr>
<tr>
<td>Clearasil – Stayclear – cream</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Acne Free Clear Skin Treatments**

- Step one – Purifying Cleaner
  - Benzoyl Peroxide 2.5%
  - Use Am and PM
- Step two – renewing Toner
  - Use Am and PM
Step three – Repair lotion
Benzoyl Peroxide 3.7% Use Am and PM

Chapter 14: Dandruff

Dandruff is excessive scaling of the scalp due to skin cell turnover. It appears as dry scales that are gray or white on the scalp.

What causes dandruff

The exact cause is unknown. It may be related to yeast-like fungus.

Certain factors can exacerbate fungus including:

- Stress
- Oily skin
- Obesity
- Infrequent shampooing
- Fatigue
- Weather extremes

Who needs to see a doctor

Dandruff is rarely a dangerous disease but a few people may benefit from a doctors intervention:

- Those less than 2-years-old
- Those who are getting worse with OTC treatment or not getting better after one month

How to treat

The first step in treatment of the condition is to attempt to manage causative factors such as stress, fatigue or infrequent hair washing.

If dandruff is the cause, it is simply treated with shampoo. Sometimes simply washing the hair will treat the dandruff. Most of the time special shampoos are needed. These include selenium sulfide, ketoconazole, coal tar and pyrithione zinc.

Those with dandruff should wash the hair every day with a medicated shampoo or once every other day until the dandruff remits.
Some people will shampoo with a more cosmetically pleasing shampoo after the medicated shampoo to mask the odor.

One treatment is often not enough to cure the condition. It often takes a number of treatments and sometimes trying different products to get a cure.

Patients with dandruff that does not respond to treatment after 1-2 months should see their doctor for an evaluation of the dandruff and possibly a stronger dandruff medication.

**How to preventative**

Once you have had a flair of dandruff it is possible that it will reoccur. Washing the hair once a week or every other week will help keep the symptoms controlled.

**Over-the-counter products**

<table>
<thead>
<tr>
<th>Product</th>
<th>Active Ingredient</th>
<th>Directions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Head &amp; Shoulders</td>
<td>Pyrithione Zinc 1%</td>
<td>Use at least twice a week</td>
</tr>
<tr>
<td>Selsun Blue</td>
<td>Selenium Sulfide 1%</td>
<td>Use at least twice a week</td>
</tr>
<tr>
<td>Selsun Blue Naturals</td>
<td>Salicylic Acid 3%</td>
<td>Use at least twice a week</td>
</tr>
<tr>
<td>T gel</td>
<td>Coal Tar and Neutar</td>
<td>Use at least twice a week</td>
</tr>
<tr>
<td>Nizoral</td>
<td>Ketoconazole shampoo 1%</td>
<td>Use every 3-4 days for up to eight weeks.</td>
</tr>
</tbody>
</table>
Chapter 15: Hair Loss

The technical term for hair loss is alopecia. It is not only a cosmetic issue but is associated with psychological distress. While it can affect either men or women, it is more common in men.

What causes hair loss

The most common cause of hair loss is androgenic alopecia, better known as male or female pattern baldness. Male pattern baldness is associated with a receding hairline at the temples and a loss of hair on the top of the head. Women often have thinning or lose hair on the front, sides or crown.

Other causes of hair loss include:

- Medications: some blood pressure medications, chemotherapy (often 2-4 weeks after chemo or radiation), anabolic steroids, birth control pills, medication for gout and some depression medications.
- Infections – fungal infections, syphilis, and some skin infection
- Systemic illness such as lupus, high fever or thyroid disease
- Menopause
- Psychological stress
- Physical stress – after a surgery as late as 3-4 months after surgery
- Alopecia areata (this is associated with patchy hair loss from an unknown cause)
- Chemicals used to treat the hair such as products to straighten the hair
- Hair pulling
- Poor diet – low levels of protein or iron

What does hair loss look like

Male pattern hair loss starts on the temples and the crown of the head and spreads to diffuse thinning. It typically spares the back and sides.
Female pattern baldness is characterized by the center and the front of the scalp thinning without the receding hairline

If there is a non-symmetrical pattern consider trichomonia. Trichotillomania is a hair pulling disorder.

**Who needs to go to the doctor**

To determine the cause it is important to ask a few questions:

- When did the hair loss start? Rapid hair loss is more likely caused by a disease.
- Is the hair loss generalized or localized? The pattern to female or male baldness is typical. Any other type of hair loss should prompt a visit to your doctor.
- Is there any itching or scaling of the scalp? This may indicated a disease.
- Has there been any recent toxic exposure? Drugs, toxins, or chemicals.
- What are the hair practices – do you use tight braids? Any hair practices that involve tightly pulling the hair may result in hair loss.
- Has there been any fatigue, cold or heat intolerance, weight changes? This may indicated a problem with the thyroid or endocrine system.
- Obsessive compulsive disease (OCD). Those with OCD may pull their hair resulting in hair loss.
- Hirsutism. This is characterized by growth of body or facial hair in women where it not typically. This may include the face, chest or stomach.

Individuals who need to go to the doctor include those with:

- Hair loss that is not typical for male or female pattern hair loss
- Females who have hair growth on their face, chest or stomach.
- Signs and symptoms suggestive of a systemic illness (fatigue, cold intolerance)
- Sign and symptoms suggestive of heavy metal poisoning
- Hair loss that is occurred abruptly
- Any suggestion that a medication is causing the hair loss
• Any suggestion that a mental illness (excessive hair pulling or OCD) is causing the hair loss.
• Pustules with scaring indicated a skin disease

How to treat hair loss

There are not great options available for the management of hair loss.

• Topical products (see OTC products)

• Finasteride (Propecia) is indicated for male pattern baldness. This is a prescription pill that is dosed one mg and needs to be given for at least six months until there is a positive effect noticed. Side effects include decreased sex drive, ejaculation problems and muscle pain/weakness.

• Surgical options. Few scientific studies confirm effectiveness of surgical options.

Over-the-counter products

Minoxidil – prolongs the growth phase of the hair follicles. It needs to be applied topically to the hair twice a day for 8-12 months. Treatment must be continued to maintain the benefit.

Rogaine is the most popular over-the-counter product that contained Monoxidil. It comes in a men and woman formulation. The male formulation is meant to be placed on the top of the head and comes in a strength of 5%.

Rogaine for women is the same medication but its dose is only 2%
Chapter 16: Canker sores

It is unclear what causes canker sores (aphthous ulcers). Factors that may contribute to canker sores include: hormonal fluctuations, viral infection, emotional stress, and local trauma. These ulcers – which are often confused with cold sores - are not infectious.

What does it look like

Canker sores can occur at different places on the inside of the mouth and their reoccurrence is in variable spots. This is opposed to cold sores, which often reoccur at similar spots.

Canker sores are painful reoccurring ulcers that occur inside the mouth on the lips, checks or throat.

Canker sores usually start between the ages of 10 and 40 and are characterized by:

- Painful shallow ulcers in the mouth
- Tingling, numbness or burring may be noticed one to 2 days before the lesion erupts
- No systemic symptoms (no fever, chills or feeling sick)
- Small sores that are 0.5 to 1 cm
- One sore to as many as 6
- Sores that heal in 7-10 days

When to worry

Most self-limiting mouth lesions are painful and last 7-10 days. Certain factors increase the likelihood of a more serious condition:

- Painless sores
- Sores that do not heal in 10 days

Treatments

Treatment involves reducing pain and providing comfort while you wait for resolution. Multiple comfort measures are available to help.
• Apply ice to the sore – it will reduce pain and swelling
• Popsicles are comforting
• Avoid irritation from foods such as spicy, acidic or rough foods
• Use a soft toothbrush

**Over-the-counter medications**

Some over-the-counter products are available to reduce pain. These include topical agents and general pain medications. Oral pain relievers – such as ibuprofen or acetaminophen may reduce pain.

Topical agents are also available to provide comfort. Most over-the-counter products are some sort of numbing medicine. They do not speed healing, but can provide comfort. No research suggests one is any better than another. See chart.

An antiseptic called thymol – which is found in Listerine mouthwash – may be helpful in treating canker sores, but the research is limited.

**Prescription drugs**

Chlorhexidine mouthwashes have the most proof to speed healing and reduce pain. It is an antiseptic mouthwash or gel that reduces germs. Everyday use can stain the teeth and tongue but it is reversible when it is stopped.

Steroid mouthwashes, creams, gel or pastes are often used to reduce pain and decrease inflammation. Triamcinolone dental paste is one example and is used in those over 12-years-old can be applied four times a day.

Numbing mouth rinses can be used to help provide comfort. The most popular agent is viscous lidocaine. It is sometimes mixed with liquid Benadryl and Maalox.

Amlexanox (Aphthasol oral paste) for those over the age of 18-years-old is able to reduce inflammation.

**Summary**

Canker sores take time to heal. Applying some of the comfort measures is helpful. In addition treating the sores with topical medications may be helpful. No OTC agent has proven more effective than any other.

The best strategy is to avoid irritating the sore, use ibuprofen and try some of the topical agents available over-the-counter. One product is not necessarily better than
any of the others – try a few of them and see what works best for you. Using Listerine mouthwash one to two times a day may help speed healing.

If you do not get adequate relief going to the doctor for a prescription medication is the next step. These products may be no more effective than over-the-counter medications.
Chapter 17: Cold Sores

Unlike canker sores, cold sores have a well-known cause – a virus. Herpes simplex virus type 1 (HSV-1) is responsible for most cases of cold sores.

Cold sores are characterized by:

- Blistering of the lips or around the mouth
- Pain which is initially severe and then dissipates over 4-5 days
- Lesions appear 2 days to 2 weeks after the person has been exposed
- The initial case may be associated with fever, feeling weak, muscle aches and swollen lymph nodes

If there are ulcers near or on the border of the red part of the lip, and they have come back on a couple of occasions in the same location, this is probably a cold sore. This is in contrast to canker sores, which often occur at different places in the oral cavity.

Cold sores are contagious. Do not kiss someone with a cold sore. The virus can live on the hand. So if you are applying medication to a child – wear a glove and wash your hands afterwards.

Cold sores reoccur and are often brought on by fever, stress or sunlight. The virus lives in the body and cannot be cured. Those with bad cases can have the number of flares reduced with the regular use of antiviral medications.

When to worry

Most self-limiting mouth lesions are painful and last 7-10 days. Certain factors increase the likelihood of a more serious condition:

- Painless sore
- Sores that do not heal in 10 days

Treatments

For comfort, treatment is similar to the treatment for canker sores. Since a virus causes it, the medications used to treat the condition are different. There are multiple over-the-counter and multiple prescription drugs that can treat cold sores. See the list of over-the-counter products listed on the table below.
Abreva — reduces pain and speeds healing. It is dabbed on five times a day. It has been shown to shorten healing time and symptoms duration. It is best applied when there is tingling before a lesion develops. This product is most efficacious in the treatment of cold sores of any over-the-counter medication.

Some products are helpful to relieve pain such as Anbesol cold therapy. While these products may speed healing and help reduce pain, more research is needed before that can be proven as the best available therapy.

Newer products that contains benzalkonium chloride is hyped as very helpful, but it only contains an antiseptic agent and is likely not that effective.

**Prescriptions**

Antiviral medications — topical and oral — may be needed in some situation. Oral medications are very likely to be beneficial in treating cold sores. If the pills are taken just as the symptom start they will shorten the time symptoms are present.

Topical agents are not as effective as oral agents, but may cut down on pain or symptoms. Oral medications are the gold standard treatment.

**Antiviral medications used in the treatment of cold sores**

- Penciclovir (Denavir) is a cream that is applied every 2 hours for 4 days. It is meant for those 18-years-old and older
- Acyclovir (Zovirax) cream is applied five times a day for 4 days. It is able to be used in those 12-years-old and older

*Oral medications are used in those over the age of 18-years old.*

- Acyclovir (Zovirax) is taken five times a day for 5 days
- Valacyclovir (Valtrex) is taken twice a day for one day
- Famciclovir (Famvir) is take as a one times dose

**Prevention**

There are multiple measures one can take to prevent recurrent outbreaks of cold sores. These include:

- Do not kiss, share utensils or drink from the same beverage of someone with an active cold sore
- Wear lip balm with sunblock
- Avoid stress
- Some people need to take daily antiviral therapy

<table>
<thead>
<tr>
<th>Brand Name</th>
<th>Medication</th>
<th>Age</th>
<th>Note</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Cold Sore</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Abreva</td>
<td>Docosanol 10% cream</td>
<td>12 and older</td>
<td>Use on face or lips, shortens healing time and duration of pain, burning, tingling or itching</td>
</tr>
<tr>
<td>Viroxyn</td>
<td>Benzalkonium chloride</td>
<td>3 and older</td>
<td>One treatment</td>
</tr>
<tr>
<td>Releev</td>
<td>Benzalkonium chloride</td>
<td></td>
<td>Apply 3-4 times over a one day period at the first sign of an outbreak</td>
</tr>
<tr>
<td>Herpecin L</td>
<td>Dimethicone 1%, meradimate 5%, octinoxate 7.5%, plus</td>
<td>12 and older</td>
<td>Apply at first sign of cold sore rub in gently and as often as needed</td>
</tr>
<tr>
<td></td>
<td>sunscreen</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Anbesol cold sore</td>
<td>Allantoin 15, Benzocaine 20%, Camphor 3%, White</td>
<td>2 and older</td>
<td>Apply to cold sore 3-4 times a day</td>
</tr>
<tr>
<td>therapy</td>
<td>petrolatum 64.9%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Nexcare</td>
<td>Benzocaine 5% and Allantoin 1%</td>
<td>2 and older</td>
<td>Apply to affected area at first sign of a cold sore no more than 3-4 times a day</td>
</tr>
<tr>
<td><strong>Canker Sore</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Canker – X</td>
<td>Polyvinylpyrrolidone, sodium hyaluronate and aloe vera</td>
<td></td>
<td>Apply 1-2 drops of the gel to the sore with a cotton swab, helps heal and provides pain relief</td>
</tr>
<tr>
<td>Canker cover</td>
<td>Menthol 2.5 mg</td>
<td>5 and older</td>
<td>Place patch on the sore and hold in place for 20 seconds, last 8-12 hours.</td>
</tr>
<tr>
<td>Anbesol</td>
<td>Benzocaine 20%</td>
<td>2 and older</td>
<td>Apply to painful area up to 4 times a day</td>
</tr>
<tr>
<td>Canker Sore – red</td>
<td>Benzocaine 20%</td>
<td>2 and older</td>
<td>Use up to 4 times a day</td>
</tr>
</tbody>
</table>
Chapter 18: Bad breath

The medical term for bad breath is halitosis. It is an embarrassing problem that plagues many people. Bed breath is caused from multiple factors.

*What causes bad breath*

- The most common cause of bad breath is bacteria in the mouth (bacteria in the mouth is caused by many of the reasons below)
- Poor dental health (not brushing or flossing)
- Food particles that are trapped between your teeth
- Smoking or chewing tobacco
- Certain food (foods are absorbed into your blood and eventually make their way back to your lungs where they are breathed out)
- Gum disease
- Plaque on the teeth
- Yeast infections in the mouth
- Dental cavities
- Dry mouth
- Some respiratory tract infections such as bronchitis, pneumonia, sinus infections or throat infections
- Some diseases such as diabetes, liver or kidney problems
- Certain medications (antihistamines like Benadryl or other allergy medications and diuretics – can dry the mouth and some medications for depression can lead to bad breath)
Who needs a doctor/dentists

- Anyone suspected of having any type of oral disease should see a dentist. Clues that would suggest oral disease include: Swollen gums, easily bleeding gums, tooth pain, oral pain and hot or cold sensitivity.

- Anyone suspected of having a medical condition associated with bad breath should see the doctor. Clues that would suggest medical diseases suggestive of bad breath include: cough, fever, shortness of breath, facial pain, excessive urination, fatigue, nasal congestion or a sore throat.

How do you prevent bad breath

Avoiding the causes of bad breath are the most important steps in preventing bad breath. The following are a list of prevention methods:

1. Brush regularly. The teeth should be brushed twice a day with a fluoride toothpaste. Ideally every time you eat, you should brush your teeth. Change your toothbrush every 2-3 months.

2. Brush your tongue. Bacteria live on the tongue that can contribute to bad breath.

3. Floss regularly. At least once a day floss your teeth or clean between the teeth with an interdental cleaner to remove plaque and food particles from areas that are hard to reach with a toothbrush. Limited data exists to tell which is the most effective product to clean between the teeth. A product such as dental floss, dental tape, dental floss picks or go-between cleaners can all be helpful in improving dental health and reducing bad breath.

4. Regular dental visits (every six months) can help assure teeth are clean and evaluate for any dental or gum disease that may be contributing to bad breath.

5. Keep the mouth moist. This can be accomplished by drinking a lot of water, avoiding alcohol and caffeine and chewing sugarless gum (which stimulates the production of saliva).

6. Do not smoke or chew tobacco.
7. Evaluate the medications you take. Some medications may be contributing to bad breath. Talk this over with your doctor, dentist or pharmacist.

8. Evaluate the foods you eat as some foods are more likely to give you bad breath. Many different foods can cause bad breath. Some common foods include garlic, onions, acidic foods, dairy products, and foods/drinks with caffeine or alcohol. Keeping a diary may help determine which foods are problematic for you.

9. Use a good mouthwash.

**Over-the-counter products to treat and prevent bad breath**

Most products to treat bad breath simply mask bad odors and provide a temporary solution. Making sure you have products that provide you with good oral hygiene is critical. The best way to treat and prevent bad breath is to get rid of bacteria in the mouth, which is most optimally done with good brushing, flossing and tongue cleaning. Mouthwashes are available to kill germs, which may be helpful.

Limited research is available on different types of oral hygiene products, but a few will be discussed below.

**Toothbrushes and Toothpastes**

There are many different products that are used to clean the teeth. The short answer is to choose a toothbrush that will clean the teeth well.

Toothbrushes come in both manual and powered varieties. Ideally you should choose one that is approved by the American Dental Association (ADA). This shows that the product is safe and effective. Also when you are at the dentist – ask him or her which product they recommend.

Children should have a toothbrush made for children. Powered toothbrushes are ideal for those with problems in their shoulders, arms or hands that make brushing difficult. This includes those with arthritis.

To find a good toothbrush and other dental products check: [http://www.ada.org/ada/seal/sealsrch.asp](http://www.ada.org/ada/seal/sealsrch.asp). A few examples of good toothbrushes include:
• CVS Gem Head
• CVS Perfect interdental Toothbrush
• Care One Toothbrush – manual
• Colgate Classic (Pokey) Toothbrush
• Colgate Junior Toothbrush
• Colgate Plus Toothbrush
• Reach Toothbrush
• Oral-B Indicator Toothbrush

Toothpaste should maximize dental health at the same time as reducing the risk of bad breath. Again checking for the ADA seal of approval can help assure that they are safe and effective products. Some recommended products include:

• Colgate Total
• Crest ProHealth
• Aquafresh Anti-Cavity Toothpaste
• Arm & Hammer Dental Care Advance Cleaning Mint Toothpaste w/Baking Soda
• Colgate for Kids Toothpaste
• Aquafresh for Kids Toothpaste

**Mouthwashes**

The regular use of mouthwashes are very likely to reduce the risk of bad breath. Using them once in a while is not as effective as regular use of mouthwashes. Using mouthwashes before bed is optimal.

When choosing a mouthwash look for the ADA seal of approval. Many products carry this seal including many products made by drug/grocery chains. A few products that are recommended include:

• CVS Antiseptic Mouthrinse
• Listerine Antiseptic
• Rite Aid Fresh Mint Antiseptic Mouthrinse
• Equate Antiseptic Mouth Rinse
Chapter 19: Heart burn

Heartburn is a burning feeling in the lower to middle chest that rises up from the stomach. It is associated with regurgitation – the effortless reflux of stomach contents into the throat. It effects about 7% of Americans on a daily basis and 44% of Americans have heartburn on a monthly basis.

Heartburn is a symptom, not a disease. Gastroesophageal reflux disease (GERD) is a disease that is associated with heartburn that has been present for an extended period of time and there is a reduction in the quality of life.

What cause heartburn

Heartburn is caused by:

- Transient relaxation of the lower esophageal sphincter (the area of smooth muscle that keeps food in the stomach)
- Reduced clearing of refluxed material from the esophagus
- Excessive volume in the stomach
- High levels of acid in the stomach

What is the risk of heartburn

Heartburn is an often annoying problem, but sometimes it can be serious and even life threatening.

Common complications include:

- Poor sleep
- Reduced quality of life
- Sore throat
- Cough

Serious complications include:

- Narrowing of the esophagus (the tube that connects the mouth and the stomach)
• Inflammation of the esophagus
• Bleeding from the esophagus
• Barrett's esophagus – a change in the cellular make up of the esophagus tissue
• Esophageal cancer

**Who needs to see a doctor/red flags**

Some situations need evaluation from a doctor in the management of heartburn. The following people should see their doctor instead of trying to manage the symptom on their own. Those with:

• Painful swallowing
• Difficulty swallowing
• Unintentional weight loss
• Bleeding from the stomach (vomiting up blood/coffee ground material or blood in the stool)
• Heartburn that lasts more than 3 months
• Heartburn not responsive to OTC medicine or heartburn that lasts beyond 2 weeks of OTC medications
• Nighttime symptoms
• Severe symptoms
• Chronic hoarseness, coughing or wheezing
• Recurrent choking
• Continuous diarrhea, nausea or vomiting
• Chest pain with shortness of breath or sweating
• Pregnancy
• Nursing mothers
• Children less than 12 –years-old
• New onset of symptoms after age 55.

Treatment

The initial treatment in heartburn and GERD is lifestyle modification. Certain foods or drinks can aggravate or contribute to heartburn (see table 1). Reduction in these substances is important. In addition, weight loss can help ease the symptoms of heartburn.

Habits are another factor that can reduce the impact of heartburn. Regular exercise may help. Smoking aggravates heartburn – so stop. Lying down encourages the reflux of stomach contents into the esophagus. Therefore, those with heartburn should not lie down after eating and not eat within three hours of bed. Some people have to place blocks under the head of their bed to encourage sleep in a supine position. Tight fitting close should be avoided.
<table>
<thead>
<tr>
<th>Medication</th>
<th>Active ingredient</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Antacids</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Tums Ultra 1000</td>
<td>Calcium carbonate</td>
<td>Take 2-3 tablets as symptoms occur</td>
</tr>
<tr>
<td>Rolaids</td>
<td>Calcium Carbonate; magnesium hydroxide</td>
<td>Take 2-4 tablets every hour for a maximum of 12 tablets per day</td>
</tr>
<tr>
<td>Mylanta</td>
<td>Aluminum hydroxide, magnesium hydroxide; simethicone</td>
<td>Antacid and anti-gas formula – Those 12 and older take between meals and at bed time, max 24 teaspoons per day.</td>
</tr>
<tr>
<td>Maalox advanced</td>
<td>Aluminum hydroxide, magnesium hydroxide, simethicone</td>
<td>Antacid and anti-gas formula – Those 12 and older take four times a day, max 16 teaspoons per day.</td>
</tr>
<tr>
<td>Gaviscon</td>
<td>Aluminum hydroxide, magnesium hydroxide</td>
<td>Liquid and chewable tablet</td>
</tr>
<tr>
<td>Alka-Seltzer</td>
<td>Aspirin, citric acid, and sodium bicarbonate</td>
<td>This is a tablet that dissolves in water that is indicated for those 12 and older and contains 2 antacids and one pain medication. It should not be used by those under 20 if there is any indication of a viral illness.</td>
</tr>
<tr>
<td>Pepto-bismol</td>
<td>Bismuth subsalicylate</td>
<td>For those 12 and older – liquid and tablet</td>
</tr>
<tr>
<td><strong>H2RAs</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Tagamet</td>
<td>Cimetidine</td>
<td>12 and older take one tablet – max 2 pills per day</td>
</tr>
<tr>
<td>Zantac 75</td>
<td>Ranitidine</td>
<td>12 and older take one tablet – max 2 pills per day</td>
</tr>
<tr>
<td>Zantac 150</td>
<td>Ranitidine</td>
<td>12 and older take one tablet – max 2 pills per day</td>
</tr>
<tr>
<td>Pepcid AC</td>
<td>Famotidine</td>
<td>12 and older take one tablet – max 2 pills per day</td>
</tr>
<tr>
<td>Pepcid Complete</td>
<td>Famotidine</td>
<td>Take one chewable tablet - no more than 2 tablets in 24 hours</td>
</tr>
<tr>
<td><strong>Proton Pump Inhibitors</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Prilosec</td>
<td>Omeprazole</td>
<td>18 years and older take one tablet once a day</td>
</tr>
</tbody>
</table>
Table 4: Foods and medications that can aggravate or contribute GERD/heartburn

<table>
<thead>
<tr>
<th>Foods</th>
<th>Medications</th>
</tr>
</thead>
<tbody>
<tr>
<td>Alcohol</td>
<td>Blood pressure medications</td>
</tr>
<tr>
<td>Drinks with carbonation</td>
<td>Antihistamines</td>
</tr>
<tr>
<td>Coffee</td>
<td>Estrogen/progesterone</td>
</tr>
<tr>
<td>Caffeine</td>
<td>Pain medications</td>
</tr>
<tr>
<td>Chocolate</td>
<td>Aspirin</td>
</tr>
<tr>
<td>Tomato and tomato based products</td>
<td>Ibuprofen/naproxen</td>
</tr>
<tr>
<td>Citrus fruits</td>
<td>Potassium</td>
</tr>
<tr>
<td>Fatty foods</td>
<td>Nitroglycerin</td>
</tr>
<tr>
<td>Spicy foods</td>
<td>Theophylline</td>
</tr>
<tr>
<td>Mint</td>
<td></td>
</tr>
</tbody>
</table>

For those individuals who are unsuccessful with lifestyle management, multiple over-the-counter products can be tried for many people who suffer with heartburn. The most common medications include: antacids, histamine-2 receptor blockers (H2RA) and proton pump inhibitors (PPI).

Episodic heartburn is managed with antacids and/or OTC H2RAs. The only over-the-counter PPI is omeprazole (Prevacid may soon become over-the-counter). It is indicated for frequent heartburn.

H2RAs and PPI heal the esophagus and relieve symptoms. Over-the-counter medication is only indicated for short periods of time and many with GERD need long-term management.

**Over-the-counter management**
The following steps can be applied to the patient with signs and symptoms suggestive of heartburn with out any red flags. All individuals with heartburn should implement lifestyle modifications.

The first two questions that need to be asked are: Is the heartburn less than two times a week or equal to or greater than 2 times a week? Is the heartburn mild, moderate or severe?

1. If it is less than two times a week and mild than you have 4 options:
   - Antacids (Tums)
   - Alginic acid/antacids (Gaviscon Tablets)
   - OTC H2RA (Tagamet)
   - OTC H2RA plus an antacid (Pepcid Complete)

2. If it is less than two times a week and moderate that you have 4 options
   - Antacids
   - Alginic acid/antacids
   - Higher dose OTC H2RA
   - OTC H2RA plus an antacid

3. If you have frequent heartburn than you should use an OTC PPI for 14 days and if the symptoms have not resolved in two weeks visit your doctor.

4. If you have mild have symptoms less than twice a week and your symptoms subside after the treatment outlined above than you can repeat the treatment for up to two more weeks if the symptoms return.

5. If you have mild/moderate symptoms and you have not responded to the above treatment you can switch to one of the other options or a trial of a PPI for 2 weeks or visit your doctor.

**Bismuth Subsalicylate**
Bismuth subsalicylate (Pepto-Bismol) is used in upset stomach and may help with heartburn. It coats the esophagus and provides a barrier to acid, thereby reducing symptoms.

It is not one of the most highly recommended products, but it is used by some. It may turn the tongue or stools black. It contains an aspirin product and should not be used by someone who cannot take aspirin.

It should not be used in those younger than 12. There is a product that is children's Pepto-Bismol, that is actually an antacid, and is safe in those as young as two years old.

It should not be used by children with a fever, as there is a risk of a rare neurological condition called Reye's syndrome.

This product has multiple drug interactions and should not be used by those also taking: blood thinners, aspirin, probenecid, some antibiotics, and methotrexate.

**Antacids**

Antacids do not prevent heartburn, but may help treat symptoms as they work by neutralizing stomach acid. They do not reduce acid secretion. They have a short duration of action and will work within 20 minutes when taken on an empty stomach but may take longer when taken with food. You can repeat the dose in 1-2 hours.

Most antacids are similar in efficacy, but each product may be associated with separate side effects. For example, calcium-containing products (Tums) are more likely to cause constipation, whereas magnesium-containing products (Mylanta) are more likely to cause diarrhea.

Antacids come in a variety of formulations including pills, liquid, lozenges and powders.

Alginic acid is added to some products (Gaviscon Tablets). It forms a viscous solution that floats on top of the gastric contents and acts as a mechanical barrier to reduce the irritation of acid on the esophageal walls. It may be a little more effective than plain antacids.

Side effects of antacids include:
• Electrolyte imbalance (More common in those with kidney problems)
• Constipation (aluminum and calcium containing products)
• Diarrhea (magnesium containing products)
• Fluid overload (sodium containing products)
• Can affect the absorption of many other medications

Different products may need to be tried to determine which works best for you. If this medication is used more than twice a week different therapy is indicated.

**Histamine Receptor Blockers**

Histamine receptor blockers (also known as histamine receptor antagonists) (H2RAs) decrease acid secretion in the stomach. Over-the-counter products come in different formulations. They are generally equally effective. Cimetidine (Tagamet) has the most problems as it has a short duration of action and has multiple drug interactions. But it is the cheapest. I do not recommend using cimetidine.

The onset of action is slower than antacids – it takes about 30-45 minutes before effect is noticed. The medicines work up to 10 hours depending which medication is taken.

Unlike antacids they can be used to prevent heartburn and therefore can be taken when you are doing an activity that will bring on heartburn. This may include eating a meal that is highly likely to aggravate heartburn.

They are indicated for those 12 and older. Side effects are not common but may include: dizziness, headache (the most common), diarrhea, constipation and sedation.

The combined use of antacids and H2RAs are better than either product alone in the management of heartburn. Some products (Pepcid Complete) combine these two agents.

**Proton pump inhibitors**

Currently only omeprazole (Prilosec) is available OTC in this class, but lansoprazole (Prevacid) may be available at some point in the near future. There are many prescriptions proton pump inhibitors (PPIs). These are the most potent acid
suppressing medications. Some acid is suppressed within one hour and effects of one drug may last for up to three days.

But, they typically do not work quickly. It may take a number of days before maximal effectiveness is noticed with PPIs.

This is used for those with heartburn more than 2 times a week in those over the age of 18. It should not be used on an as needed basis. Many people use it this way and there will likely be some improvement, but it is not the best way to use the medication.

The medication should be taken in the morning before breakfast. It is taken for 14 days. It may be repeated once every four months.

If symptoms persist beyond 14 days – a follow up with your doctor is indicated.

Side effects include diarrhea and headache. It can interact with some seizure medications and blood thinners (warfarin).
Chapter 20: Diarrhea

Diarrhea is frequent watery or loose bowel movements that deviate from the normal pattern. The average adult has about four bouts of diarrhea a year. It is a more serious problem in young children and older adults. Diarrhea is a very common cause of hospitalization in children. It accounts for 9% of the hospitalizations in the United States for children under five years old.

Diarrhea is classified as acute or chronic. Acute diarrhea is diarrhea that lasts less than 2 weeks and chronic lasts longer than 2 weeks. Most causes of diarrhea last 2-3 days. This chapter will look at acute diarrhea as chronic diarrhea could take up a whole book.

What causes diarrhea

Acute diarrhea is most commonly caused viruses in the gastrointestinal tract, but can also be caused by antibiotic use, bacterial or parasitic infections, food allergies or food poisoning. A few points to keep in mind about the causes of acute diarrhea include:

- Viral infections present with diarrhea that lasts 2-3 days with no blood in the stool.
- Eating foods that bother the stomach and intestines can cause diarrhea. Sometimes keeping a food diary/bowel movement diarrhea can help you determine which foods cause diarrhea.
- Parasites such as *Giardia* can present with loss of appetite, abdominal bloating and cramping and foul smelling stool.
- Some medications that cause diarrhea include laxatives, medications for heartburn, antibiotics, magnesium containing products and alcohol.
- Bacterial infections that commonly cause diarrhea include *Clostridium difficile* (often occurs after taking antibiotics), *Campylobacter* and *Escherichia coli* (common cause of food poisoning). These infections present with fever, blood in the stool and white blood cells noticed in the stool by the doctor.
- Food poisoning can result in nausea, vomiting and diarrhea.
• Lactose intolerance often leads to chronic diarrhea (but should be considered in acute diarrhea). Lactose intolerance is associated with gas, bloating and explosive diarrhea.

• Breastfeeding can cause loose stools in infants.

• Traveler's diarrhea is common in those who go to Asia, Africa, Central or South America and the Middle East. It presents with diarrhea, nausea, vomiting, slight fever and abdominal cramping.

• Partial bowel obstruction can cause diarrhea.

• Constipation results in a hard stool that liquid stool can work its way around resulting in diarrhea.

Who needs to see a doctor

• If dehydration is present (dehydration may be indicated by inability to keep fluids down, dark urine or reduced urine output, increased heart rate, low blood pressure, dizzy when standing and dry mouth)

• Diarrhea with lethargy or confusion

• Blood, mucus or pus in the stools

• Abdominal pain

• High fever - greater than 102 degrees Fahrenheit or prolonged fever

• Weight loss

• Those who are very young or very old

• Those with diabetes, heart or kidney disease

• Those with AIDS, cancer or organ transplants

• Pregnancy
Treatment

Most cases of diarrhea are self-limiting and the use of medications to stop diarrhea is generally not recommended. A treatment approach will be looked at for those individuals who are not candidates to be seen by a doctor.

In diarrhea, the first step is to replace lost fluids and avoid dehydration.

The young child with moderate diarrhea should try to get 50-100 ml (this is approximately 2-3 ounces) of fluid per kilogram over 4 hours. After each loose stool the person should consume 10 ml of fluid per kilogram. It may require small intakes of fluid at first. Encourage small amounts and advance as tolerated. For example, start with one teaspoon every five minutes and if there is no more diarrhea or vomiting increase to 2 teaspoons every 5 minutes after 15-30 minutes.

For example, the first step in determining the recommended fluid intake for a 65-pound child with diarrhea is calculating his weight in kilograms. It can be calculated by dividing his weight in pounds by 2.2. This yields a weight in kilograms of almost 30. This child would need to consume 60 to 90 ounces of fluid over a four-hour period. This equates to 15 to 22 ounces per hour. For every loose stool the child should consume another 300 ml of fluid or 10 ounces.

The adult with moderate diarrhea should consume 2-4 liters of fluid over four hours and drink 15-20 ml of fluid per kg for each loose stool.

In those with mild diarrhea they should consume their regular diet and increase fluid intake. The person should avoid fatty or spicy foods and those high in simple sugars. Caffeine and alcohol should be avoided.

Start an age appropriate diet as soon as you can. Typically the diet should be eaten after there is no more vomiting and you are rehydrated. Formula is OK to use in the young child.

When the diarrhea is moderate and the person is bothered by symptoms, the use of OTC anti-diarrhea medication is not unreasonable. It should be used according to the label. The two OTC products are loperamide and bismuth subsalicylate.

Over-the-counter products
Loperamide (Imodium) is indicated for individuals 6 and older. It is not recommended for those under 6 because the benefit it provides is less than the risks of side effects. Side effects include the small but real chance of a paralyzed colon, which can lead to death. It should not be used in those with a bacterial infection as indicated by blood /mucus in the stool or fever.

Adults and children 12 and older can take 4 mg after the first loose stool and than 2 mg after each subsequent loose stool. Adults should take no more than 8 mg a day. The child between 6 and 12 should take 2 mg after the first loose stool and 1 mg after each subsequent loose stool. Kids between 60-95 pounds should max out at 6 mg per day and those between 48-59 pounds should take no more than 4 mg per day.

This product should not be used more than 48 hours.

Bismuth subsalicylate – which was discussed in the heartburn section – can also be used for diarrhea. It is used in those 12 and older. There are two products that contain this medication: Pepto-bismol and Kaopectate.

It is dosed every 30-60 minutes to a maximum of 8 doses in 24 hours. The medication should not be used longer than 48 hours.

It should not be used by children with a fever as there is a risk of a rare neurological condition called Reye's syndrome.

This product has multiple drug interactions and should not be used by those also taking: blood thinners, aspirin, probenecid, some antibiotics, and methotrexate.
Chapter 21: Constipation

Constipation is difficulty passing a stool or infrequent bowel movements or both. It affects about 2% of the population in the United States. It can present in a variety of ways including:

- Straining
- Infrequent passage of stool
- Sense of incomplete bowel movements
- Hard or small stools
- Abdominal bloating/discomfort

Normal bowel movement occur from three times per day to twice a week. Many people have the impression that they need to have more frequent bowel movement, but one must understand what is normal.

What causes constipation

There are many causes of constipation

- Disease states (thyroid disease, Parkinson's disease, irritable bowel syndrome, depression, eating disorder and diabetes)
- Diseases of the colon such as slow-transit constipation or rectal prolapse
- Medications (see table 5)
- Lifestyle factors (see table 5)
- Ignoring the urge to have a bowel movement
- Painful lesion in the rectal area such as hemorrhoids or fissures
**Table 5: Causes of Constipation**

<table>
<thead>
<tr>
<th>Medications that cause constipation</th>
<th>Lifestyle factors that cause constipation</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Pain medications</td>
<td>• Inactivity</td>
</tr>
<tr>
<td>• Some antacids (calcium and aluminum based)</td>
<td>• Poor fluid intake</td>
</tr>
<tr>
<td>• Some blood pressure pills</td>
<td>• Reduced calorie intake</td>
</tr>
<tr>
<td>• Some cold medications (antihistamines)</td>
<td>• Low fiber intake</td>
</tr>
<tr>
<td>• Iron and calcium</td>
<td>• Disruption of the regular diet</td>
</tr>
<tr>
<td>• Some Parkinson's disease drugs</td>
<td>• Eating a lot of dairy products</td>
</tr>
<tr>
<td></td>
<td>• Stress</td>
</tr>
</tbody>
</table>

**Who needs to see a doctor**

Most cases of constipation can be managed without a doctor’s input. Some cases do need the input of a doctor. The following is a list of people who should see the doctor.

- Those with fever
- Those with significant abdominal pain, distention or cramping
- Nausea and/or vomiting
- If it is a new problem for you
- Excessive flatulence
- Weight loss
- Blood in the stool (either red stool or dark colored stool)
- Change in the caliber of the stool – especially a thin stool
- Recurrent symptoms (those that have lasted longer than 2 weeks or those that reoccur over 3 months
- Daily laxative use
• Certain underlying medical conditions such as paralysis or inflammatory bowel disease
• Symptoms that are not manageable by OTC medications and lifestyle interventions

**Treatment**

The first step in the management of constipation is lifestyle interventions. Lifestyle interventions revolve around diet and exercise. The main dietary intervention is to increase fiber intake.

**Increase fiber intake**

• Adults should have 20-35 grams of fiber each day.
• Increasing the amount of whole grain foods, legumes, fruits and vegetables can do this. Multiple fiber bars are available including Fiber One Bars.
• Reduce the amount of food without fiber – such as simple sugars
• If diet alone does not get fiber intake up to recommended range - add fiber supplements (see table below)
• Gradually increase fiber intake as major increases in fiber intake can lead to abdominal distention or excessive flatulence
• Drink a lot of water with the increase in fiber intake
• Positive effect may not be noticed for 3-5 five days, but onset may be in as soon as 12 hours.
• Fiber can interact with medications and medications should be avoided within 2 hours of taking the fiber supplement

Other tips to reduce constipation include:

• Limit diary intake
• Reduce psychological stress
• Become more physically active
Avoid dehydrating drinks such as caffeine or alcohol.

Medications to alleviate constipation can be used for periods less than 7 days. If they are needed beyond 7 days than a visit to the physician is indicated.

Laxatives are commonly used to treat constipation. Laxatives can be broken down into multiple classes.

**Saline Laxatives**

Saline laxatives draw water into the colon and work within 30 minutes to 3 hours. The most common example of a saline laxative is milk of magnesia.

These products are generally safe for those who are healthy. Side effects include electrolyte imbalance and diarrhea and should be used with extreme caution (if at all) in children, patients who are older and those with kidney problems or heart disease. Overdose of this medication has the potential to result in death.

**Hyperosmotic laxatives**

Hyperosmotic laxatives are given in suppository form and work within 30 minutes. Glycerin suppositories are the most common laxative in this category. They are safe and have minimal side effects such as local irritation. It is probably the safest laxative for all age groups when used intermittently. There are no interactions with other drugs.

**Stimulant laxatives**

Stimulant laxatives help push the stool through the colon. The two OTC medications in this class are senna and bisacodyl. They can be used for occasional constipation as well as for those with chronic constipation.

The onset of action is usually 6 to 10 hours when taken by mouth. The onset of action for bisacodyl is about 30 minutes when taken via suppository.

Side effects include cramping, electrolyte disturbance and fluid loss. Bisacodyl can cause GI upset. On occasion it can cause the urine to turn red, violent or brownish. These drugs are associated with dependence.

**Emollient laxatives**
Emollient laxatives (Colace) help soften the stool and are better at preventing constipation than treating it. This class of medication works in 1-2 days, but may take 3 - 5 days to work.

They are helpful in making the stool easier to pass and may work best for those who strain a lot with bowel movements. In addition they can be used in those with high blood pressure, women who recently gave birth, those who recently had surgery or had a recent heart attack to prevent straining.

Side effects include: diarrhea and abdominal cramping.

Lubricant laxatives

Lubricant laxatives (the most popular product is mineral oil) are given orally and coats the stool. The medications will work within 6 to 8 hours. It should not be used in those younger than 6-years-old, older adults and pregnant women. This product should not be used in favor of the safer emollient laxatives.

Side effects are more common in those who have used this medication for an extended period of time. The most common side effects are anal irritation and itching. If the mineral oil is aspirated it can lead to aspiration pneumonia. It can also impair the absorption of vitamins A, D, E and K. It may lead to impaired absorption of oral contraceptives, blood thinners and digoxin.

Polyethylene Glycol

Polyethylene Glycol (MiraLax) is a fairly recently approved over-the-counter medication. It is a safe and effective product for the short-term treatment of constipation. It increases the amount of water in the stool and helps with constipation. The medications is taken by measuring about one teaspoon (the cap has a measuring device) and mixing it with 4-8 ounces of liquid (water, juice, tea, coffee or soda). It is indicated for those over the age of 16.

Side effects include: diarrhea, abdominal bloating or distention, gas, cramping and nausea.
# Over-the-counter products for constipation

<table>
<thead>
<tr>
<th>Product</th>
<th>Active Ingredient</th>
<th>Directions</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Stool Softener</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Colace</td>
<td>Docusate Sodium</td>
<td>12 and older take 1-3 capsules a day; 2-12 take 1 capsule a day</td>
</tr>
<tr>
<td>Dulcolax</td>
<td>Docusate Sodium</td>
<td>12 and older take 1-3 capsules a day; 2-12 take 1 capsule a day</td>
</tr>
<tr>
<td><strong>Fiber</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Metamucil</td>
<td>Psyllium fiber</td>
<td>12 and older one teaspoon in 8 oz of liquid up to three times a day; 6-11 years old ½ teaspoon up to three times a day</td>
</tr>
<tr>
<td>Benefiber</td>
<td>Wheat dextrin</td>
<td>Multiple different products – they come in Chew able tablets, caplets, powder</td>
</tr>
<tr>
<td>Fiber Choice</td>
<td>Inulin</td>
<td>Multiple different products – they come in Chewable tablets, caplets, powder</td>
</tr>
<tr>
<td>Citrucel</td>
<td>Methylcellulose</td>
<td></td>
</tr>
<tr>
<td>Fibercon</td>
<td>Polycarbophil</td>
<td></td>
</tr>
<tr>
<td><strong>Saline Laxatives</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Milk of Magnesia</td>
<td>Magnesium Citrate</td>
<td></td>
</tr>
<tr>
<td>Peri-colace</td>
<td>Magnesium hydroxide</td>
<td></td>
</tr>
<tr>
<td><strong>Stimulant Laxatives</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Correctol</td>
<td>Bisacodyl</td>
<td>12 and older take 2 pills once or twice a day; 6-12 take one pill once or twice a day</td>
</tr>
<tr>
<td>Ex-lax</td>
<td>Sennosides</td>
<td></td>
</tr>
<tr>
<td><strong>Lubricant laxatives</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mineral Oil</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Suppositories</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fleets</td>
<td>Glycerin</td>
<td>6 and older use one</td>
</tr>
<tr>
<td><strong>Enema</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fleets enema</td>
<td>Saline Enema</td>
<td></td>
</tr>
<tr>
<td><strong>Miscellaneous</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>MiraLax</td>
<td>Polyethylene Glycol</td>
<td>17 and older - Take 17 grams – mix in 4-8 ounces of beverage</td>
</tr>
</tbody>
</table>
Chapter 22: Nausea

Nausea is an unpleasant sensation in the gastrointestinal tract that often comes before vomiting. Vomiting is a forceful abdominal contraction that expels the contents of the stomach. Nausea is not a disease – but a symptom.

Regurgitation is spitting up of gastric content without nausea and without a forceful abdominal contraction.

What causes nausea

There are multiple causes of nausea and vomiting.

- Infections – stomach virus
- Food poisoning
- Milk allergy
- Motion sickness
- Some medications
- Psychological stress
- Pain
- Early pregnancy
- Overeating
- Cancer
- Gastroparesis (a disease when the nerves in the stomach do not work well – seen most often in diabetics)
- Diseases of the stomach such as small bowel obstruction
- Liver diseases such as hepatitis
- Toxic ingestion
- Anything that affects the vomiting center in the brain such as increased pressure in the brain from a tumor, bruise or bleed
- Migraine headache
- Ulcers
- Heart attack
A few key points that need to be considered when there is nausea and/or vomiting.

When did it start? Nausea shortly after eating may suggest food poisoning or an inflammation of the stomach.

How long did it last?

Was there a recent head injury? This needs medical evaluation.

Was there any recent motion such as a plane ride, boat ride or amusement park trip? This may indicate motion sickness.

What is the content of the vomit? Is it bile (yellow-green), blood (red or coffee ground), or a recently consumed meal?

What are the associated symptoms? Abdominal pain, abdominal distention, diarrhea (gastroenteritis), headache (bleeding in the brain)?

When was the last time you passed a stool or passed gas? If it has been a long time consider a bowel obstruction and seek medical attention.

Is there any chance of pregnancy? When was the last menstrual period? Is there any breast swelling or tenderness?

Is there any blood in the urine or flank pain? This may indicate kidney stones. Kidney stones usually present with severe pain.

What is the risk of nausea

Complications of nausea and vomiting itself are not common unless it is prolonged or forceful. Complications include dehydration and electrolyte disturbances (such as low potassium level). Less commonly there are tears in the esophagus. Chronic nausea and vomiting may result in malnutrition and weight loss.

The major risk may be the underlying cause. Most cases of nausea are self-limiting and benign. Every once in a while a more serious underlying cause is present that is risky. See the “Who needs to go to the doctor” section.

Who needs to see a doctor

- Dehydration – dry mouth, cracked lips, increased pulse rate, dizzy when standing, dark urine or reduced urine output
- Dizziness
- History of heart problems
• Stomach or chest pain
• Pregnant or may be pregnant
• Diabetics – especially if taking insulin
• Blood in the vomit
• Fever over 101 degrees Fahrenheit
• Headache, stiff neck or confusion
• Severe abdominal pain
• Not passing stool
• Just started taking a new medication
• Prolonged nausea or vomiting
• Recurrent vomiting in pregnancy
• Home treatment is not working
• Those under six should see a doctor if there is vomiting/diarrhea that has lasted more than a few hours, if there is a fever or if there is a reduction in urine production
• Those over six should go to a doctor if there is fever (above 101 degrees Fahrenheit), diarrhea or vomiting that has persisted over 24 hours

**Treatment**

Most cases of nausea are self-limiting. Management options include treating the cause, preventing dehydration, providing comfort and monitoring for complications.

To prevent dehydration drink clear fluid as the body can tolerate. Do not consume irritating foods/drinks or medications. Do not discontinue any medication given to you by a health care provider or recommended without first consulting the health care provider.

The use of a hydrating solution – such as Pedialyte – may be helpful if there is vomiting and diarrhea that has persisted.

The use of dry crackers or ginger products may be helpful – to settle the stomach.

The use of over-the-counter medications (see table below) may provide some relief to the person with nausea. While none are magic treatments, they may provide some comfort. No product has proven to be most efficacious. Given he fact that there is limited negative side effects, a trial of one of the products is worth it to minimize the discomfort that nausea can bring.
**Prescription medications**

When time and over-the-counter medications do not provide relief the use of prescription medications can be used.

When there is motion sickness, the use of antihistamines or a scopolamine patch may help (see section on motion sickness for more details).

General medications for nausea are associated with many side effects including sedation. Common prescriptions include: promethazine (Phenergan) and prochlorperazine (Compazine).

Those affected with diabetic gastroparesis may be treated with metoclopramide (Reglan).

For those with severe nausea and vomiting – particularly cancer patients - can be tried on ondansetron (Zofran). This medication can cost over 20 dollars per dose.

**Over-the-counter products for nausea**

<table>
<thead>
<tr>
<th>Product</th>
<th>Active ingredient</th>
<th>Directions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Emetrol</td>
<td>Dextrose, levulose and phosphoric acid</td>
<td>Adults take 1-2 tablespoons every 15 minutes; children 2-12-years-old take 1-2 teaspoons every 15 minutes until nausea is gone, do not take more than 4 doses without consulting a doctor</td>
</tr>
<tr>
<td>Nauzene</td>
<td>Dextrose, levulose and sodium citrate dihydrate</td>
<td>Adults take 2-4 tablets every 15 minutes (max 6 doses); less than 18 consult a doctor</td>
</tr>
<tr>
<td>Pepto-bismol</td>
<td>Bismuth Subsalicylate</td>
<td>For those over 12-years-old take 2 tablet every 30-60 minutes; use with doctor’s advice if under 12-years-old. Max 8 doses in 24 hours; children and teenagers who have or are recovering from a viral illness should not use this product.</td>
</tr>
<tr>
<td>Children’s Pepto Bismol</td>
<td>Calcium Carbonate</td>
<td>6-11-years-old take 2 tablets and those 2-5-years-old take 1 tablet; the dose may be repeated as need but no more than 3 doses in 24-hours.</td>
</tr>
</tbody>
</table>
Chapter 23: Motion Sickness

Discomfort in the stomach followed by feeling nauseated or vomiting, having cold sweats, facial flushing, dizziness, increased salivation, feeling warm and generally feeling bad when traveling defines motion sickness. This can occur with any type of motion such as plane rides, boat trips, trains, amusement park rides or even car trips.

Who should be concerned

Motion sickness is not associated with any long-term complications or problems, but sometimes motion sickness can mimic more serious conditions. The following people should be concerned and get immediate medical help.

- Those with symptoms of a stroke: slurred speech, paralysis, weakness or reduced coordination
- When motion sickness is associated with chest pain or shortness of breath

Risk factors

- Female
- Younger age - risk increases between 4 and 12-years-old
- History of migraine
- Pregnancy
- Drinking alcohol during travel
- Currently menstruating
- Older adults

Treatment

Motion sickness can be treated with multiple over-the-counter medications and some prescription medications. Oral medications should be given 30-60 minutes before travel. Those with certain conditions (chronic lung disease, heart disease, kidney disease, liver disease, a history of seizures, glaucoma, and enlarged prostate, urinary
retention or constipation) should talk to their doctor before trying one of the over-the-counter medications.

A prescription patch – Scopolamine (Transderm Scop) - can be applied prior to travel. It is changed every 72 hours and the area should be washed well after the product has been removed. It is given to those over 18-years-old.

Scopolamine also comes as a tablet that can be taken one hour prior to exposure to travel and can be given every 6-8 hours as needed. It is given to those over 18-years-old.

**Over-the-counter products**

Over-the-counter medications should be taken 30 minutes to one hour before travel.

- **Meclizine (Bonine) 25-50 mg by mouth for those 12-years-old and older.** This is a longer acting medication than Dramamine and is only given once a day. It has a different active ingredient than original Dramamine.
- **Clyclizine (Bonine for Kids) is given for those over the age of 6 as 25 mg every 6-8 hours no more than 3 doses in 24 hours.**
- **Dimenhydrinate (Dramamine) is given to adults (greater than 12-years-old) and dosed 50-100 mg every 4-6 hours as needed. Those 6-11-years-old take 12.5 to 25 mg by mouth every 6-8 hours. It can also be given to those 2-5-years-old every 6-8 hours. Adults should not take more than 400 mg in 24 hours; those 6-11 should not take more than 150 mg in 24 hours; and those 2-5 should not take more than 75 mg in 24 hours. I do not recommend using these products in children under 6.**
- **Meclizine (Dramamine) 25-50 mg tablet is taken by mouth once a day for those over the age of 12. This is a newer product that is under the brand name Dramamine but contains a different active ingredient than the original Dramamine. It contains the active ingredient in Bonine. It therefore only has to be given once a day.**
- **Diphenhydramine (Benadryl) is given to adults (greater than 12-years-old) as 25-50 mg every 4-6 hours as needed. Those 6-11-years-old take 12.5 to 25 mg by mouth every 4-6 hours as needed. Adults should not take more than 300 mg in 24 hours and kids (6-11-years-old) should take no more than 150 mg in 24 hours.**
• Sea-band is an over-the-counter band that is placed on the wrist. It works by providing acupressure. It can be used by those 2 and older and is used for the relief of nausea. Research has shown that it is not effective in preventing motion sickness, but has no side effects – except a dent in the pocket book.

Research is sparse as to which product is most effective, but using a product with meclizine (either Dramamine (less drowsy formula) or Bonine) is preferred as it requires less dosing and is associated with less sedation. If you are just being exposed to a short duration trip the use of the Dramamine original product may be as beneficial as the medication will be out of your system in a shorter period of time.

Other tips to minimize motion sickness

• Sit in the front seat of the car
• Sit in the center of the airplane – over the wing if possible
• If possible, get fresh air – open a vent
• Do not eat heavy or fatty meals prior to travel
• Minimize excessive head movements when traveling
• Do not read when traveling
• Do not drink alcohol when traveling
• Avoid others who are motion sick
• Fix on set point on the horizon when on a boat
• Sunglasses may be helpful
• Avoid strong odors
Chapter 24: Vaginal Discharge

Vaginal discharge is very common. Some amount of vaginal discharge is normal and this can vary from day-to-day. When estrogen levels are high (right before ovulation, pregnancy or patients on estrogen drugs) there may be more vaginal discharge. Estrogen levels maintains vaginal thickness and bolsters normal local defenses.

Glands in the vagina and cervix create normal vaginal discharge. The discharge normally does not smell bad and is clear or slightly milky.

Yeast infections affect 75% of women at some point in their life and many have recurrent episodes. This is the major cause of vaginal discharge that is treatable with over-the-counter medications. The role of the person is to be able to identify a yeast infection and identify when it may be caused by something else that requires a health care provider’s input.

Vaginal discharge that is not normal is associated with

- Irritation
- Burning
- Itching
- Bloody discharge - when not on your period
- A significant change in vaginal discharge
- Greenish or yellow discharge

What causes vaginal discharge

The overgrowth of vaginal germs stem from antibiotic use, poor hygiene, frequent douching, alkaline pH as seen with menstrual blood or semen and some diseases such as diabetes is a common cause of vaginal discharge.

Most kids with vaginal discharge will need a work up by a health care provider. In kids a common cause of vaginal discharge is a foreign body. If no foreign body is found than the possibility of a sexually transmitted disease needs to be considered.
Other common causes of vaginal discharge and itching in children include:

- Poor hygiene – this will be associated with redness and odor
- Chemical irritation – often secondary to soaps or bubble baths
- Infections (see table below)
- Anatomic abnormalities

Women of reproductive age often have vaginal discharge that is normal. Normal vaginal discharge is milky white, mucoid, without odor or irritation. Common infectious causes of vaginal discharge and vaginal inflammation are shown in the table below.

<table>
<thead>
<tr>
<th>Condition</th>
<th>Symptoms</th>
<th>Signs</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chlamydia/Gonorrhea</td>
<td>Sometimes none, burning on urination, urinating often and urgently, pelvic/abdominal pain and pain with sex</td>
<td>Thick vaginal discharge, discharge from the urethra</td>
</tr>
<tr>
<td>Trichomoniasis</td>
<td>Odor, pain and itching when urinating, soreness in the genital area</td>
<td>Yellow or green vaginal discharge</td>
</tr>
<tr>
<td>Bacterial vaginosis</td>
<td>Fishy odor (worse after sex or cleaning), itching and burning</td>
<td>White, yellow or gray discharge, redness and swelling</td>
</tr>
<tr>
<td>Yeast infections</td>
<td>Pain, burning and itching, Symptoms worsen with sex</td>
<td>White, cottage cheese discharge, swelling and redness</td>
</tr>
</tbody>
</table>

**Who needs to see a doctor**

Vaginal discharge is rarely life threatening, but sometimes a health care provider is needed to properly manage vaginal discharge. The following people with vaginal discharge should see a doctor

- Suspicion of a foreign body
- Sexually transmitted disease risk with vaginal discharge
Yellow or green vaginal discharge
Fever
Pelvic/abdominal pain
A strong odor associated with the vaginal discharge
Pain upon urination, needing to urinate urgently or frequently

**Treatment**

While yeast infections are treatable with over-the-counter medications, most causes of vaginal discharge are not amendable to treatment with over-the-counter medications. Consequently, a healthcare provider most often treats vaginal discharge.

General treatment strategies for non-specific vaginal discharge include preventing irritation and keeping the area clean and dry. Do not use feminine hygiene products. Utilize good hygiene – wipe from back to front. Use ice packs or sitz baths when there is discomfort.

When foreign body is the problem, removal often remedies the problem.

Yeast infections can be treated with OTC medication or prescription medication. Below are a listing of topical products that can treat yeast infection. Topical products are about 80% effective if used correctly. The oral prescription medication most commonly used to treat yeast infections is called fluconazole (Diflucan). It is also highly effective. It is given as a one-time dose of 150 mg.

**How to prevent vaginal discharge**

- Practice safe sex
- Do not douche
- Limit use of feminine hygiene sprays
- Do not take bubble baths
- Do not used perfumed or colored tampons or toilet paper
- Wipe from front to back after going to the bathroom
• Wear cotton underwear that allow some air circulation
• Avoid the use of tight pants or pantyhose for extended periods of time
• Clean the genital area daily
• Be aware that new products used can cause problems such as: condoms, diaphragms and spermicides.
## Over-the-counter products

<table>
<thead>
<tr>
<th>Product</th>
<th>Active Ingredient</th>
<th>Directions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Monistat 1</td>
<td>Miconazole</td>
<td>12 and older – insert vaginally one time and apply cream two times a day for up to 7 days as needed</td>
</tr>
<tr>
<td>Vagistat 1</td>
<td>Tioconazole ointment</td>
<td>12 and older insert vaginally one time at bedtime</td>
</tr>
<tr>
<td>Monistat 3</td>
<td>Miconazole</td>
<td>12 and older insert vaginally at bed time for three days and apply cream two times a day for up to 7 days as needed</td>
</tr>
<tr>
<td>Monistat 7</td>
<td>Miconazole</td>
<td>12 and older insert vaginally at bed time for seven days and apply cream two times a day for up to 7 days as needed</td>
</tr>
</tbody>
</table>
Chapter 25: Urinary Frequency

Urinary frequency is the need to urinate many time over the day and night. Some define this as the need to urinate more than 8 times in 24 hours.

The volume of urine not a factor. Many people with urinary frequency urinate often but only in small volumes. When you urinate it does not decrease the sensation of needing to go to the bathroom.

Urinary frequency needs to be differentiated form urinating large volumes, which is called polyuria. Large volumes of urine are defined as urinating more than 3 liters a day.

What causes urinary frequency

It typically occurs from diseases of the lower urinary tract. It is not large volumes of urine in the bladder that cause the symptoms, it is usually irritation/inflammation that is perceived as the need to void.

The most common causes are

- Urinary tract infections. This is associated with burning upon urination, foul smelling urine and sometimes flank pain.
- Urinary incontinence. This is associated with leaking of urine.
- An enlarged prostate. This is associated with a weak urinary stream, urinary hesitancy and incomplete emptying of the bladder. This only affects men and usually those over the age of 50.
- Stones in the urinary tract. This is associated with colicky flank or groin pain.
- Medications such as diuretics, caffeine and alcohol

Less common causes include:

- Cystocele or a dropping of the bladder which is associated with vaginal fullness and urinary incontinence.
• Infection of the prostate gland which is occurs in men and will present with fever, low back pain and thick discharge from the penis
• Pregnancy
• Spinal cord injury which is associated with lower extremity weakness
• A narrowing the urethra

**Who needs to see a doctor**

Many cases of urinary frequency need to be evaluated by a health care provider. Most situations do not require urgent evaluation, but some do. The following people should see their health care provider:

• Those with back pain
• Those with fever
• Those with lower extremity weakness
• Those with burning on urination which may indicate a urinary tract infection
• Those with a weak urinary stream and hesitancy which may indicate an enlarged prostate
• Those with blood in the urine. This may mean a urinary tract infection or urinary stone in the younger individual and possibly cancer in the older adult.
• Anyone with a history of prostate cancer or pelvic disease should be seen to evaluate these disease processes
• Anyone with eye symptoms and arthritis suggests a reactive arthritis.
• Anyone with a sexual history suggestive of a sexually transmitted disease

**Evaluation and treatment**

Look for any obvious causes of urinary frequency. For example, excessive caffeine or alcohol intake. If you cut down on the intake of these products this may cure the problem.
If there is a history of missed menses and/or breast tenderness you may need a pregnancy test.

The most common cause of urinary frequency is a urinary tract infection. There are multiple OTC products that allow you to test for urinary tract infections. These products typically involve dipping a testing strip into the urine or urinating on a test strip and the urine strip will look for indications of infection. Look for a test that evaluates for leukocytes and nitrates. I recommend Azo test strips.

You will be unable to treat the infection without the input of your doctor. These tests will help you identify a cause. Talk to your doctor about the use of these tests. Some doctor's will call in a prescription for you if you have a positive result on this test and have a history of urinary tract infections. Talk to your doctor.

Unfortunately, the use of OTC products do not treat urinary tract infections. If you think you have one than a trip to your health care provider is necessary for proper treatment – an antibiotic.

One product – Cystex – contains an antibacterial medication. This medication is not indicated by itself for the treatment of a urinary tract infection and it should not be used as a treatment option. A recent evaluation suggested that this product may be useful in the prevention of urinary tract infections in healthy individuals, but more research is needed before this can be said definitively.
## Over-the-counter products

<table>
<thead>
<tr>
<th>Test Strips</th>
<th>Azo Test Strips</th>
<th>UTI Home Screen Test Stick</th>
<th>Tests for white blood cells and nitrites and protein – this test is not recommended.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bladder analgesics</td>
<td>Azo Standard</td>
<td>Phenazopyridine is the active ingredient; 2 tablets are to be taken three times a day with food.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Cystex</td>
<td>Contains methenamine, which is an antibacterial medication and sodium salicylate that is a pain reliever. Indicated for those over 12-years-old and to be taken 2 tablets three times a day.</td>
<td></td>
</tr>
<tr>
<td>Miscellaneous Products</td>
<td>Azo Cranberry</td>
<td>Contains vitamin C, cranberry powder concentrate and bacillus (probiotics). It is to be taken as 2 tablets three times a day.</td>
<td></td>
</tr>
</tbody>
</table>
Chapter 26: Urinary burning

Urinary burning – known to doctors as dysuria – may be described as pain or discomfort as well as burning. It can occur at the beginning of urination, in the middle of urination, at the end or throughout.

What causes urinary burning

The most common cause of urinary burning is a urinary tract infection. The infection can be in the bladder, urethra or in the vagina. It is sometimes present in men, but much less commonly. Infection in the prostate gland will cause dysuria.

Other causes of burning upon urination include:

- Injury in the genital area
- Low level of estrogen (women)
- Stones in the urinary tract
- Sexually transmitted disease

What to do

When you have dysuria, the first consideration is a urinary tract infection. Make an immediate appointment with your doctor or go to the emergency room if you have a high fever, back pain and/or just feel sick.

If none of these red flags are present you should drink fluids and consider the addition of cranberry juice or the Azo product, Azo Cranberry. In addition, you should rule out a urinary tract infection.

Using one of the test strips (preferably Azo Test Strips) to see if you have a urinary tract infection can do this. If you do, call your doctor. You can also bypass this step and have your doctor check you for a urinary tract infection.

There are a couple over-the-counter products that can help treat the discomfort of dysuria. Two of the most popular is Azo Standard and Cystex.
Azo standard contains the active ingredient of phenazopyridine hydrochloride. This is the same medication that a doctor would give you to control bladder pain. It is taken 2 tablets, three times a day for those 12 and older. Unless approved by a doctor it should not be used by those who are pregnant, breastfeeding, have kidney disease or have Glucose-6-Phosphate Dehydrogenase Deficiency.

Its major side effect is upset stomach so take the product on a full stomach. The product will turn your urine orange-red. It has the potential to stain clothes if you leak urine. It can also stain contact lenses.

This product will interfere with urinary diagnostic tests such as a urine dipstick. This will make it harder to definitively diagnose the infection if you take this product before you get your urine checked. If possible – wait to have a diagnosis before taking this medication.

Cystex contains the pain reliever Sodium Salicylate and can be take as 2 tablets with water three times day. It is recommended in those 12 and older. Those should not use it with a Glucose-6-Phosphate Dehydrogenase Deficiency.

This medication should be taken with food as it can upset the stomach. Those under 20 should not take this product if they have a chicken pox, the flu or another viral illness. This product contains high levels of sodium and should not be used by those with high blood pressure, heart failure or any condition that requires a restriction in salt. Those who are prone to bleeding or have stomach ulcers should not use it.

Any one taking blood thinners, pain medication, gout medication or diabetes medication should talk to their health care provider before taking it.

**Prevention of urinary burning**

- Drink plenty of fluids
- Wear cotton underwear
- Weight loss if overweight
- Do not use douches
- Void after intercourse
• Practice safe sex
• Hormone therapy for women in menopause may be considered
Chapter 27: Congestion/sinus problems

Inflamed blood vessels in the nose causes the nasal passages to swell leading to a sense of stuffy nose, facial pressure, post-nasal drip, cough, sore throat and runny nose.

What causes nasal congestion

- Sinus infections
- Allergies
- Viral illnesses – the common cold
- Pregnancy

Who needs to go to the doctor

Nasal congestion is a common complaint that can most often be managed by time, home remedies and some over-the-counter medications.

When nasal congestion lasts beyond 7-10 days without much improvement than there is possibility that there is a sinus infection. Going to the doctor would best suit these individuals. Individuals who do not have one of the red flags listed below and have had nasal congestion that has persisted less than 7 days likely do not need a doctor.

The following people should see a health care provider if they are afflicted with nasal/sinus congestion and any of the following symptoms:

Red flags

- High fever
- Confusion
- Double vision
- Swelling of the forehead or around the eyes
- Inability to move the eyes
- Confusion
- Decreased sensation over the face
What is the risk

Most cases of sinus congestion will go away on their own. Some cases have the potential to lead to major problems. Any of the factors in the above section “who needs to see the doctor” are potentially situations that could lead to major problems.

Many people with nasal congestion have the common cold.

Risk Factors for the Common Cold

- Daycare attendance
- Young age. The young child has an immature immune system. It is not that unusual for young children to have 8-12 colds a year.
- Day care attendance
- Old age. Older adults have a decreased cough and gag reflex and an immune system that does not work as well
- Certain disease states such as cancer, HIV and diabetes
- Conditions that require you to be on medications that suppress the immune system such as prednisone
- Travel on buses, planes or in crowded conditions
- Psychological stress
- Excessive exercise
- Low vitamin D level
- Winter season. Viruses survive better in low humidity environments

Treatment

Treatment needs to focus on improving symptoms. People with a common cold can be quite miserable. Getting rest and plenty of fluids should be encouraged to allow the body to heal. Fluids will help prevent dehydration and may help thin the mucus.

Nasal saline is a product that helps clear mucus out of the nose. Sore throat can be treated with oral pain relievers, salt-water gargles or a variety of over-the-counter throat products. No product is a magic bullet, but many can provide some relief of throat discomfort.
Most colds follow a three to five day pattern. While the individual feels quite bad the first few days, by day three there should be significant improvement and by day five the patient should be almost completely well. Nasal congestion and cough is not unusual beyond five days, but the patient should be feeling better than the first three days.

The most important part of treating a cold is to provide the person with rest and fluids. During the first two to three days of the cold those afflicted should take as much rest as possible. The child should be given extra attention during this time. Fluids will help with hydration, soothe a raw and irritated throat and will help loosen congestion.

Cool mist humidifiers and steam from showers can help with congestion. Caution should be used in those who have asthma as those with asthma risk a spasm to the breathing tubes with a change in humidity.

Encouraging children to sleep on their sides may provide more restful sleep instead of sleeping on the back. Sleeping on the back increases the amount of mucus that drips into the throat and chest, which will predispose to coughing and a sore throat.

A multitude of over-the-counter medications can be used to provide relief while the body fights off the infection. Depending on the primary symptoms that are giving you trouble, you may want to select an agent that will help treat those symptoms (see the symptom chart at the end of this chapter).

Medicines that bring down fever are also effective at improving pain and body aches. If these symptoms are bothersome the use of acetaminophen, aspirin or non-steroidal anti-inflammatory drugs (NSAIDs) can be helpful.

Antihistamines are helpful if you are bothered by runny nose, sneezing and itchy eyes, nose and throat. The first generation antihistamines are more effective at controlling these symptoms than the second-generation antihistamines. Side effects of the antihistamines may be more bothersome than the benefits are beneficial, so antihistamines should be used with caution. Antihistamines are generally not recommended for sinus infections.

First-generation antihistamines include medications such as diphenhydramine (Benadryl). Second-generation antihistamines include medications such as loratadine (Claritin) and cetirizine (Zyrtec).
Decongestants either topical or oral – can help with nasal congestion. Adults benefit for up to five days with the use of decongestants to a modest extent but children younger than 12 have not seen the same benefit as adults.

There are three levels of nasal decongestants.

1. Oral medications
2. Topical medications
3. Vapor medications

Oral medications are pills taken by mouth. Examples include pseudoephedrine (Sudafed) and phenylephrine (Sudafed PE). These medications work by constriction blood vessels in the nose. One unfortunate side effect is that they constrict vessels not only in the nose but also all over the body. Therefore, they can increase blood pressure and should be used by caution in anyone with heart disease, high blood pressure, any other cardiovascular condition in addition to diabetes, thyroid problems, or prostate problems.

Topical decongestants can also be used to unblock the nose. These are medications that are sprayed directly up the nose and act locally. Unfortunately, some of the medication can leak into the blood and act systemically. This means that topical medications can also increase blood pressure. Therefore, the same risks associated with oral decongestants apply to the topical decongestants.

The other major complication of topical decongestants is rebound congestion. The use of topical decongestants for more than three days can lead to congestion that becomes difficult to break up without persistent use of the same topical decongestants. Therefore, only use topical decongestants for three days.

Vapor decongestants are not as potent as the other two brands of decongestants, but are the safest medications to use in those with heart disease.

Antitussives (such as over-the-counter Robitussin - DM) can be used to quiet cough, but in the common cold the best strategy to reduce cough is the use of antihistamines and decongestants.

Antibiotics should not be used for the common cold, unfortunately they often are. Antibiotics – while they may appease the person who goes to the doctor for the cold – do not enhance illness resolution. Upper respiratory tract infections are the second most common reason antibiotics are prescribed each year.
Another common misconception is that antibiotics will prevent a cold from becoming a sinus infection. This is not true.

Over-the-counter medications have been thoroughly studied in adults, but these medications have not been studied as well in children. New labeling laws have recommended that the use of many over-the-counter medications be limited in children under the age of 4-years-old. Many of the complications resulting from over-the-counter medication use in children have been from incorrect dosing. Caregivers need to assure proper doses when giving medications to children.

**Antibiotics for Acute Sinusitis**

Most patients with sinus infections have a viral sinusitis and will not derive benefit from antibiotics, but there are times that antibiotics are helpful. Unfortunately, antibiotics are a very common prescription given to patients for colds.

When symptoms persist beyond 10-14 days bacteria may be causing some of the symptoms and the use of antibiotics may resolve the infection. Some patients may actually clear their infection without the assistance of antibiotic even if symptoms have persisted beyond 10-14 days.

Adults who have mild symptoms such as mild pain and a fever of less than 101 degrees Fahrenheit may be treated with close monitoring and symptom management instead of antibiotics.

In the typical cold improvement should be noticed in 3-5 days with complete resolution by day 12.

**Symptom Chart**

<table>
<thead>
<tr>
<th>What is your symptom?</th>
<th>Helpful intervention</th>
<th>Helpful medication</th>
<th>May be helpful</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sore throat</td>
<td>Fluids, cool mist humidifier, salt-water gargles</td>
<td>Nasal saline</td>
<td>Throat lozenges/sprays</td>
</tr>
<tr>
<td>Stuffy nose</td>
<td>Fluids, cool mist humidifier</td>
<td>Nasal saline</td>
<td>Decongestants</td>
</tr>
<tr>
<td>Runny nose</td>
<td>Fluids, cool mist humidifier</td>
<td>Nasal saline</td>
<td>Antihistamines</td>
</tr>
<tr>
<td>Headache</td>
<td>Rest, cool compress on the head</td>
<td>APAP, NSAIDs</td>
<td></td>
</tr>
<tr>
<td>Fever</td>
<td>Fluids, dress in light clothes</td>
<td>APAP, NSAIDs</td>
<td>Sponge bath</td>
</tr>
<tr>
<td>Symptom</td>
<td>Treatment</td>
<td>Medications</td>
<td></td>
</tr>
<tr>
<td>------------------</td>
<td>------------------------------------</td>
<td>------------------------</td>
<td></td>
</tr>
<tr>
<td>Body aches</td>
<td>Rest</td>
<td>APAP, NSAIDs</td>
<td></td>
</tr>
<tr>
<td>Earache</td>
<td>Warm wash cloth over the ear</td>
<td>APAP, NSAIDs</td>
<td>Decongestants</td>
</tr>
<tr>
<td>Face/sinus pressure</td>
<td>Fluids, warm wash cloth over the face</td>
<td>APAP, NSAIDs</td>
<td>Decongestants</td>
</tr>
<tr>
<td>Cough</td>
<td>Fluids, cool mist humidifier</td>
<td>Nasal saline</td>
<td>Guaifenesin or dextromethorphan</td>
</tr>
<tr>
<td>Sneezing</td>
<td>Avoid allergens</td>
<td>Nasal saline</td>
<td>Antihistamines</td>
</tr>
</tbody>
</table>

APAP – acetaminophen

NSAIDs – non-steroidal anti-inflammatory drugs (ibuprofen, naproxen)
Chapter 28: Cough

Cough is a protective response that clears the airways of secretions and mucus. It is the fifth most common reason for people to visit their doctor.

Cough is broken down into acute (less than three to four weeks) or chronic (longer than three to four weeks). The cause of cough is important to determine and can be variable depending on whether the cough is acute or chronic.

Cough is not a disease, but a symptom from another problem.

What causes cough

The following is a list of causes of cough and some points about that particular cause.

- Viral upper respiratory tract infections are associated with runny nose, sore throat and feeling run down.
- Postnasal drip is common due to a cold, sinus infection or allergies.
- Bronchitis is an acute inflammation of the breathing passages.
- Chronic bronchitis exacerbation is similar in presentation to acute bronchitis but it occurs in a patient with known chronic bronchitis.
- Pneumonia will usually present with a fever and productive cough. A virus or bacterium most commonly causes pneumonia. It is uncommonly caused by a fungus or food/drink going into the lung in a condition called aspiration pneumonia.
- Pulmonary embolism is a blood clot in the lung and is a rare cause of cough. It may present with chest pain, cough and shortness of breath.
- Congestive heart failure is another uncommon cause of cough in the adult. Heart failure is a condition where the heart does not pump out enough blood and fluid backs up into the lungs. This extra fluid in the lungs will sometimes make a person cough.
- Foreign body, though not common in the adult, will result in a cough.

Chronic cough common occurs due to:

- Postnasal drip from allergies or a chronic sinus infection may cause of chronic cough.
• Pneumonia can cause chronic cough. This is most typical with a type of pneumonia called atypical pneumonia. Atypical pneumonias (commonly known as walking pneumonia) are caused by certain types of bacteria that can go undetected (or misdiagnosed as a viral illness) for an extended period of time.
• Chronic bronchitis can cause cough and it is diagnosed when an individual has a cough that persists more than 3 months in two consecutive years when no other cause has been found. This is common in those who have a long history of smoking.
• Post upper respiratory tract infection often leads to a chronic cough that may persist for weeks to months after an infection.
• Acid reflux can irritate the respiratory tract and cause coughing.
• Medications have the potential to cause cough. A class of blood pressure medications called angiotensin converting enzyme inhibitors is a common culprit of cough. The cough can occur form days to months after the medication is started.
• Asthma is usually associated with wheezing, but a cough variant asthma presents with only coughing.
• Tumors are an uncommon cause of cough, but should be suspected if there is fever, weight loss and night sweats.
• Tuberculosis is another rare cause of cough and should be suspected when there is fever, weight loss, night sweats and blood in the mucus.
• Fungal infections rarely cause chronic cough, but should be considered in those who have recently traveled to a place that is known for their fungal infections such as the southwest United States.
• Excessive earwax or a foreign body in the ear can irritate a nerve in the ear that can lead to cough.
• Psychogenic cough is basically a cough that is in your head.

The reason that all of these causes were discussed was because, determining the cause of the cough is more important than trying to stop the cough.

The most common cause of an acute cough in a child is an viral upper respiratory tract infection. Other common causes of acute cough include: pneumonia and foreign
body. The younger child may be afflicted with bronchiolitis (better know as RSV) and croup.

Chronic cough is most commonly caused by asthma. Other common causes of chronic cough in the child include: acid reflux and post-nasal drip – often from allergies. Other less common causes of chronic cough include walking pneumonia, tuberculosis, foreign body and pertussis (whooping cough).

**Who needs to see a doctor**

Things to be concerned about

- Shortness of breath with cough
- Coughing up blood
- Weight loss
- Risk factors for tuberculosis or HIV (HIV: multiple sexual partners, men who have sex with men, intravenous drug use. Tuberculosis: living in a country where it is common such as Africa, living in close quarters, those in jail or those with HIV).

**Red flags**

Red flags are things that need to be watched for closely. They indicate that immediate medical intervention is necessary.

1. Bluish discoloration of the lips or hands
2. Difficulty breathing or shortness of breath
3. Looking very sick
4. Stridor – a high pitched inspiration sound
5. Cough with drooling or severe anxiety

**Treatment**

Most cases of cough do not need any fancy treatments. As mentioned most coughs are related to viral upper respiratory infections. Some of the features that indicate more serious infection are highlighted above.

Chest x-ray is often used when there is a red flag above. Chest x-ray is also indicated if pneumonia, tuberculosis, cystic fibrosis or foreign body aspiration is suspected.
Based on the suspected cause of the cough, the patient embarks on a treatment course. If there is no improvement based on the likely cause of the cough, more extensive test may be indicated. For example, if the doctor thinks that post-nasal drip from allergies is the cause of the cough and he prescribes a treatment that does not stop the cough, then diagnostic testing may be indicated.

As mentioned earlier, it is important to determine what is causing the cough. Treating a cough is not helpful in most cases.

When discussing cough medicine to treat cough there are two options: suppressing the cough and helping expel the mucus. Expectorants are used to help rid the body of mucus. The OTC expectorants are outlined in table 6. The main OTC product that does this is guaifenesin. While OTC expectorants are very commonly used, their effectiveness is questionable.

Expectorants are most helpful when you are affected with a cough that is accompanied by thick mucus that you are not able to expel. In addition to trying these products when you have thick mucus, make sure you drink plenty of fluid – which will also help thin mucus.

Cough suppression is not generally recommended for children (and usually not adults) with cough. The cough is a built in protective mechanism that serves some very important services. First, it helps clear mucus from the airway. Second, it protects the airway from aspiration of a foreign body. In addition, the cough may help your doctor determine if there is an underlying disease.

The use of cough suppression is not recommended in children as they have proven not beneficial and may even be harmful. Expectorants have also not proven to be effective in children.

In adults the use of over-the-counter cough medicine is mildly effective at best. Products like Robitussin DM and Delsym can be tried, but do not expect dramatic results.

Instead of treating the cough itself, treat the cause. Common causes of cough and their treatment include:

1. Viral infections of the respiratory tract are treated with nasal saline, rest, increased fluids and cool mist vaporizers.
2. Allergies are treated with antihistamines and sometimes, nasal steroids.
3. Asthma is treated with inhaled medications that open up the airway.
4. Pneumonia is treated with antibiotics.
5. Most cases of bronchitis are viral and are not related and do not respond to treatment with antibiotics, cough suppression may be tried if there is significant cough that is causing pain or interfering with sleep.

**Cough Medications**

*Table 6: Expectorants*

| **Mucinex** – Mucinex comes in a variety of formulations. Mucinex is guaifenesin, which can be taken 600 mg to 1200 mg every 12 hours. Plain Mucinex is purely an expectorant, which means that it helps remove mucus from the respiratory tract. The pill formulation of this medication is meant for those over the age of 12 and not recommended for those under 12. It should be taken with a full glass of water. The medication is an extended release tablet that should not be broken, chewed or crushed. It comes in a regular formulation and a maximum strength formulation. The regular formulation allows you to take one or two pills (600 mg per pill), whereas the maximum strength is the same medication but each pill is 1200 mg and you take one pill every 12 hours. |
| **Mucinex DM** is a combination production that combines guaifenesin with dextromethorphan. Dextromethorphan is a cough suppressant. Likewise, this medication should not be used in those under that age of 12. It also comes in a regular formulation and a maximum strength formulation. |
| **Mucinex D** is another combination product that combines guaifenesin with pseudoephedrine. This medication provides the expectorant along with a nasal decongestant. It can help not only rid the body of mucus but reduce nasal congestion. |
| **Robitussin** syrup is a shorter acting formulation of guaifenesin as it is dosed every 4 hours. |
| **Robitussin DM** syrup is a combination of guaifenesin and dextromethorphan. It is a combination expectorant and cough suppressant. |
| **Robitussin CF** is a combination of guaifenesin, dextromethorphan and a nasal decongestant. |
decongestant.

**Guaifenesin** comes as a generic formulation 400 mg - which is taken every 4 hours in the adult. A child between the ages of 6 and 11-years-old can take one-half of a tablet every 4 hours and it is not recommended for those under the age of 6.

*Mucinex comes in other formulations that are appropriate for children.*

**Mucinex oral solution** comes as guaifenesin 100 mg per 5 ml. It is used in those over the age of 4-years-old and is dosed 50-100 mg every four hours in the child 4-5-years-old; and in children 6-11-years-old it is given 100-200 mg every four hours. It comes in a variety of flavors including grape and berry. The Mucinex oral solution comes combined with a nasal decongestant in Mucinex Cold.

**Mucinex mini-melts** come in packages that contain 100 mg of guaifenesin.

---

**Table 7: Cough Suppression**

<table>
<thead>
<tr>
<th><strong>Robitussin DM</strong></th>
<th>A product already discussed above. The DM component of the medication is dextromethorphan, which is the cough suppressant.</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Dextromethorphan polistirex (Delsym)</strong></td>
<td>An extended release suspension that provides cough suppression for 12 hours. It is dosed for those 12-years-old and older, 2 teaspoons every 12 hours; in those 6-11-years old, one teaspoon every 12 hours; and for those 4-6-years-old, ½ teaspoon every 12 hours. Make sure you read the labeling – some of the Delsym products are not indicated for children.</td>
</tr>
</tbody>
</table>

---

**What to do**

When affected by a cough, evaluate your symptoms using the worksheet below. The worksheet will help you evaluate your symptoms and help you determine the cause of your cough. Try to treat the cause of the cough. Cough suppression may be tried if there is significant cough that is causing pain or interfering with sleep. The use of an expectorant can be considered if you are affected by thick mucus that you cannot expel. In addition, increase your intake of clear fluids.
Worksheet for cough

1. Is the cough acute or chronic? ____________________________________________

2. How did it come on: Slow or fast? _________________________________________

3. How long has it been present: in hours, days or weeks? ____________________

4. What makes the cough better/worse? _____________________________________

5. What is the cough like? Is it dry, wet, productive, non-productive?__________

6. Is the cough worse at any particular time of the day? Post-nasal drip from sinus
   infections tend to make the cough worse in the morning or right when the person
   goes to bed. Middle of the night cough often occurs from asthma, infection of the
   trachea or a cough that persists after an upper respiratory cough.
   ________________________________________________________________

7. Are there any other signs and/or symptoms: Fever, wheezing, sneezing, itchy
   eyes, runny nose, is there any spitting up blood?
   ________________________________________________________________

8. What does it sound like? Is it barky, moist, dry or paroxysmal. Barky cough may
   indicate a croup in the young child. A staccato sound (rapid cough-cough-cough) may
   indicate a viral or atypical pneumonia. Paroxysm cough (spasms of uncontrollable coughing) may indicate a viral pneumonia or pertussis.
   ________________________________________________________________

9. If the cough is productive, what is coming up? Is the mucus thick or thin? Is
   there blood in the mucus?
   ________________________________________________________________
10. Are there any other symptoms suggestive of the diagnosis?  
________________________________________________________________________

11. Are there any other currently known diagnoses that may explain the cough?  
________________________________________________________________________

12. Are there any risk factors for HIV or tuberculosis? HIV: multiple sexual partners, men who have sex with men, intravenous drug use; Tuberculosis: living in a country where it is common such as Africa, living in close quarters, those in jail, a current diagnosis of HIV, cancer or AIDS? 
________________________________________________________________________

13. Has there been any recent medication changes?  
________________________________________________________________________

14. Has there been any travel? To the southwest United States? (Fungal infection)  
________________________________________________________________________

15. Is there an exposure to chronic irritants? This may include: allergens, dust or smoke.  
________________________________________________________________________

16. Is there any abdominal pain? This could indicate a pneumonia.  
________________________________________________________________________

17. Is there any weight loss, slow weight gain or foul smelling stools? Cystic fibrosis should be considered. ______________________________________________________________________

18. Is there any night sweats? Night sweats along with cough often bloody may indicated tuberculosis. ______________________________________________________________________
19. Is there any muscle soreness? This would indicate a viral infection or a walking pneumonia.

20. Is there a history of allergies? This makes cough from post-nasal drip more likely?

21. Is there recurrent pneumonia? If there is recurrent pneumonia it could indicate a more serious underlying condition such as cystic fibrosis or a disease where the immune system does not work as well.

22. Is the individual with a cough having trouble breathing? Are they using extra muscles to get air in? Are they uncomfortable or extremely anxious? This indicates a more serious problem and requires immediate medical attention.

23. Is there a fever? How high is it? Fever would indicated an infection as a possible cause.

24. How fast is the breathing and heart rate? If a fever is present the heart rate and breathing rate may be slightly elevated.

25. Is there any discharge coming from the nose? What does it look like?
26. Is there any notable wheezing? Wheezing indicates that the breathing tubes are not fully open and a whistling sound is heard as the air tries to get through. It may indicate asthma.
Chapter 29: Sore throat

Viruses cause the majority of sore throats. Bacteria cause 5-15% of sore throats, but those between the ages of 5-15-years-old have a higher incidence of bacterial causes of sore throat. In this group, 15-30 percent of sore throats may be caused by Group A Beta Hemolytic Streptococcus (GABHS) better known as strep throativ. Certain factors can help determine if the sore throat is caused by a bacterium or a virus. Viruses that cause sore throat are more commonly accompanied by cough, stuffy nose, red eyes and fatigue.

Possible diagnoses

- **Viral sore throat** – there are over 200 viruses that cause the common cold and each presentation may be a little different. Many of these viruses are linked to sore throat. Below some specific viruses that cause sore throat will be discussed.
- **Hand-foot and mouth disease.** This is caused by a virus that is called the Coxsackie virus. It causes blisters on the hands and feet as well as in the mouth or throat.
- **Infectious mononucleosis** can also cause sore throat. This sore throat is typically severe and associated with pus (white patches) in the throat. This disease is associated with swollen lymph nodes – particularly the glands on the back of the neck. It sometimes comes with stomach pain due to an enlarged liver or spleen. Those who are treated with penicillin will usually develop a rash (90% of the time). It is most common in those who are 10-25 years old and is accompanied by fatigue and a lingering sore throat.
- **HIV** is a rare cause of sore throat. Individuals who have risk factors for HIV (multiple sexual partners, men who have sex with men, intravenous drug users) who present with a sore throat should have this diagnosis considered.
- **Bacterial sore throat.** The most common cause of bacterial sore throat is GABHS. Other bacteria can sometimes cause sore throat.
- **Fungal infections rarely cause sore throats.** Candida infections are a common cause of fungal sore throat. The individual will have a sore throat with a white
coat on the tongue and in the oral cavity that looks like cottage cheese. The white coating will bleed if it is scraped off.

- Peritonsillar abscess is a serious cause of sore throat and presents with fever, feeling wiped out, a hot potato voice, difficulty swallowing, painful swallowing, ear pain and difficulty opening the mouth.
- Miscellaneous causes of sore throat include: persistent cough, smoking, gastroesophageal reflux, postnasal drip secondary to runny nose, allergies, foreign body and thyroiditis (inflamed thyroid gland).

**Complications**

Most sore throats are caused by a virus and go away on their own. It is important that all health care consumers are aware of when sore throats can be serious and when they are likely self-limiting.

Some serious complications include:

- Throat abscess (pus filled infection in the throat) may lead to breathing problems as the swelling in the throat reduces the ability to breath.
- Diphtheria (a rare bacterial infection that can cause sore throat) can lead to respiratory failure.
- Untreated GABHS can affect the heart valves and has the potential to lead to heart failure.
- Peritonsillar abscess (pus behind the tonsils) can cause sore throat or can be a complication of GABHS.
- Streptococcal infections have the potential to attack the kidneys.

**Red flags**

- High fever
- Drooling
- Difficult time opening the mouth
- Hot potato voice (muffled voice, sounds like you have a mouthful of hot potatoes)
- Uvula (piece of tissue that hangs down in the back of the throat) deviating to one side
- One swollen tonsil
- Difficulty breathing
Treatment

Most cases of sore throat are either caused by a virus or GABHS. If strep throat is present treatment with antibiotics is important and if it is not present treatment of the symptoms is all that is necessary. Treatment of strep throat will reduce rheumatic fever, abscess formation, transmission and improve comfort.

Treatment of strep throat is with penicillin. Children sometimes receive amoxicillin, as its suspension tastes better. There are multiple other options for those allergic to penicillin.

Sore throat pain can be quite debilitating – whether it is caused by a virus or bacteria - and managing that pain is a critical part of treatment.

Oral medications used to treat the pain include ibuprofen, acetaminophen, naproxen or acetaminophen/codeine (in severe cases). The use of medications to reduce pain and fever, in addition to reducing symptoms, may help shorten the course of disease by one to two days.

Topical medications are available in many over-the-counter formulations (see table below) and some can be made at home. Most OTC products are very similar, but there is some evidence that the medication Dyclonine is most effective in relieving pain. This is the active ingredient in the product Sucrets.

A common home remedy is salt-water gargles, which can be made by adding one-fourth of a teaspoon of salt to 6-8 ounces of warm water. This concoction can be gargled and spit out every 3-4 hours. Sugar-free or regular Popsicles can help ease the discomfort of a sore throat.

Multiple over-the-counter medications are available for treating sore throat. They come in sprays and drops (see chart at end of the chapter).

Certain foods can help the throat feel better. For example, warm or cool liquids soothe and moisturize the throat. Nasal saline can moisturize the nasal passages and clean mucus out of the nose. This will reduce the amount of post-nasal drip, which will help reduce throat discomfort. Herbal teas may be helpful in the treatment of sore throat. Throat coat – a herbal tea - has a demulcent that is more effective at providing relief than regular tea.
Certain prescription medications have the potential to aid a sore throat. Viscous lidocaine is a medication that comes as a thick liquid that the healthcare provider can prescribe that will numb the throat. It can also be mixed with other liquid medications such as liquid Benadryl and/or Maalox to ease the discomfort.

Steroids are used in some patients with sore throats. This is a prescription given by the doctor and can be given by mouth or as a shot. Steroids reduce the inflammation of a severely inflamed throat.

Home remedies for a sore throat:

- Salt water gargles as outlined above.
- A cool mist humidifier should be used. Many sore throats are caused by or exacerbated by dryness; the moisture that a cool mist humidifier provides can improve symptoms.
- Suck on a sour drop. Lemon drops or another type of drop will stimulate saliva and reduce throat pain.
- Drink tea with honey as this will coat the throat.

**Follow up**

Improvement in the sore throat caused by a bacteria or virus is typically noted in 2-3 days. When there is no improvement or a worsening of symptoms noted a follow up with your healthcare provider should be attained to rule out a more serious (cellulitis or abscess) or another underlying condition (mononucleosis or chronic post-nasal drip).

**What you need to know**

If you are diagnosed with strep throat:

- Do not infect others. Do not come in close contact with others for 24 hours after starting antibiotics.
- Removable oral appliances (e.g. retainers) should be cleaned completely.
- A new toothbrush should be used after 24 hours.
- Complete the entire course of antibiotics or resistance to that antibiotic may occur.
- Symptoms that do not improve by 72 hours or get worse after 48 hours require a medical evaluation.
• Do not take any antibiotics that are lying around the house for a sore throat without visiting the health care provider. Antibiotics may invalidate a throat culture.

**Over-the-counter products for sore throat**

**Chloraseptic spray**  Phenol 1.4% spray can be used for those 3 and older. It is to be sprayed and held in place for 15 seconds and then spit out every 2 hours. Five sprays for those 12-years-old and older and three sprays for those 3-11-years old.

**Chloraseptic max**  Phenol 1.5% (slightly higher level) and glycerin 33% which is a demulcent.

**Halls (Halls-Plus)**  Menthol 7 mg – marketed as a cough suppressant/oral anesthetic

**Halls Breezers**  Pectin throat drops – 7 mg of pectin, which is an oral demulcent. They are meant for those five and older

**Sucrets**  Dyclonine hydrochloride 2.0 mg which is a sore throat/oral anesthetic. It is indicated for those 6 and older and can be repeated every 2 hours, no more than 10 per day

**Luden’s**  Pectin 2.8 mg marketed as a oral demulcent

**Ricola**  Menthol 4.8 mg marketed as a cough suppressant and oral pain reliever

**Cepacol**  Benzocaine 15 mg (oral anesthetic) plus menthol 3.6 mg oral analgesic. Can be give to those five and older and repeated every 2 hours

**Cepacol (sore throat and cough)**  Benzocaine 7.5 mg and 5.0 mg of dextromethorphan (cough suppressant). Individuals 12 and over should take 2 lozenges every 4 hours (max 12 in 24 hours), Individuals 6-12 should take one every four hours (max 6 in 24). It should not be used n those under 6

**Cepacol (Sore throat and Coating relief)**  Combines benzocaine 15 mg and pectin 5.0 mg and can be used every 2 hours in those over the age of 5.

**Tylenol cough and sore throat**  An oral liquid that contains acetaminophen (Tylenol and Dextromethorphan). Nothing in the medication directly works on the throat, but acetaminophen is a general pain reliever that will provide some relief and the liquid may provide an very temporary rush of relief.
Chapter 30: Allergies

Allergies are a broad category of disorders, but allergic rhinitis is the allergic subclass that will be discussed here. Allergic rhinitis is an allergic reaction that is associated with predominately nasal symptoms and is associated with sneezing, runny nose and watery eyes.

Risk factors

Many factors increase the risk of allergies.

- Maternal smoking
- Living in areas of high pollution
- Higher socioeconomic status
- Exposure to indoor allergens as a child
- Early introduction of food or formula as an infant
- Non-Caucasian race
- Genetics
- A family history of allergies, asthma and eczema increases the risk of allergies
- Personal history of asthma and/or eczema

Allergies usually presents with:

- Clear, runny nose
- Sneezing
- Nasal congestion
- Itchy eyes, nose and throat
- Frequent clearing of the throat
- Watery, red, swollen eyes
- Fatigue
- Headache

How common are allergies

Allergies are a very common problem\(^{vii}\).

- 25% of individuals suffer from allergies at some point in their life.
• More than 50% have the condition for greater than 11 years.
• Slightly less than 50% of those with allergies report symptoms for more than 2 seasons per year.
• In adults, men and women are equally affected.
• More women reported persistent allergies than men.
• In children, more boys are affected than girls.
• The average age of onset is 8-11 years old.

What causes allergies
Many environmental substances can cause allergic rhinitis. Common allergens include:
• Ragweed
• Grass pollen
• Animal dander
• Mold
• Dust

Who needs to see a doctor
• When there is evidence of a secondary infection such as a sinus infection (fever, facial pain, thick, discolored nasal discharge; an ear infection (ear pain, fever); or pneumonia (fever, productive cough, chills or breathing difficulty).
• An asthma exacerbation – wheezing, shortness of breath or worsening cough
• Allergy symptoms that are not responsive to over-the-counter medications.

Medications
Often times lifestyle modifications and elimination of triggers are not enough to manage the disease and medications need to be used. It is important to have a solid handle on your symptoms as some medications work better for specific symptoms. Those with eye symptoms should be treated with allergy eye drops. Oral antihistamines can treat sporadic symptoms. Nasal congestion is best managed with decongestants and some prescription nasal sprays.
Medications typically do not work when they are not taken. Individuals with persistent disease need to be treated continually or symptoms will return.

**Oral antihistamines** are the most common initial treatment for allergies, mainly because of their availability and ease of use. Antihistamines treat runny nose, red watery eyes, sneezing and itching. They do not treat nasal congestion but many products come combined with decongestants.

Older antihistamines - chlorpheniramine (Chlor-Trimeton), diphenhydramine (Benadryl) and hydroxyzine (Atarax) - are associated with more side effects, particularly sedation, and are less commonly used when compared to newer medications. The most common over-the-counter first-generation antihistamine is diphenhydramine.

Second-generation medications have improved dosing schedules and are less commonly associated with sedation. There are five second-generation antihistamines. Two are available over-the-counter. Multiple studies have demonstrated that cetirizine (Zyrtec) is the most potent over-the-counter second-generation antihistamine. Cetirizine and loratadine are the two over-the-counter second-generation antihistamines.

Oral antihistamines are often used as first-line options in the management of allergic rhinitis due to their ease of use.

**Other over-the-counter medications**

**Nasal Cromolyn**

Cromolyn sodium (Nasalcrom) is an over-the-counter medication used in the management of allergic rhinitis. It requires frequent dosing and is given one puff per nostril every 4-6 hours. It is not as useful for immediate relief and it may take a week before benefit is realized. It is not as potent as nasal corticosteroids.

**Nasal Saline**

Nasal saline is a frequently overlooked option for allergies. It removes factors that cause allergies and improves mucus clearance. Everyone who has allergies should use nasal saline.

Two primary types of nasal saline are normal saline and hypertonic saline. Hypertonic saline has a higher concentration of salt in it. It is hyped to be more effective at drying the nose than normal saline. It also is more likely to cause a burning and stinging sensation when used.

**Eye Symptoms**
When allergies affect the eyes, there are two ways to manage them. Take an oral antihistamine (all of which have systemic effects). Second, you may use eye drops to deliver the medication directly in the eyes.

Some people are able to use drops used for dry eyes to effectively manage their eye symptoms. These drops can help flush away allergens, but do not have any medication that directly treats allergies.

Many people with severe eye symptoms need medicated eye drops. Many products are a combination of antihistamines and mast cell stabilizers and effectively treats red, watery and itchy eyes (see table at the end of the chapter). For eyes that are inflamed and painful prescription anti-inflammatory drops may be helpful.

**Prescriptions medications**

When a trail of environmental control and over-the-counter medications fail to adequately control allergies then a visit to the doctor is necessary. The doctor will likely recommend some other medications or refer you on for allergy testing.

Other medications to help treat allergies include: leukotriene receptor blockers, nasal steroids, nasal antihistamines and nasal anticholinergics.

Leukotriene receptor blockers inhibit chemicals in the body that are responsible for allergies. This class of drugs is commonly used in those with asthma. The most popular drug in this class for the treatment of allergies is montelukast (Singulair).

Nasal corticosteroids are recommended as first-line treatment of moderate to severe persistent allergies. Immediate relief will not be noticed with them. Some benefit is usually appreciated by the fourth day of use and it may take a couple of weeks before full effects are noticed. They work by reducing the amount of inflammation in the nose. They are often combined with oral antihistamines, which will provide some immediate relief.

Spraying antihistamines up the nose is another method to deliver medicine to the allergic patient. Topical antihistamines come in a product called azelastine (Astelin) and Astepro.

Anticholinergic medication - ipratropium bromide (Atrovent nasal spray) – can also help dry a runny nose. This medication comes in two strengths 0.03 and 0.06 %. Only the 0.03% is indicated for allergies while the 0.06% is indicated for runny nose
associated with the common cold. This medicine can be used in those over five and is dosed two sprays, 2 to three times a day.

**Stuffy nose**

Allergies are often accompanied by nasal stuffiness. Some of the medications already discussed can provide relief from nasal congestion – topical antihistamines and nasal corticosteroids. Effective and rapid relief from nasal congestion can be attained with OTC decongestants.

Decongestants are dangerous in some people. Decongestants have the potential to increase the blood pressure, heart rate and make you feel jittery. Checking with your doctor or health care provider is important if you have high blood pressure, heart disease, heart rhythm problem, diabetes, thyroid problems, an enlarged prostate or glaucoma.

Many allergy medications combine decongestants and antihistamines. When you see the allergy medication with a “D” on the back, for example, Claritin D, this has a decongestant in it.

When your symptoms are a combination of sneezing, runny nose and watery eyes with nasal congestion, than the use of an allergy product with a decongestant will be most helpful in managing symptoms.

Decongestants come in a variety of forms (see chart at end of chapter). They can be taken orally, topically (as a nasal spray) and as a vapor.

**Severe symptoms**

In rare situations, doctors need to use oral corticosteroids. These are powerful anti-inflammatory medications and are used when symptoms are severe. They are typically given for less than 7 days. Allergic rhinitis is not an indication for long-term use of oral corticosteroids.

**What should a patient do with allergies?**

When you come down with the hallmark symptoms of allergies – sneezing, watery eyes, runny nose and nasal congestion – what should you do?

1. The first thing to do is take an inventory of your symptoms. This is best accomplished by maintaining an allergy log (see end of chapter) With the use of this allergy log you can determine when your allergies are worst, which
symptoms are most bothersome, what is aggravating them and how effective your treatments are at controlling the symptoms.

2. Attempt to eliminate any factors that may be making the allergies worse.

3. If this does not work, a trail of some over-the-counter medication is appropriate. The most popular and potent over-the-counter medication is cetirizine (Zyrtec). If you are plagued by congestion, the addition of decongestants may be helpful. Use caution with the decongestant part if you are affected by high blood pressure, heart disease, thyroid disease, heart rhythm problem, diabetes, prostate enlargement or glaucoma.

4. If symptom control is unsuccessful with over-the-counter medications, set up an appointment with your health care provider.

5. Continue to work on environmental control and track your symptoms.

6. If after a two or three appointments with your primary doctor your symptoms are not controlled than seeing an allergy specialist is recommended.

**What the doctor will do?**

If environmental control and over-the-counter medications have not provided adequate relief than the health care provider may prescribe some of the other medications discussed above.

When this does not adequacy control symptoms than allergy testing or immunotherapy may be indicated.

The primary doctor will provide a complete evaluation and may decide on an earlier referral if other symptoms suggestive of a problem are evident. Certain conditions that would warrant evaluation by a specialist include:

- Nasal polyps which would be suggested by chronic congestion, runny nose, post-nasal drip and reduced smelling and/or taste
- One sided nasal congestion
- Persistent bloody discharge
- Complications of allergies such as recurrent sinus or ear infections
## Over-the-counter allergy products

### Over the counter Antihistamines

<table>
<thead>
<tr>
<th>Medication</th>
<th>Dose</th>
<th>Side effects</th>
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<tbody>
<tr>
<td><strong>First-generation antihistamines</strong></td>
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<tr>
<td>Diphenhydramine (Benadryl)</td>
<td>For those 12-years-old and older take 25-50 mg every 4-6 hours; 6-11-years-old take 12.5 to 25 mg every 4-6 hours; not recommended for those under 6-years-old</td>
<td>Sedation, constipation, blurred vision, dizziness, difficulty urinating, can cause excitability in kids</td>
</tr>
<tr>
<td>Chlorpheniramine (Chlor-Trimeton)</td>
<td>For those 12-years-old and older take one tablet (4 mg) every 4-6 hours as needed; 6-11-years-old take one-half tablet every 4-6 hours as needed, not recommended under 6-years-old</td>
<td>Sedation, constipation, blurred vision, dizziness, difficulty urinating, can cause excitability in kids</td>
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<tr>
<td><strong>Second-generation antihistamines</strong></td>
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<tr>
<td>Cetirizine (Zyrtec)</td>
<td>5-10 mg orally every day for those over 5-years-old; for those 6-months and older it is indicated for perennial allergic rhinitis - and the dose is reduced to as low as 2.5 mg for those between the ages of 6-months and 5-years-old.</td>
<td>Sedation and it is therefore dosed at night. It also can cause diarrhea, dry mouth, nervousness and insomnia</td>
</tr>
<tr>
<td>Loratadine (Alavert, Claritin)</td>
<td>Dosed as 10 mg in the adult once a day. Loratadine is for those over 2-years-old with seasonal allergies</td>
<td>Headache, sleepiness, fatigue, dry mouth, Kids may show: cold symptoms, wheezing, nervousness, abdominal pain</td>
</tr>
</tbody>
</table>
## Over-the-counter decongestants

<table>
<thead>
<tr>
<th>Medication</th>
<th>Dose</th>
<th>Uses</th>
<th>Side effects</th>
<th>Cautions</th>
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<tbody>
<tr>
<td><strong>Oral decongestants</strong></td>
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<tr>
<td>Pseudoephedrine</td>
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<tr>
<td>Sudafed (Standard formula)</td>
<td>Adult 30-60 mg every 4 to 6 hours</td>
<td>Nasal congestion, sinus pressure</td>
<td>Increased heart rate, increased blood pressure, nervousness, insomnia, dizziness</td>
<td>High blood pressure, heart disease, thyroid disease, diabetes, prostate disease</td>
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<tr>
<td></td>
<td>6-11-years-old – 30 mg every 4-6 hours</td>
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<td>Under 6 – not recommended</td>
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<tr>
<td>Sudafed 12-hours</td>
<td>120 mg every 12 hours in those over 12-years-old</td>
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<tr>
<td>Sudafed 24-hours</td>
<td>240 mg every 24 hours in those over 12-years-old</td>
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<tr>
<td>Pseudoephedrine liquid</td>
<td>6-11-years-old - 30 mg of liquid every 4-6 hours</td>
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<td>4-5-years-old - 15 mg of liquid every 4-6 hours</td>
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<td>Under 4 years-old not recommended</td>
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<td><strong>Phenylephrine HCl</strong></td>
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<tr>
<td>Sudafed PE (Phenylephrine HCl)</td>
<td>12-years-old and older use 10 mg every 4 hours</td>
<td>Nasal congestion, sinus pressure</td>
<td>Increased heart rate, increased blood pressure, nervousness, insomnia, dizziness</td>
<td>High blood pressure, heart disease, thyroid disease, diabetes, prostate disease</td>
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<tr>
<td></td>
<td>Under 12-years-old - not recommended</td>
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<tr>
<td>Pseudoephedrine PE liquid</td>
<td>6-11-years-old use 10 mg every 4 hours</td>
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<td>4-5-years-old use 5 mg every 4 hours</td>
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<td>Under 4-years-old - not recommended</td>
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# Over-the-counter allergy eye drops

<table>
<thead>
<tr>
<th>Drug</th>
<th>Dosage</th>
<th>Use</th>
<th>Side Effects</th>
<th>Note</th>
</tr>
</thead>
<tbody>
<tr>
<td>Naphazoline pheniramine (Naphcon A/Opcon A)</td>
<td>Indicated for those over the age of 6 and is available over the counter and is usually dosed 1-2 drops four times a day</td>
<td>Treats red and itchy eyes due to allergies</td>
<td>Headache, stinging, burning, swelling of the eyes</td>
<td>Antihistamine and mast cell stabilizer</td>
</tr>
<tr>
<td>Ketotifen (Zaditor, Zyrtec eye drops)</td>
<td>One drop in each eye twice day for those over the age of 3.</td>
<td>Treats red and itchy eyes due to pollen, grass, animal hair/dander and ragweed</td>
<td>Eye redness, stinging, burning, headache, runny nose</td>
<td>Antihistamine</td>
</tr>
</tbody>
</table>
# Allergy Log

<table>
<thead>
<tr>
<th>Time</th>
<th>Sneezing</th>
<th>Runny nose</th>
<th>Nasal congestion</th>
<th>Sore throat</th>
<th>Red, itchy, watery eyes</th>
<th>Fatigue</th>
<th>Headache</th>
<th>Medications</th>
<th>Activity</th>
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Night

Rate the severity of the symptoms

0 - none; 1 - mild; 2 - moderate; 3 severe; 4 - unbearable
Chapter 31: Red eye

The red eye is the red appearance of the open eye secondary to dilatation of blood vessels in the eye.

What causes of red eye

There are many causes of the red eye, but the most common cause is an infection of the conjunctiva (the clear membrane that covers the sclera) or an eye allergy. This section will look at some of the common causes and discuss them.

- Conjunctivitis is one of the most common causes of a red eye. Infection caused by a bacterium or virus commonly causes conjunctivitis. In infectious conjunctivitis there is eye discharge, no pain, no vision changes (except when eye discharge distorts vision) and no or mild sensitivity to light.

- Allergy is another common cause of conjunctivitis and red eye. It presents with clear watery discharge, a red eye and itching. It may be associated with a runny nose and sneezing.

- Subconjunctival hemorrhage is a focal red patch that typically affects one eye without any symptoms such as tearing or irritation. It is bleeding beneath the conjunctiva (outer layer of the eye). It often results from sneezing, coughing or physically straining.

- Episcleritis is similar to conjunctivitis but is typically without discharge (or a very small amount). It is associated with one eye being red with mild irritation. Episcleritis is a very focal irritation of the eye.

- The cornea can also become red. This can be a more serious form of red eye. It is generally differentiated from problems with the conjunctiva by more pain, significant light sensitivity and a visible lesion in the eye that the doctor notices when there is a staining substance put in the eye.

- A corneal abrasion or foreign body is a more serious cause of red eye. There is typically a history of injury and there is a break in the protective clear coat of the eye. It is usually caused from trauma, content lens use or foreign body.
• A red painful eye associated with blurred vision, headache and nausea may indicate acute narrow angle glaucoma and is a medical emergency.
• Anterior uveitis presents with light sensitivity, pain, decreased vision, and redness most pronounced around the iris (the colored part of the eye).

**Who needs to see a doctor**

As you can see from above there are many causes of the red eye. Most cases of red eye are not serious, but it is important to identify which situation may be serious. Knowing when to go to the doctor is critical. Some times going to the doctor needs to occur on an urgent basis, including all of the red flags below.

**Red flags**

- Sudden severe pain with nausea and vomiting
- Significant eye pain
- Limited eye movement
- Your pupil looks different
- Skin rash with blisters around the eye (this could be shingles that affects the sight)
- Red rash around the eye that is tender, swollen or hot
- Decreased vision/double vision
- Light causing pain in the eye
- Profuse discharge from the eye. Discharge that rapidly reappears after being wiped away.
- A red eye after an eye injury
- If you got chemicals in the eye
- Recent eye surgery
- Other causes of red eye are in need of management by a qualified health care provider on a less urgent basis including: bacterial pink eye or an eye problem that is not responsive to home treatment.
What to do

If you have one of the red flags above - seek medical help immediately. Otherwise, complete the worksheet below. This will give you some clues as how to proceed.

Only a limited number of conditions are treatable with over-the-counter products for red eye. If the red eye is caused by allergies, there are multiple OTC products that can be helpful.

If you suspect an allergy – itchy, watery eyes, which are accompanied by sneezing – treating with allergy eye drops is a reasonable option (see chart in chapter on allergies). Another clue to allergy is that there has been recent exposure to animals.

If you suspect a viral infection causing the red eye, than using moisturizing eye drops may provide comfort (see chapter on dry eye). The use of a vasoconstrictor/antihistamine combination can be used if there is itching (Naphcon-A/Opcon-A).

Viral infections are more likely if the person has had close contact with someone with a red eye. Viral eye infections are very contagious.

If you suspect a bacterial infection, a trip to the health care provider is indicated for an antibacterial eye drop.
Red Eye Worksheet

1. How severe is the pain (0-10 scale)? The pain should be non-existent or mild. ____________________________________________________________

2. Is there photophobia (light hurting the eye)? If there is a doctor should be consulted. _______________________________________________________

3. Is there any vision changes? If there is a doctor should be consulted. _______________________________________________________  

4. When did the redness start? Is it always there? ________________________________________________________________

5. Is there any discharge? What is the discharge like (stringy, milky, green, yellow, white, thick, thin, watery, etc). ____________________________________________________________

6. Has there been any exposure to anyone else with eye infections or any exposure to chemicals or toxic substances? ____________________________________________________________

7. Are the eyes matted together in the morning? This may indicate a bacterial infection of the eye. ____________________________________________________________

8. Has there been any prior episodes of this? ________________________________________________________________

9. Is there any itchiness? This suggests allergy. ________________________________________________________________
10. Does it feel like something is stuck in the eye? A doctor should evaluate this.

11. Is there any headache, seeing of halos, or nausea/vomiting? This could indicate
narrow angle glaucoma.

12. Has there been any recent trauma? A doctor should evaluate this.

13. Is there any past medical history of autoimmune disease (Lupus or Sjogren’s
disease), allergies, or recent use of topical eye medications?

14. Was there a recent cold, allergies, rash around the eye or vision changes?
Chapter 32: Dry Eye

The eye needs moisture and lubrication for it to function properly. Without it vision will be compromised and comfort will be minimized. The eye provides its own moisture by producing tears, which are made up of water, oil, mucus and antibodies.

Paradoxically, some patients with dry eyes will have large volumes of tears in the eye. This is the body's response to the dry eye attempting to lubricate the eye. When the body excretes all of these tears in the dry eye, it is not regular tears, mainly just water. It does not have all of the other components of tears and will not provide relief to the symptom of dry eye.

Dry eye can lead to discomfort, pain, stinging or itching. It can also be associated with redness, blurred vision, mucus in the eyes, sensitivity to light or a feeling of something being in the eye.

What causes dry eye

Causes of dry eyes are:

- Drying out of the tear film – often due to dry air
- The environment – dry air, excessive sun, wind or high altitude
- Air conditioning or high heat
- Poor tear quality – Tears are made up of oil, water and mucus - if the balance is not optimal than dry eye could be present
- Not producing enough tears – more common in older adults
- Aging
- Eyelid problems such as inflammation of the eyelids or an abnormal position of the eye lids (eyelids turned out or in)
- Decreased blinking – which is often seen in those with Parkinson's disease
- Imbalance in the tear-flow system
• Medications – antihistamines, some antidepressants, Accutane (acne drug), 
some narcotic pain relievers, diuretics, sleeping pills and some birth control pills

• Diseases – Sjogren's syndrome, rheumatoid arthritis

**Who needs to see a doctor**

Many causes of dry eyes are treatable by environmental manipulation, over-the-
counter eye drops and sometimes adjustment in the medications you take. If simple 
measures to manage dry eye are not working than following up with a health care 
provider is the next step. If you suspected you have a disease process that causes dry 
eye, you should see a doctor.

Long-term dry eyes that are not treated can lead to inflammation of the eye and 
possibly infection or even scarring of the cornea.

**Treatment**

It is difficult to cure dry eyes, but they can be treated. The first step is to look at the 
potential causes and see if they can be modified. Some lifestyle modifications can 
really help with dry eye and should be implemented in those with dry eye (see table 8).

*Table 8: Lifestyle modifications for dry eye*

- Wear goggles when swimming
- Cover the eyes with glasses on windy days
- Use a humidifier in the home in the winter
- Do not rub the eyes
- Do not let air blow in your eyes
- Blink regularly
- Do not smoke
- Avoid second hand smoke

If you have inflammation of your eyelids, washing them with diluted baby shampoo 
can significantly improve eyelid inflammation. Sometimes a doctor will prescribe an 
antibiotic eye drop. A surgeon can treat misshapen eyelids if they are severe.
Artificial teardrops – both OTC and prescription - are the most common treatment for dry eyes. Not everyone responds to a single eye drop. It often requires some experimentation to determine which is the best option. The ideal eye drop does not contain preservatives. If they do not contain preservatives, they can be used as often as needed. If there is a particular activity that irritates your dry eyes – make sure you use the artificial tears before that activity.

Do not use an eye drop with a redness remover – it can make the red eye worse.

Ointments tend to last for longer periods of time, but they are associated with blurred vision. Using ointments is good before bed.

For those individuals who do not respond to environmental manipulation and eye drops a trip to the doctor may be indicated. The doctor may try one of the following treatment options.

1. **Restasis** – a prescription eye drop for dry eyes that helps the body increase tear production and decreases inflammation. One drawback is that many people’s eyes burn when they are used.

2. A procedure to temporary close the tear duct that drains tears from the eye can be tried. If it is helpful the tear duct can be closed permanently.

3. Specialized contact lenses help hydrate the eye and can be used in severe cases.

4. Rarely topical steroids are used.

5. Surgery can be done to close the duct that drains tears into the nose. This will allow more tears to remain in the eye.
# Over-the-counter products for dry eye

<table>
<thead>
<tr>
<th>Product</th>
<th>Ingredient</th>
<th>Instructions</th>
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</thead>
<tbody>
<tr>
<td>Refresh Tears</td>
<td>Carboxymethylcellulose sodium 0.5%</td>
<td>Instill 1 to 2 drops in the eyes as needed</td>
</tr>
<tr>
<td>TheraTears</td>
<td>Sodium Carboxymethylcellulose 0.25%</td>
<td>Instill 1 to 2 drops in the eyes as needed</td>
</tr>
<tr>
<td>Systane</td>
<td>Polyethylene Glycol 400 0.4% and Propylene Glycol 0.3%</td>
<td>Instill 1 to 2 drops in the eyes as needed</td>
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<tr>
<td>Visine</td>
<td>Glycerin 0.2%, hyromellose 0.2% and Polyethylene glycol 400 1%</td>
<td>Instill 1 to 2 drops in the eyes as needed, 6 years old and older</td>
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<tr>
<td>GenTeal moderate</td>
<td>Hyromellose 0.3%</td>
<td>Instill 1 to 2 drops in the eyes as needed</td>
</tr>
<tr>
<td>GenTeal moderate-sever</td>
<td>Carboxymethylcellulose sodium 0.25%, hyromellose 0.3%</td>
<td>Instill 1 to 2 drops in the eyes as needed</td>
</tr>
<tr>
<td>GenTeal PM</td>
<td>Mineral oil 15% and white petrolatum 85%</td>
<td>Place ¼ on an inch in the lower lid, one or more time a day</td>
</tr>
<tr>
<td>Refresh Lacri-Lube</td>
<td>Mineral oil 42.5% and white petrolatum 56.8%</td>
<td>Place ¼ on an inch in the lower lid</td>
</tr>
<tr>
<td>Advanced Eye relieve</td>
<td>Glycerin 0.3% and propylene glycol 1.0%</td>
<td>Instill 1 to 2 drops in the eyes as needed</td>
</tr>
<tr>
<td>Sooth XP</td>
<td>Light mineral oil 1.0% and Minteral oil 4.5%</td>
<td>Instill 1 to 2 drops in the eyes as needed</td>
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Chapter 34: Alternative treatments and their effectiveness

Herbal products are often heralded as a safer alternative than prescription and over-the-counter drugs. Sometimes they are, but sometimes they are not.

In addition to safety there are many concerns with herbal medication. First, the Food and Drug Administration (FDA) do not regulate them. Second, companies can put anything into the drug that they want.

Third, labeling can be very confusing on herbal and alternative products. To get the same active ingredient, it may take 1 pill of one product and 4 of another. Fourth, there are different extraction methods used for different companies. One milligram of a product may not equal one milligram from another product.

Drug interactions is a common problem. There are so many drugs and understanding how they interact is problematic. There is limited research on drug interactions with herbal products.

Many products are reasonable to try, but they need to be used with some caution.

- Use only reputable products from reputable companies
- If you use a lot of herbs, it is beneficial to employ the help of herbalist

The next section will look at some popular products and provide a brief overview.

Selected products

Echinacea

Use: Prevents colds and flu as it may stimulate the immune system.

Efficacy: Studies are mixed on how well it works. Most studies suggest that it does not prevent colds and the flu.

Side effects: Echinacea is a fairly safe medication. It may be associated with stomach upset, headache, dizziness and some people have an allergic reaction.

Feverfew

Use: For the prevention of migraine headaches and rheumatoid arthritis.
Efficacy: There is some evidence that suggests that it may help prevent migraine headaches, but more research is needed. It is probably not helpful in rheumatoid arthritis, but it may help those with very mild symptoms.

Side effects: May be associated with GI upset, bleeding and mouth ulcers.

**Garlic**

Use: Multiple reported uses including: high blood pressure, high cholesterol, heart disease and some cancers.

Efficacy: Garlic may slightly lower cholesterol, but research is not overwhelming. There is research to suggest it may slow down the development of heart disease and may lower blood pressure. Garlic has been said to lower the risk of some cancers, but this has not been proven in research.

Side effects: It may give the person who takes it bad breath, heartburn, or an upset stomach. May be associated with increased bleeding.

**Ginger**

Use: Ginger is used to treat nausea/vomiting.

Efficacy: It is effective at reducing nausea in pregnancy. It has not proven overwhelmingly effective in its treatment of nausea associated with chemotherapy or from motion sickness.

Side effects: Ginger is generally safe, but it may cause gas, bloating or heartburn.

**Ginko biloba**

Use: Ginkgo is used for many reasons including fatigue, ringing in the ears, bronchitis, improving the memory, sexual dysfunction, pain in the legs when walking if it is due to fatty blockages and increase cognition.

Efficacy: Variable results. Research suggests that it is helpful in reducing leg pain secondary to blockages in the legs due to fatty blockages. It has mixed results on its effect on memory.
Side effects: Common side effects include: nausea, diarrhea, headache and dizziness. Allergic reaction is possible. It may be associated with bleeding, but otherwise pretty safe.

**Melatonin**

Use: Melatonin is used in insomnia and Jet Lag

Efficacy: While it is considered safe for short periods of time, research shows that it does not work in long-term sleep disorders. It is mildly effective in insomnia. There is little evidence that it helps with jet lag, but it is often used for this purpose. It is somewhat effective for those who are shift workers and need to sleep during the day. While research shows limited effectiveness – it is safe and may be worth a trial.

Side effects: May lead to sedation, headache, nausea, irritability, depression and dizziness.

**SAMe**

Use: S-Adenosyl-L-Methionine is used for three conditions: depression, arthritis and liver disease.

Efficacy: SAMe is likely somewhat effective for depression, but more research is needed until it is widely recommended. It has also shown to help improve pain in osteoarthritis, but not as much as traditional medications. It has some effectiveness in the management of itching secondary to liver disease.

Side effects: Side effects are not common but nausea, diarrhea, gas, insomnia and anxiety may be seen.

**Saw Palmetto**

Use: It helps with urinary symptoms that are caused by a harmless enlargement of the prostate.

Efficacy: Research is mixed on how effective it is. Some studies suggest that it is somewhat effective whereas other research has shown it to be no more effective than a sugar pill.
Side effects: Most side effects are mild, but it may cause an upset stomach, decrease libido and increase blood pressure. Talk to your doctor if you choose to take this supplement.

**St John' Wort**

Use: St. John's Wort is mainly used for depression.

Efficacy: It may be somewhat effective in the treatment of mild depression, but it is not very effective for moderate or severe depression.

Side effects: St. John's Wort is associated with diarrhea, dizziness, nausea, sunlight sensitivity, dry mouth and fatigue. It is also associated with interactions among many other medications. Some common medications it interacts with include antidepressants, digoxin, some drugs for HIV, narcotic pain medication, blood thinners and birth control pills. Combined with antidepressants the side effects of headache, nausea, anxiety may be intensified.
Chapter 35: Summary

Over-the-counter medications are able to manage many conditions. If you learn how to properly use over-the-counter medications you will be able to improve your comfort, reduce your risk and reduce the amount of health care appointments you will need.

This book provides an overview of 30 common conditions. It provided an over of the conditions, including who needs to be evaluated by a health care provider.

Most importantly it provided an overview of over-the-counter products including how and which ones to use.

Utilize the information in this book to safely and effectively treat many common conditions. If used properly over-the-counter products can:

- Reduce doctor visits
- Reduce frustration at the drug store
- Save money due to fewer doctor visits and spending less money buying products that are not effective

The health care system is bad. It is up to you to make sure you are healthy and safe. Do not make the mistake of thinking that going to the drug store and asking the pharmacist what to buy is a good option. Pharmacists and pharmacy technicians are very busy people, who do not have the time to fully and safely evaluate you.

Take responsibility for your health – follow the steps in this ebook.

References


