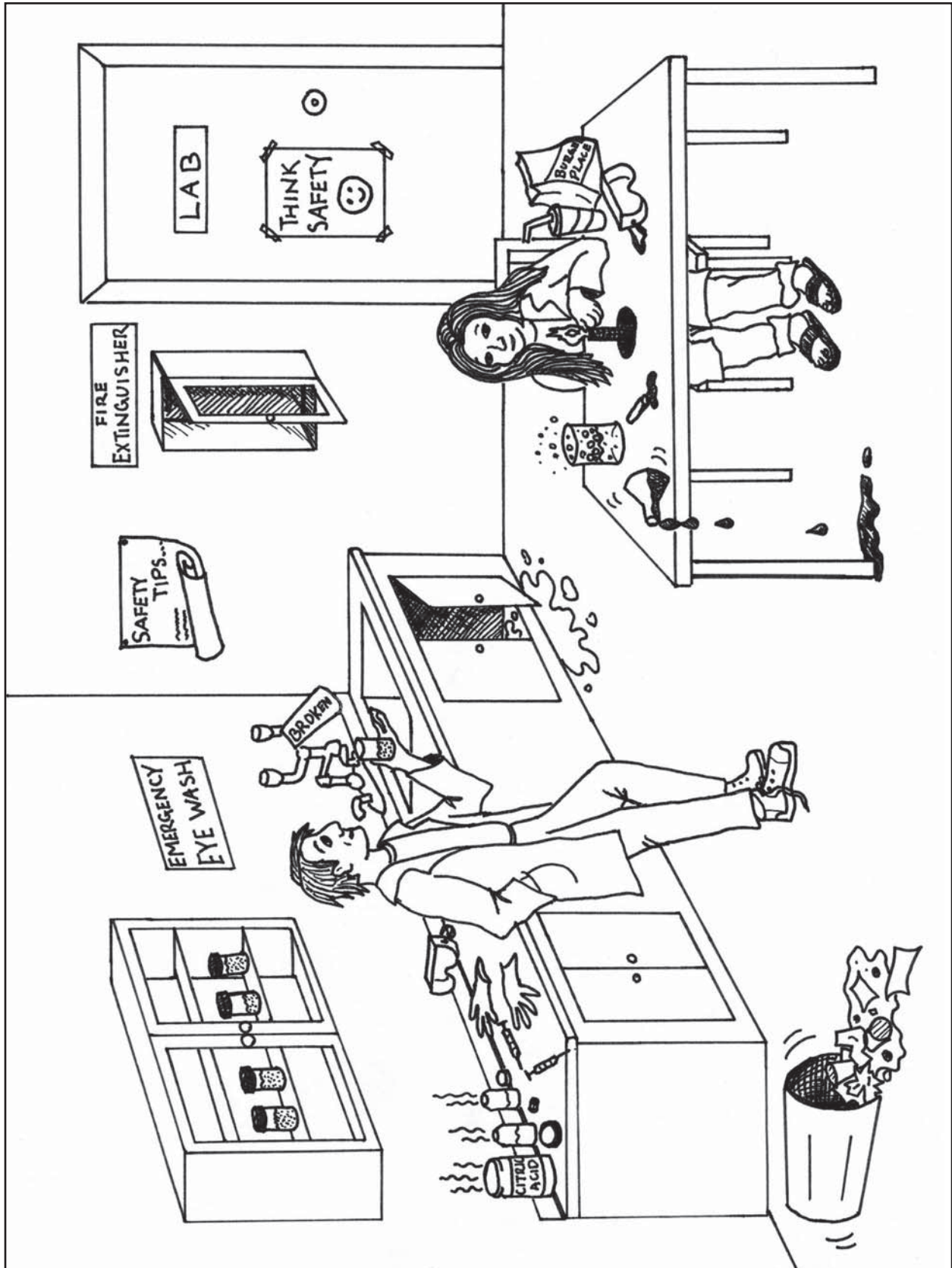


Find the Mistakes

Find the safety mistakes made in the lab.



What Do You Think?

Write two or three sentences to answer each of the following questions:

1. What is mental illness?
2. Name some mental illnesses that you have heard about.
3. How would a person who has a mental illness look or act?
4. If you learned that a new student at school has a mental illness, how would you act toward him or her? How would you feel about him or her?
5. What causes someone to be mentally ill?

What's Happening in the Brain?

Master 1.3, which includes full-color PET images, can be found at the end of the module. Please replace this page with that one.

Analyzing the Cases

Name: _____ Date: _____

Write the letters (A–F) of your two cases at the top of the right-hand columns of the table. Then fill in the information, one part at a time.

Part		Case:	Case:
1	Symptoms and other information		
	Possible health problem(s)		
2	New symptoms and information in Part 2		
	Possible health problem(s)*		
3	Time passed since Part 1 (when symptoms first appeared)		
	Probable health problem*		
	Part(s) of the body affected		

*Consult the *Doctors' Reference Manual* if you need help completing the chart.

**Medical Chart A, Part 1:
History of the Illness**

Patient: Alex A.

Age: 13

Date	Complaint
<u>Yesterday afternoon</u>	<u>Sore throat</u>
	<u>(Patient's mother wondered if it had something to do with a big history test coming up)</u>

**Medical Chart A, Part 2:
Medical Examination Results**

Patient: Alex A.

Age: 13

Exam date: _____

Test	Results	Test	Results
Height:	<u>62 in.</u>	Weight:	<u>111 lbs.</u>
Blood pressure:	<u>Normal</u>	Temperature:	<u>99.4°F</u>
Throat:	<u>Slightly red</u>	Lungs:	<u>No wheezing</u>
Abdomen:	<u>No tenderness</u>	Lymph nodes:	<u>No swelling</u>
Urine test:	<u>Not done</u>	Additional tests:	<u>Strep & mono tests ordered</u>

Additional patient complaints: Stuffy, runny nose

Additional information: _____

**Medical Chart A, Part 3:
Doctor's Notes to Interns**

Patient: Alex A.

Age: 13

You have to decide what the health problem is (that is, make a diagnosis) based on what we have learned from the patient's history and medical exam. Sore throat is a common symptom for many problems, including allergies, colds, the flu, strep throat, and mononucleosis. Compare Alex's symptoms with the information in the Doctors' Reference Manual to decide what's wrong with him.

**Medical Chart B, Part 1:
History of the Illness**

Patient: Alex B.

Age: 13

Date	Complaint
<u>Yesterday afternoon</u>	<u>Sore throat</u>
	<u>(Patient's mother wondered if it had something to do with a big history test coming up)</u>

**Medical Chart B, Part 2:
Medical Examination Results**

Patient: Alex B.

Age: 13

Exam date: This afternoon

Test	Results	Test	Results
Height:	<u>62 in.</u>	Weight:	<u>111 lbs.</u>
Blood pressure:	<u>Normal</u>	Temperature:	<u>102°F</u>
Throat:	<u>Red with white patches on tonsils</u>	Lungs:	<u>No wheezing</u>
Abdomen:	<u>No tenderness</u>	Lymph nodes:	<u>Swollen</u>
Urine test:	<u>Not done</u>	Additional tests:	<u>Strep & mono tests ordered</u>

Additional patient complaints: Throat very sore today

Additional information: none

**Medical Chart B, Part 3:
Doctor's Notes to Interns**

Patient: Alex B.

Age: 13

You have to decide what the health problem is (that is, make a diagnosis) based on what we have learned from the patient's history and medical exam. Sore throat is a common symptom for many problems, including allergies, colds, the flu, strep throat, and mononucleosis. Compare Alex's symptoms with the information in the Doctors' Reference Manual to decide what's wrong with him.

**Medical Chart C, Part 1:
History of the Illness**

Patient: Abby C.

Age: 12

Date	Complaint
<u>Two nights ago</u>	<u>Difficulty breathing</u>
	<u>Sore chest</u>

**Medical Chart C, Part 2:
Medical Examination Results**

Patient: Abby C.

Age: 12

Exam date: This morning

Test	Results	Test	Results
Height:	<u>58 in.</u>	Weight:	<u>95 lbs.</u>
Blood pressure:	<u>Normal</u>	Temperature:	<u>101.5°F</u>
Throat:	<u>Normal</u>	Lungs:	<u>Wheezing</u>
Abdomen:	<u>No tenderness</u>	Lymph nodes:	<u>No swelling</u>
Urine test:	<u>Not done</u>	Additional tests:	<u>None ordered</u>

Additional patient complaints: Coughing up mucus

Additional information: No asthma in family; Abby's mother has allergies

**Medical Chart C, Part 3:
Doctor's Notes to Interns**

Patient: Abby C.

Age: 12

You have to decide what the health problem is (that is, make a diagnosis) based on what we have learned from the patient's history and medical exam. Coughing, chest pain, and wheezing are common symptoms for several illnesses including bronchitis, pneumonia, asthma, and allergies. Compare Abby's symptoms with the information in the Doctors' Reference Manual to decide what's wrong with her.

**Medical Chart D, Part 1:
History of the Illness**

Patient: Abby D.

Age: 12

Date	Complaint
<u>Two nights ago</u>	<u>Difficulty breathing</u>
	<u>Sore chest</u>

**Medical Chart D, Part 2:
Medical Examination Results**

Patient: Abby D.

Age: 12

Exam date: This morning

Test	Results	Test	Results
Height:	<u>58 in.</u>	Weight:	<u>95 lbs.</u>
Blood pressure:	<u>Normal</u>	Temperature:	<u>98.5°F</u>
Throat:	<u>Normal</u>	Lungs:	<u>Wheezing</u>
Abdomen:	<u>No tenderness</u>	Lymph nodes:	<u>No swelling</u>
Urine test:	<u>Not done</u>	Additional tests:	<u>None ordered</u>

Additional patient complaints: None

Additional information: Abby has had bronchitis four times in the past year
Abby's mother has allergies and her uncle has asthma

**Medical Chart D, Part 3:
Doctor's Notes to Interns**

Patient: Abby D.

Age: 12

You have to decide what the health problem is (that is, make a diagnosis) based on what we have learned from the patient's history and medical exam. Coughing, chest pain, and wheezing are common symptoms for several illnesses including bronchitis, pneumonia, asthma, and allergies. Compare Abby's symptoms with the information in the Doctors' Reference Manual to decide what's wrong with her.

**Medical Chart E, Part 1:
History of the Illness**

Patient: Jenna E.

Age: 15

Date	Complaint
<u>6 weeks ago</u>	<u>Sadness, poor appetite</u>
	<u>Not interested in favorite sport (volleyball)</u>
	<u>Grades went down</u>

**Medical Chart E, Part 2:
Medical Examination Results**

Patient: Jenna E.

Age: 15

Exam date: This afternoon

Test	Results	Test	Results
Height:	<u>64 in.</u>	Weight:	<u>120 lbs.</u>
Blood pressure:	<u>Normal</u>	Temperature:	<u>98.5°F</u>
Throat:	<u>Normal</u>	Lungs:	<u>Normal</u>
Abdomen:	<u>No tenderness</u>	Lymph nodes:	<u>No swelling</u>
Urine test:	<u>Not done</u>	Additional tests:	<u>Blood tests normal</u>

Additional patient complaints: Jenna is annoyed at having a doctor's appointment;
she wanted to play volleyball this afternoon.

Additional information: Jenna's grandfather died two months ago. In the past two
weeks, her grades have come back up.

**Medical Chart E, Part 3:
Doctor's Notes to Interns**

Patient: Jenna E.

Age: 15

You have to decide what the health problem is (that is, make a diagnosis) based on
what we have learned from the patient's history and medical exam. It's normal to
feel sad after someone close to you dies, but depression is more than just sadness.
Is Jenna depressed or just experiencing normal sadness? Compare her symptoms
with the information in the Doctors' Reference Manual to decide what's wrong.

**Medical Chart F, Part 1:
History of the Illness**

Patient: Jenna F.

Age: 15

Date	Complaint
<u>6 weeks ago</u>	<u>Sadness, poor appetite</u>
	<u>Not interested in favorite sport (volleyball)</u>
	<u>Grades went down</u>

**Medical Chart F, Part 2:
Medical Examination Results**

Patient: Jenna F.

Age: 15

Exam date: This afternoon

Test	Results	Test	Results
Height:	<u>64 in.</u>	Weight:	<u>120 lbs.</u>
Blood pressure:	<u>Normal</u>	Temperature:	<u>98.5°F</u>
Throat:	<u>Normal</u>	Lungs:	<u>Normal</u>
Abdomen:	<u>No tenderness</u>	Lymph nodes:	<u>No swelling</u>
Urine test:	<u>Not done</u>	Additional tests:	<u>Blood tests normal</u>

Additional patient complaints: Jenna is not sleeping well and has no confidence in herself.
She is often angry at her parents.

Additional information: Jenna's grandfather died two months ago. Last week, she
dropped out of her band, one of her favorite activities.

**Medical Chart F, Part 3:
Doctor's Notes to Interns**

Patient: Jenna F.

Age: 15

You have to decide what the health problem is (that is, make a diagnosis) based on
what we have learned from the patient's history and medical exam. It's normal to
feel sad after someone close to you dies, but depression is more than just sadness.
Is Jenna depressed or just experiencing normal sadness? Compare her symptoms
with the information in the Doctors' Reference Manual to decide what's wrong.

Doctors' Reference Manual:

Allergies

What are the symptoms of allergies?

Most allergies are mild. Mild allergies have symptoms such as an itchy rash, runny nose, itchy nose and throat, and coughing and wheezing. Allergies do not cause fevers. Some strong allergies have life-threatening symptoms. The bronchial tubes swell and block the airway to the lungs. Then the affected person has difficulty breathing. If untreated, the person may stop breathing and die.

What causes allergies?

The immune system protects the body against harmful things such as bacteria and viruses. When a person's immune system reacts to something that is not harmful, an allergy is the result. Common harmless substances that cause allergies include pollen, mold, animal dander, and dust. Some people have allergies to particular foods, drugs, or insect bites.

Who gets allergies?

Many children and adults have allergies. Allergies often run in a family. This means that genes affect whether someone has allergies. People who have problems such as eczema (a skin rash) and asthma often have allergies.

What is the treatment for allergies?

For mild and moderate allergic reactions, the treatment is to reduce the symptoms. For example, people who have allergies can use drugs to reduce itchy skin and relieve runny, stuffy noses. People who are having a strong allergic reaction, such as to a bee sting, must be treated immediately with drugs that stop the immune reaction.

Is there a cure for allergies?

There is not always a cure for allergies, although some may be improved by desensitization shots. The best way to prevent allergies is to avoid the things that cause the inappropriate immune response. For example, people who have food allergies should check the ingredients in foods before they eat to make sure the substance they are allergic to is not in the food. People who are allergic to a particular drug should be sure to tell their physicians so they are not given that drug.

What happens if allergies are not treated?

In the case of a strong allergic reaction, which is usually not caused by a seasonal allergy, the affected person may die. For mild allergies, affected people have uncomfortable symptoms until the substance that causes the allergy is removed.

Doctors' Reference Manual:

Asthma

What are the symptoms of asthma?

Common symptoms of asthma include coughing, wheezing, difficulty breathing, and tightness in the chest. During an asthma attack, affected people may feel anxious. If the attack is severe, they may also have pale, sweaty faces, blue lips or fingernails, and tightened neck and chest muscles.

What causes asthma?

Asthma is caused by narrowing of the bronchial tubes that lead to the lungs. This narrowing makes breathing difficult. Many people who have asthma also have allergies such as hay fever or skin allergies. Many also have relatives who have asthma or other allergies. This indicates that genetics influences asthma. Certain environmental conditions such as living in large urban areas, exposure to cigarette smoke, and exposure to certain chemicals also make it more likely that a person will develop asthma.

Asthma attacks are triggered by different things for different people. Pet hair, pollens, and molds are common triggers. Exercise, cold air, cigarette smoke, and certain drugs cause asthma attacks in some people. Having a cold or being stressed also triggers asthma attacks for some people.

Who gets asthma?

About 7 to 10 percent of children and 3 to 5 percent of adults have asthma.

What is the treatment for asthma?

Most people who have asthma take certain drugs daily (or several times a day) to prevent asthma attacks. These drugs help keep the bronchial tubes from narrowing. During an asthma attack, people who have asthma take drugs that help reduce swelling quickly. People whose asthma is triggered by allergies sometimes take allergy shots to reduce their sensitivity.

Is there a cure for asthma?

Although symptoms decrease over time for some people, there is no cure for asthma. Most people who have asthma can lead normal lives by learning to manage their illness. They use an instrument that measures how much their bronchial tubes are blocked. They compare the measurement with the levels in their management plan. The plan tells them whether to maintain their current dose of medicine, increase their dose of medicine, call 911, or go to the emergency room.

What happens if asthma is not treated?

Asthma can be a serious illness. Without long-term treatment, asthma attacks can occur more often and become more serious. If a severe asthma attack is not treated quickly, the bronchial tubes may swell so much that the airways are completely blocked.

Doctors' Reference Manual: **Attention Deficit Hyperactivity Disorder** **(ADHD)**

What are the symptoms of attention deficit hyperactivity disorder (ADHD)?

People with ADHD have difficulty paying attention, are overly active, and are impulsive. Examples of not being able to pay attention include difficulty following instructions, being easily distracted, losing and forgetting things, doing careless or sloppy work, not paying attention to details, and making careless mistakes. Overly active and impulsive behaviors include difficulty staying seated, talking too much, having trouble waiting for a turn, and interrupting others. Everyone shows some of these behaviors at times, but people with ADHD show them often. The behaviors cause problems in at least two areas of a person's life, such as school and home. The behaviors appear before age seven and last for at least six months.

What causes ADHD?

Many children who have ADHD have at least one close relative who also suffers from ADHD. This suggests that genes have an effect on getting ADHD. Research has shown that there are differences in the brains of people with and without ADHD. Several regions of the brain tend to be smaller in people who have ADHD than in people who do not have this illness.

Who gets ADHD?

ADHD affects as many as 1 of every 20 children. Both boys and girls get ADHD, but more boys are affected than girls.

What is the treatment for ADHD?

Effective treatments for ADHD include medication and behavior therapy. Sometimes, in addition to ADHD, people have another illness, such as depression, which also needs to be treated.

Is there a cure for ADHD?

There is no cure for ADHD, but the treatment described above helps almost all children who are affected by this disorder.

What happens if ADHD is not treated?

Children who have ADHD often have trouble in school because of the symptoms of inattention, impulsiveness (lack of control over their behaviors), and overly active behavior. They may also have trouble making and keeping friends. Children with ADHD often have low self-esteem because of their problems in school and with friends. Some research studies found that children with untreated ADHD have a higher risk of abusing drugs. Other studies have not found this to be true.

Doctors' Reference Manual:

Bronchitis

What are the symptoms of bronchitis?

The symptoms of bronchitis include coughing, difficulty breathing, and wheezing. People who have bronchitis usually cough up mucus. They may feel tired, and their chests may feel tight or sore. Sometimes, people who have bronchitis have a slight fever (lower than 101°F).

What causes bronchitis?

Bronchitis occurs when the bronchial tubes that lead to the lungs swell. Acute (short-term) bronchitis often follows a respiratory infection caused by a virus. Chronic (long-term) bronchitis is a more serious illness. Most chronic bronchitis is caused by cigarette smoke, either from smoking or from breathing in cigarette smoke in the surrounding air.

Who gets bronchitis?

Anyone can get bronchitis. Chronic bronchitis is more common among people who are over 45. Smokers of all ages are more likely to have chronic bronchitis than nonsmokers.

What is the treatment for bronchitis?

People who have acute bronchitis should rest, drink lots of water and juice, and use a humidifier to keep the air around them warm and moist. People who have chronic bronchitis should avoid things that cause the bronchial tubes to swell. Quitting smoking and avoiding polluted air help people who have chronic bronchitis. Sometimes, doctors prescribe drugs that relax and open the bronchial tubes.

Is there a cure for bronchitis?

There is not always a cure for bronchitis. Most healthy people who get acute bronchitis get over it within two weeks. People who have chronic bronchitis should avoid things that cause their bronchial tubes to swell.

What happens if bronchitis is not treated?

Most people who have acute bronchitis get well without any complications. In a small number of people, the bronchitis may come back and become chronic.

Doctors' Reference Manual:

Colds

What are the symptoms of colds?

The symptoms of colds include runny and stuffy nose, sneezing, sore throat, coughing, and headache. There may be no fever, or only a slight fever (lower than 101°F). Symptoms usually last one to two weeks.

What causes colds?

More than 200 different viruses can cause the symptoms of colds. These viruses infect cells in the membranes in the nose. Mucus in the nose traps many of the things people inhale, such as pollen, dust, bacteria, and viruses. People are infected with a cold virus when the virus gets past the mucus and enters a cell in the nose.

Who gets colds?

Children get an average of 6 to 10 colds a year. Adults get two to four colds a year. Children get more colds than adults because they have less resistance to infection and because they have contact with many other children in day care centers and schools. Almost everyone who inhales cold viruses is infected, but only about 75 percent of them develop cold symptoms. In the United States, colds are most common during the fall and winter.

What is the treatment for a cold?

There is no treatment that stops cold viruses. The symptoms of colds are treated to make the patient more comfortable. A person who has a cold should rest, drink plenty of water and juice, gargle with warm salt water, and take acetaminophen (Tylenol) to relieve headaches.

Is there a cure for colds?

Colds cannot usually be cured. Vaccination to prevent all colds is difficult because there are so many different cold viruses. Each virus would need its own vaccine. Cold viruses also change often, so a new vaccine is needed each time a virus changes.

What happens if colds are not treated?

Most people get over colds within two weeks. In a small number of cases, colds may lead to bacterial infections of the sinuses or the ear. Ear infections are more common in children than in adults. People who get these infections have high fevers. Bacterial sinus and ear infections must be treated with antibiotics. People who have asthma may have asthma attacks when they are ill with colds. People who have chronic bronchitis may get worse when they have a cold.

Doctors' Reference Manual:

Depression

What are the symptoms of depression?

People who are depressed have five or more of the following symptoms nearly every day for more than two weeks. They

- are sad or easily irritated;
- lose interest in activities they once enjoyed;
- have changes in appetite;
- have no energy;
- feel that they are worthless;
- have difficulty concentrating;
- have a hard time sleeping, or oversleep;
- lose their appetite, or overeat;
- think a lot about death and suicide; and
- have changes in activity levels, including restlessness, agitation, or slowness.

What causes depression?

No one thing causes depression. Depression tends to run in families. This indicates that genes have an effect on depression. Other things that may trigger depression include the loss of a parent or other loved one, divorce, learning or behavioral problems, physical or emotional abuse, and traumas such as violent crimes, floods, or tornadoes.

Who gets depression?

Both adults and children can suffer from depression. For children, about the same number of boys and girls are affected. For teenagers and adults, women are more likely to have depression than men. People with a family history of depression are more likely to suffer from this illness.

What is the treatment for depression?

Treatment involves counseling, medication, or a combination of the two.

Is there a cure for depression?

There is no cure for depression, but 80 percent of people who are depressed are helped by counseling, medication, or both. These treatments reduce the person's symptoms and help them live a normal, happy life. Often, however, people who have had their depression treated successfully will have another period of depression that requires treatment at another time in their lives.

What happens if depression is not treated?

Many people who are not treated get over depression after several months or years, but the illness tends to reappear throughout their lives. Children and teenagers who are depressed often have problems in school and difficult relationships with family and friends. They may also have social problems such as drug abuse. People who are seriously depressed may commit suicide.

Doctors' Reference Manual:

Influenza (Flu)

What are the symptoms of the flu?

Symptoms of the flu include fever above 100°F, headache, tiredness, cough, sore throat, stuffy nose, and body aches.

What causes the flu?

The flu is caused by one of many influenza viruses. These viruses change from year to year, so people can get the flu every year (or even several times in one year). Illnesses that cause vomiting and diarrhea are often called the stomach flu, but they are not really the flu. They are caused by different viruses or bacteria.

Who gets the flu?

Both adults and children can get the flu.

What is the treatment for the flu?

People who have the flu should rest, drink plenty of water and juice, and take acetaminophen (Tylenol) for headaches and body aches.

Is there a cure for the flu?

There is no cure for the flu, but this illness can often be prevented by getting a flu vaccine. Because the flu virus changes often, a new vaccine is prepared each year. This vaccine protects people against new varieties of the virus expected to be present that year. If a new flu virus appears after the vaccine is made, a person who is vaccinated can still get the flu from this new virus.

What happens if the flu is not treated?

Most people get better in one or two weeks. A few people develop pneumonia, bronchitis, or sinus or ear infections after they have the flu. The flu is more dangerous for some people. People who are older than 65, very young children, and people of any age who have other long-term illnesses such as asthma are more likely to have complications from the flu.

Doctors' Reference Manual:

Mononucleosis (Mono)

What are the symptoms of mononucleosis (mono)?

The most common symptoms of mono are fever above 101°F, sore throat with white patches on the tonsils, swollen lymph nodes all over the body, headaches and body aches, extreme tiredness, lack of appetite, swollen spleen and liver, and sometimes a red rash. Young children may have a fever but no other symptoms.

What causes mono?

Mono is caused by a virus. Doctors diagnose most cases of mono based on symptoms, but they can use a blood test that indicates whether the virus that causes mono is present.

Who gets mono?

Anyone can get mono, but most people who have obvious symptoms are between ages 15 and 24. Most people have been exposed to the mono virus by the time they are 35. People who have been infected by the mono virus are immune. They will not get the disease again, even if they did not have many symptoms when they were infected.

What is the treatment for mono?

People who have mono should rest, drink plenty of water and juice, take acetaminophen (Tylenol), and gargle with salt water to relieve sore throat. Most of the symptoms of mono get better within 10 days, but tiredness may last for several months. However, a swollen spleen and liver may take six weeks to return to normal size.

Is there a cure for mono?

There is no cure for mono, but in most cases people recover after two weeks. After they have recovered, they are immune to mono.

What happens if mono is not treated?

In most cases, people recover from mono on their own. In rare cases, the spleen can swell so much that it splits open. When this happens, the person must have surgery to repair the damage. Other rare complications include inflammation of the liver (a form of hepatitis), anemia, and nerve damage.

Doctors' Reference Manual:

Pneumonia

What are the symptoms of pneumonia?

Symptoms of pneumonia include coughing, fever, chills, chest pain, difficulty breathing, and weakness. People usually cough up mucus from the lungs. When a person has pneumonia, doctors hear abnormal sounds such as bubbling or cracking when they listen to the lungs. This indicates that there is thick liquid in the lungs. Doctors may also use chest X-rays to confirm their diagnosis of pneumonia.

What causes pneumonia?

People have pneumonia when their lungs are infected by bacteria, viruses, or other organisms. There are more than 50 kinds of pneumonia. It can be a mild or a very serious illness. Bacterial pneumonia begins suddenly and the symptoms are sometimes strong. Viral pneumonia begins slowly and the symptoms are milder.

Who gets pneumonia?

Anyone can get pneumonia. Very young children, people who are 65 or older, or people who have long-term illnesses such as diabetes or AIDS are more likely to get pneumonia than are other people.

What is the treatment for pneumonia?

People who have bacterial pneumonia take antibiotics to stop the infection, usually at home. Antibiotics are not used to treat viral pneumonia because they do not stop viruses. People who have pneumonia should rest and drink lots of water and juice. Young, healthy people recover from pneumonia in two to three weeks. Older adults or people who have other health problems may need two months to recover.

Is there a cure for pneumonia?

Antibiotics treat bacterial pneumonia. There is no cure for viral pneumonia, but most people get better on their own.

What happens if pneumonia is not treated?

Most people who have mild pneumonia get better on their own, but people who have bacterial pneumonia need to take antibiotics or they could become very sick. This is why it is important to see a doctor when symptoms of pneumonia are present.

Doctors' Reference Manual:

Schizophrenia

What are the symptoms of schizophrenia?

The most common signs of schizophrenia are hallucinations (seeing or hearing things that other people do not), odd speech, and delusions. People who have delusions believe something even after they have been shown that it is not true. For example, they may believe someone is putting poison in their food. Other signs of schizophrenia include blank facial expressions, talking only in short statements, and not remembering to eat, bathe, or take care of other personal needs.

Most people who have schizophrenia have periods of time when they have these serious symptoms. These periods are called relapses. During relapses, people with schizophrenia usually need to be in a hospital or other care facility. Between relapses, affected people have no or few symptoms. These periods of time are called remissions. During these times, affected people can live at home and go to work or school.

What causes schizophrenia?

No one thing causes schizophrenia. People who have a parent or relative who has schizophrenia are more likely to develop the illness themselves. This means that genes have an effect on schizophrenia. Environmental factors are also involved. The illness often appears after a stressful event such as losing a loved one or being the victim of a crime.

Certain regions of the brain are smaller in people who have schizophrenia than those regions in healthy people. Some affected people have differences in blood-flow patterns in their brains and in the amounts of certain brain chemicals when compared with healthy people.

Who gets schizophrenia?

About 1 percent of people have schizophrenia. Most of these people develop it between the ages of 16 and 25. Very few children have schizophrenia.

What is the treatment for schizophrenia?

Schizophrenia is treated by one or a combination of medicines. Most people who have schizophrenia will have to take the medicines all of their lives. Counseling may also help people who have schizophrenia. Illnesses such as depression or anxiety often occur along with schizophrenia. In these cases, people must take medicines for those illnesses as well.

Is there a cure for schizophrenia?

There is no cure for schizophrenia. The medications and other treatments described above can help with the symptoms of the illness.

What happens if schizophrenia is not treated?

The most serious complication of schizophrenia is suicide. Some people who have schizophrenia try to kill themselves because they are depressed. Others hear voices that tell them to kill themselves. Some people with schizophrenia hear voices or see things that scare them. Rarely, these people may commit violent acts because they are afraid people near them are trying to hurt them.

Doctors' Reference Manual:

Strep Throat

What are the symptoms of strep throat?

People who have strep throat have a sore throat that is especially painful when they swallow. They usually have fever above 101°F and swollen lymph nodes in their neck. Their throats are bright red with a white or yellow coating on the back of the throat or tonsils. Sometimes, strep throat causes a skin rash known as scarlet fever. Usually, people who have strep throat do not have cold symptoms such as coughing, sneezing, or runny nose.

What causes strep throat?

Strep throat occurs when a particular type of bacterium infects the throat. When a person has symptoms of strep throat, the doctor collects bacteria from his or her throat and tonsils using a cotton swab. A rapid strep test checks for the presence of the bacteria that cause strep throat on the swab.

Who gets strep throat?

Both children and adults get strep throat, but it is more common among children than adults. Strep throat occurs most frequently during the colder months of the year.

What is the treatment for strep throat?

Strep throat is treated with an antibiotic. Usually, the patient feels better within a day or two after beginning the antibiotic.

Is there a cure for strep throat?

Yes, the antibiotic usually cures strep throat. However, it is possible to be infected by strep bacteria again.

What happens if strep throat is not treated?

Most people will get well without treatment. However, a small percentage of untreated people develop complications such as scarlet fever and rheumatic fever. Those who develop scarlet fever have a rash that lasts over a week. As the rash fades, the skin peels. Scarlet fever is treated with the same antibiotic used for strep throat.

If scarlet fever is not treated, rheumatic fever may develop about 20 days later. Rheumatic fever may affect the heart, joints, skin, and brain. Damage to the heart may be long term.

Comparing the Cases: A and B

Part		Case: Alex A.	Case: Alex B.
1	Symptoms and other information		
	Possible health problem(s)		
2	New symptoms and information in Part 2		
	Possible health problem(s)		
3	Time passed since Part 1 (when symptoms were first noticed)		
	Probable health problem		
	Part(s) of the body affected		

Comparing the Cases: C and D

Part		Case: Abby C.	Case: Abby D.
1	Symptoms and other information		
	Possible health problem(s)		
2	New symptoms and information in Part 2		
	Possible health problem(s)		
3	Time passed since Part 1 (when symptoms were first noticed)		
	Probable health problem		
	Part(s) of the body affected		

Comparing the Cases: E and F

Part		Case: Jenna E.	Case: Jenna F.
1	Symptoms and other information		
	Possible health problem(s)		
2	New symptoms and information in Part 2		
	Possible health problem(s)		
3	Time passed since Part 1 (when symptoms were first noticed)		
	Probable health problem		
	Part(s) of the body affected		

Is It an Illness?

Analysis Question	Sadness (Case E)	Depression (Case F)
What are the symptoms (effect on life)?		
What part of the body is affected?		
How long did the symptoms last?		
Are the symptoms outside the normal range?		

Looking Inside the Brain

Master 2.8, which includes full-color PET images, can be found at the end of the module. Please replace this page with that one.

The Roll of the Die for Depression

In this activity, you will model a person's risk for getting depression. Roll the die one time for each row in the table below. After each roll, work with your team members to decide whether the person's chance for getting depression increases or decreases. Mark the risk meter based on your group's conclusions.

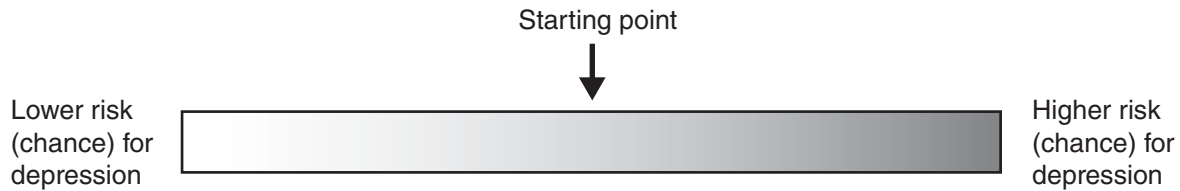
Die roll	Outcome If the number on the die is:	Consequence
1st	1, 2, or 3: The person you are modeling is female.	Anyone can get depression, but it is more common in females than in males.
	4, 5, or 6: The person you are modeling is male.	
2nd	1 or 2: The person is a child or teenager.	People of all ages can get depression.
	3 or 4: The person is between 20 and 35 years old.	
	5 or 6: The person is over 35 years old.	
3rd	1, 2, or 3: The person has a close family that gets along most of the time.	Individuals who have a close family with lots of communication among family members are less likely to be depressed.
	4, 5, or 6: The person has a family that often has a hard time getting along with each other.	
4th	1, 2, or 3: The person has a parent, brother, or sister who has depression.	A person who has depression often has a family member who also has depression.
	4, 5, or 6: The person does not have any close family members with depression.	
5th	1, 2, or 3: The person smokes cigarettes.	Young people who smoke cigarettes are more likely to have depression.
	4, 5, or 6: The person does not smoke cigarettes.	
6th	1, 2, or 3: The person sees the bad side of things in life.	People who are pessimistic about life (who always see the negative side of things) and who feel hopeless are more likely to be depressed.
	4, 5, or 6: The person sees the good side of things in life.	

Die roll	Outcome If the number on the die is:	Consequence
7th	1, 2, or 3: The person recently broke up with a boyfriend or girlfriend.	Stressful events such as a romantic breakup can make depression more likely.
	4, 5, or 6: The person did not break up with a boyfriend or girlfriend recently.	
8th	1, 2, or 3: The person has close friend or family member who died recently.	The death of a close friend or family member is a stressful event and can make depression more likely.
	4, 5, or 6: None of the person's close friends or family members died recently.	
9th	1, 2, or 3: The person has experienced abuse or violence.	A person who experiences abuse, violence, or disaster is more likely to get depression.
	4, 5, or 6: The person has not experienced abuse or violence.	

The Risk Meter

Team Members: _____ Date: _____

Work with your team members to determine whether the risk of getting depression increases or decreases based on the outcome of the roll of the die. Place a new arrow on the meter for each die roll (and indicate which roll it is—1st, 2nd, and so forth). For each roll of the die, your starting point will be your last arrow. For example, for the move with the 2nd die roll, you will start from the arrow you made for the 1st die roll. Then, complete the chart to explain why you moved your arrow on the meter.



Die roll	The die number you rolled	Movement on the meter (Did you move to the left, to the right, or not at all?)	Reason
1st			
2nd			
3rd			
4th			
5th			
6th			
7th			
8th			
9th			

ADHD: What Are the Chances?

Name: _____

Date: _____

Read the following information about ADHD. Then, record the things that might increase or decrease a person's chances for getting ADHD in the table at the bottom of the page. You can also write information that might be important to think about but doesn't seem to change the person's chances.

ADHD, or attention deficit hyperactivity disorder, is a mental illness that causes a person to have trouble at home, at school, and/or at work. A person who has ADHD often

- has trouble sitting still (is very active);
- can't always control his or her behaviors (talks too much, interrupts others, and has trouble waiting for a turn);
- loses or forgets things;
- is easily distracted;
- makes careless mistakes;
- has more injuries than other people;
- puts off doing things that are difficult;
- appears not to listen to things; and
- has trouble paying attention for a long period of time.

The person's symptoms must meet certain guidelines before a doctor can diagnose him or her with ADHD. The person's symptoms must start before he or she is 7 years old. The symptoms must last for at least 6 months. The symptoms must also occur more often or be more severe than in other people of the same age. Finally, the symptoms must cause problems in at least two areas of life (school, home, friends, or work).

ADHD is the most common mental illness in children and adolescents. About 3 to 5 percent of students have ADHD. ADHD is more common among children, but adults can have it too. Boys are 2 to 3 times more likely to have ADHD.

Scientists do not know what causes ADHD. Children who have ADHD usually have a family member who also has ADHD. One research study found that a person is 11 to 18 times more likely to have ADHD if his or her identical twin has ADHD. Scientists do not believe that ADHD is caused by having food allergies, eating too much sugar, watching too much television, going to poor schools, or suffering minor head injuries.

Factors to consider	A risk or not a risk?	Why?

Schizophrenia: What Are the Chances?

Name: _____

Date: _____

Read the following information about schizophrenia. Then, record the things that might increase or decrease a person's chances for getting schizophrenia in the table at the bottom of the page. You can also record information that might be important to think about but doesn't seem to change the person's chances.

Schizophrenia is not a split personality or multiple personalities. The most common symptoms of schizophrenia are odd speech, seeing or hearing things that aren't there (hallucinations), and believing something even when told it isn't true (delusions). For example, people who have schizophrenia may believe aliens from another planet are giving them secret information. Most people who have schizophrenia do not have symptoms all the time. In between episodes of serious illness, they may have minor symptoms such as blank facial expressions or talking only in short sentences. Most people who have schizophrenia take medicine that helps them deal with their symptoms. Counseling helps them deal with their disease, too. Most people who have schizophrenia can live on their own and work at a job; very few people need to be in the hospital because of their disease.

About 1 in 100 people in the population has schizophrenia. Both males and females can get it. About half the people who have schizophrenia are male and half are female. Schizophrenia usually begins at a younger age in males (late teens or early twenties) and in females, in their mid-twenties or early thirties. It is very uncommon for children to get schizophrenia, but it can happen in children over age 5.

Scientists do not have all the answers about what causes schizophrenia. They do know that people who have a close family member who has schizophrenia are more likely to get it than are people who do not have a family member with the illness. A person whose identical twin has schizophrenia has a 40 to 50 percent chance of having the illness. A possible cause that scientists are studying is an infection by a virus that happens before the person is born.

Factors to consider	A risk or not a risk?	Why?

Do People with Depression Get Better?

Andrew's story

“I was having a hard time sleeping and I felt sad all the time. I had a hard time concentrating at my job, and nothing was fun anymore. A friend told me to see my doctor.

“After my doctor ran some tests and asked me about my symptoms, she decided that I had depression. She wrote a prescription for some medicine. She told me that the medicine should help me feel better but that it would be best if I got psychotherapy, too. Psychotherapy is “talk” therapy—the psychotherapist helps people understand their problems. She set up some sessions for me with a psychotherapist she knows.

“I didn't really want to take medicine all the time, and I didn't think that talk therapy would do anything for me. When I told this to the doctor, she showed me a letter from a patient who described how his depression got better after he started treatment. The patient thanked the doctor for helping him have a normal life again and gave the doctor permission to show the letter to other patients.

“She also showed me the results of a scientific study about depression. Scientists took PET images from people who have depression before and after they got treatment. The PET images showed that treatment changes what is happening in the brain. You can probably see why I decided treatment might be a good idea.

(Now look at the two PET scans in Master 4.2, *The Brain's Response to Treatment*.)

“I went back to my doctor after a month. I wasn't feeling any better, so she prescribed a different medicine. She told me to keep going to my psychotherapy sessions.

“It took a while, but I started feeling better. I was sleeping better and enjoying my old hobbies. My work was going well, and my friends said I seemed happier, too. My doctor told me that my experience with depression was typical. Medication and psychotherapy help 80 percent of people who have this illness.”

The Brain's Response to Treatment

Master 4.2, which includes full-color PET images, can be found at the end of the module. Please replace this page with that one.

Do People with ADHD Get Better?

John's story

"I was always in trouble at school. I couldn't sit still, and I couldn't concentrate long enough to finish my assignments. I thought I was just stupid. I had trouble making friends, too. They didn't like to play with me because I never wanted to wait my turn and I wouldn't follow the rules of the games they played.

"When I was in the second grade, my teacher had a meeting with my parents and the school counselor. He thought I might have ADHD. The counselor talked with my parents and my teacher about my symptoms and observed me in class and on the playground. My parents also took me to our family doctor to make sure I didn't have any other illnesses that could cause my symptoms.

"Our doctor referred us to another doctor who specializes in mental illnesses that affect children. She talked with my parents and me and decided that my counselor was right: I did have ADHD. She got me started on some medicine and worked with both my parents and me to help me develop ways to stay focused on my schoolwork.

"School became a much happier place for me after that. The medicine helped me think, and the methods I learned to focus on my work and get it completed really helped. I learned that I wasn't stupid after all! And, I still divide large tasks into small steps and reward myself as each step is completed, the same way I learned to do when I was in school.

"I went on to college and graduate school. Even though I was grown up by then, I still had trouble concentrating and sitting still. The strategies I had learned to help me stay focused really paid off then.

"Today, I am a scientist who studies childhood mental illnesses. Through my studies, I have learned that 90 percent of kids like me can overcome their illness if they get the medicines and psychotherapy used to treat ADHD. In my research, I take brain scans of people who have ADHD and compare them with people who do not have ADHD. I have found that the areas of the brain that control attention are less active in children who have ADHD. After treatment, these areas become more active.

"My personal experience with ADHD and my research in this area have convinced me that treatment really works!"

Do People with Schizophrenia Get Better?

Melinda's story

“Like 2 million other Americans, our daughter Melinda has schizophrenia. She started showing symptoms right after she graduated from college. She heard voices telling her that certain people were plotting to kill her, she seemed to jump from one thought to another so quickly that she made no sense, and she was no longer interested in anything.

“Her behavior became more and more strange. Some days, she did nothing but sit around in her pajamas. She wouldn't get dressed, brush her teeth, or eat. Her face was blank and she spoke only in flat, short sentences. Before this time, Melinda was always busy and always excited about something in her life. It worried us to see her this way.

“Our doctor diagnosed Melinda with schizophrenia. He gave her a prescription for a special kind of medicine for people who have this disease. He said that after the medicine began to work, Melinda should begin psychotherapy to help her learn skills for coping with her illness. Finally, he encouraged us to begin family education to learn more about schizophrenia and how we could help Melinda manage her illness.

“The medicine helped Melinda a lot. She stopped hearing voices and she could talk with us more normally. But, she still had problems expressing emotions, and we didn't feel she was well enough to live in her own apartment.

“Melinda didn't like some of the side effects of the medicine. It made her mouth dry and caused her muscles to twitch. After a while, she decided she was better and stopped taking her medicine so she wouldn't have the side effects.

“Soon, the voices were back. Melinda's behavior became more and more strange, and one night, she even called the police because the voices in her head told her the neighbor's house was bugged. Then we put her in the hospital. The doctors got her started on another medicine and got her back into psychotherapy.

“The new medicine didn't have as many side effects for Melinda. She has stayed on this medicine. Her psychotherapy sessions have helped her learn ways to live on her own.

“Today, Melinda has a full-time job. She lives in her own apartment and often goes out with her friends. She continues to take her medicine and go to her psychotherapy sessions. We are so proud of our daughter!

“The family education program helped us learn that Melinda's experience with schizophrenia is common. Most people who have this illness can work, live on their own, and enjoy friends and family if they continue with their treatment.”

My Story



Individual #1
Marissa

Individual #2
Katie

Individual #3
Chris

Individual #4
Kellie

Individual # _____

1. What mental illness does the person have?
2. When did it start?
3. How did the illness affect the person's thoughts?
4. How did the illness affect the person's feelings?
5. How did the illness affect the person's behaviors?
6. Did the illness cause the person difficulty in his or her life? In what ways?
7. What kind of treatment did the individual get?
8. How has the individual's life changed after treatment?
9. In what ways were other people important to each of the individuals in the video?

Telling Their Own Stories—A Summary

1. What mental illness does the person have?
2. When did it start?
3. How did the illness affect the person's thoughts?
4. How did the illness affect the person's feelings?
5. How did the illness affect the person's behaviors?
6. Did the illness cause the person difficulty in his or her life? In what ways?
7. What kind of treatment did the individual get?
8. How has the individual's life changed after treatment?
9. In what ways were other people important to each of the individuals in the video?

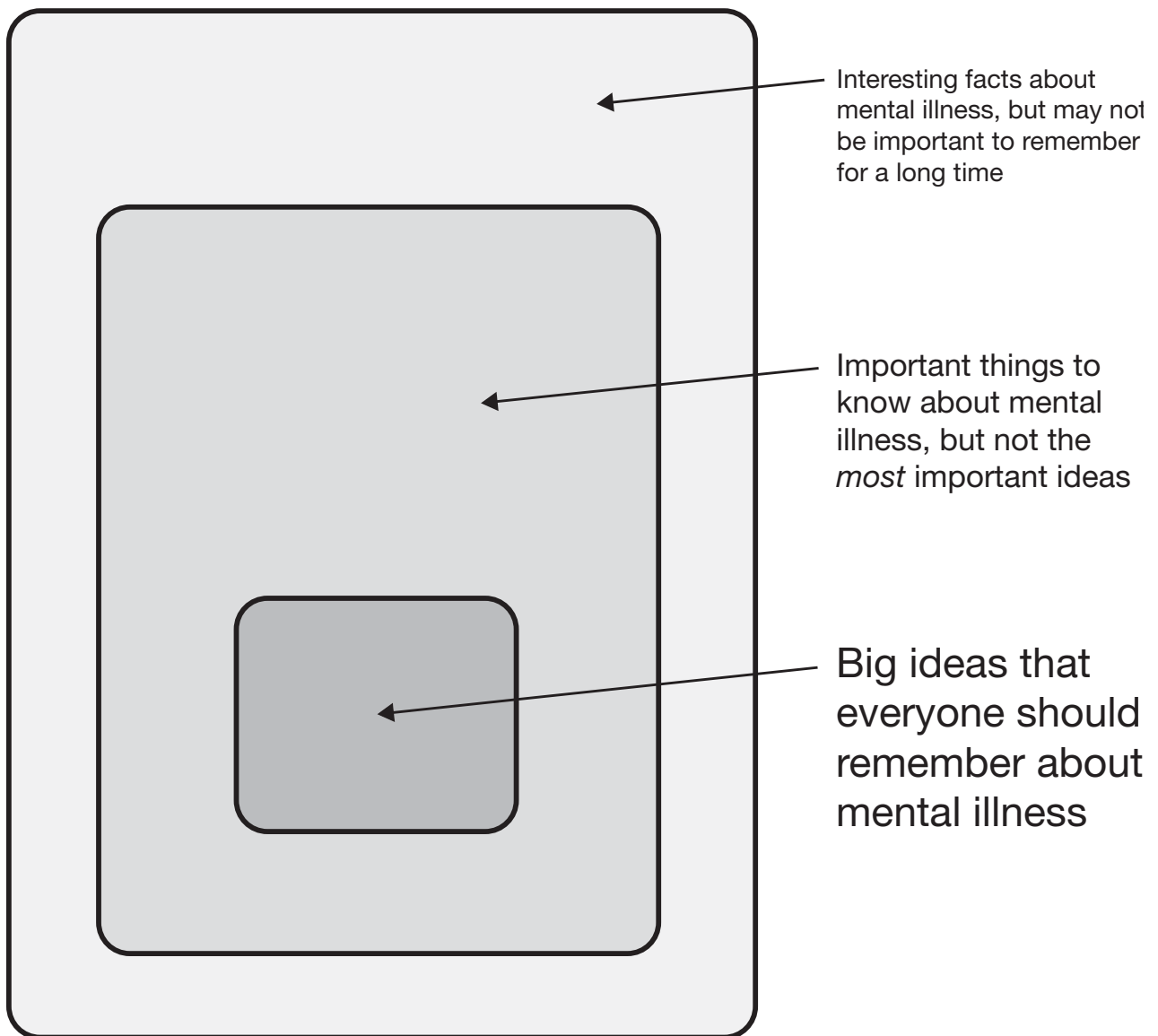
Things to Think about

1. One of the individuals on the video stated that she didn't like it when people called her a schizophrenic and that she liked it better when people referred to her as "a person who has schizophrenia." Can you explain why she might feel that way? Do you think that other people who have a health problem might also feel this way? Why?
2. If you felt that you, a brother or sister, or a friend showed symptoms of a mental illness, what might you do to help yourself or the other person? Explain your answer and include examples from the video if it was helpful.
3. Research studies have shown that many people who have a mental illness (including adults, children, and teenagers) don't get treatment. Why do you think people don't seek help for a mental illness? How might a person's life be affected if he or she does not get treatment? Include examples from the video to support your answer.

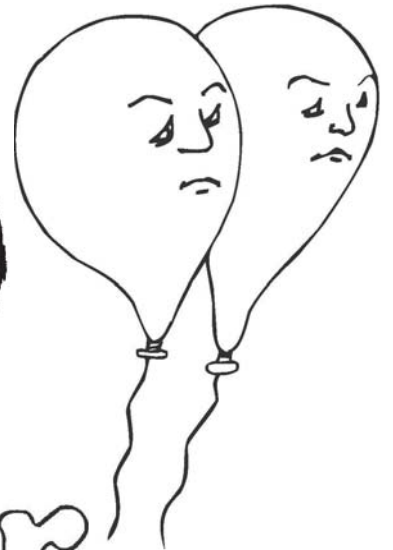
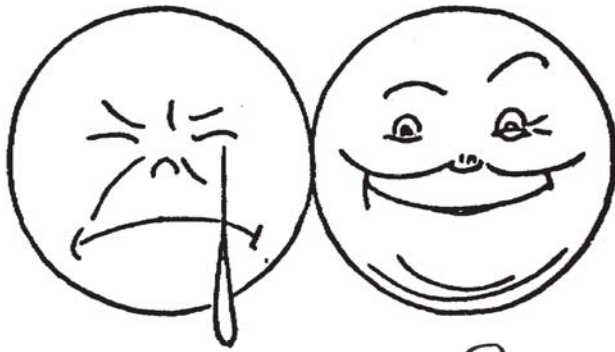
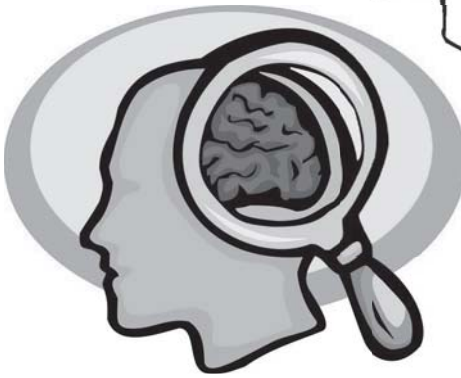
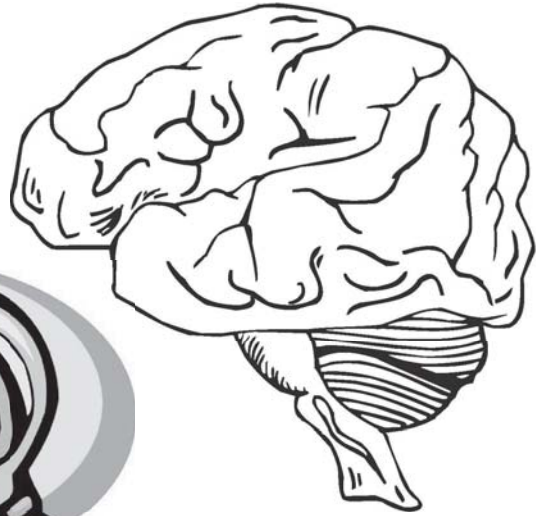
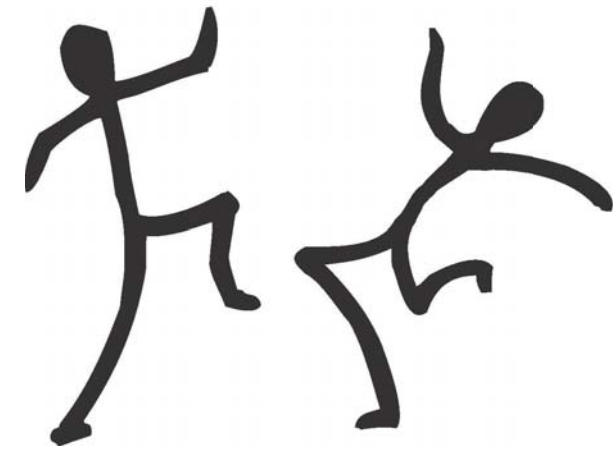
Rubric for Evaluating the Brochures

Category	Excellent (5 points)	Good, but could be improved (3 points)	Needs a lot of improvement (1 point)
The brochure has a clear idea or message.	<ul style="list-style-type: none"> • The main message of the brochure is very clear. • The brochure focuses on a single idea. 	<ul style="list-style-type: none"> • The main message of the brochure is somewhat clear. • The brochure's theme is all right, but it includes more than one main idea. 	<ul style="list-style-type: none"> • The main message of the brochure is not clear at all. • The ideas are not focused on a single theme. The brochure tries to include too many different ideas.
The brochure's message is important for people to know.	<ul style="list-style-type: none"> • The main message is very important for people to understand. 	<ul style="list-style-type: none"> • The main message is somewhat important for people to understand, but not the most important thing. 	<ul style="list-style-type: none"> • The message is only slightly important for people to understand.
The brochure includes accurate information.	<ul style="list-style-type: none"> • The message of the brochure is supported by many facts. • The facts that support the message are accurate. 	<ul style="list-style-type: none"> • Some important facts that would support the idea are missing. • Some of the facts are not accurate (are wrong). 	<ul style="list-style-type: none"> • The brochure does not include facts to support the idea. • Most of facts that support the message are not accurate (are wrong).
The brochure is well written.	<ul style="list-style-type: none"> • There are no spelling or grammar errors in the brochure. 	<ul style="list-style-type: none"> • There are only a few spelling or grammar errors in the brochure. 	<ul style="list-style-type: none"> • There are many spelling and grammar errors in the brochure.
The brochure looks nice.	<ul style="list-style-type: none"> • The brochure uses art and color nicely. • The brochure is very neat. 	<ul style="list-style-type: none"> • The use of art and color could be improved. • The brochure is a little sloppy. 	<ul style="list-style-type: none"> • The brochure is very sloppy. • The brochure does not use art or color well.

Deciding What's Important



Sample Art



Brochure Scoring Sheet

Name: _____

Date: _____

When you evaluate a brochure, use the rubric to score each category. Enter your score for each category on this form. Then give a specific reason (or reasons) why you assigned that score.

The ID code for the brochure I am evaluating is _____.

Category	Score	Reason for score (Give specific reasons or examples to explain the score that you gave for each category. If a statement is wrong, indicate what it should say to be correct.)
The brochure has a clear idea or message.		
The brochure's message is important for people to know.		
The brochure includes accurate information.		
The brochure is well written.		
The brochure looks nice.		
Total Score _____		

1. What is the best thing about this brochure?

2. What suggestions do you have for improving this brochure?

What Do You Know?

Name: _____

Date: _____

Write two or three sentences to answer each of the following questions:

1. What is mental illness?
2. Name some mental illnesses that you have heard about.
3. How would a person who has a mental illness look or act?
4. If you learned that a new student at school has a mental illness, how would you act toward him or her? How would you feel about him or her?
5. What causes someone to be mentally ill?

What's Happening in the Brain?

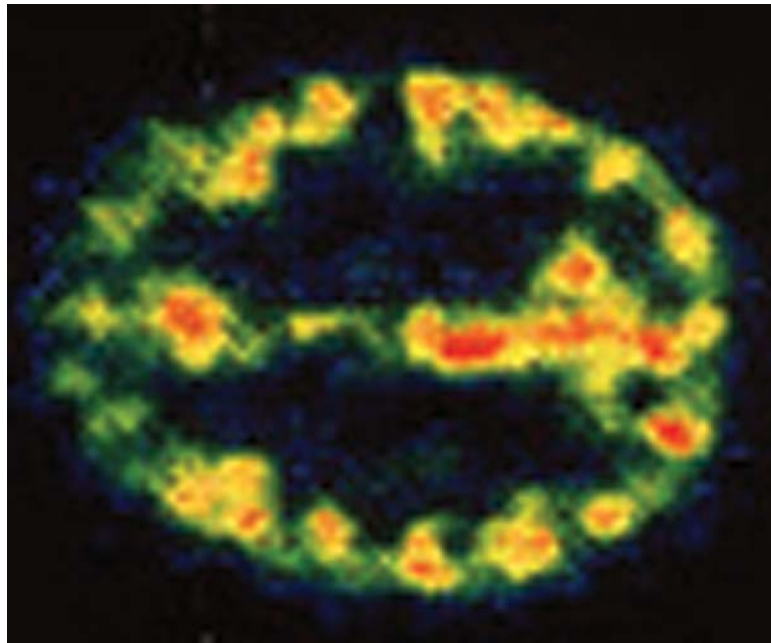


image 2

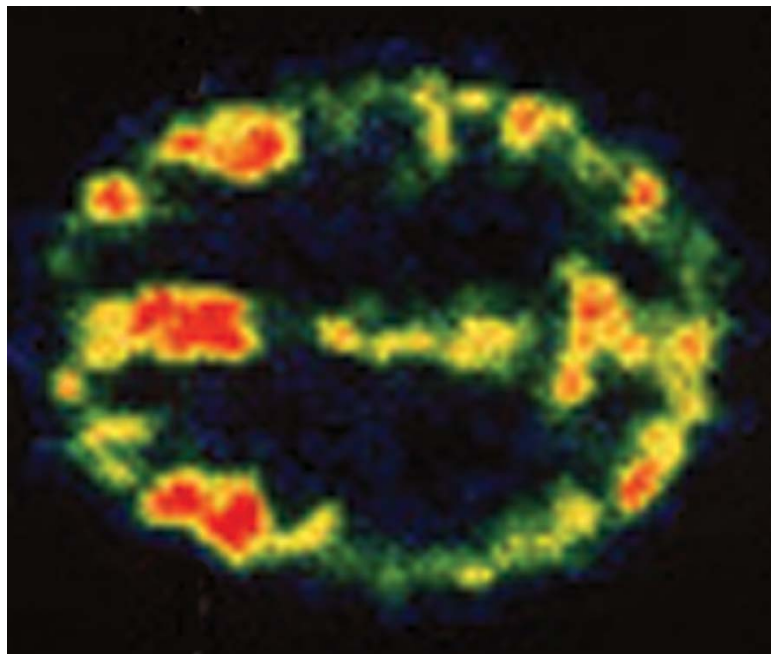
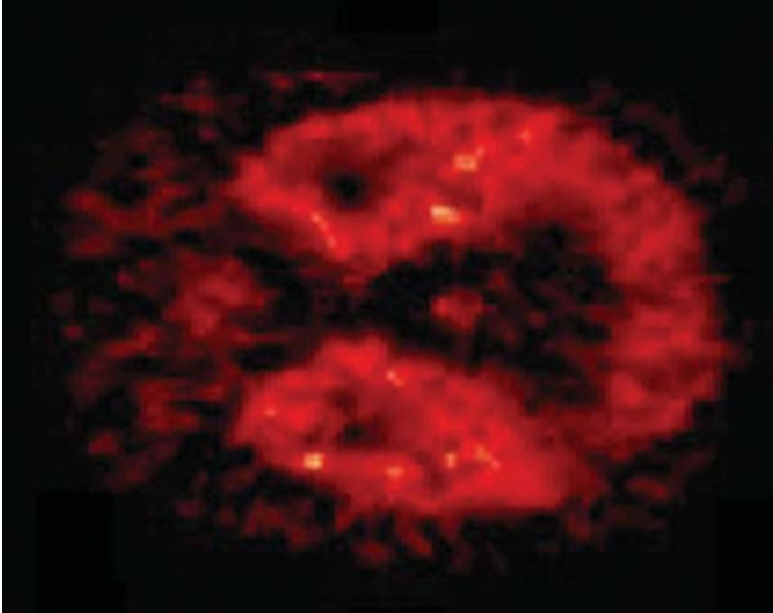


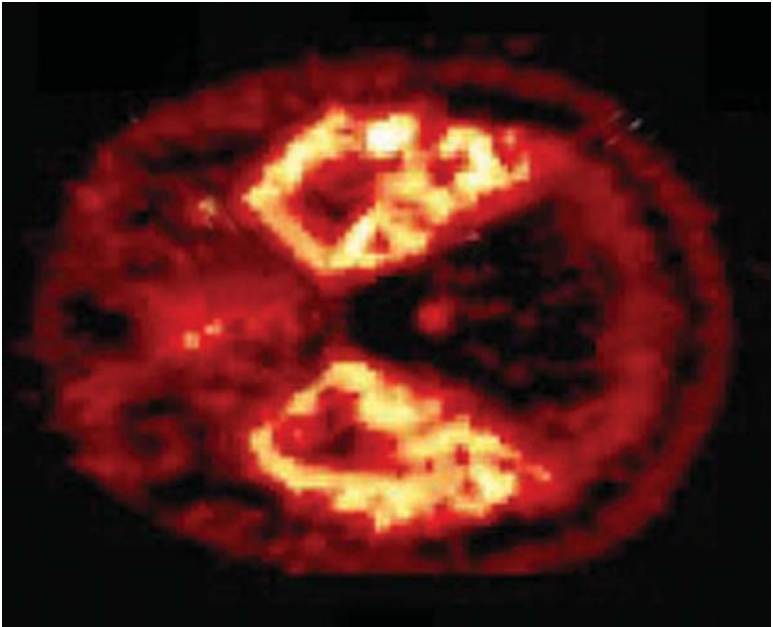
image 1

Looking Inside the Brain

ability to use a
specific brain
chemical



with
depression

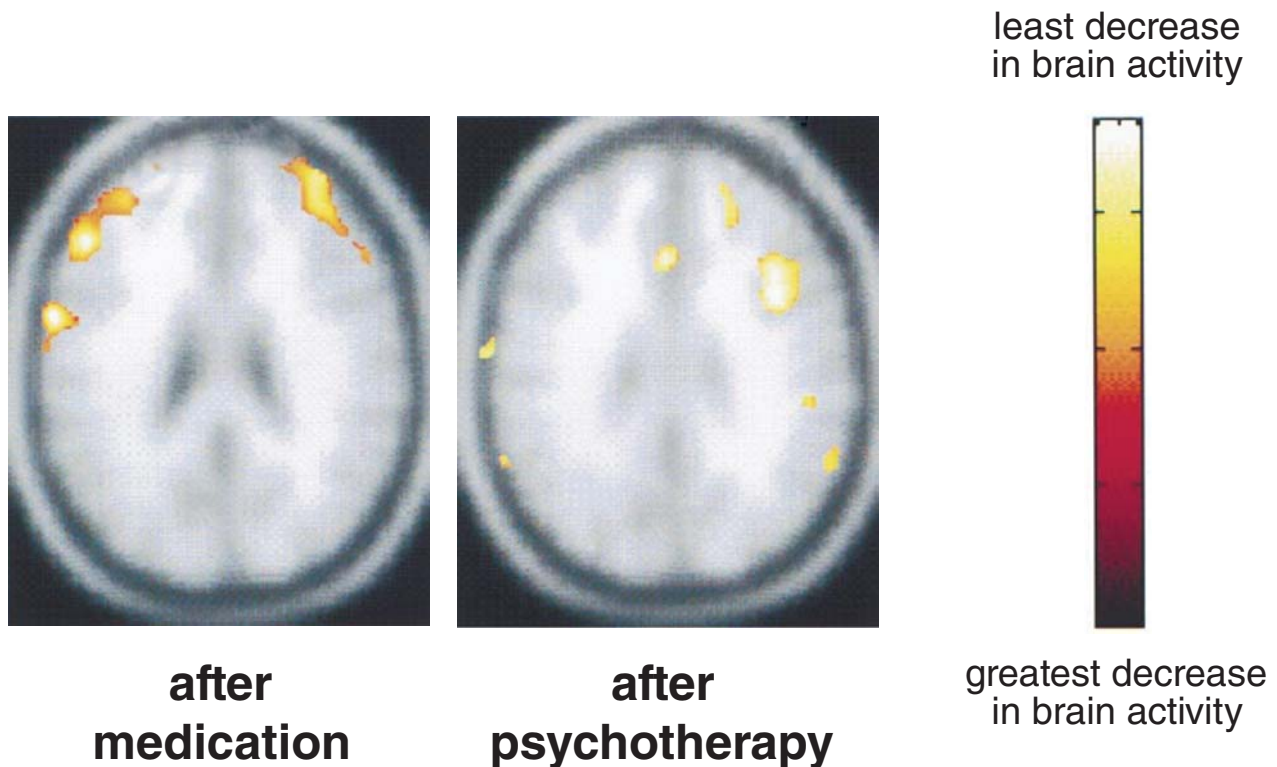


without
depression

The Brain's Response to Treatment

The scientists who took these PET images of people with depression wanted to see whether treatment makes the brain work more like the brain of someone who does not have depression. Before they could look at the effects of treatment, however, the scientists needed to know what differences there are in the brains of people who have depression compared with the brains of people who do not have depression. The scientists investigated and found out that some parts of the brain are less active in people who have depression, and some are more active. Knowing which areas of the brain in someone who is depressed can be less active and which can be more active allowed the scientists to make sense of the PET images showing brain changes after treatment.

These images, which look at areas of the brain that become less active with treatment, use color differently from how it was used in the images you looked at earlier in this unit. In these images, color highlights the parts of the brain that have different activity levels after treatment compared with before treatment. As you can see on the scale bar, red indicates the largest decrease in brain activity and yellow, a lesser decrease in brain activity. Areas of the PET images shown in color are the areas that decrease in activity after treatment. That means that the treatment caused the brain to be more like that of a person who does not have depression.



Master 4.2