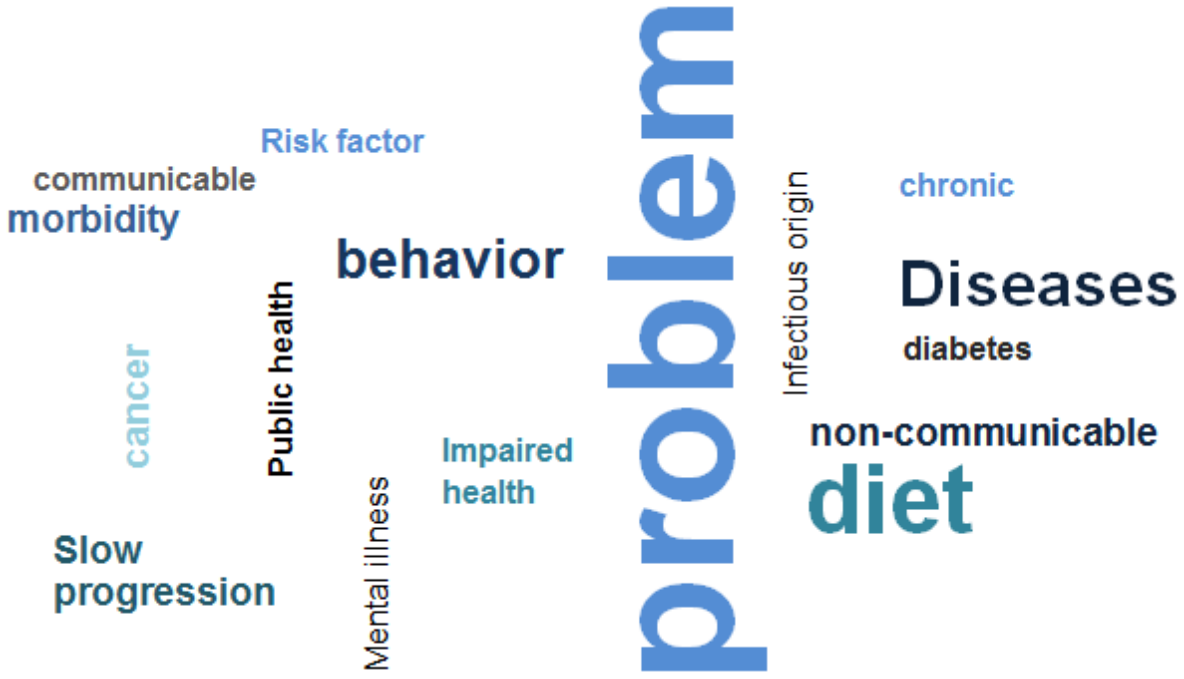
FACILITATOR GUIDE



Overview of NCD's and Related Risk Factors

Created: 2013

Overview of NCD's and Related Risk Factors. Atlanta, GA: Centers for Disease Control and Prevention (CDC), 2013.

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Overview of NCD's and Related Risk Factors

Learning Objectives

At the end of the training you will be able to describe the following for your country or region:

- The burden of disease of the four main NCDs
- How risk factors affect the burden of NCDs.

Estimated Completion Time

- 6 hours (includes a 1 hour skill assessment and a 30 minute debrief)

Training Techniques

- Content and examples will be presented using *lectures* and *group discussion*. Participants will complete the practice exercise in pairs and the skill assessment in a small group.

Prerequisites

- Introduction to NCD Epidemiology

Materials and Equipment

For the Facilitator:

- PowerPoint file for presentation
- Marker for slides
- Flipchart and markers

For the Participant:

- Participant Guide
- Skill Assessment Assignment
- Computer and Internet Access

References and Resources

- World Health Organization – Global Health Observatory. **http://www.who.int/gho/ncd/mortality_morbidity/en/index.html**
- World Health Organization. *A Comprehensive Global Monitoring Framework, Including Indicators, And A Set Of Voluntary Global Targets For The Prevention And Control Of Noncommunicabale Diseases*. 2012. Retrieved from **http://www.who.int/nmh/events/2012/discussion_paper3.pdf** on May 3, 2013.

- World Health Organization. Media centre fact sheets. Retrieved from **http://www.who.int/mediacentre/factsheets/en/** on May 3, 2013.

PREPARATION CHECKLIST

The following are action items to be completed by the facilitator prior to training:

___ Review slides
___ Prepare the Skill Assessment Guides for participants

FONT GLOSSARY

The following fonts are used in this guide:

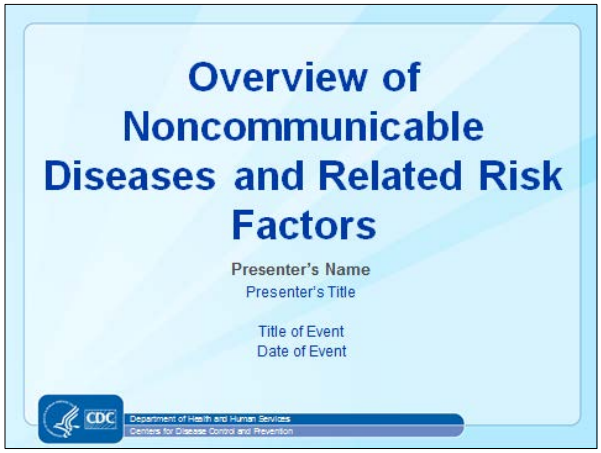
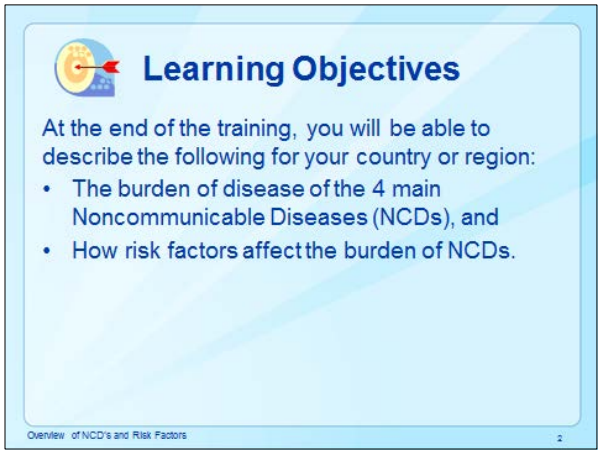
Font Type	Font Meaning
Plain	Script
Bold	**Instructions**
Italics	*Answers*

ICON GLOSSARY

The following icons are used in this guide:

Image Type	Image Meaning
Activity Icon	Small group exercise.
Flip Chart Icon	Write responses during facilitator-led discussions or debriefs.
Question Icon	Question for facilitator to ask participants.
Tip Icon	Supplemental information discussion.

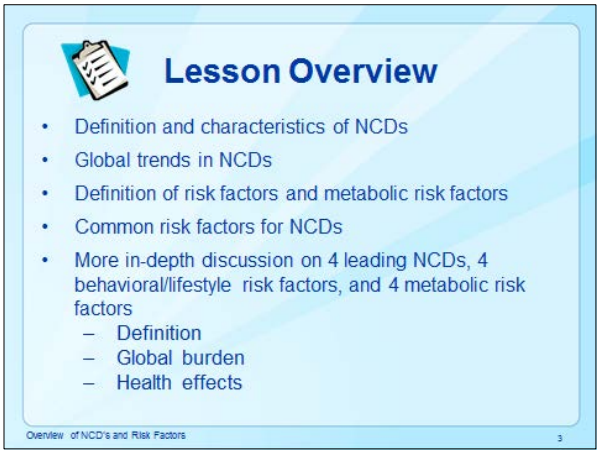
MODULE CONTENT

Duration/ Slide Number	What to Do/What to Say
5 minutes **Slide 1**	 • **Tell participants that this lesson will take approximately six hours to complete.** • **Explain that this lesson will provide them with an overview of the four priority noncommunicable diseases (NCDs) and related risk factors.** • **Explain that after learning the lesson content they will complete a skill assessment in pairs or individually.**
1 minute **Slide 2**	 • **Direct participants to page 1 in their participant guides.** • **Read the learning objectives from the slide.**

Duration/ Slide Number	What to Do/What to Say

1 minute

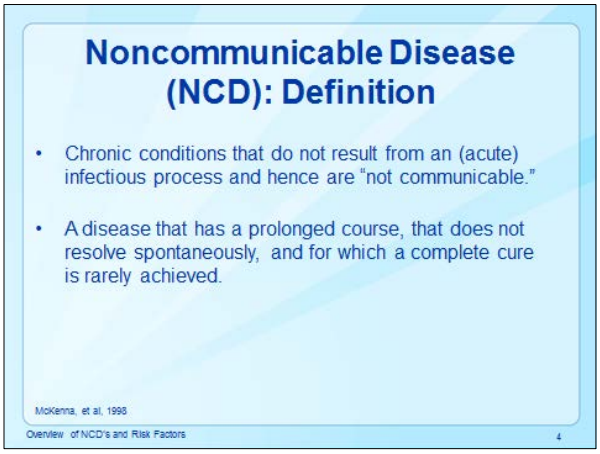
Slide 3



- **Read the slide.**

2 minutes

Slide 4



- **Tell participants that you will begin the lesson by defining a noncommunicable disease.**
- **Explain that for the purpose of this course, we are calling noncommunicable chronic diseases NCDs.**

Question

- **Ask:** Can someone define noncommunicable disease?
- **Read the definitions on the slide.**
- **Point out the limitations of the McKenna definition, which defines chronic disease, not an NCD. For example, HIV infection fits McKenna's definition, i.e., it is now a chronic disease, but no one would call it an**

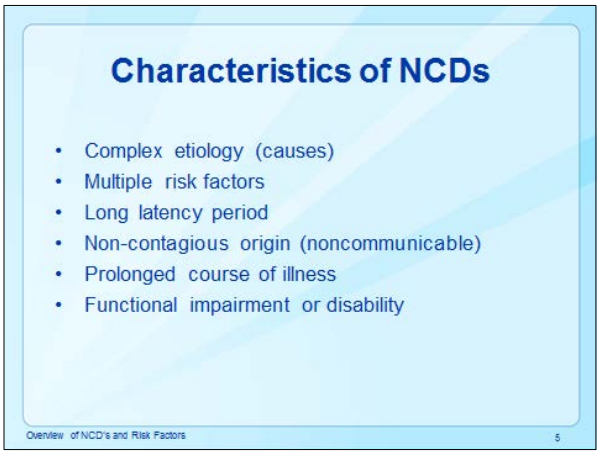
Duration/ Slide Number	What to Do/What to Say

NCD.

- **Explain that the first definition is more explicit – NCD means a noncommunicable chronic disease.**
- **Explain that in some definitions, NCDs also include:**
  - chronic mental illness
  - injuries which have an acute onset but may be followed by prolonged convalescence and impaired function**.**
- **Say:** All of these conditions cause premature morbidity, dysfunction, and reduced quality of life; they usually develop and progress over long periods; often initially insidious (*unnoticed*) and once manifested there is usually a protracted period of impaired health.

2 minutes

Slide 5



- **Say:** NCDs share many of the same characteristics**.**
- **Read the slide bullets.**

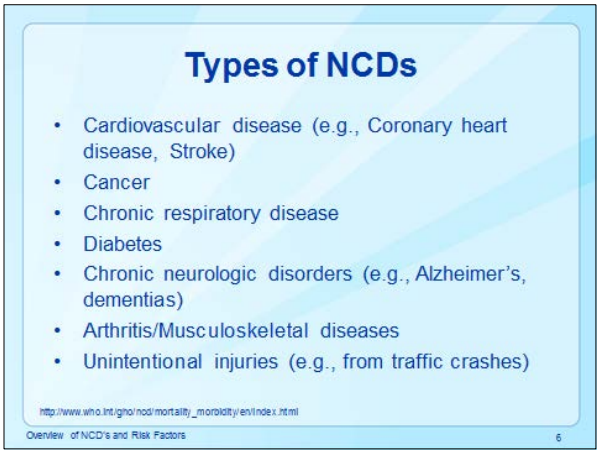
Question

- **Ask:** Why do they share the same characteristics?
- **Answer:** *Risk factors for chronic diseases are often the same.*

Duration/ Slide Number	What to Do/What to Say

2 minutes

Slide 6

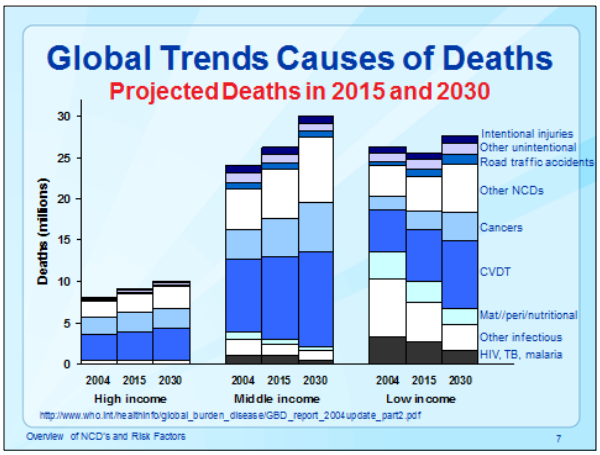


Question

- **Ask** participants for types or examples of NCDs.
- **Read the types of NCDs on the slide and explain that this list is not complete.**
- **Explain that the first four on the slide are the most prevalent NCDs and also the focus for WHO. (Point out the reference for this at the bottom of the slide.)**
- **Mention that 80% of NCD deaths occur in low-to-middle income countries.**
- **Say:** Let's take a look at the projected deaths between 2015 and 2030, and in particular, NCD-related deaths**.**

4 minutes

Slide 7



Duration/ Slide Number	What to Do/What to Say

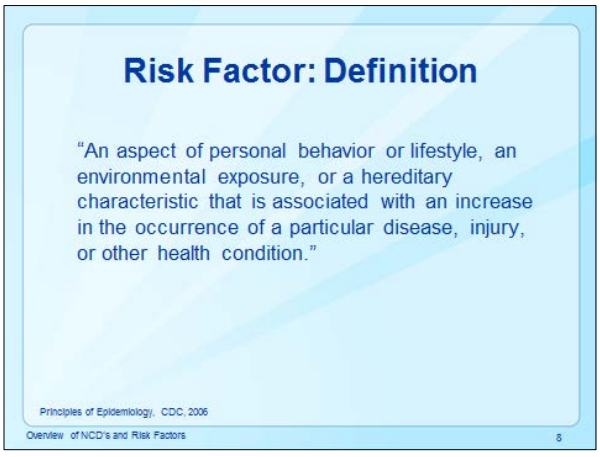
- **Note:** Explain how to read the graphic and that it represents the proportion of total deaths attributed to a particular cause.
- For instance, in low income countries, the proportion of deaths due to cardiovascular disease (CVD) is projected to increase by 2015 and 2030.
- **Discuss** the projected deaths from 2015 and 2030 and point out the differences in high-income, middle-income, and low-income countries.
- **Point out the differences related to deaths from infectious diseases over time and by country income.**
- **Explain** that NCDs comprise the CVD, cancers, and other NCDs in the graph.

Questions

- **Ask participants questions about the graph, such as:**
  - What is trend of deaths due to NCDs in low (or middle) income countries from 2004 to 2030?
  - What do you think accounts for these trends?
- **Ask:** Which NCD is projected to cause the most deaths by 2030? Why?
- **Answer***: CVD. Some factors related to the projected rise in CVD deaths are unhealthy diet and obesity.*

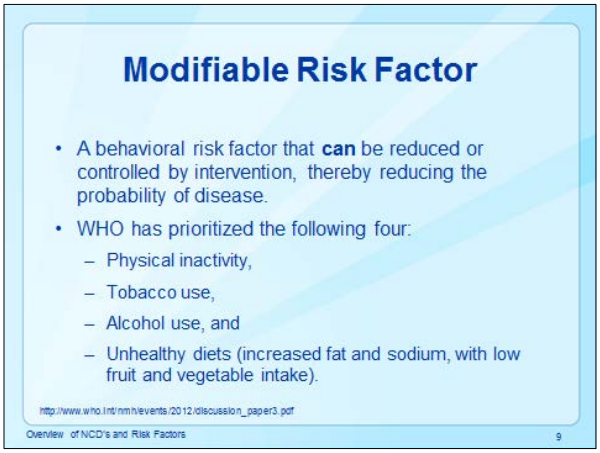
2 minutes

Slide 8



Question

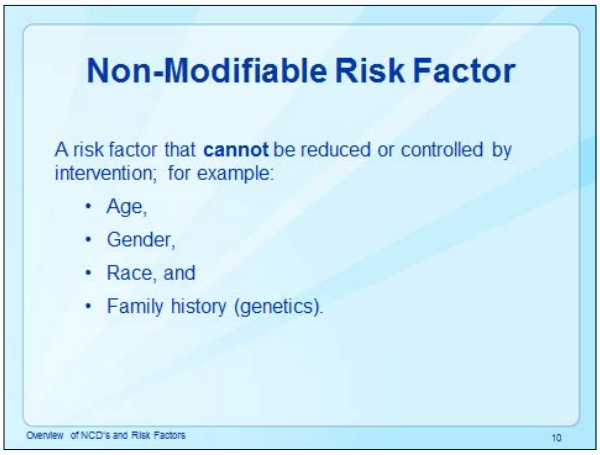
- **Say:** In order to better understand the main NCDs, we need to discuss risk factors*.*
- **Ask participants to define risk factor.**

Duration/ Slide Number	What to Do/What to Say
	• **Click on slide and read the definition.** • **Explain that risk factors can be either modifiable or nonmodifiable.**
5 minutes **Slide 9**	
 Activity	• **Ask participants to find a colleague and spend three minutes to define modifiable risk factors and provide four main examples and define nonmodifiable risk factors and provide four examples.**
 Questions	• **Ask:** Can any group define modifiable risk factor? • **Click and read the definition on the slide.** • **Ask:** Why is it important for us to think about <u>modifiable</u> risk factors? • **Possible answer***: Because we can do something about it; we can have an intervention for it.* • **Ask participants for examples of modifiable risk factors.** • **Click and read examples on the slide.** • **Explain that these modifiable risk factors are not listed in priority order.**

Duration/ Slide Number	What to Do/What to Say

2 minutes

Slide 10

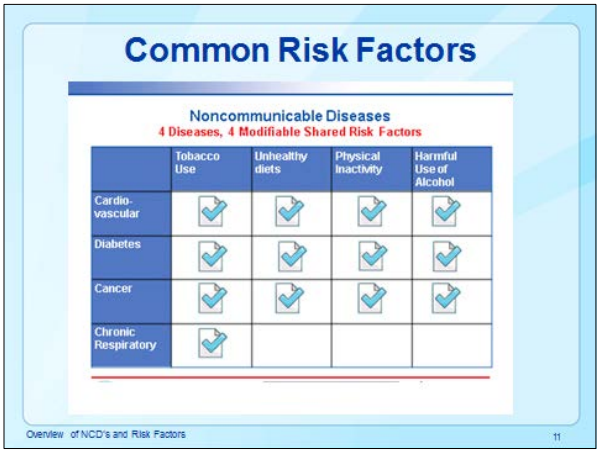


Questions

- **Ask:** What is the definition of nonmodifiable risk factor?
- **Click and read definition on slide.**
- **Ask:** What are examples of nonmodifiable risk factors?
- **Click and read examples on slide.**

2 minutes

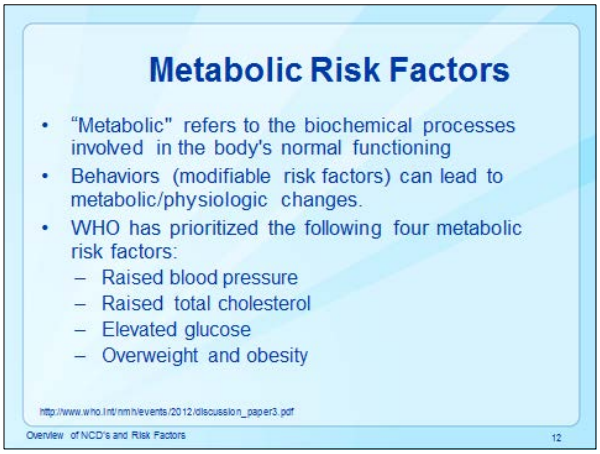
Slide 11



Activity

Question

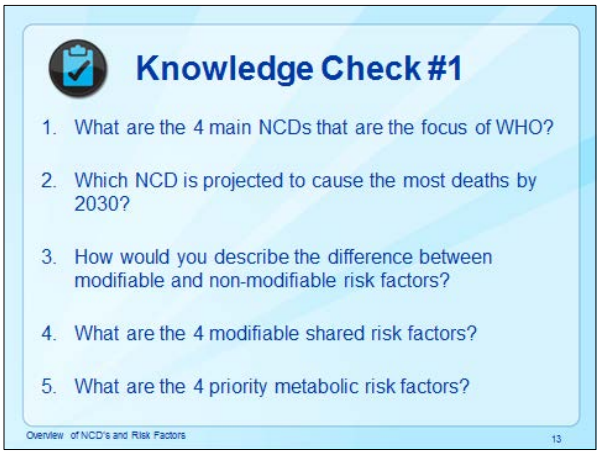
- **Activity:**
  - **Draw this table on two flip charts without the checkboxes filled in. Ask for two volunteers or groups of volunteers to fill it out. Provide directions, e.g., place a check mark if _____ is a risk factor).**
  - **Show slide as the answers and lead a discussion.**
- **Ask:** What does this slide say about tobacco use? Physical inactivity? Unhealthy diet?

Duration/ Slide Number	What to Do/What to Say
	• **Point out that if you have an intervention for physical inactivity and tobacco use, you can make progress on four key NCDs. You don't need to plan separate interventions for each NCD or each risk factor.** • **Tell participants that when you discuss each NCD later on in the module, you will go into more detail on risk factors.** • **Say:** Let's discuss metabolic risk factors next.
2 minutes **Slide 12**	
 Questions	• **Ask:** Can anyone define metabolic risk factors? • **Click and read the definition on the slide.** • **Emphasize that in a majority of cases, modifiable risk factors lead to metabolic risk factors. Interventions on modifiable risk factors can also lead to a reduction in metabolic risk factors.** • **Ask:** Does anyone have any examples of metabolic risk factors? • **Click and read examples on the slide.**

Duration/ Slide Number	What to Do/What to Say

15 minutes

Slide 13

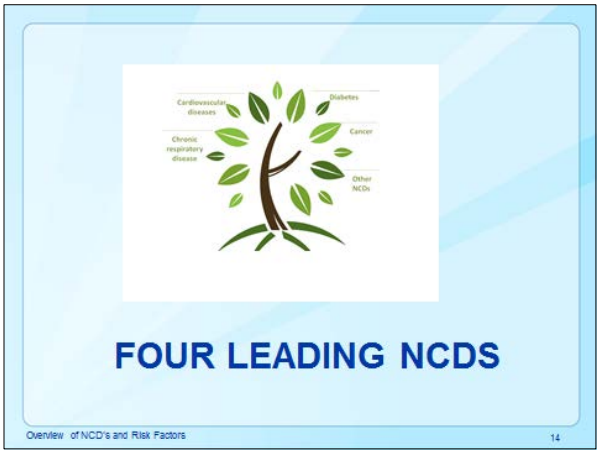


Activity

- **Ask participants to turn to the appropriate page in their participant guide and answer the questions for knowledge check #1**. After 10 minutes, ask for volunteers to share answers.
- **Answers:**
  1. *CVD, cancer, type 2 diabetes, and chronic respiratory disease*
  2. *CVD*
  3. *A modifiable behavioral risk factor can be reduced or controlled by intervention; a nonmodifiable risk factor cannot be reduced or controlled by intervention*
  4. *Physical inactivity, tobacco use, alcohol use, unhealthy diet*
  5. *Raised blood pressure, raised total cholesterol, elevated glucose, overweight and obesity*

Question

- **Ask:** What questions do you have about what we have discussed so far, before we discuss the four leading NCDs in greater detail?

Duration/ Slide Number	What to Do/What to Say
1 minute **Slide 14**	 • **Say**: Let us now turn our focus to the four leading NCDs. We will begin with a website you can access to learn information on NCDs.
10 minutes **Slide 15**	 • **Lead a discussion on how participants can access the WHO website to learn more about global health priorities.** • **Show participants how they can access information on NCDs (mortality/morbidity and risk factors) through the global health observatory and information.** • **Show them how they can access "country statistics" to learn health data and statistics for their own country. (Click on "Health statistics summarized for major health topics", then "Noncommunicable disease country profile".)**

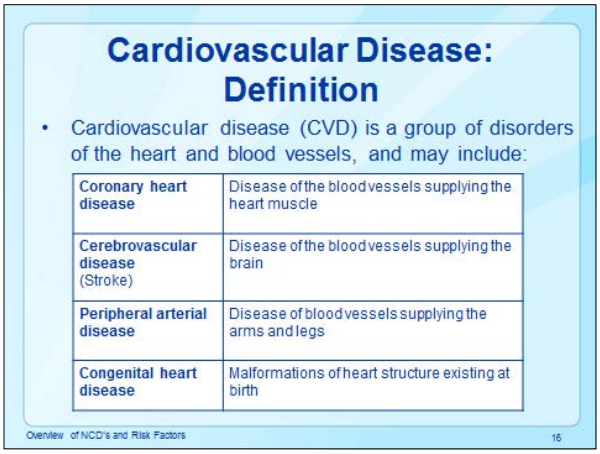
Duration/ Slide Number	What to Do/What to Say

- **Show them how to access the factsheets to learn more about specific disease, their risk factors, and burden of disease through the media centre/factsheets.**

- **Tell participants that they will use the information presented on the WHO website throughout the module.**

2 minutes

Slide 16



- **Say:** We will begin our discussion of NCDs with one of the WHO priority diseases – cardiovascular disease, or CVD.

- **Discuss the slide.**

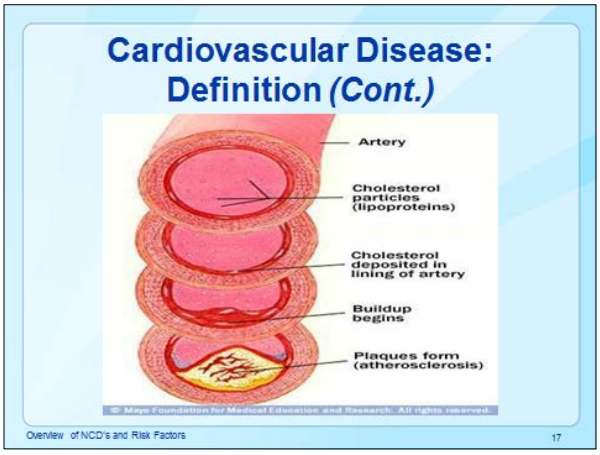
- **Say**: Cardiovascular disease is caused by narrowed, blocked or stiffened blood vessels that prevent your heart, brain or other parts of your body from receiving enough blood.

- **Note:** Some congenital heart disease conditions can be corrected or cured with surgery, while others have a prolonged course. So while technically congenital heart conditions are a type of CVD, we will not discuss them further.

Duration/ Slide Number	What to Do/What to Say

2 minutes

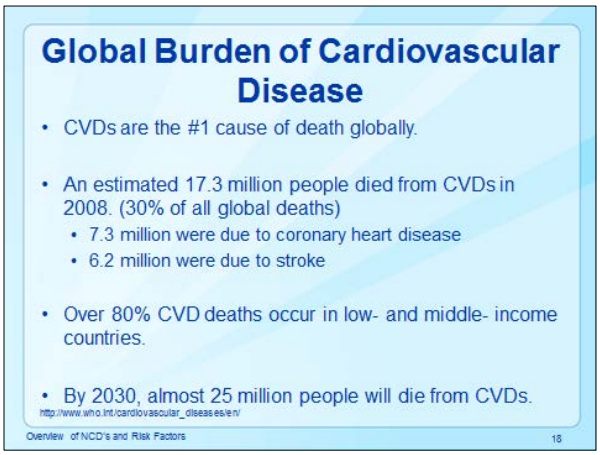
Slide 17

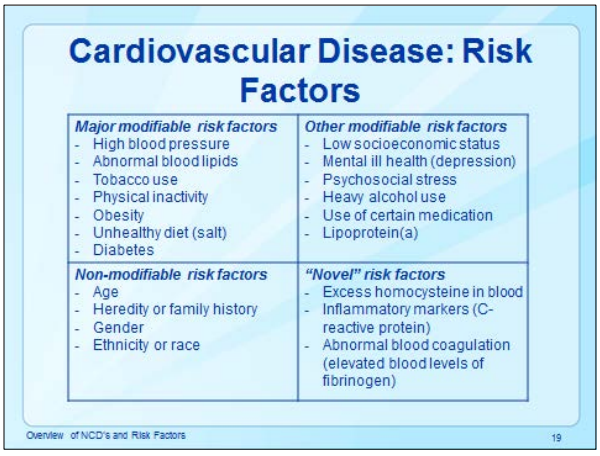


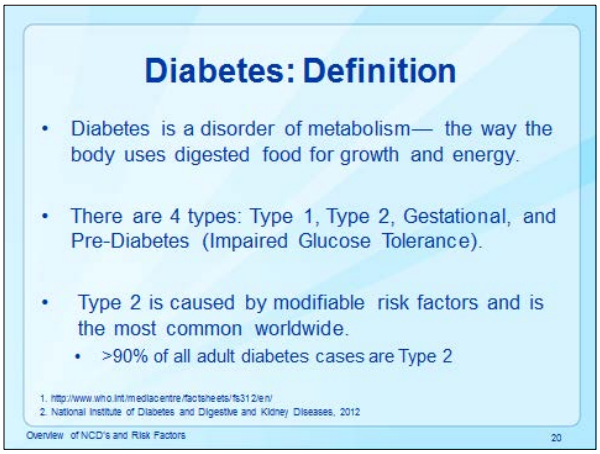
- **Say:** When too many cholesterol particles get into the blood, cholesterol may accumulate on the artery walls.
- Eventually, deposits called plaques may form, leading to a condition known as atherosclerosis.
- The deposits may narrow or block the arteries.
- These plaques can also burst, causing a blood clot.
- If a blood clot forms, it can stop the blood flow leading to a stroke or heart attack.
- The picture shows how atherosclerosis leads to major heart events.

10 minutes

Slide 18



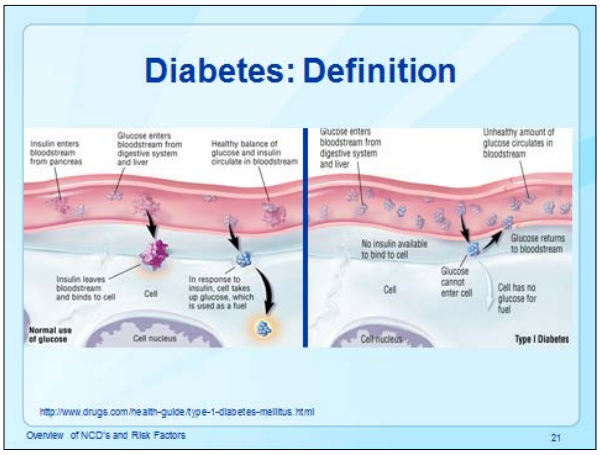
Duration/ Slide Number	What to Do/What to Say
Activity	• **Ask** participants to access the WHO website to find information about the global burden of CVD. • **Ask for volunteers to write some important information they found on the global burden of CVD on the flip chart.**
Flipchart	• **Reveal the slide for possible answers and discuss.** • **Note:** Throughout this module, WHO fact sheets will be used to demonstrate global burdens of these 4 NCDs, but often it is hard to interpret what that means to an individual country. For example, this slide lists the possible answers found on the WHO website for the CVD fact sheet, but these numbers (17.3 million deaths in 2008 and 25 million in 2030) do not include denominators (i.e., the total population). Therefore, just using these makes it difficult to know whether the increase from 17.3 million deaths to 25 million deaths reflects the expected growth in world population. • **Say:** As you use the WHO materials available to you throughout this module and in your work, ensure that you understand the numerators and denominators of the figures that you present. Use **http://www.who.int/gho** where WHO Chronic Diseases and NCD Country Profiles give actual numbers so you can calculate what percent of all deaths are from a particular NCD.
5 minutes **Slide 19**	 • **Note: The table will appear after you click on slide.** • **Say:** Based on what you know about risk factors, can you identify some modifiable and nonmodifiable risk factors for cardiovascular disease?

Duration/ Slide Number	What to Do/What to Say
	• **Click until table appears.** Read any additional risk factors not provided by participants. Note that "novel" means "unusual" or "unique". • **Tell participants you will discuss these risk factors in more detail later on.**
3 minutes **Slide 20**	
	• **Explain** that diabetes is a chronic disease that arises when the pancreas does not produce enough insulin, or when the body cannot effectively use the insulin it produces. Insulin is a hormone made by the pancreas that helps cells to take in glucose (sugar) from the blood and use it for energy. Failure to produce insulin, or of insulin to act properly, or both, leads to raised glucose levels in the blood (hyperglycemia). This is associated with long-term damage to the body and failure of various organs and tissues.
Question	• **Ask:** What are the 4 types of diabetes? • **Click to reveal second bullet.** • **Explain that the focus of this training is on type 2 diabetes.** • **Say:** Type 2 diabetes *was* previously called non–insulin-dependent diabetes mellitus (NIDDM) or adult-onset diabetes. In adults, type 2 diabetes accounts for about 90%-95% of all diagnosed cases of diabetes. While type 2 diabetes used to only be seen in the adult population, it is commonly seen in all age groups due to rise of unhealthy risk factors. It usually begins as insulin resistance, where cells do not use insulin properly. As the need for insulin rises, the pancreas gradually loses its ability to produce it.

Duration/ Slide Number	What to Do/What to Say

2 minutes

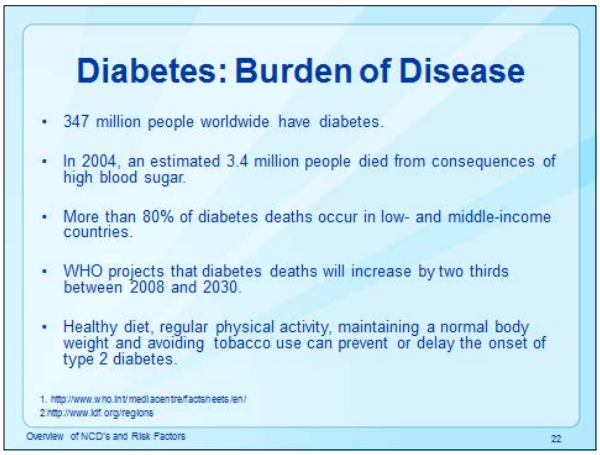
Slide 21



- **Explain** that this diagram shows a healthy, nondiabetic cell on the left, and a diabetic cell on the right. In the cell on the right, you can see that because there is no insulin bound to the cell, no signal is sent for the cell to take up glucose. This leads to an elevated amount of glucose in the bloodstream, and is problematic for other organs and tissues.

10 minutes

Slide 22



Questions

- **Ask:** Why is diabetes an important chronic disease to study and prevent?

Activity

- **Ask** participants to access the WHO website to find information about the global burden of diabetes. If you want participants to access prevalence and mortality data by region, ask them to go to the International Diabetes Federation website. http://www.idf.org/regions.

- **Ask** for volunteers to write some important information they found on the global burden of CVD on the flip chart.

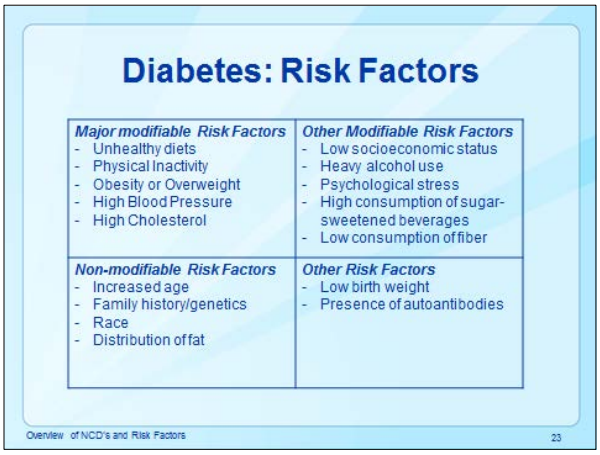
Duration/ Slide Number	What to Do/What to Say

- **Reveal the slide for possible answers and discuss.**

- **Note:** The slide lists the possible answers found on the WHO website for the diabetes fact sheet; however, you may want to point out that these numbers do not include denominators (i.e., the total population). For example, 80% of what number? In the case of the 80% on the slide, the denominator is all diabetes deaths in the world. You may want to also direct the participants to the IDF website.

2 minutes

Slide 23



Questions

- **Say:** Most type 2 diabetes cases are caused by risk factors that are preventable.

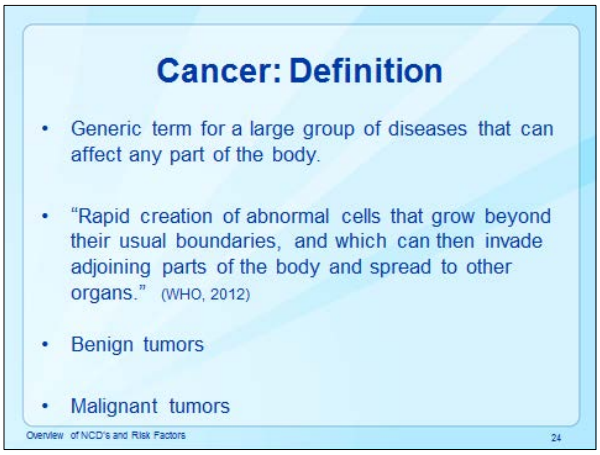
- **Ask** participants if any of the above risk factors are surprising.

- **Possible answers:** *psychological stress, low birth weight*

Duration/ Slide Number	What to Do/What to Say

2 minutes

Slide 24



- **Say:** Cancer is the next NCD we will discuss.
- **Read the slide.**
- **Say:** Cancer begins at the cellular level. Normally, cells grow and divide to form new cells as the body needs them. When cells grow old, they die, and new cells take their place. But sometimes this process goes wrong. New cells form when the body does not need them, and old cells do not die when they should. These extra cells can form a mass of tissue called a growth or tumor.

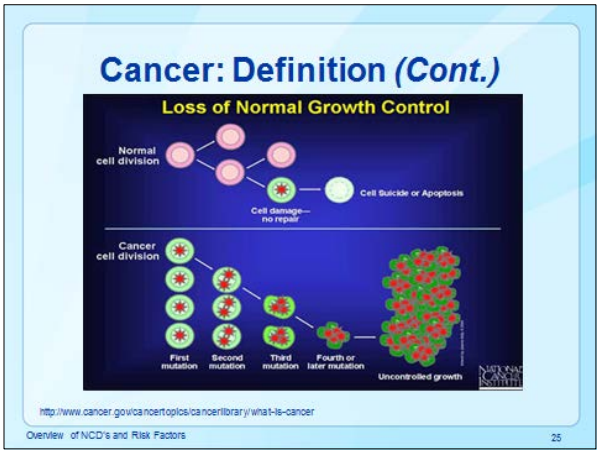
Question

- **Say:** Tumors can be benign or malignant.
- **Ask** if anyone can define benign tumors and malignant tumors.
- **Answer:** *Benign tumors are not cancer, and can be removed. These types of tumors usually do not grow back, invade other tissues around them, or spread to other parts of the body. Malignant tumors are cancer, and can be life-threatening. These types of tumors can often be removed, but sometimes they grow back, invade the tissues around them, and spread (metastasize) to other parts of the body.*

Duration/ Slide Number	What to Do/What to Say

2 minutes

Slide 25

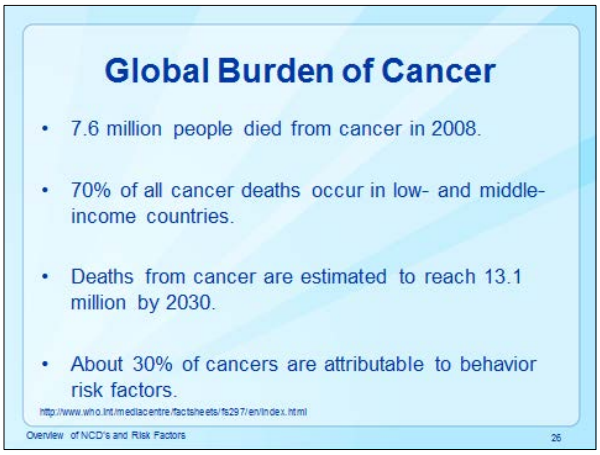


- **Say:** This diagram shows the difference between normal cell division at the top, where damaged cells do not continue to live and divide, and cancerous cell division at the bottom, where damaged cells grow uncontrollably into a growth or tumor.
- The transformation from a normal cell into a tumor cell is a multistage process. These changes are the result of a person's genetics interacting with three categories of external **carcinogens** – cancer causing agents – including (1) **physical** carcinogens, such as ultraviolet and ionizing radiation; (2) **chemical** carcinogens, such as asbestos, components of tobacco smoke, food contaminants, and arsenic (a drinking water contaminant); and, (3) **biological** carcinogens, such as infections from certain viruses, bacteria, or parasites.
- There are over 100 different types of cancer, but for the purposes of this class we will focus solely on cervical, lung, breast, stomach, and liver cancer. (Note: If there are other, more prevalent cancers in your country, add in a slide to include them in the discussion.)

Duration/ Slide Number	What to Do/What to Say

10 minutes

Slide 26



Activity

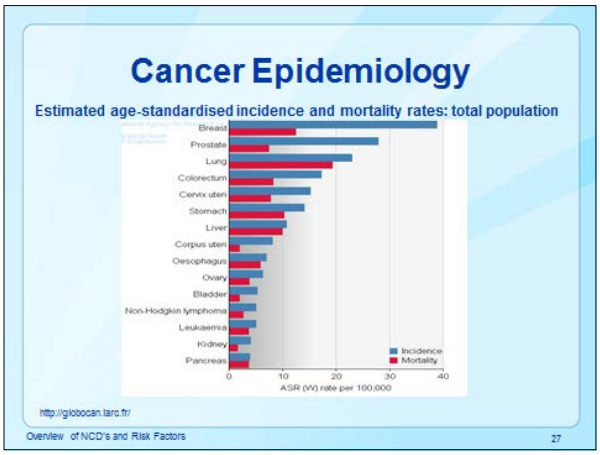
- **Ask participants to work individually or in small groups to access information about the global burden of cancer.**
- **Ask for volunteers to write some facts on the flip chart (*encourage them to get up and be physically active!)***
- **Reveal and discuss bullet points on the slide.**

Flipchart

- **For the last bullet say:** About 30% of cancer deaths are due to the five leading behavioral and dietary risks: high body mass index, low fruit and vegetable intake, lack of physical activity, tobacco use, alcohol use.

3 minutes

Slide 27



- **Say:** Cancer increasingly affects all nations, including low, middle, and high income countries. The incidence rates and mortality rates differ greatly between cancers.

Question

- **Ask a participant to interpret the table (i.e., which cancers have the highest incidence and mortality rates).**

Duration/ Slide Number	What to Do/What to Say

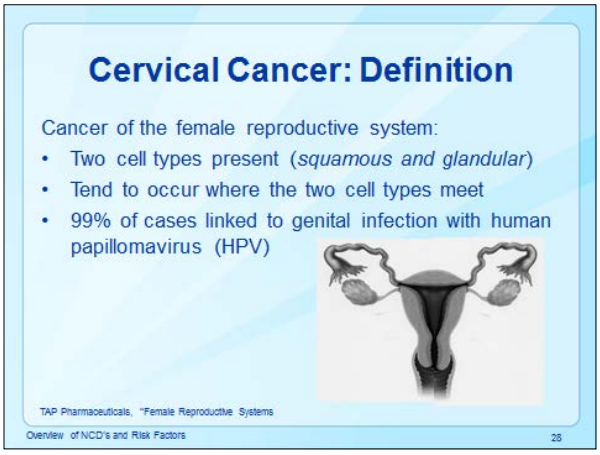
- **Note:** In this module we will be using graphs similar to this for all cancers. You will note that some cancers are specific to genders (such as cervical cancer only among women and prostate cancer only among men). However, for these graphs the number of cases (incidence) and number of deaths (mortality) have been divided by the total population to maintain comparability among these graphs from IARC.

- **Say:** We will now examine several types of cancer. Each has a very high incidence or mortality rate, and has been deemed a top priority by WHO: cervical, lung, breast, colorectal, and prostate. These cancers have the highest incidence rates and the highest mortality rates globally.

- **Note:** In the Appendix there are additional slides on stomach, liver, and esophagus cancer if you wish to include in the presentation.

2 minutes

Slide 28



- Now we will focus on the five cancers previously mentioned, beginning with cervical cancer.
- **Click and read each bullet.**

- **Say:** The cervix is located at the lower end of the uterus, at the top of the vagina. The cervical canal is enveloped by the cervix, allowing birth and menstruation.

- The cells on the outside of the cervix are squamous mucosa, like the vagina and the inside of your mouth. The cells on the inside of the cervix are glandular and are responsible for the production of mucous, like the inside of your nose.

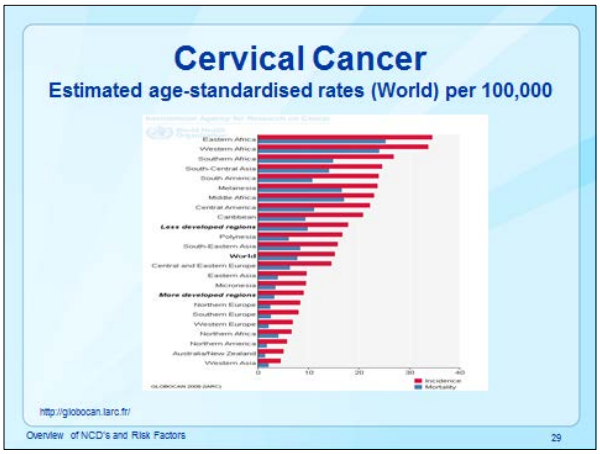
Duration/ Slide Number	What to Do/What to Say

Cervical cancers tend to occur where the two cell types meet; this is called the transformation zone. Cancers can come from the squamous or the glandular cells. The glandular cancers hide deeper in the cervix and are harder to detect.

- Some may argue that cervical cancer does not meet the definition of the noncommunicable part of NCD because of its link with HPV. However, it is important because it is the most common cause of cancer death in parts of the world where Pap tests are not available, and it is the easiest gynecologic cancer to prevent through screening.

5 minutes

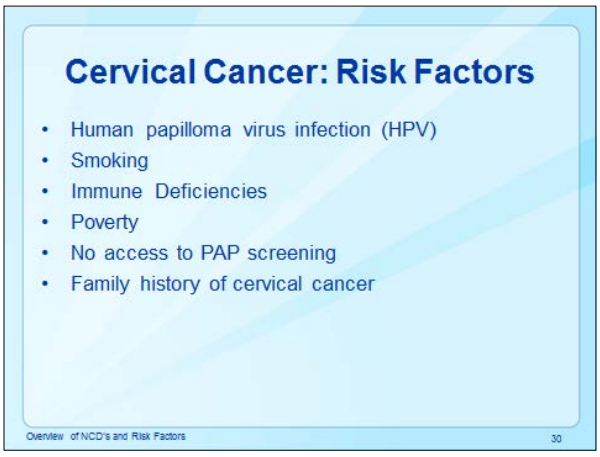
Slide 29



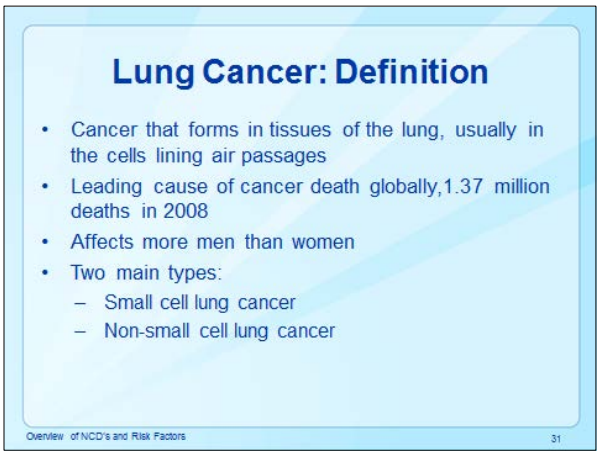
- **Discuss the slide.**

2 minutes

Slide 30



- **Read the slide.**
- **Say**: After HPV, the main risk factors for cervical cancer are

Duration/ Slide Number	What to Do/What to Say
	smoking and immune deficiencies such as HIV. All of our bodies have the ability to fight infections. Some of our bodies are more effective fighters of HPV than others. A weakened immune system from any cause makes the body less able to fight the virus. • Women who smoke are more likely to get cervical precancer and cancer. Tobacco may contribute to cervix cancer risk in multiple ways. First, tobacco decreases the body's ability to fight off infections like HPV. Second, some of the carcinogenic chemicals found in tobacco are concentrated in the mucous made by the cervical glands. When a woman who smokes has an HPV infection, the carcinogens and the virus are a "double hit" for her cervix. • Poverty is related with lack of access to PAP screenings. Without the means to get to a clinic for screening, or worse yet, without a local clinic offering such screenings, the risk for developing cervical cancer increases.
2 minutes **Slide 31**	 • **Read the slide.** • **Explain** that "small cell" and "non-small cell" are the names given to the two types of lung cancer based on the size of the cancer cells and how they look under a microscope. The three main types of non-small cell lung cancer are squamous cell carcinoma, large cell carcinoma, and adenocarcinoma. Non-small cell lung cancer is the most common kind of lung cancer. • **Say**: Small cell lung cancer is an aggressive (fast-growing)

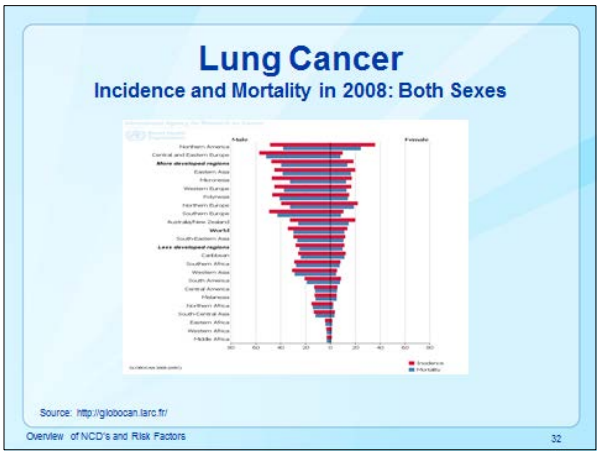
Duration/ Slide Number	What to Do/What to Say

cancer that forms in tissues of the lung and can spread to other parts of the body. The cancer cells look small and oval-shaped when looked at under a microscope.

- If the lung cancer is made up of both types, it is called mixed small cell/large cell cancer.

2 minutes

Slide 32

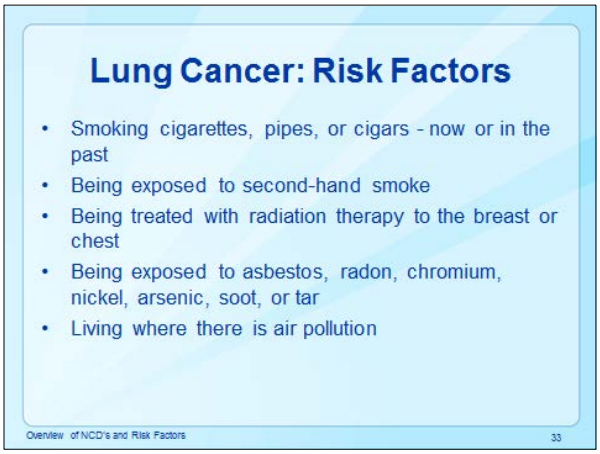


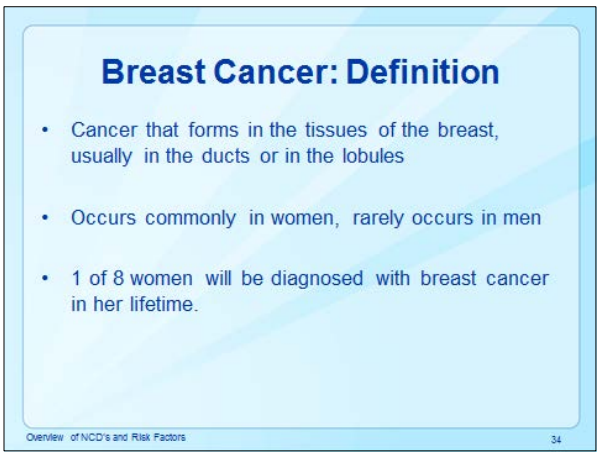
Question

- **Ask:** Why is there a large discrepancy between the rates of lung cancer between genders?
- **Answer:** *The most common risk factor for lung cancer is using tobacco products. More males than females smoke and use tobacco globally. Therefore, more males than females get lung cancer.*

2 minutes

Slide 33

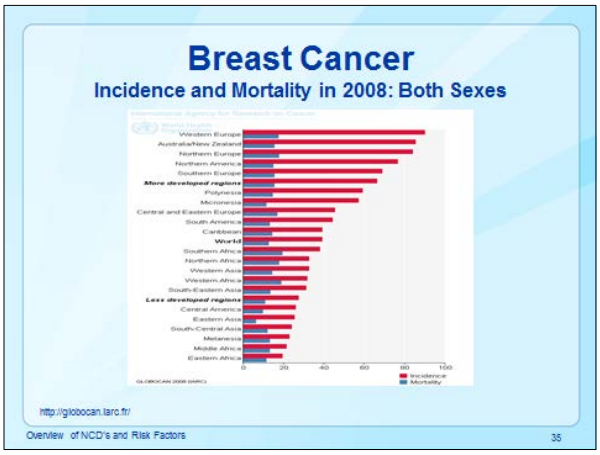


Duration/ Slide Number	What to Do/What to Say
Question	• **Ask:** Which risk factor is most associated with lung cancer? **Answer:** *Tobacco* • **Say:** Anytime tobacco exposure is combined with these other risk factors, the risk for lung cancer is increased. • **Read the slide.** • **Say:** We will now discuss breast cancer.
2 minutes **Slide 34**	
	• **Say:** Breast cancer occurs most commonly in women, but also occurs in men. It is usually diagnosed with the help of a mammogram, where breast tissue density is confirmed and tumors can be identified. Breast examinations help detect early onset of breast cancer for many populations.
Question	• **Ask:** How many women will be diagnosed with breast cancer in her life? • **Click the slide once to reveal the answer.**

Duration/ Slide Number	What to Do/What to Say

2 minutes

Slide 35



- **Discuss the slide.**

2 minutes

Slide 36

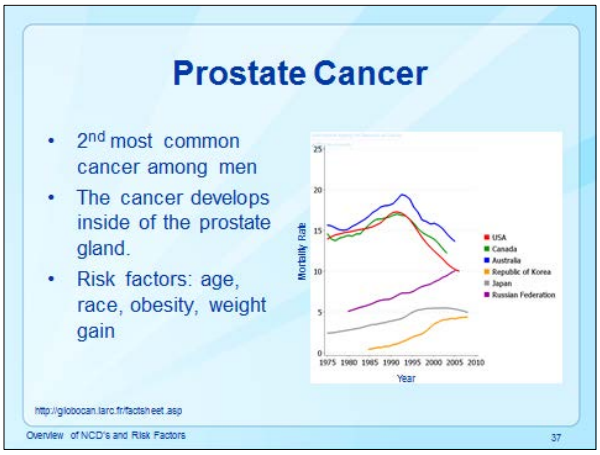
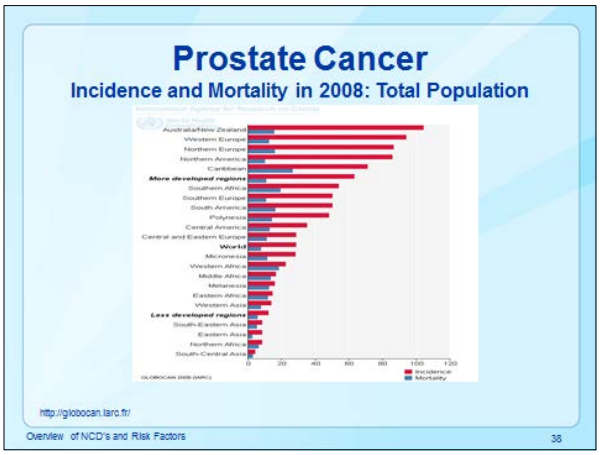
- **Say:** There are many different risk factors for women (because breast cancer is rare in men, we will just focus on the risk factors for women).

Question

- **Ask:** Of the listed risk factors, which are preventable or are "lifestyle" risk factors?
- **Answer***: Weight and physical activity, (sometimes) hormone therapies. Long-term use of estrogen and progesterone hormones (more than five years) are associated with breast cancer incidence rates.*

Question

- **Ask:** Of the remaining risk factors, which do we hear about most often?
- **Say:** Usually we focus on the genetic causes of breast cancer. However, genetic mutations only account for less

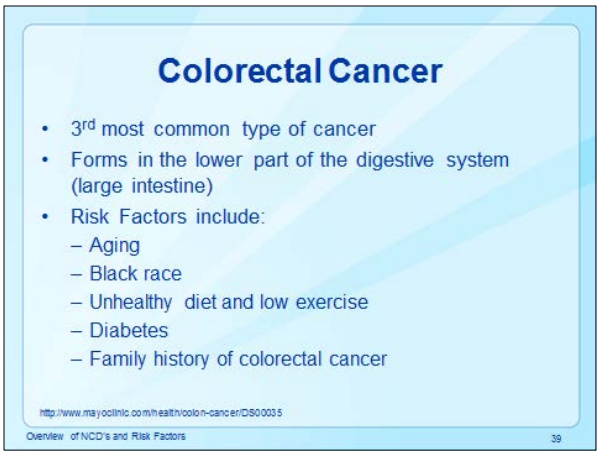
Duration/ Slide Number	What to Do/What to Say
	than 10% of all breast cancer cases. Most women have a much higher risk of breast cancer if they are very inactive, obese, over the age of 60, and are white.
2 minutes **Slide 37**	
	• **Say:** Prostate cancer is a cancer which only affects men – it develops in the prostate gland. While no singular causes of prostate cancer have been identified, there are several risk factors: aging, black race, obesity, and those with a family history of prostate cancer are at a higher risk. Symptoms can include blood present in the urine or frequent pain when urinating. • Overall mortality rates of prostate cancer have begun to decrease over the past decade, largely due to improved diagnoses and early detection rates. The graph on the right shows the change in death rates for six different countries over the past 35 years.
2 minutes **Slide 38**	

Duration/ Slide Number	What to Do/What to Say

- **Discuss the Slide**

2 minutes

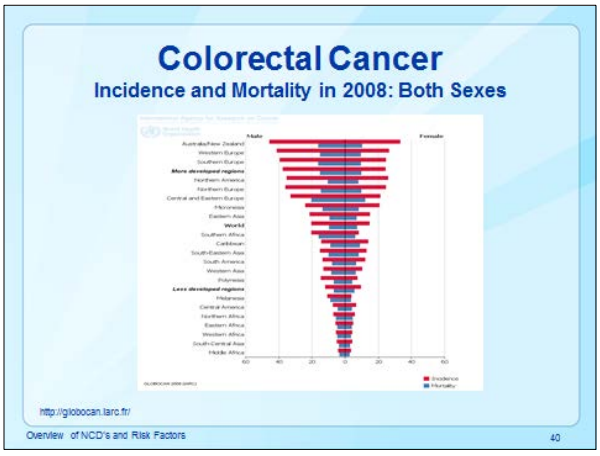
Slide 39



- **Say:** Most colorectal cancers begin as small clumps of cells called polyps. These polyps may eventually develop into cancer; however, some polyps remain benign. Often, there are few symptoms so older adults are recommended to undergo a screening process for colorectal cancer detection. More men than women develop colorectal cancer, but the cancer has a higher fatality rate among women.
- There are currently no definitive causes identified for colorectal cancers. However, many risk factors have been identified. They include older age, black race, unhealthy diets (high in fat and low in fiber), low exercise, diabetes, and a family history of colorectal cancer.

2 minutes

Slide 40

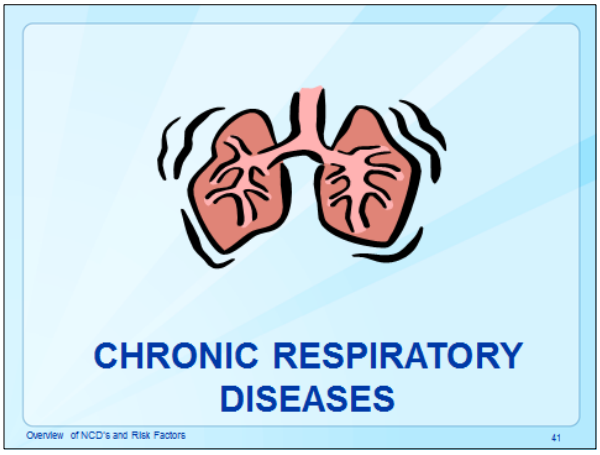


- **Discuss the slide**

Duration/ Slide Number	What to Do/What to Say

2 minutes

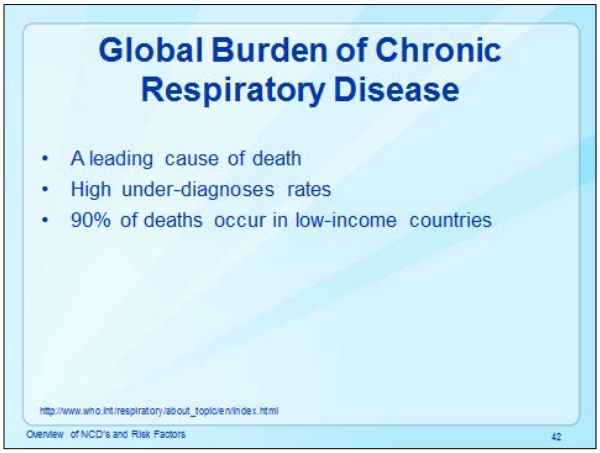
Slide 41



- **Explain** that you will discuss the next WHO priority NCD disease: Chronic Respiratory Disease
- **Read the slide.**
- **Explain** that you will just discuss the highest prevalence chronic respiratory diseases: COPD and asthma**.**

2 minutes

Slide 42

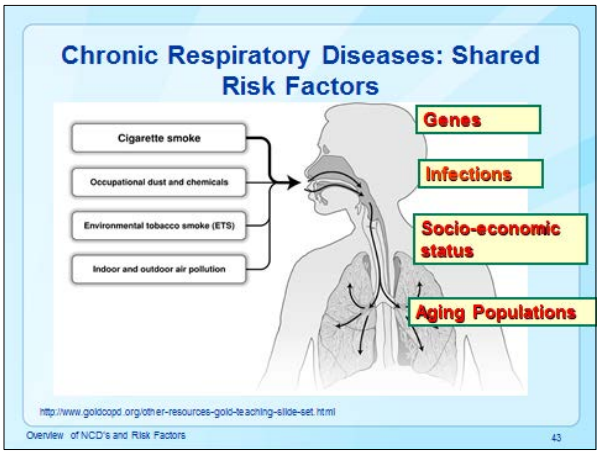


- **Say:** Chronic respiratory disease affects hundreds of millions of people globally. Because it includes so many different types of respiratory disorders, and the underdiagnoses rate is so high, an estimate of the number affected cannot be produced. What is known, however, is that most (90%) of the deaths from chronic respiratory diseases occur in low-income countries. This is due to the higher prevalence of risk factors and the exposure risks.

Duration/ Slide Number	What to Do/What to Say

2 minutes

Slide 43

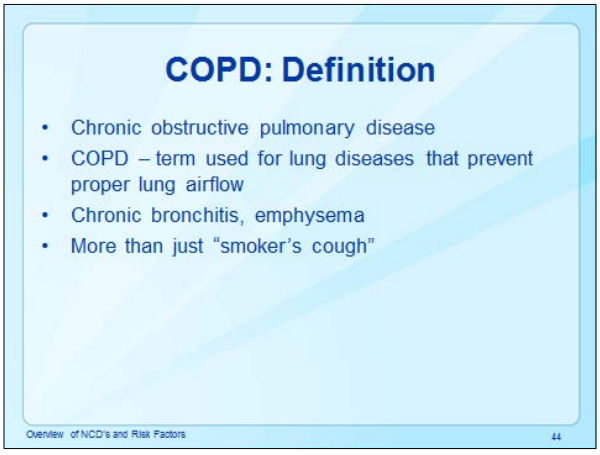


Question

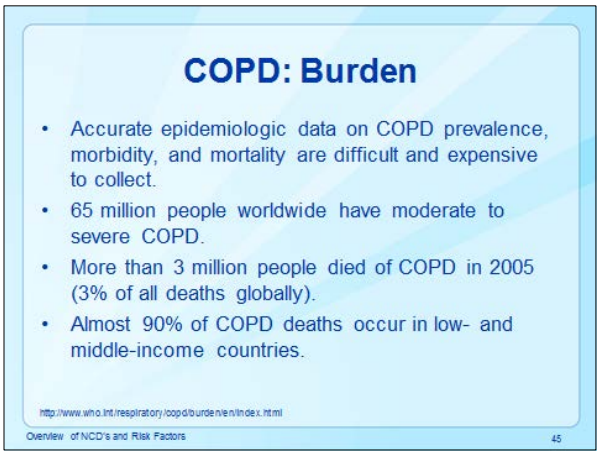
- **Ask** participants to give specific examples of the types of risk factors they just learned about from the previous slide.
- **Click to show the slide.** Ask for a volunteer to read the risk factors aloud.
- **Say:** Many chronic respiratory diseases are preventable. Total deaths from chronic respiratory diseases are projected to increase by more than 30% in the next 10 years unless urgent action is taken to reduce underlying risk factors, especially tobacco use.

2 minutes

Slide 44



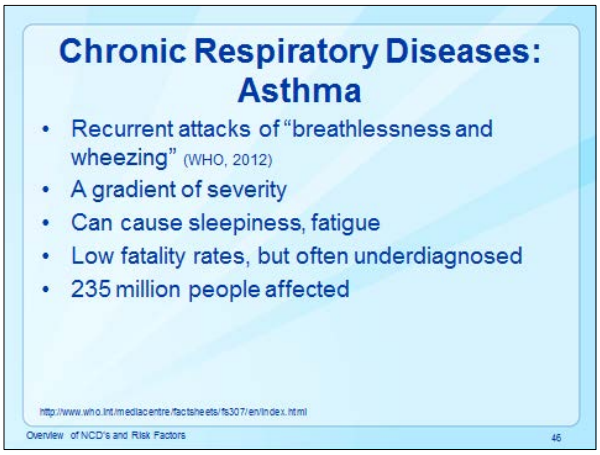
- **Say:** Chronic obstructive pulmonary disease (COPD) is term that includes diseases characterized by a persistent blockage of airflow from the lungs.
- The air that you breathe goes down your windpipe into tubes in your lungs called bronchial tubes or airways. Within the lungs, your bronchial tubes branch into thousands of

Duration/ Slide Number	What to Do/What to Say
	smaller, thinner tubes called bronchioles. These tubes end in bunches of tiny round air sacs called alveoli. Small blood vessels called capillaries run through the walls of the air sacs. When air reaches the air sacs, the oxygen in the air passes through the air sac walls into the blood in the capillaries. At the same time, carbon dioxide moves from the capillaries into the air sacs. This process is called gas exchange. The airways and air sacs are elastic. When you breathe in, each air sac fills up with air like a small balloon. When you breathe out, the air sacs deflate and the air goes out. With COPD less air flows in and out of the airways. • In many instances, COPD goes under-diagnosed because it is assumed to be a harmless "smoker's cough", and the symptoms are very slow to progress. However, it is a life-threatening lung disease that interferes with normal breathing and is not fully reversible.
10 minutes **Slide 45**	
 Activity	• **Ask participants to work individually or in small groups to access information about the global burden of COPD.** • **Ask for volunteers to write some facts on the flip chart.** • **Reveal and discuss bullet points on the slide.**
 Flipchart	

Duration/ Slide Number	What to Do/What to Say

2 minutes

Slide 46

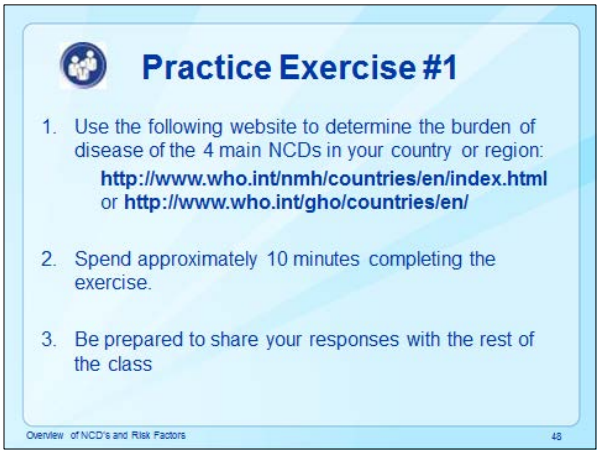


- **Say:** Asthma is a common chronic respiratory disease. It is characterized by chronic breathlessness and wheezing, where an individual struggles to intake air and the airways become restricted. Due to the lack of oxygen, frequent attacks can leave an individual tired and frequently without energy.
- Globally, over 235 million individuals are affected. It is the number one chronic disease among children worldwide. Unfortunately, it is often undiagnosed or under-diagnosed, leading to poor treatment or no treatment at all. While relatively few deaths from asthma occur, 80% of the deaths occur in low-income countries, usually due to lack of treatment.

2 minutes

Slide 47

- **Say:** Asthma can be treated with medications that help open airways during an attack and help reduce inflammation. If an individual has been diagnosed with

Duration/ Slide Number	What to Do/What to Say
	asthma, they may also take special care to avoid risk factors which may trigger an attack, such as mold, pollen, pet dander, smoke, or other air pollutants. • In the picture you can see how, in an asthmatic bronchiole, the airway becomes restricted so that airflow is greatly reduced, leading to the "wheezing" attacks.
20 minutes **Slide 48**	
 Activity	• **Read the assignment.** • **Give participants approximately 10 minutes to complete the activity.** • **Note:** If no data exists on the website for their country, either encourage learners to find another resource or suggest they look at data for a neighboring country. • **Debrief for 10 minutes. Questions to ask:** o Why is there a high burden of _____ disease in your country? o What are some factors that might cause the high burden? • **Make the transition to risk factors – learning why there is a burden of disease and how they may be able to prevent or control it.**

Duration/ Slide Number	What to Do/What to Say

1 minute

Slide 49

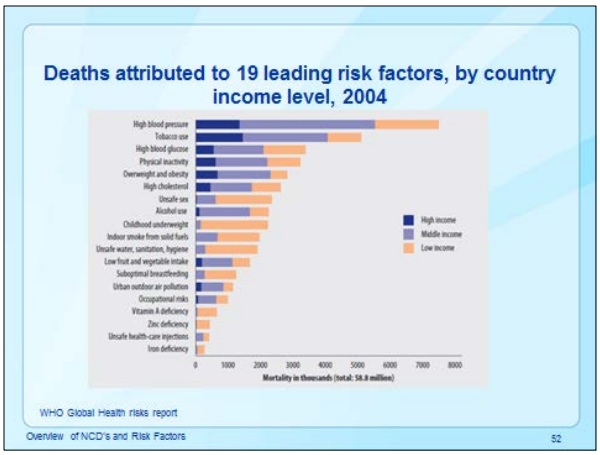
- **Say:** Let us now turn our focus to risk factors.

3 minutes

Slide 50

- **Say:** We just talked about the main NCDs and the risk factors of each. As we learned, these NCDs share some common risk factors. Why should we collect data on risk factors?
- In countries around the world, disease-only surveillance systems have been developed for communicable diseases such as measles and polio. In countries such as China, where the health burden has shifted from communicable to noncommunicable diseases, noncommunicable disease surveillance systems have been created to monitor conditions such as cancers and injuries.
- However, surveillance for noncommunicable diseases can be difficult because of the lag time between an exposure and the health condition. When an individual is diagnosed

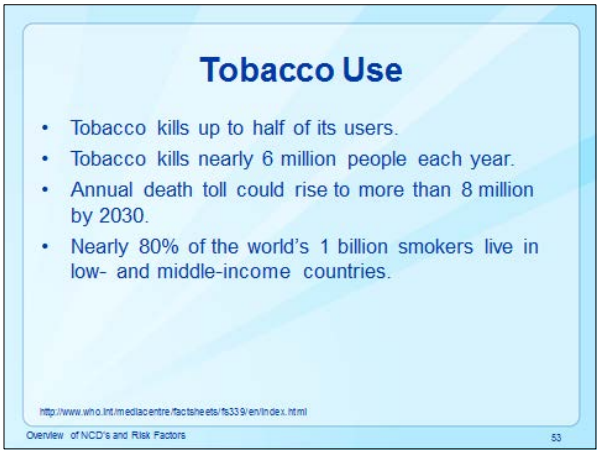
Duration/ Slide Number	What to Do/What to Say
	with a health condition, it is unclear how much time has elapsed since his/her exposure. • Furthermore, there is often more than one exposure that can increase the risk for a health condition. For example, genetics, obesity, lack of physical activity, smoking, and diabetes are all factors that can increase the risk for cardiovascular disease. These risk factors can also work in combination with one another to increase the risk of cardiovascular disease. • Finally, an exposure is often linked to more than one health condition. For example, obesity is a risk factor for diabetes, cardiovascular disease, and some types of cancer. • Interventions that target the risk factors are needed to prevent diseases such as cardiovascular diseases.
2 minutes **Slide 51**	 • **Say**: It is clear that <u>behavior</u> plays a critical role in the development of health conditions, many of which can lead to early death. • It is imperative to change people's behaviors and practices to reduce the risk of developing an adverse health condition. This will ultimately lead to a reduction in the burden of noncommunicable diseases in a population. • To implement an effective intervention program, it is necessary to have information on the distribution of the risk factor in a population. Surveillance for risk factors is essential if your ultimate goal is to reduce the burden of noncommunicable diseases in your population. • We will next discuss the four main risk factors: tobacco use,

Duration/ Slide Number	What to Do/What to Say
	unhealthy diet, physical inactivity, and harmful use of alcohol.
5 minutes **Slide 52**	
Question	• **Briefly discuss implications of this graph.** • **Ask:** What stands out on this slide? • **Possible responses:** • *8 out of 10 of the risk factors associated with the highest mortality rates are directly related to NCDs (e..g., high blood pressure, tobacco use).* • *Low- and middle- income countries have higher deaths due to the leading risk factors compared to high income countries.*
Question	• *Highest mortality rates are associated with high blood pressure, which can lead to CVD.* • **Ask:** Do you think these data are accurate? Overestimated? Underestimated? Why? • **Possible answers:** • *There might be some underreporting due to lack of surveillance systems in some LMICs.*

Duration/ Slide Number	What to Do/What to Say

5 minutes

Slide 53



- **Say:** Nicotine that is found in tobacco is a stimulant that temporarily stimulates the central nervous system. It is highly addictive. When nicotine is inhaled by the lungs, it enters the bloodstream where it immediately flows to the brain, increasing mental and/or physical function. Since this sensation is short-lived, people often smoke a number of cigarettes through the day to maintain the stimulation.

Question

- **Ask** participants to access the WHO website to identify some facts about tobacco usage globally. Ask participants to share what they found.
- **Reveal the slide to show additional facts.**
- **Show** participants how they can access country specific data on tobacco: **http://www.cdc.gov/tobacco/global/index.htm** and GTSS ATLAS **http://www.cdc.gov/tobacco/global/gtss/tobacco_atlas/index.htm**.

Duration/ Slide Number	What to Do/What to Say

2 minutes

Slide 54

- **Say:** The global adult tobacco survey (GATS) started in 1997 and assessed daily tobacco usage and the exposure to second-hand smoke of adults in select countries. They concluded that most people who use tobacco products on a daily basis have a desire to quit using tobacco. The countries with the highest smoking rates globally were India, Russia, China, Thailand, Vietnam, Turkey, Brazil, and Uruguay.

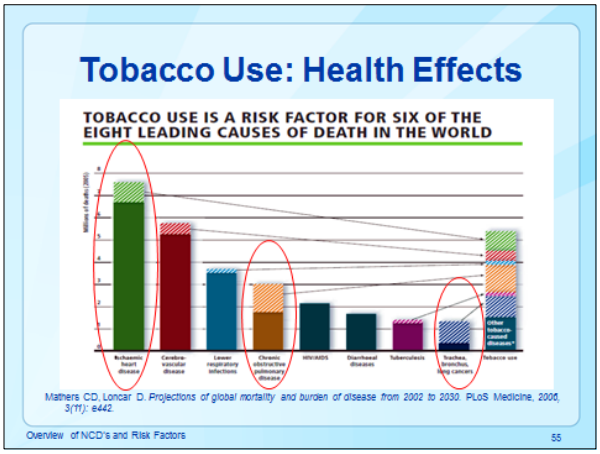
Question

- **Ask:** What stands out on this map?
- **Possible responses and discussion points:**
- *No surveys for most of Africa, which is difficult to help inform policy*
- *There are plans in place to conduct GATS in several African countries*
- **Explain that youth surveys have been conducted in many countries, including the United States.**
- **Point out the resource they can use to view data from tobacco surveys conducted in their country.**

Duration/ Slide Number	What to Do/What to Say

2 minutes

Slide 55

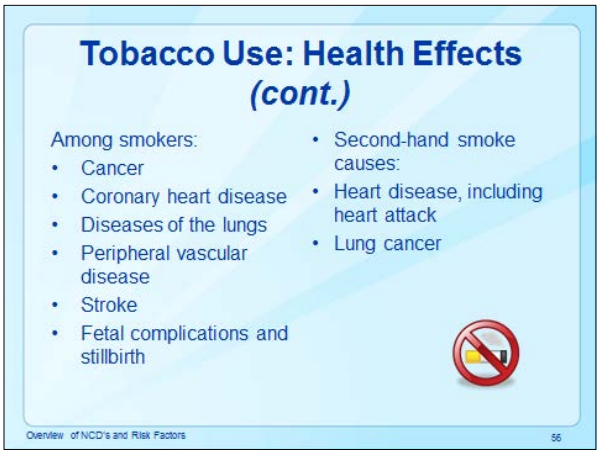


Question

- **Ask a participant to explain the significance of this slide.**
- **Points to include:**
- Tobacco use is a risk factor for six of the eight leading causes of death in the world.
- Three of these causes of death are NCDs: heart disease, COPD, and trachea/bronchus/lung cancers.

2 minutes

Slide 56



- **Say:** Tobacco use affects almost all organs in the body. Therefore it has been linked to a variety of adverse health effects throughout the body. These include:
- Cancers including lung, kidney, bladder, stomach, and cervix;
- Coronary heart diseases (CHDs). The risk of CHD among

Duration/ Slide Number	What to Do/What to Say
	smokers is 2-4 times that of nonsmokers; • Diseases of the lungs including emphysema, chronic obstructive pulmonary disease; • Peripheral vascular disease; • Stroke; and, • Fetal complications and stillbirth among pregnant women • **Furthermore, second-hand smoke can increase the risk of heart disease including heart attacks, and lung cancer among individuals who do not smoke.**
2 minutes **Slide 57**	 • **Say:** Let's look at the risk factor of unhealthy diet more closely by first discussing what would be considered a "healthy" diet. • **Solicit responses.** • **Possible responses:** *Fresh fruits and vegetables, lean meats, fish, and whole grains* • **Say:** A healthy diet is important to help promote and maintain a healthy weight; however, increases in the types and availability of a wide variety of unhealthy foods has led to increases in poor diets. Although there are a variety of influences that shape an individual's body weight, behavior and environment are two important factors that can be modified. • Maintaining a healthy weight is about balancing the amount and types of food consumed with the amount of energy used by the body. When food consumption is more than energy used, an imbalance occurs which leads to weight gain that

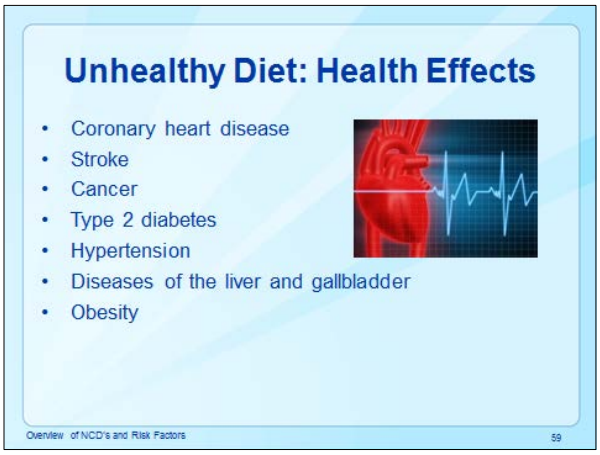
Duration/ Slide Number	What to Do/What to Say
	can lead to overweight or obesity. However, a healthy diet is more than just balancing food and energy. A healthy diet also includes appropriate intake of nutrients and macronutrients.
2 minutes **Slide 58**	

- **Say:** Around the world diets have changed drastically. From the 1960s to the present, people are consuming more than 400 more calories per day. These calories are typically composed of high fat, calorie-concentrated foods and beverages. Many countries have also increased their consumption of meats and wheat products, which has also increased the daily consumption of fats and refined starches. Even though overall calorie consumption is rising, nutritional intake has not. People are consuming greater amounts of nutrient-poor foods.
- Some countries such as China have experienced drastic increases in consumption of fats, from 24g per day in the 1960s to over 70g per day currently. North American and Western European countries still consume the most amount of fat per day, but the relative change in consumption is less than other nations.

Duration/ Slide Number	What to Do/What to Say

2 minutes

Slide 59

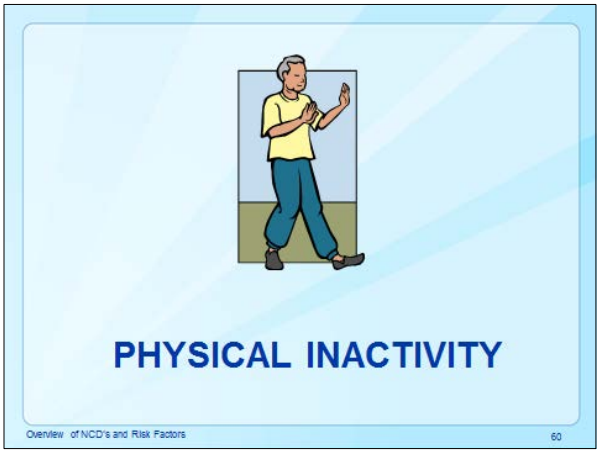


Question

- **Ask** participants for the health effects of an unhealthy diet.
- **Read possible answers on the slide.**
- **Unhealthy diet is a risk factor for all the other conditions listed INDEPENDENTLY OF OBESITY.**

2 minutes

Slide 60



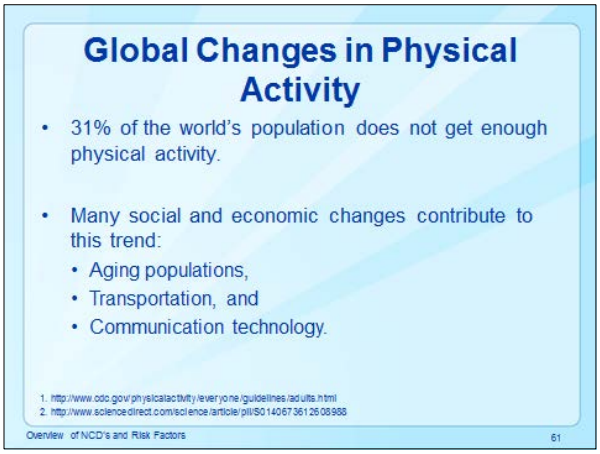
Question

- **Tell participants that you will now discuss the risk factor of physical inactivity.**
- **Ask:** What are the benefits of physical activity?
- **Possible answers:** *Physical activity improves overall health and fitness. In addition to a healthy diet, physical activity is an important part of a healthy weight. Recall that a healthy weight is a balance between food consumed and energy used by the body. Physical activity increases the amount of energy used by the body. Increased physical activity helps maintain a balance while the lack of physical activity can lead to weight gain.*

Duration/ Slide Number	What to Do/What to Say

2 minutes

Slide 61

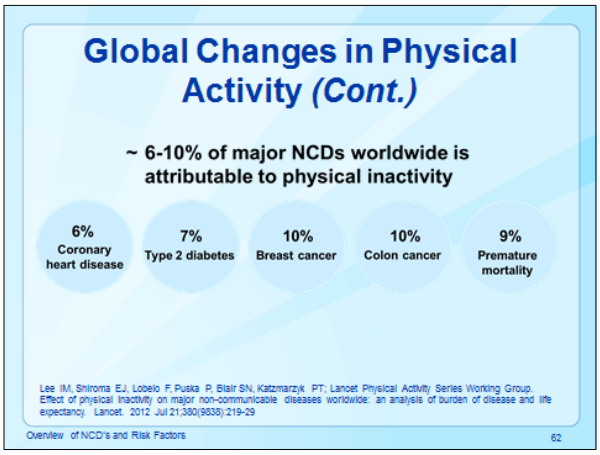


- **Say:** In a series of public health articles published in 2012, researchers examined the global trends and burdens associated with physical inactivity and chronic diseases. They found that physical inactivity is steadily rising due to many different changes in countries' infrastructure, population demographics, and overall technology. As transportation and technology have changed in many countries, more cars and telecommuting have kept people from walking or commuting to work in other ways. Older populations are also less likely to participate in daily exercise, so the global aging of the population also contributes to decreased physical activity.
- Today, it is recommended that children get at least one hour per day of physical exercise including aerobic, muscle-strengthening, and bone-strengthening exercises. Adults should also have between 75 min to 150 minutes of exercise per week, and it should also include aerobic activities combined with muscle-strengthening exercises.

Duration/ Slide Number	What to Do/What to Say

2 minutes

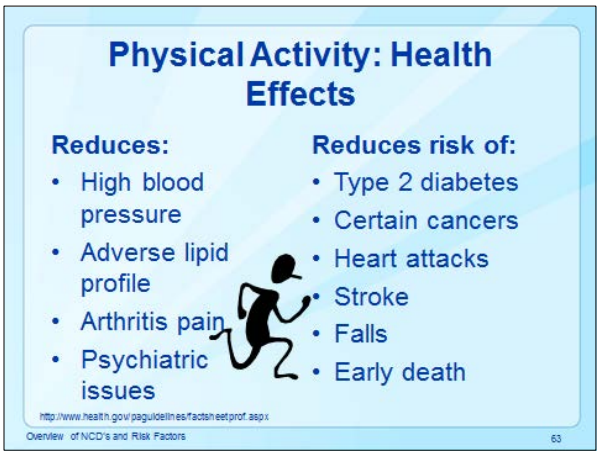
Slide 62



- **Say:** Overall, physical inactivity is responsible for many different chronic diseases. Just by not being active, you increase your risk for these five diseases! Worldwide, this is equivalent to 5.3 million preventable deaths**.**
- **Discuss the slide.**

10 minutes

Slide 63



Activity

- **Activity:**
- **Have two flipcharts and ask participants to fill in (1) what does physical activity reduce, and (2) other risks physical activity reduces.**
- **Have participants fill out the two columns. Click through the slide to reveal the answers.**
- **In addition to maintaining a healthy weight, increased physical activity is also associated with reducing:**
  - **High blood pressure**

Flipchart

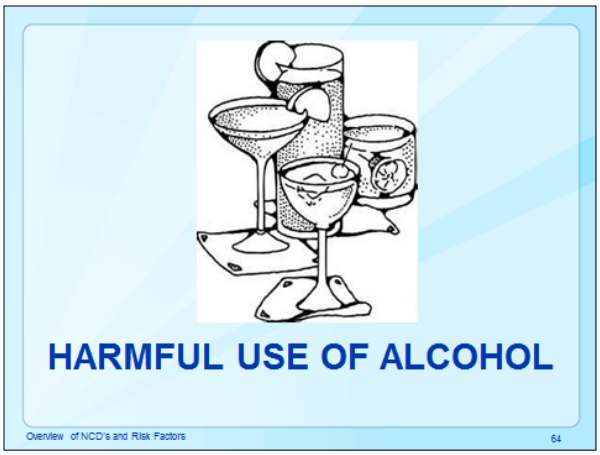
Duration/ Slide Number	What to Do/What to Say

- **Adverse lipid profile**
- **Arthritis pain and associated disability**
- **Psychiatric issues such as symptoms of anxiety and depression**

- **Physical activity also reduces to the risk for:**
  - **Type 2 diabetes**
  - **Cancers(for example colon and breast cancer)**
  - **Heart attacks**
  - **Stroke**
  - **Falls**
- **Early death**

2 minutes

Slide 64



- **Say:** Harmful use of alcohol can change the mental and physical state of a person, making him or her potentially harmful to him or herself and his or her community. We will now discuss the global consumption of alcohol and the consequences of harmful consumption.

Duration/ Slide Number	What to Do/What to Say

5 minutes

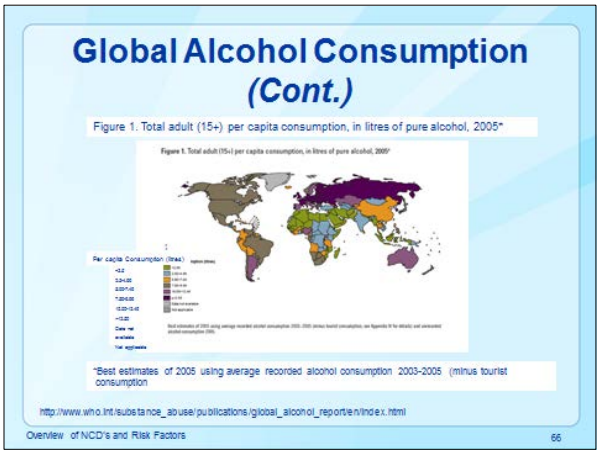
Slide 65

Questions

- **Ask** participants to access the WHO fact sheet on alcohol consumption and record some key points**.**
- **Ask for volunteers to provide their responses.**
- **Reveal possible answers on the slide.**
- **Say:** Most adults who consume alcohol do so in limited, low-risk levels. However, more than 10% of the world's population engages in risky alcohol consumption. This increases their risk for specific chronic diseases and other adverse health effects. For the past 20 years, overall consumption of alcohol has been stable - very few countries have increased or decreased overall consumption rates.

3 minutes

Slide 66



Question

- **Ask:** What stands out on this slide?
- **Possible responses and key points:**

o *North American and European countries traditionally have*

Duration/ Slide Number	What to Do/What to Say
	the highest rates of alcohol consumption. o *In many countries, consuming alcohol is forbidden under religious code, or there are gender differences in alcohol consumption, resulting in overall lower rates of alcohol consumption.*
3 minutes **Slide 67**	 • **Say:** Let's discuss the next risk factor: harmful use of alcohol. • **Say:** Alcohol is a depressant of the central nervous system. The effect of alcohol is related to how much alcohol is consumed. This is because alcohol is quickly absorbed into the bloodstream. Alcohol is metabolized by enzymes in the liver but the liver can metabolize only a limited amount of alcohol at one time. Therefore, excess alcohol remains in the bloodstream where it can circulate throughout the body. The more alcohol that is consumed the more unmetabolized alcohol circulates through the body. It is clear that all organs of the body are affected by alcohol. • Alcohol consumption may be a common occurrence but excessive drinking can lead to adverse health events. Excessive drinking may be heavy drinking and/or binge drinking.
Question	• **Ask:** Do you know how many drinks are defined (per day) as "heavy drinking" for men and women? What about for "binge drinking"? • **Answer:** Click on the slide the reveal the number of beers. • **Say:** Heavy drinking has been defined for men as consuming, on average, more than two drinks per day while

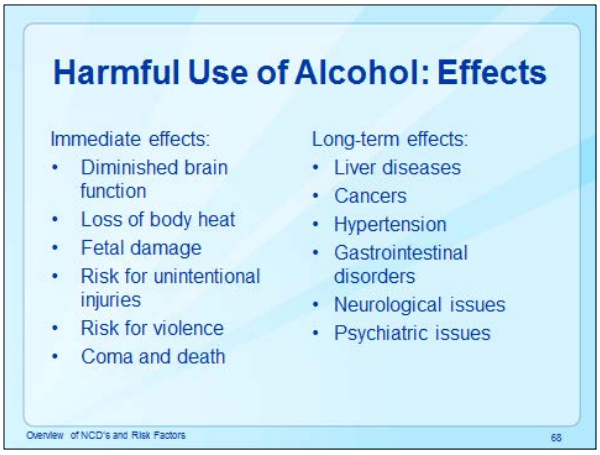
Duration/ Slide Number	What to Do/What to Say

for women drinking on average, more than one drink per day. Binge drinking has been defined for men as consuming more than 5 drinks, and for women more than 4 drinks, during a single occasion**.**

- **Note: Definition of one drink:**
  - 12 ounces of beer
  - 8 ounces of malt liquor
  - 5 ounces of wine
  - 1.5 ounces or a shot of 80 proof distilled spirits

5 minutes

Slide 68

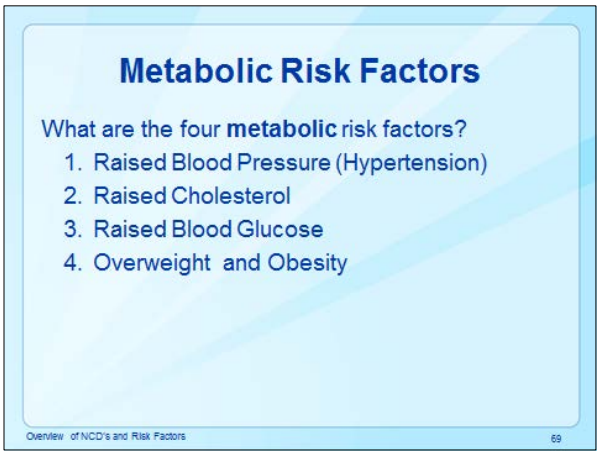


Activity

Activity:

Have participants fill out two flip-chart columns (like the physical exercise activity). Ask: what are the (1) immediate effect of alcohol on the body and (2) what are the long term effects? Click through the slide to show answers after getting group responses.

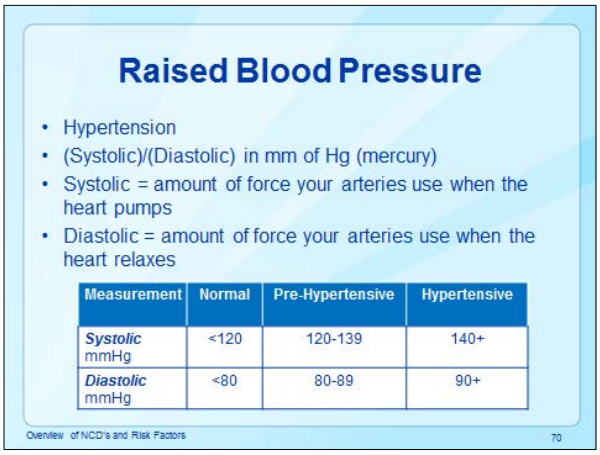
- **Say:** It is estimated that 2.5 million people die each year due to alcohol use. Excessive drinking can to lead to immediate and long-term health events. Immediate events, which are mostly associated with binge drinking, include:
  - Diminished brain function causing poor judgment, slower reaction times, impaired speech and motor skills, and loss of balance
  - Loss of body heat due to dilation of blood vessels
  - Fetal damage in pregnant women
  - Increased risk for unintentional injuries from motor vehicle accidents, falls, and other events

Duration/ Slide Number	What to Do/What to Say
	o Increased risk for violence including homicide and suicide o Alcohol poisoning which can result in coma and death due to rapid consumption of large amounts of alcohol o Long-term adverse health events include an increased risk for: o Liver diseases such as cirrhosis and alcohol induced hepatitis o Cancers including liver, throat, esophagus o Cardiovascular issues such as hypertension and heart attacks o Gastrointestinal disorders including pancreatitis o Neurological issues including dementia and stroke o Psychiatric issues such as anxiety and depression • **Tell participants that you will now discuss metabolic risk factors.**
2 minutes **Slide 69**	
 Question	• **Ask:** Who remembers the four main metabolic risk factors as identified by the WHO? • **Click to reveal answers.**

Duration/ Slide Number	What to Do/What to Say

2 minutes

Slide 70



- **Say:** Hypertension is the formal term for raised or high blood pressure. As blood pressure increases, so does your risk for hypertension. Blood pressure is measured in mmHg (millimeters of mercury). It is the "force" of your blood against your arteries when the heart pumps.
- When your blood pressure is taken, you receive two different measurements- your systolic and diastolic blood pressures. They are read as systolic over diastolic (e.g., 120 over 80).
- Systolic blood pressure is the amount of force your arteries use when the heart pumps.
- Diastolic blood pressure is the amount of force your arteries use when the heart relaxes.
- The accepted, or target, healthy blood pressure for the average adult is less than 120/80 mmHg. There is some evidence to support lowering these numbers even further.

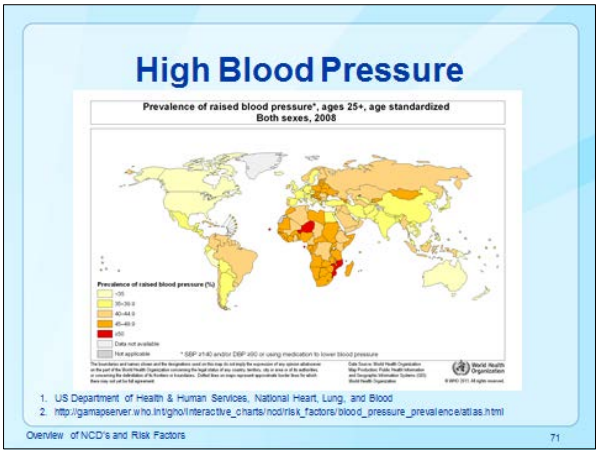
Question

- **Ask:** What can help keep your blood pressure at a healthy level?
- **Answer:** *Exercise*

Duration/ Slide Number	What to Do/What to Say

2 minutes

Slide 71



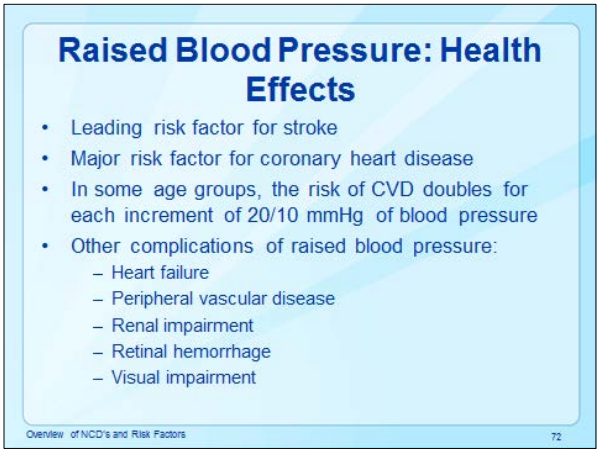
T

- **Say:** Globally, the overall prevalence of raised blood pressure in adults aged 25 and over was around 40% in 2008. Because of population growth and aging, the number of people with uncontrolled hypertension rose from 600 million in 1980 to nearly 1 billion in 2008.
- **Ask** participants to find their country (or region) on the map and to identify the prevalence**.**
- **Ask:** What does the low prevalence of raised blood pressure in the US and Canada indicate?
- **Answer:** *These countries have access to medication that regulate blood pressure.*

Questions

5 minutes

Slide 72



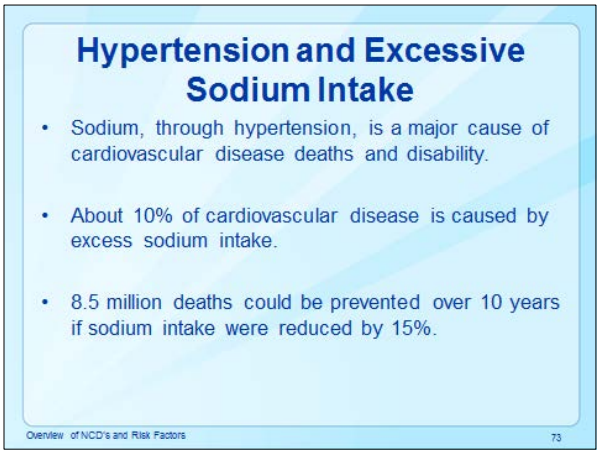
Duration/ Slide Number	What to Do/What to Say

Activity

- **Activity:**
- **Ask participants to spend a few minutes with a colleague discussing the possible health effects of raised blood pressure.**
- **Show slide to reveal possible answers.**

5 minutes

Slide 73



- **Say**: With the exception of few populations, there is general consensus that most people around the world consume sodium in excess of safe amounts (1-4). Sodium, through hypertension, is a major cause of cardiovascular disease death and disability (1-4). Compared to other dietary risk factors such as high intake of trans fatty acids, alcohol use, low intake of fruits and vegetables, etc, excessive intake of sodium causes more deaths than any other single dietary factor (4). Ten percent of cardiovascular disease is caused by consuming too much sodium (2). The potential societal, economic, and medical savings for reducing hypertension and related cardiovascular diseases through population-based sodium reduction strategies has been estimated (2). Approximately 8.5 million deaths worldwide could be prevented over 10 years if sodium intake were reduced by 15% (3). Estimated cost savings to the US and Latin America are provided on the next slide.

1. World Health Organization, World Heart Organization, & World Stroke Organization. (2011). In S. Mendis, P. Puska, & B. Norrving (Eds.). *Global Atlas on cardiovascular disease and control*. Geneva, Switzerland: World Health Organization.
2. Gaziano TA, Bitton A, Anand S, Weinstein MC for the International Society of Hypertension. The global cost of

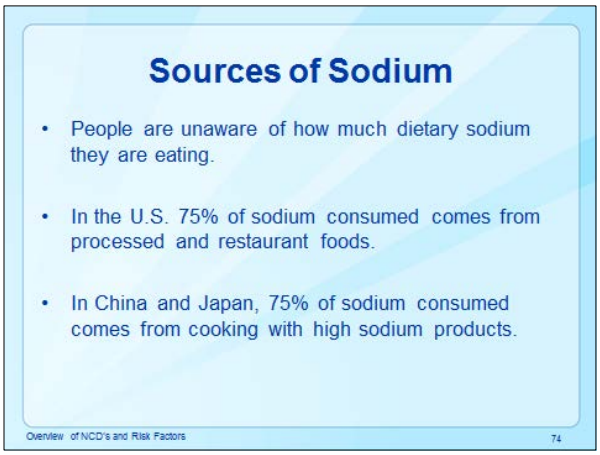
Duration/ Slide Number	What to Do/What to Say

nonoptimalblood pressure. J Hypertens. 2009; 27:1472-77.

3. Asaria, P., Chisholm, D., Mathers, C., Ezzat, M., & Beaglehole, R. (2007). Chronic disease prevention: Health effects and financial costs of strategies to reduce salt intake and control tobacco use. *Lancet, 370*(9604), 2044–2053.
4. Institute of Medicine. (2010). *Strategies to reduce sodium intake in the United States* (pp 52-57, 145-148). Washington, D.C.: The National Academies Press.

5 minutes

Slide 74

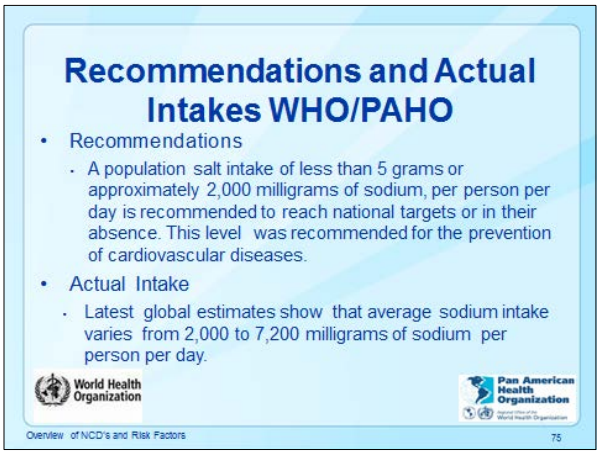


- **Say**: Many people are unaware of how much sodium they are eating. This is because more than 75% of sodium in food has already been added to processed and restaurant foods (1). In fact, foods that otherwise seem healthy may have high levels of sodium (e.g., cottage cheese and turkey breast luncheon meat). Some foods that you eat several times a day, such as bread, add up to a lot of sodium even though each serving is not high in sodium (1). In some countries however, like China and Japan, approximately 75% of their sodium intake comes from cooking with high-sodium products such as soy sauce, miso, and fish sauce (2). Sodium intakes also vary by region. For example, people living in the northern and northwestern areas of China consume significantly more sodium than do people from the southern regions (3). The following slide provides an example of the major sources of sodium in the U.S. There are steps that you can take, however, to reduce sodium in your diet.

Duration/ Slide Number	What to Do/What to Say

5 minutes

Slide 75



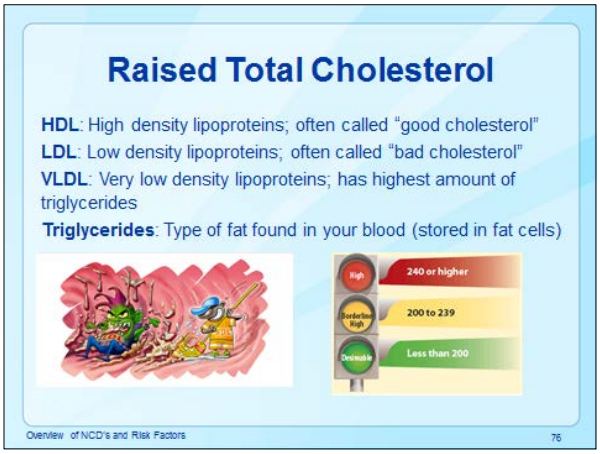
- **Say:** Since 2002, the World Health Organization (WHO) has provided recommendations for the population to reduce their intake of sodium intake (1). In order to prevent cardiovascular disease, the World Health Organization's most current recommendation is that the overall population limit their intake of sodium to less than 2,000 mg or 5 grams of salt per person per day(1,2). This policy goal is directed to countries who already have national targets in place as well as to those countries needing guidance on setting sodium intake recommendations (1,2). However, the latest global show that average sodium intake varies from 2,000 to 7,200 milligrams of sodium per person per day (3).

1. World Health Organization. Prevention of Cardiovascular Disease: Guidelines for assessment and management of cardiovascular risk. Geneva. World Health Organization. 2007.
2. World Health Organization. 2003. *Diet, nutrition and the prevention of chronic diseases*. Technical Report Series, No. 916 of a Joint WHO/FAO Expert Consultation. Geneva, World Health Organization.
3. Brinsden, H. C. and Farrand, C. E. (2012), Reducing salt; preventing stroke. Nutrition Bulletin, 37: 57–63. doi: 10.1111/j.1467-3010.2011.01947.x

Duration/ Slide Number	What to Do/What to Say

3 minutes

Slide 76



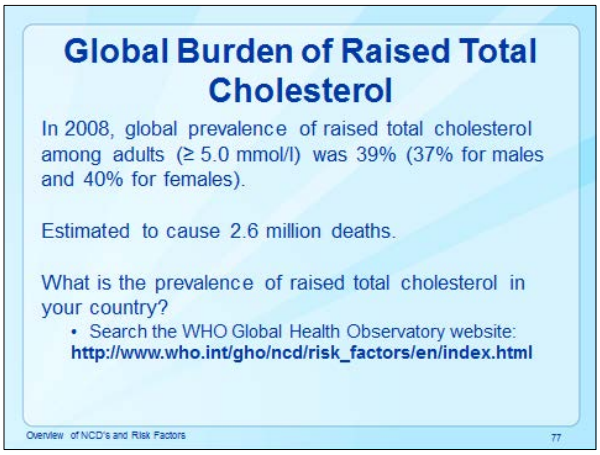
Question

- **Say:** Let's look at the next metabolic risk factor: elevated cholesterol. Cholesterol is a lipoprotein that resembles a fat.
- **Ask:** Does anyone know what types of cholesterol exist and where it comes from?
- **Answer:** *There are four types of cholesterol: HDL, LDL, VLDL and Triglycerides. HDL stands for "high density lipoproteins" and is often called the "good" cholesterol. LDL stands for "low density lipoproteins" and is called "bad" cholesterol. Cholesterol is only found in animal products (it's a fat!). Some fats are considered poor for your health, like triglycerides, while others are considered good, such as unsaturated fats. VLDL = Very Low Density Lipoprotein. This type of cholesterol has the highest amount of triglyceride; if you have high VLDL, you are at an elevated risk for coronary artery disease. It usually is not reported with a cholesterol screening. Triglycerides= type of fat found in your blood (stored in fat cells). They are different than cholesterol, because they are a different type of fat. Triglycerides store unused calories and cholesterol builds cells. Both are circulated throughout your body through lipoproteins.*
- **Additional information:**
  - HDL absorbs bad cholesterol, and flushes it out of the body via the liver.
  - LDL can build up in your arteries, and result in excess plaque. This then can lead to heart disease

Duration/ Slide Number	What to Do/What to Say

10 minutes

Slide 77



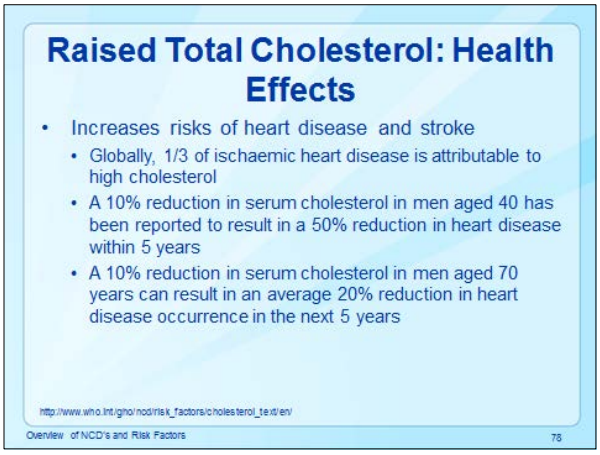
Question

- **Read the slide.**
- **Ask** participants to access the WHO Global Health Observatory website and locate the prevalence of raised total cholesterol in their country or region. Lead a brief discussion on the information they find.
- **If the participants want more information of Causes of Risk factors, refer them to the sites below:**
  - Causes of High Cholesterol: **http://www.nhlbi.nih.gov/health/health-topics/topics/hbc/causes.html**
  - Causes of Obesity: **http://www.nhlbi.nih.gov/health/health-topics/topics/obe/causes.html**
  - Causes for High BP: **http://www.nhlbi.nih.gov/health/health-topics/topics/hbp/causes.html**
  - Causes for Elevated Glucose: **http://diabetes.niddk.nih.gov/dm/pubs/causes/#type2**

Duration/ Slide Number	What to Do/What to Say

5 minutes

Slide 78

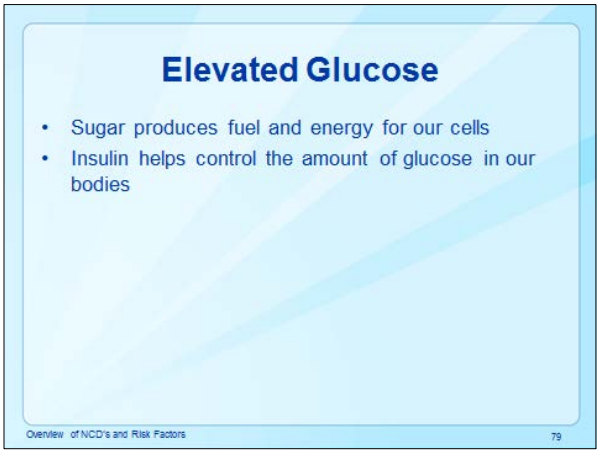


Activity

- **Activity:**
- **Ask participants to spend a few minutes with a colleague discussing the possible health effects of raised total cholesterol.**
- **Show slide to reveal possible answers.**

5 minutes

Slide 79



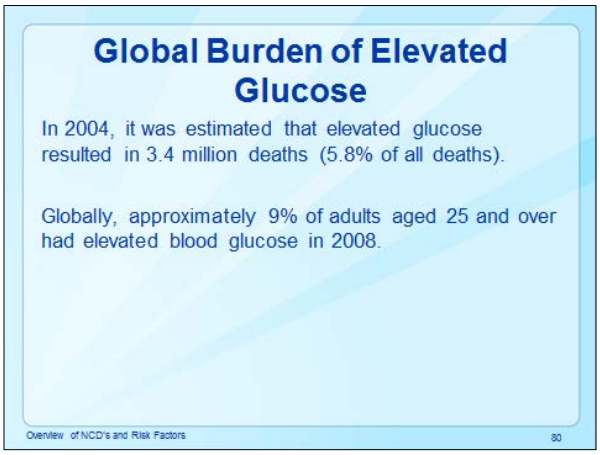
- **Say**: Let's look at the next metabolic risk factor – elevated glucose.
- Glucose is another term for sugar. It comes from carbohydrates: foods like breads, pastas, rice, and grains, as well as processed foods. Our bodies uses glucose as energy; every time we eat, our glucose levels rise. However, too much glucose in our bodies can be a bad thing.

Duration/ Slide Number	What to Do/What to Say

- When we eat (and increase glucose), our pancreas releases insulin to manage our glucose levels. Without insulin, glucose levels rise to dangerous levels and can lead to diabetes. Remember, diabetes can cause vision impairment, kidney failure, numbness in your legs, tiredness, and thirst.

2 minutes

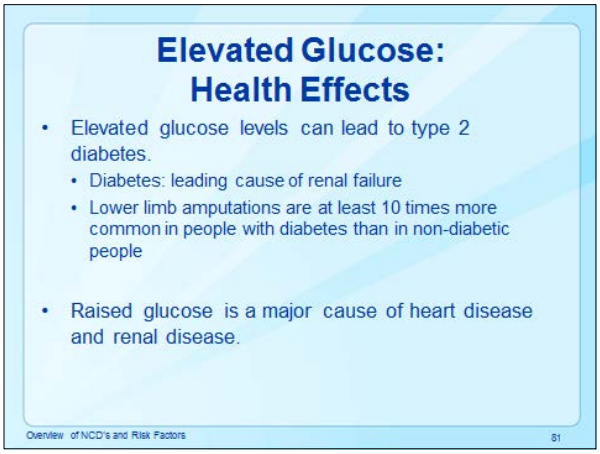
Slide 80



- **Read the slide.**
- **Explain that this percentage of adults with elevated blood glucose is increasing.**

2 minutes

Slide 81



- **Read the slide.**

Duration/ Slide Number	What to Do/What to Say

5 minutes

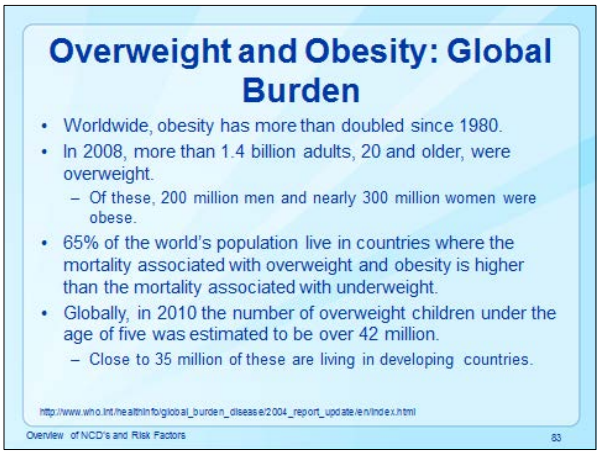
Slide 82

- **Say:** Let's look at our final metabolic risk factor – overweight and obesity.
- **Read the first bullet.**
- **Say:** Obesity is a defined measurement of being too heavy or overweight for your body height. The Body Mass Index (or BMI) is usually used to determine if an individual is overweight or obese. BMI doesn't actually measure body fat but it provides the ratio of your height to overall body weight. *BMI of:*
  - *Between* 25 and 29.9 indicates overweight
  - 30 or higher indicates obesity
- **Say:** While BMI is the easiest and most common test to determine obesity, it doesn't directly measure body fat. Often, BMI is inaccurate for individuals with large muscle masses (such as athletes).
- **Alternatives to BMI include:**
  - Skinfold Thickness Test - body fat is measures at the arms, waist, and thighs by pinching and measuring the top fold of your skin.
  - Waist to Hip Circumference Ratio - circumference of the waist is compared to the circumference of the hip to determine how much fat is stored around the abdomen.

Duration/ Slide Number	What to Do/What to Say

3 minutes

Slide 83



- **Read the slide.**
- **Mention that in some cultures being overweight is a status symbol.**

5 minutes

Slide 84

Activity

- **Ask** participants to spend a few minutes with a colleague discussing the health effects of overweight and obesity.
- **Read the slide.**
- **Point out an excellent resource for more information about obesity.**

Duration/ Slide Number	What to Do/What to Say

5 minutes

Slide 85

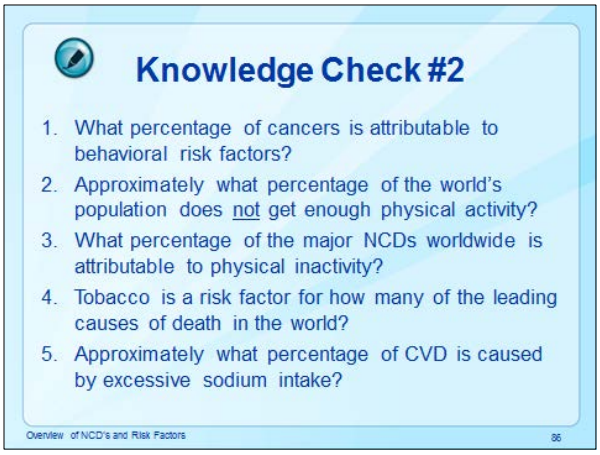
- **Say:** This chart shows the goals to reduce the risk of chronic diseases by decreasing the prevalence of risk factors based on the 2012 WHO Global Targets**.**
- **Briefly describe the chart.**
- **Lead a brief discussion about whether these are realistic targets for their country.**
- **The targets in orange are those that may not have enough evidence to support target or difficulty establishing measures**.
- **<u>Note</u> that although the target for obesity is 0% reduction, it is also saying that the target is <u>no increase in prevalence</u>.**
- **Note: The following are the criteria used for the targets:**
    - High epidemiological and public health relevance
    - Coherence with major strategies
        - Priorities of the Global Strategy for the Prevention and Control of NCDs and its Action Plan, as well the political declaration
        - WHO framework for health systems priorities to monitor exposures, outcomes, and health systems response
    - Evidence driven targets and indicators
        - Availability of evidence-based effective and feasible public health interventions
    - Evidence of achievability at the country level

Duration/ Slide Number	What to Do/What to Say

- Existence of unambiguous data collection instruments and potential to set a baseline and monitor changes over time

15 minutes

Slide 86

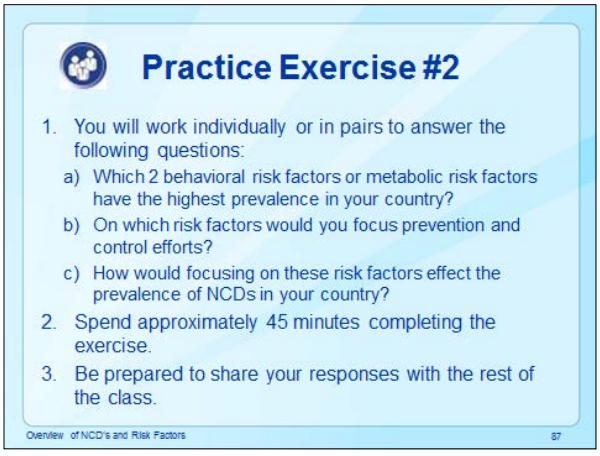


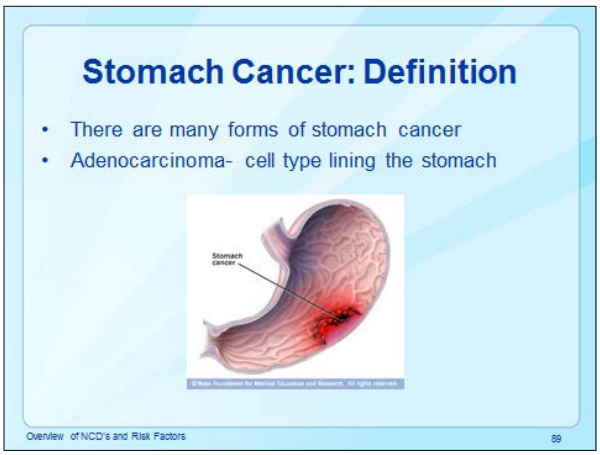
Activity

- **Ask participants to turn to the appropriate page in their participant guide and answer the questions for knowledge check #2. After 10 minutes, ask for volunteers to share answers.**
- **Answers:**
  1. *30%*
  2. *30%*
  3. *6 – 10%*
  4. *6*
  5. *10%*

60 minutes

Slide 87

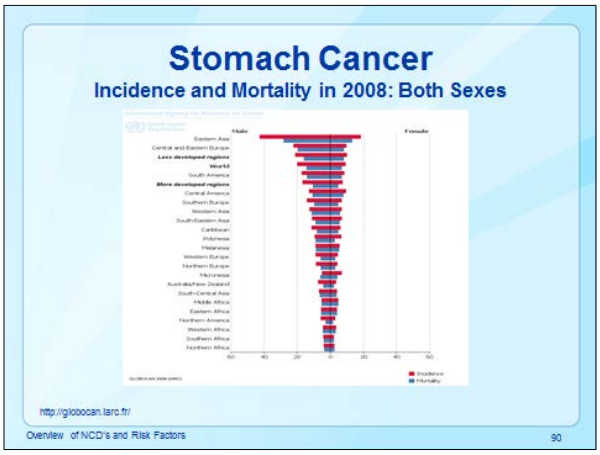


Duration/ Slide Number	What to Do/What to Say
Activity	• **Activity: Estimated Time: One hour (including a 15-minute debrief)** • **Read the assignment.** • **Give participants approximately 45 minutes to complete the activity. Make sure they have access to the internet.** • **Debrief for 15 minutes**
2 minutes **Slide 88**	 • **In this section you will find additional slides that you may wish to include in the presentation.**
2 minutes **Slide 89**	 • **Say:** Stomach cancer is also referred to as gastric cancer. These types of cancers often lead to other types of cancer that spread throughout the digestive tract. Adenocarcinoma is the most common form of gastric cancer - it involves the cells lining the stomach.

Duration/ Slide Number	What to Do/What to Say

2 minutes

Slide 90



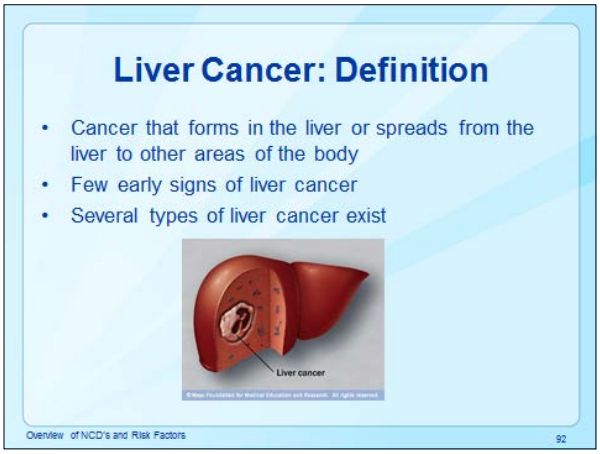
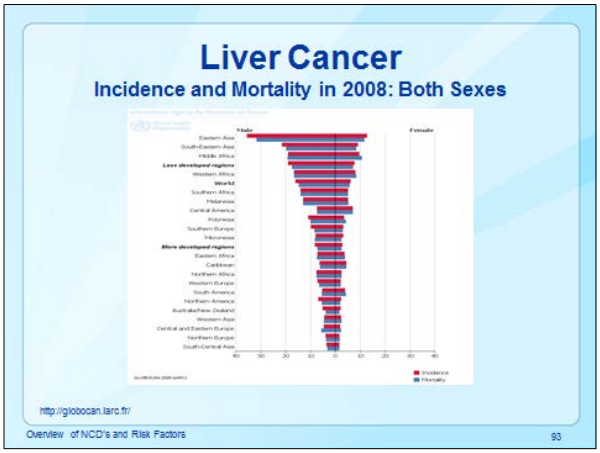
- **Discuss the slide.**

2 minutes

Slide 91

Question

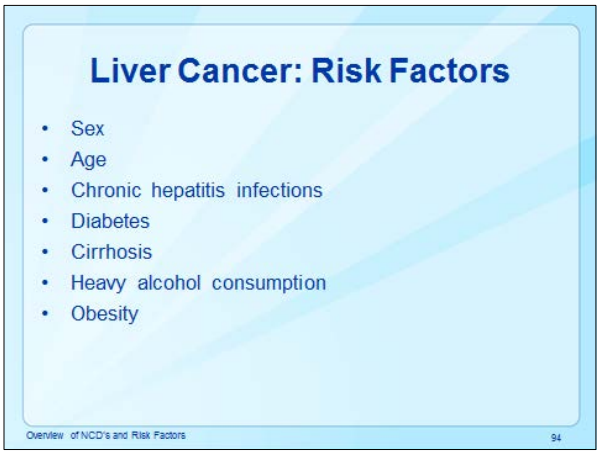
- **Ask:** Which of these risk factors are preventable**?**
- ***Answer:*** *Most of these risk factors are preventable except for the family history of stomach cancer.*
- **Say**: While a definitive cause of gastric cancers have not been identified, the greatest risk factors are smoking and diets that are rich in salted, smoked, and pickled foods. H. pylori infections can lead to stomach ulcers and polyps, which raise the risk of stomach cancer as well**.**

Duration/ Slide Number	What to Do/What to Say
2 minutes **Slide 92**	 • **Read the slide.**
2 minutes **Slide 93**	 • **Discuss the slide.**

Duration/ Slide Number	What to Do/What to Say

2 minutes

Slide 94



Question

- **Ask:** Which of these risk factors are preventable?
- ***Answer:*** *Diabetes, alcohol consumption, and obesity*
- **Say:** It is possible that some of these factors are related, such as diabetes and obesity.
- Risk for liver cancer is higher for older men. However, in Asia and in Africa, liver cancer is commonly diagnosed in younger male populations.
- **Note:** Much of liver cancer in the developing world is related to infection with hepatitis B, which is now preventable with the hepatitis B vaccine.