

# PPZ30

HEALTH FOR LIFE



LESSON 11

# Lesson 11 – Health at School and Work

## Health at School

### Safe schools:

1. Are free from violence
2. Are nurturing, caring and respectful of everyone
3. Are physically and psychologically healthy
  4. Promote sensible risk taking
  5. Enhance the self-esteem of all

## Youth Violence in Canadian Schools

Increasing youth violence in our schools and communities is a growing concern that requires immediate attention. It is common knowledge in our communities in Ontario and supported by statistics taken from police incident reports indicating that the number of young people charged with assaults and weapons offences has more than doubled in the past decade. The arrival of guns in our schools in the hands of kids willing to use them is a phenomenon relatively new to the Canadian experience and indicates the need for continuing initiatives to be taken between government, police, schools and community agencies in responding to youth who may be in high-risk situations.

Gang and weapons related school violence has intimidated many kids into being governed by a code of silence out of fear of reprisal. This code of silence is a new issue that has surfaced in Canadian schools in recent years. Children need to mature and be socialized in a safe and secure school environment.



It is important to communicate to the community that the problem is societal in nature and not just the sole responsibility of educators to sort out in isolation.

### SUPPORT QUESTION – School Safety

1. How does your school help ensure the safety of students and school staff?
2. What are some ways that communities can promote school safety?

## Areas of Concern



### (1) Weapons

A relatively new phenomenon facing students and school personnel. Conflict among youth is not new to our communities but the means of settlement has changed. Youth will say they carry weapons for protection. Weapon availability, however, changes the operative dynamic and gun use, in particular, can very quickly lead to a catastrophic event.

### (2) Youth Gangs

A new and ominous reality gaining a foothold in Canadian communities. Modeled after the generational gangs in the U.S. (Bloods, Crypts, etc.) they are economically driven and supported by violent power.

### (3) Code of Silence

Students fear of reporting incidents of violence is a new issue that has resulted in a "code of silence" that has recently surfaced in Canadian schools. Reporting is often considered "ratting" with potentially dangerous consequences

### (4) Young Offenders Act

The image of the act is in itself a problem. People break laws for a variety of reasons and bad laws with more frequency. The perception of the YOA (Young Offenders Act) among educators and youth is that it is a bad act. Concerns include the anonymity provision applying equally to frequent habitual violent offenders as well as first time non-violent offenders.

### (5) Media Violence

It's trendy, it sells and governments need to get involved to curb it. Youth may act out what they see in the media. Studies have shown that children have become behaviourally damaged by continual exposure to violent programming.

### (6) Financial Constraints

School violence is a societal problem and requires a cost sharing mechanism/strategy that is not currently available. Partnerships and private sector support are necessary.

### (7) Cultural Conflict

Cultural conflict may develop as an outgrowth of individual conflict where participants seek support. Support groups are often members of the same culture resulting in a potentially highly emotional conflict pitting culture against culture.

### (8) Family Violence

The importance of parental influence cannot be over emphasized. Family violence has a long-term psychological impact on young people who may either witness this violence

or be victims themselves. Children from these dysfunctional homes are at risk of replicating this learned anti-social behaviour in a school setting.

### (9) Maintaining Full Participation

A safe school is a school where parents, students and teachers contribute and feel a sense of ownership. The armed guard syndrome that characterizes many inner city US schools developed in part because of the unwillingness of teachers to engage because of increasingly dangerous supervisory activities.

### School Violence - The Warning Signs!

Unusual interest or preoccupation with weapons  
 Cruelty to pets or other animals  
 Talking constantly about violence  
 Depression, mood swings, suicide threats/attempts, self-mutilation, perceptions of hopelessness  
 Involvement or interest in gangs  
 Self-isolation from friends, teachers, family  
 Significant changes in behaviour, appearance, dropping grades  
 Significant changes in behaviour, appearance, dropping grades  
 Constant refusal to follow rules and disregard for authority  
 Disciplinary problems in school or criminal activity in community  
 Lack of anger management skills  
 Lack of interest in school  
 Obsessions with violent movies, TV and games  
 \*\*No single indicator should be reason for alarm/concern however, multiple indicators may suggest potential risk



### Bullying

(Source: National Crime Prevention Strategy)

*Ever been beaten up? Threatened? Ridiculed over and over? Ever watched on helplessly while someone was humiliated in front of you? Ever picked on a weaker person because it made you feel better about yourself? Most of us have either seen or experienced bullying.*

If a school is rife with bullying, it doesn't feel safe. Bullying poisons the social environment for everyone, has long-term consequences for the bully and the victim, and is a factor in suicides and violent incidents.

**BULLYING** is the act of seeking power or attention through the psychological, emotional or physical abuse of another person. Bullying in its truest form is comprised of a series of repeated intentionally cruel incidents, involving the same children, in the same bully and victim roles. This, however, does not mean that in order for bullying to occur there must be repeat offenses. Bullying can consist of a single interaction.

Bullying behaviour may also be defined as a criminal act if the bully is twelve years of age or older.

## Common Characteristics of Bullying

So, what makes a bullying incident? Certain conditions must exist for a bullying incident to occur. Lots of kids joke around with each other, call each other names, or engage in some fairly physical horse-play and yet these incidents are not deemed as bullying when they occur between certain children. The difference lies in the relationship of the bully and victim, and in the intent of the interaction.

Bullying usually, although not always, occurs between individuals who are not friends. In a bullying situation, there is a power difference between the bully and the victim. For instance, the bully may be bigger, tougher, physically stronger or be able to intimidate others or have the power to exclude others from their social group.

The intention of bullying is to put the victim in distress in some way. **Bullies seek power.**

Bullying knows no financial, cultural or social bounds. Bullying may not look exactly the same everywhere, but it has the same devastating effect on everyone, and during adolescence, bullying is not a problem that usually sorts itself out.

**The effects of bullying last a lifetime. It causes misery for the bully's victims, and leaves a lasting impression on all those who witness repeated bullying incidents.**

## Different Types of Bullying

PHYSICAL	PSYCHOLOGICAL	
	Verbal	Social
<ul style="list-style-type: none"> <li>✓ Hitting</li> <li>✓ Kicking</li> <li>✓ Punching</li> <li>✓ Pushing/Shoving</li> </ul>	<ul style="list-style-type: none"> <li>✓ Insults</li> <li>✓ Slurs</li> <li>✓ Sexual Harassment</li> <li>✓ Racial Comments</li> <li>✓ Threats</li> </ul>	<ul style="list-style-type: none"> <li>✓ Gossiping</li> <li>✓ Rumours</li> <li>✓ Ignoring/Excluding</li> </ul>
↓	↓	↓
* Can cause physical harm to a child's body	* Destabilizes a child's sense of self	* Destabilizes a child's position in their social group

- Physical bullying and psychological bullying are not necessarily mutually exclusive. The effects of psychological bullying can also evolve from a physical bullying incident.

- Within psychological bullying, the “social” acts of gossiping, spreading rumours, and exclusion are more prevalent than “verbal” acts.

## The Facts on Bullying

- It’s a girl AND a boy problem (65% of boys and 75% of girls in high school reported being verbally or socially aggressive).
- Peaks in the early high-school years (the transition to, and the adjustment to high-school is a particularly difficult time for many students; a similar number of boys and girls psychologically bully and are bullied).
- Mainly occurs between same-sex peers.
- Incidences towards opposite-sex peers / romantic peers increased across high-school years, as sexual issues / romantic relationships become more important; but are not as prevalent as incidents of verbal or social aggression between same-sex peers.

<b>BULLY</b>	<ul style="list-style-type: none"> <li>✓ <i>Reflects a complete lack of empathy</i> or understanding of others’ feelings, and an inappropriate use of power in social relationships.</li> <li>✓ The problem can continue into adolescence and adulthood, leading to sexual harassment, dating aggression, child abuse, and elder abuse.</li> </ul>		
<b>BULLY AND VICTIM</b>	<table style="width: 100%; border-collapse: collapse;"> <tbody> <tr> <td style="width: 30%;"><b>Externalizing Problems</b></td> <td> <ul style="list-style-type: none"> <li>✓ Aggressive behaviour, delinquency.</li> <li>✓ More prevalent amongst <i>boys</i>.</li> </ul> </td> </tr> </tbody> </table>	<b>Externalizing Problems</b>	<ul style="list-style-type: none"> <li>✓ Aggressive behaviour, delinquency.</li> <li>✓ More prevalent amongst <i>boys</i>.</li> </ul>
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- Any involvement in psychological bullying (as either a bully or a victim) is associated with increased risk for other problems, including delinquency, other forms of aggression, anxiety and depression.
- The greater the severity of the bullying or victimization, in terms of both the act and the duration, the greater the likelihood of experiencing a range of psychological problems.

## What is the Difference between Teasing and Taunting?

- It is often difficult to differentiate playful teasing and psychological bullying. What may be hurtful to one person may not be at all painful to another.
- Taunting is based on an imbalance of power and is one sided; teasing allows the teaser and person teased to swap roles.
- Taunting is intended to harm; teasing isn’t.
- Teasing maintains the basic dignity of everyone involved; taunting can be humiliating, cruel, demeaning or bigoted.
- Taunting directs laughter at the target, not with the target; teasing intends to get everyone to laugh.
- Teasing is innocent in motive; taunting is sinister in motive.

- Most importantly, teasing stops when the person being teased becomes upset or objects; taunting continues.



## Challenges

- Bullying can be difficult to detect; it is a covert activity carried out under the radar of adult awareness or knowledge. It is sneaky in intent and can be sophisticated in style.
- Psychological bullying can be difficult to identify/recognize – it's more subtle in form; easy to make light of, and write off as regular bickering/squabbling or playful teasing that happens between siblings and peers; what may be hurtful to one person may not be painful to another.
- A bully's lack of understanding of others' feelings represents a complete "dehumanization" of the victim, such that the victim is seen as inferior and not worthy of respect.

## Key Insights

- Both boys and girls are involved; the various forms of social/verbal aggression, typically associated with girls, are reported just as frequently by boys.
- Incidents predominantly occur between same-sex peers.
- Need to target messages to 8 – 12-year-old (grades 4, 5 and 6) demographic as a pre-emptive strategy to prevent the problem before it becomes an established behaviour problem.
- Need to make sure children (both the perpetrators and the victims) can identify and recognize the various forms of verbal/social aggression as "bullying" and that they are very wrong.
- Need to find a way for children to be empathetic; put themselves in the victims' shoes and really try to understand and feel what it might be like to be on the receiving end of the aggression, as well as comprehend the negative consequences/impact, both short-term and long-term.

## What Schools Can Do?

A major cause of stress at school for children is the fear of being taunted or bullied. Kids who are bullied are two to three times more likely to have headaches or other illnesses. Schools need to establish a social climate where physical aggression and bullying are not used to gain popularity, maintain group leadership or influence others to do what they are told to do. No one deserves to be bullied. Once the 60% of children who are neither victims nor bullies adopt the attitude that bullying is an unacceptable behavior, schools are well on their way to having a successful bullying program.

Schools need to advertise the fact that they have adopted a Zero Tolerance policy for bullying, and that they have a working Anti-Bullying plan in force. School faculty must maintain a high profile in terms of the behavioral expectations of their students in order to gain support from the community and send a clear message to the families of present and future students that bullying will not be tolerated.

Once a school has established itself as a safe place for all students, school personnel will need to continually work at maintaining that reputation. It is a difficult task that requires the school faculty to put student safety at the top of their priority list.

Remember, students who do not feel safe at school are unlikely to perform as well academically as they are capable, thus possibly impeding their future opportunities. A commitment by the staff to no-bullying in the school must be a long term undertaking. When a new school year begins, staff should be sure Anti-Bullying policies have been included and discussed in the yearly goal setting process.

Schools can create support groups where victims can concentrate on developing the skills needed to change their place within the social hierarchy of the student body. The goal is for the victim to become a part of the group of students who do not bully and are not bullied. Such changes requires a great deal of time and effort, but it is possible, given the necessary support.



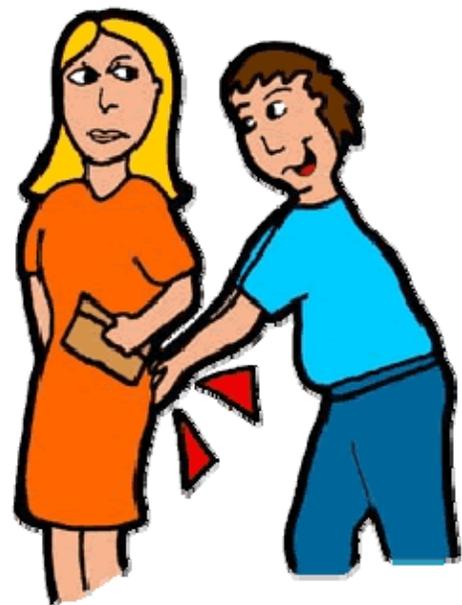
### **SUPPORT QUESTION – School Bullies**

Bullies use words and physical force to seek power or attention. What are some ways you can let bullies know that you do not approve of their actions?

## **Sexual Harassment in Schools: It's No Joking Matter**

**Do these kinds of situations make you feel uncomfortable?**

- ◆ comments about your body or physical appearance;
- ◆ questions about your sex life;
- ◆ unwanted touching, hugging or kissing
- ◆ hearing sexually suggestive jokes or comments;
- ◆ seeing graffiti or T-shirts with sexual messages or pictures
- ◆ being whistled at or having your bra snapped
- ◆ being followed or watched;
- ◆ being asked repeatedly for dates after you said no;
- ◆ having your shorts pulled down in public;
- ◆ being treated unfairly for refusing sexual activity



Sexual comments and behaviour such as these that humiliate or upset people are sexual harassment! If you act like this to other people, you could be harassing them!

## Exactly what is sexual harassment?

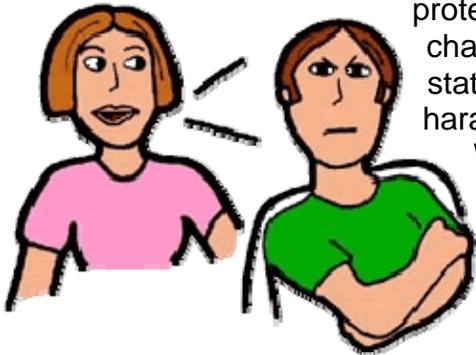
**SEXUAL HARASSMENT** is any unwelcome behaviour, actions or words which:

- are sexual in nature;
- are likely to offend or humiliate;
- relate to a person's sex, sexuality or body parts;
- the harasser knows or ought to know are inappropriate;
- are repeated after the person has been told to stop.

Sometimes it's hard to tell when a person has crossed the line from flirting or teasing to harassing you. The line between teasing and sexual harassment often has to do with the circumstances. These circumstances may include: whether other people are around; why the person is doing it; and how it makes you feel.

## Is sexual harassment against the law?

YES - Sexual harassment is a violation of the Human Rights Code. The Code also protects against discrimination and harassment based on characteristics such as race, colour, sex, religion, marital status, sexual orientation and disability. All forms of harassment show a lack of respect for the rights of others.



When harassment takes place in a workplace, including a school, the people in authority are responsible for preventing or discouraging it.

## Does it happen in schools?

YES - Sexual harassment can happen anywhere - including schools. It could occur in the classroom, the locker room, on a field trip or the school bus, or at a sporting event. Demeaning and offensive behaviour often starts early as school yard bullying. Students may also face sexual harassment in their part-time or summer jobs, playing sports, babysitting, on the street, and elsewhere.

## Who gets sexually harassed at school?

The majority of victims reported are girls, but anybody can be a victim.

## Who might sexually harass a student?

In a school setting, it could be:

- ✓ A classmate harassing students of the opposite sex;
- ✓ Girls harassing other girls (ex. comments on sexual experience, name calling, etc.);
- ✓ Boys harassing other boys (ex. comments on physical appearance, sexual preference or sexual experience);
- ✓ A teacher or other school personnel such as a bus driver, coach, secretary or volunteer harassing students of either sex.

## Is sexual harassment harmful?

- ◆ It hurts.
- ◆ You might feel angry, confused, uncomfortable and frightened.
- ◆ You might feel sick.
- ◆ You might feel powerless.
- ◆ You might lose your concentration.
- ◆ Your grades might go down.
- ◆ You might feel like avoiding certain school hallways, skipping classes, dropping courses, transferring schools or quitting your job.

## Maybe I should just ignore it?

If you are being sexually harassed, don't ignore it. You have the right to go to school in an environment that is emotionally and physically safe and non-threatening. If you skip classes or drop courses to avoid harassment, it could affect your future career choices. If you are being harassed - whether at school, on the job or playing sports - it can reduce your ability to concentrate and do your school work.

## What can I do if I'm being sexually harassed?

Learning to deal with sexual harassment is important. Here are some things to consider:

**1. Don't blame yourself** - You may feel that it is your fault, but it's not. Trust your emotional responses. If someone makes you feel uncomfortable, the problem may be the other person's.

**2. Tell the person to stop** - Sometimes people don't understand that their actions offend others until somebody tells them. If you feel safe, tell the person harassing you what has upset you and ask him/her to stop. Speak up early. It may end the harassment. If you feel uncomfortable doing this, ask a friend, a parent, a teacher or a guidance counsellor to help you.



**3. Tell someone** - Tell someone you trust about what happened, like a parent, teacher or guidance counsellor. Emotional support is important.

**4. Look for peer support** - Peer support helps. Ask other students whether they are being harassed by the same person. If others have the same problem, consider collective or group solutions. Get a class, all the students in a grade level, the student council, or a student organization to take action.

**5. Keep a written record** - Write down what happened, when, where and who saw it. Note how you reacted. If the harasser sends you notes or pictures, keep them to show the behaviour that is causing a problem. A written account helps you document the harassment if you need to take further action.

**6. Report the harassment to a school official** - If the problem continues, talk to the principal or another school official. If your school has a sexual harassment policy, arrange to meet with the person who looks after complaints. If you feel uncomfortable talking to that person, speak to a trusted adult. If you want, ask a parent or friend to come with you.

**7. Contact the Human Rights Commission** - The Commission can offer information and assistance on dealing with sexual harassment. You can also file a complaint with the Commission.

**8. Get help in a crisis** - Some unwelcome behaviours, such as grabbing, kissing, fondling or sexual activity are criminal in nature. If you are being physically or sexually assaulted, you should talk to the police or R.C.M.P. Depending on your age, child protection officials may be able to help you. You can also get emotional support and advice from your local sexual assault crisis centre or a helpline.

## What can I do if I see somebody else being harassed?

Speak out against harassment. Even if you are not being harassed personally, seeing others harassed can make the learning environment uneasy for everyone. Ask your guidance counsellor to put up posters that discourage sexual harassment. Refuse to listen to sexist jokes or comments. Everyone should speak out against sexual harassment!



### SUPPORT QUESTION – Sexual Harassment Quiz

#### When does a joke or flirting become sexual harassment???

Take this quiz to see how you feel! - True False

1. Anyone who is offended by a dirty joke has a poor sense of humour.
2. It's okay to tell somebody you think they look really nice.

3. Staring at somebody's body shows that you really like them.
4. It's not a big deal for teenagers and teachers to flirt with one another.
5. Patting somebody on the bottom is a way of flirting with them.
6. If nobody complains when you wear a T-shirt with a sexual message, it means you haven't offended anybody.
7. It shouldn't bother you to be teased about your body and appearance.
8. A teacher who continually makes students uneasy should be told to stop.

### Answers to Sexual Harassment Quiz

1. False. Some jokes offend because the point of the joke is to make someone feel worthless or humiliated. If someone feels less valuable than others when they hear a joke, then it's no joking matter.
2. True. Compliments about a person such as "You look really cool" are usually appreciated. Sexual comments about the body are less likely to be received as compliments.
3. False. Although eye contact usually happens without making anyone uncomfortable, it can cross the line. A quick glance or a smile is usually considered flirting; constant staring at your body's sexual places is not.
4. False. Flirting happens between peers - it is not appropriate between people in authority and somebody over whom they have control.
5. False. Flirting is not patting, grabbing, pinching or groping.
6. False. Just because nobody complains, doesn't mean it's okay. There are lots of reasons why teens don't tell about sexual harassment. They may not want to attract attention or be called a "prude" or a "rat".
7. False. Although teasing and good-natured joking are part of life, constant teasing is hurtful. Boys and girls are both affected by harassment.
8. True. If students worry that a teacher will purposefully say things that embarrass them, it is not just a form of teasing. What the teacher is doing should be reported to parents or school authorities and the teacher should be told to stop.

### Backpack Overload



A number of recent studies and surveys are showing more students are complaining of sore backs and shoulders, muscle strain, numbness, poor posture and balance as well as falls from carrying overloaded backpacks. All of this is occurring at an age when children and youth are experiencing physical growth and motor and spinal development.

Female students are more susceptible to the hazards of heavy backpacks because they are smaller in weight but are carrying the same load of books and homework as their male counterparts.

According to pediatric chiropractors and orthopedic surgeons, students should not be carrying backpacks that weigh more than 10 per cent of their body weight. Yet the average backpack weight for student is 17 per cent. This would be the equivalent of a 150 lb. adult carrying a 26 lb. load.

## Warning signs of backpack overload

If your back aches and pains and shoulder pains by the end of the school week, this could be attributed to a heavy backpack, particularly if the pain diminishes by the end of the weekend. The solution is to lighten the load.

## Getting the lead out

- Weigh the backpack. Aim for 10 per cent of body weight. Backpacks weighing more than 20 pounds should be avoided.
- Wear both shoulder straps. Wearing a backpack over just one shoulder can cause leaning to one side which could curve the spine over time. Also avoid athletic bags that have only one strap.
- Distribute weight evenly across your back. The more spread out a load is, the less strain it puts on one part of the body.
- Load the heaviest items first so it is closest to your back and then distribute the load on the right and left.
- Adjust shoulder straps so the backpack fits close to the upper part of the body. The further a backpack is away from the body, the more difficult it is to achieve proper balance.
- Neatly pack the backpack and keep it organized. Clean it regularly to keep it free of unnecessary clutter and weight.
- Consider using fewer plastic containers (which can add weight) in lunch bags and carry the lunch bag by hand.
- Try to make frequent trips to lockers, between classes to replace books.
- Use the correct lifting techniques - bend at the knees when picking up a heavy backpack.



## Weighing your options: shopping for a good backpack

The International Chiropractic Pediatric Association recommends that you look for the following features when buying a backpack:

- Wide, padded shoulder straps. Narrow straps can dig into the shoulders causing numbness or a tingling in the arm which could eventually cause weakness in the hands.
- "S" shaped shoulder straps will economically contour to your body.
- A lighter weight backpack material such as canvas instead of leather.

- Backpacks with a waist or chest strap to keep the load close to the body for proper balance.
- A backpack with a hip strap to help the legs take on more of the weight.
- Built in back support.
- A lumbar pillow.
- Backpacks with compartments can help even the load.
- Consider a backpack with wheels as a good alternative.

## Sick School Syndrome

Some days, it seems as if your child spends almost as much time at school as she does at home. As a parent, you worry about whether she does her homework, understands her lessons, and gets along with her classmates. But should you be concerned about whether her school building is making her sick?

### What Is Sick School Syndrome?

When a building has indoor air problems, it is known as a sick building. Sick building syndrome (SBS) has received a lot of attention in the past decade or so, and it's no surprise that "sick schools" have also been put in the spotlight. When a school is deemed sick, it means that the people inside experience health problems that have no other obvious cause and that these symptoms or problems disappear or improve when they leave the building.



There are no strict criteria for diagnosing sick school syndrome; health experts make a diagnosis by examining the child and assessing whether her symptoms seem related to entering or leaving the school building. Sick school syndrome is often wrongly blamed for several illnesses and disorders ranging from winter flu outbreaks to attention deficit hyperactivity disorder. Therefore, it is important for health experts to look for other explanations for a child's symptoms before attributing them to the school environment.

Sick school syndrome is different from ***BUILDING-RELATED ILLNESS*** (BRI), which is any illness that is associated with a building but that can be specifically diagnosed as caused by an identifiable biological or chemical agent. People who have BRI develop an illness related to something specific in the building, and they usually require time to recover from (or sometimes to develop symptoms of) the illness. Examples of building-related illnesses include carbon monoxide poisoning; asbestos, mould, lead, or mercury poisoning; or legionnaires' disease.



### SUPPORT QUESTION – What Would YOU Do?

Go to the following website and view the three (3) scenarios. They are real-life videos acted out for you to test yourself.

[http://www.takingastand.com/games\\_and\\_activities\\_scenarios.shtml](http://www.takingastand.com/games_and_activities_scenarios.shtml)

## WORKPLACE HEALTH

Our workplaces can expose us to all types of health risks not normally faced at home. Workplace health and wellbeing is about the effects of work on health, and how physical and mental health affects a person's ability to carry out their duties at work.

### Carpal Tunnel Syndrome

In the wrist, nerves and tendons pass through a space between bones and ligaments called the carpal tunnel.

Because the carpal tunnel is somewhat narrow, the median nerve, a major nerve that passes through this tight space, can become irritated or compressed. **CARPAL TUNNEL SYNDROME** is a combination of numbness, tingling, pain and weakness in the hand caused by compression of the median nerve in the carpal tunnel.

Symptoms tend to be most prominent in thumb, index finger, middle finger and half of the ring finger because the median nerve provides sensation to those areas.

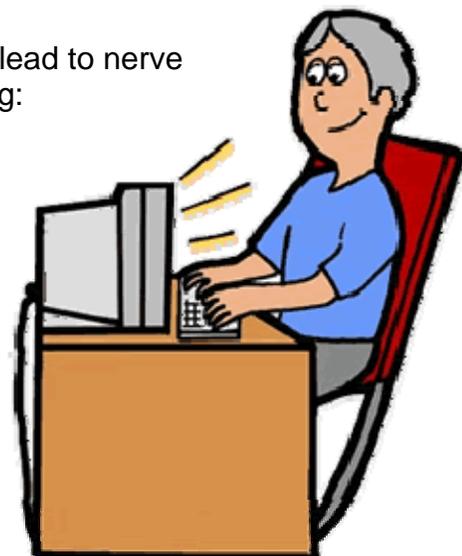
### Possible Causes

Even a small additional narrowing or other injury can lead to nerve irritation. There are several common causes, including:

- Arthritis or fracture near the wrist
- Pregnancy
- Diabetes
- Overuse (as in typists, cashiers or certain athletes)
- Thyroid disease, particularly an under active thyroid

In each of these conditions, there is either nerve injury or added pressure in the carpal tunnel.

Often, carpal tunnel syndrome occurs without a clear



reason.

The condition affects women more often than men, perhaps because women normally have smaller carpal tunnels. It can occur in one or both hands.

## Symptoms

Symptoms of carpal tunnel syndrome can include burning, tingling or numbness of the fingers, difficulty gripping tools or other implements, and problems making a fist. Symptoms may appear first at night and are most noticeable in the thumb and the index and middle fingers. People with carpal tunnel syndrome often describe awakening with a tingling sensation and the need to shake out the hands to recover normal feeling. There can be pain in the wrist that radiates into the hand or into the forearm. If the condition is not treated, the muscles of the thumb eventually can waste away so that the normal mound of muscles at the base of the thumb eventually flattens.

## Prevention

If you type or use a computer keyboard, you can decrease your risk of carpal tunnel syndrome by making sure that you work in a "wrist neutral" position, with the wrist joint straight, not bent up or down. To help you do this, several types of office aids are available, including a cushioned wrist rest and a keyboard tray that adjusts to a position below the work surface. Newer types of keyboards also are being developed, including ones that split the keys into left-hand and right-hand groups, and others that bend the keyboard into a tent shape. You also may need to check the position of your hand when you use a computer mouse or trackball because some experts suspect that people who use these computer accessories consistently are more likely to develop carpal tunnel syndrome. If you continue to have symptoms, you may want to have a professional assess your workstation.



## Hearing Loss

**HEARING LOSS** is a decrease in the ability to perceive sounds. In adults, hearing loss can be partial or total, sudden or gradual, temporary or permanent, and it can affect one ear or both. Currently in the United States, 28 million people over age 3 have some form of hearing loss. During adulthood, the condition affects approximately 3 percent of all men and women. In general, the risk of hearing loss increases with age. Between 24 percent and 40 percent of adults over age 65 have difficulty hearing. Thirty percent of people over age 85 are deaf in at least one ear.

To understand hearing loss and treatment, it helps to know how hearing works. Sound enters the ear and strikes the eardrum (tympanic membrane), causing the

eardrum to vibrate. The eardrum's vibrations are amplified through the chamber of the middle ear along three tiny interconnected bones. Inside the ear, the energy produced by the vibrations is transformed into nerve impulses. These nerve impulses travel to the brain, where they are interpreted as sounds.

Because the outer ear and middle ear transmit (or conduct) sound, any injury to this part of the hearing pathway is called conductive hearing loss. The inner ear, eighth cranial nerve and brain deal with the production, transmission and interpretation of nerve impulses. An injury to this part of the hearing pathway is called sensorineural hearing loss.

## Symptoms

In adults, some of the most important causes of hearing loss are:

- **Middle-ear disease** — A bacterial infection of the middle ear can injure the eardrum, disrupt the middle-ear bones, or cause fluid build-up.
- **Noise** — Without adequate ear protection (earmuffs or earplugs), loud sounds can injure delicate cells within the ear. This is a form of sensorineural hearing loss, and it is currently the most common cause of hearing loss among American adults. Noise-induced hearing loss sometimes happens because of a single brief burst of an extremely loud sound (gunshot, firecracker). It is more often the result of long-term exposure to loud sounds of slightly lower intensity, such as factory noise or rock music. Among U.S. workers, noise-induced hearing loss is the most common of all occupational injuries. It is a significant health problem among carpenters, miners, plumbers, factory workers, farmers, construction workers and workers exposed to aircraft, sirens or explosives. People can also develop noise-induced hearing loss from recreational activities, such as listening to very loud music, operating a personal watercraft (one brand is Jet Ski) or snowmobile, shooting firecrackers or guns, or operating a loud lawnmower or leaf blower.
- **Trauma** — Many types of accidents can cause hearing loss, including stab wounds, gunshots or being hit on the ear or skull; blast injury to the eardrum from the force of an explosion; or simply a cotton swab (Q-tip) that ruptures the eardrum during an attempt to clean the ear canal.



## Prevention

You can help prevent hearing loss by taking the following steps:

- Wear protective earplugs or earmuffs if you are often exposed to loud noise at work or during recreational activities.
- Never put cotton swabs or other foreign objects in your ears.
- Wear a protective helmet

## Back Injuries on the Job



Four out of five adults will experience significant low back pain in their lifetime. In many cases, this back pain is caused by injuries, and often these injuries are workplace-related.

Back injuries account for nearly 20 percent of all injuries and illnesses that occur in the workplace. They are common in a variety of fields, from construction work to health care and child care. Many of these injuries can be prevented, however.

### Healthy Back Guidelines

Here are some of the most important steps you can take to avoid back injuries — at work or at home:

- Use the correct techniques for bending, lifting and moving loads (see list below).
- Exercise your back and abdominal muscles regularly to provide stronger support for the back.
- Wear comfortable, low-heeled, nonslip shoes.
- Do not smoke. Research shows that smoking reduces blood flow to the spine.
- Maintain proper posture to put the least strain on your back.
- If you are overweight, lose weight. Excess pounds, especially in the middle, throw your body out of alignment and increase the burden on your back.
- If you are able, sleep on your side, on a firm mattress.
- Make sure that the work surface is at a comfortable height and that your chair offers good back support; sit as far back in the chair as you can to keep your lower back supported. If you work at a computer, adjust your equipment so you can sit properly.
- Follow proper techniques for doing your specific job. Employers and the U.S. Occupational Safety and Health Administration have developed such guidelines for many occupations.

## Safe Lifting

A large proportion of back injuries are related to lifting, and people whose jobs involve frequent bending or lifting face the greatest risk of back injuries.

These guidelines can help you to bend and lift safely:

- Plan your lift. Test the weight of what you are preparing to lift by pushing it with your hands or feet. Make sure you have enough room to lift safely.
- If the load is awkwardly shaped or too heavy, don't try to lift it alone. Get help, use a dolly or split it into smaller loads.
- Take your time. Don't hurry or use jerky movements.
- Position yourself close to the load you plan to lift. Reaching increases the strain on your back. Keep the load close to your body as you lift.
- Plant your feet shoulder-width apart to provide a firm base of support.
- Grip the object tightly.
- Bend at the knees, not at the waist.
- Tighten your stomach muscles. (Don't stop breathing!) Keep your back straight and your chin up, and lift with your leg muscles as you stand up.
- Avoid twisting as you lift. If you must turn, start with your feet and then pivot your body in the same direction.
- When placing a load on a high shelf, move close to the shelf. Spread your feet apart, with one in front of the other. Keep your elbows in and do not fully extend your arms as you place the object on the shelf. Remember to tighten your stomach muscles. Do not arch your back.
- Do not rely on a back belt. Studies so far have not shown that they help to prevent injuries.
- Use an assistive device such as a specially designed belt or board to help move a person.
- Take breaks. At least once an hour, stand and stretch. Place your hands on your lower back and slowly arch backward.



## Computers and Their Effects on Your Eyes

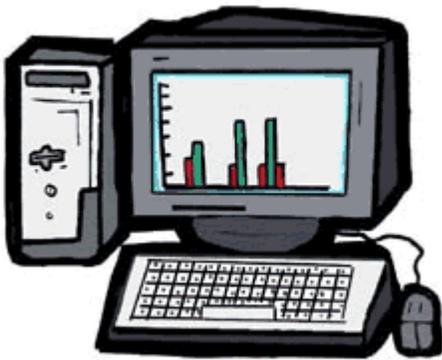
Complaints of eye fatigue and discomfort are common. Many people assume that computer use in the office or at home is the source of these complaints. But extensive testing in government and private laboratories has not produced scientific evidence that computer screens will harm your eyes. Research has established that the most common kind of computer screens emit little or no hazardous radiation, such as x-ray, or non-ionizing radiation, such as ultraviolet rays.

Although people who use computers on a daily basis often complain of eye irritation, fatigue and difficulty focusing, most of these symptoms are caused by conditions surrounding the computer screen, such as poor lighting or improper placement of equipment and supplies. In some instances, a pre-existing eye problem may be the cause.

### How can changes in the workplace reduce eye discomfort?

Even the most well-planned office layouts can pose circumstances that are not ideal for video display terminal (VDT) use. Keep the following checklist in mind when evaluating your workstation:

- Most users prefer a viewing distance of 20 to 26 inches, a little farther away than for reading printed text.



- The computer screen should be placed slightly below eye level. Reference material should be placed on a document holder and moved close enough to the screen so that you don't have to swing your head back and forth from the material and the screen. If that happens, your muscles can become stiff and sore, and your eyes have to constantly change focus, which can cause eyestrain or headaches.
- Lighting should be modified to eliminate glare and harsh reflections

### Occupational Asthma

Some people have a type of asthma called occupational asthma. This means their asthma is caused by something in their workplace. Occupational asthma can happen when something the person breathes in at work causes an otherwise healthy person to develop asthma. This might not happen immediately - occupational asthma may take weeks, months or years to develop.

Which occupations are most at risk? These include food processing (especially baking), electronics, chemical and metal manufacturing or treatment, health careers and industries involving the use of paints, plastic and wood. Some of the substances causing the problem are chemical solvents or chemicals used in spray painting; dust from insects or animals (eg cockroaches, shellfish, wool and laboratory animals) dust from wood, grain, flour, hay, tea and coffee.

This doesn't mean, of course, that everyone who works as a baker or a spray painter will develop asthma. Nor does it mean that all cases of asthma are caused by something a person works with. Exactly why some people and not others develop

asthma isn't clear - but if you have relatives with asthma or other allergies, your risk may be higher. It's also important to remember that not everyone with asthma is affected by the same 'triggers' - someone who reacts to cigarette smoke, for instance, may not react to dust from animals.

What should you do if you suspect you have occupational asthma? Talk to your GP. If he or she suspects you have occupational asthma, you can be referred to a specialist. If a diagnosis of occupational asthma is made early enough, simple changes to your workplace can cure your asthma.

## Second Hand Smoke

### What is second-hand smoke and why is it so dangerous?

- It's the smoke that's released from the end of a burning cigarette.
- It's the smoke that's exhaled by a smoker.
- It contains more than 4,000 chemicals, including carbon monoxide, formaldehyde, benzene and hydrogen cyanide.
- It contains the same toxic chemicals as the smoke inhaled by the smoker.
- Even after a cigarette is out, second-hand smoke remains in the environment (furniture, carpets, blinds ... ) and is still toxic.
- Ventilation systems, air purifiers and designated smoking areas are not enough to provide protection from second-hand smoke.
- More than 1,000 non-smokers will die this year in Canada due to tobacco use over 300 lung cancer deaths and at least 700 deaths from coronary heart disease will be caused by second-hand smoke.
- More about second-hand smoke...



### Why does the workplace present such a risk?

- Employees who are routinely exposed to second-hand smoke can see their risk of lung cancer increase by 20%.
- 3 million Canadian workers have no protection from second-hand smoke. Another 8 million have only partial protection.
- Exposure to second-hand smoke can be higher in some workplaces than at home. For example, the level of nicotine in the air in bars is up to 15 times higher than in a smoker's home.
- Non-smokers who work in a smoke filled environment inhale the same toxic chemicals as the people smoking.
- The risk of a non-smoker developing coronary heart disease can be considerably higher if he or she is regularly exposed to second-hand smoke on the job.

## Stopping the Spread of Germs at Work

### How Germs Spread

Illnesses like the flu (influenza) and colds are caused by viruses that infect the nose, throat, and lungs. The flu and colds usually spread from person to person when an infected person coughs or sneezes.

### How to Help Stop the Spread of Germs

#### Cover your mouth and nose when you sneeze or cough



Cough or sneeze into a tissue and then throw it away. Cover your cough or sneeze if you do not have a tissue. Then, clean your hands, and do so every time you cough or sneeze.

#### Clean your hands often

When available, wash your hands — with soap and warm water — then rub your hands vigorously together and scrub all surfaces. Wash for 15 to 20 seconds. It is the soap combined with the scrubbing action that helps dislodge and remove germs.

When soap and water are not available, alcohol-based disposable hand wipes or gel sanitizers may be used. You can find them in most supermarkets and drugstores. If using a gel, rub

the gel in your hands until they are dry. The gel doesn't need water to work; the alcohol in the gel kills germs that cause colds and the flu.

#### Avoid touching your eyes, nose, or mouth

Germs are often spread when a person touches something that is contaminated with germs and then touches their eyes, nose, or mouth. Germs can live for a long time (some can live for 2 hours or more) on surfaces like doorknobs, desks, and tables.

#### Stay home when you are sick and check with a health care provider when needed

Your employer may need a doctor's note for an excused absence. Remember: Keeping your distance from others may protect them from getting sick. Common symptoms of the flu include:

fever (usually high)  
cough

headache  
sore throat

extreme tiredness  
runny or stuffy nose

muscle aches, and nausea, vomiting, and diarrhea, (much more common among children than adults).

### Practice other good health habits

Get plenty of sleep, be physically active, manage your stress, drink plenty of fluids, and eat nutritious food. Practicing healthy habits will help you stay healthy during flu season and all year long.

## Workstation Safety

You sit at your computer for eight hours a day, staring at the monitor and making the same tiny finger motions over and over. Your files are electronic, so you don't even get up to go to a filing cabinet. After a full day of this, you're tired — and maybe you even hurt.



People who work with computers have reported a variety of problems that can be related to work habits, work station design or job design. These complaints include fatigue, eyestrain and irritation, blurred vision, headaches and pains in the neck, back, arm and muscles.

It doesn't have to happen. Although the way you work in an office can put a strain on your body, there are things you can do to be more

comfortable and to help prevent injuries.

## Your Work Habits

Here are some basic tips:

- Take periodic breaks. Take a 10-minute rest after two hours of continuous computer use, or a 15-minute rest every hour for work that is repetitive or makes intense demands on your eyes. If possible, get up from your desk and walk around.
- In between these breaks, give your eyes a chance to rest by occasionally looking away from the computer screen and focusing on an object at least 20 feet (about 6 meters) away.
- Whenever you can, alternate tasks that use the computer with those that do not. For example, after a long session at the keyboard, make a phone call or go pick up your mail.
- Try desk exercises to relax and stretch your muscles.
- Sit up straight in your chair. Good posture keeps your body in the proper alignment to reduce muscle strain.

## Your Work Environment

The design of your workstation and the surrounding office can make a difference in your comfort and perhaps reduce injuries. Here are some suggestions on proper design for the work area:

### *Lighting and glare:*

- If possible, lighting for computer use should be indirect and not too bright. If direct, overhead lighting is used, light-diffusing slats or louvers on the fixtures can help to reduce glare.
- Workstations should be arranged to reduce glare. Ideally, your computer screen should be at right angles to windows or other light, so you do not have to face the light or see it reflected in the screen.
- Blinds, shades or curtains should be used on windows located less than 20 feet (6 meters) from a computer terminal.
- Glare filters can be attached to the computer screen. These should be used as a last resort because they can make it harder to read text on the screen.

### *General workstation design:*

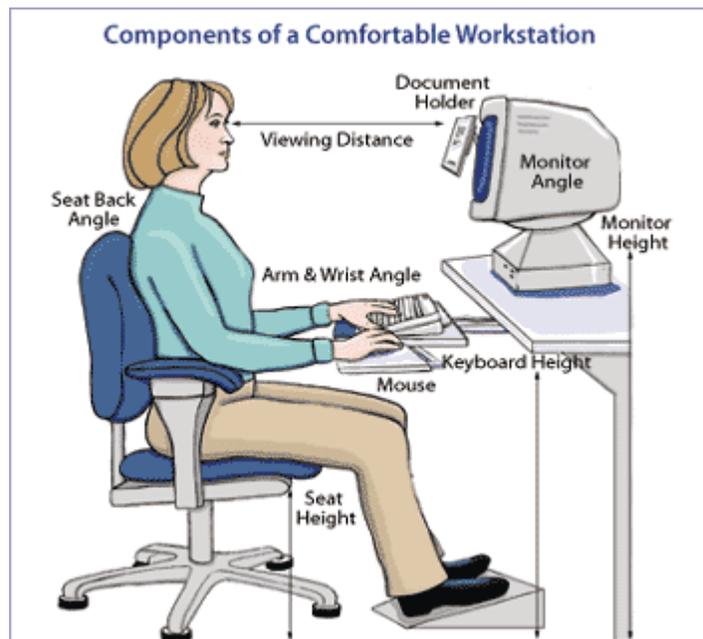
- Chairs, computer monitors and desks or other work surfaces should be adjustable to ensure maximum comfort.
- The work area should have adequate space for the task and for the individual, including enough room to stretch out the legs periodically.

## Your Equipment

Simple adjustments to your chair, your monitor and other equipment also can help.

### Chair:

- Adjust the height of the chair so your foot can rest flat on the floor or a footrest and so the backs of your knees are slightly higher than the chair seat.
- Adjust the angle of the chair back and chair so your entire back has firm support and your weight is evenly distributed.
- Make sure the armrests are low and short enough to fit under work surfaces. This allows you to get close enough to the computer.



**Computer monitor:**

- Adjust the height and angle of the monitor and your computer desk or table so you can look straight ahead or slightly down into the computer screen. The top of the screen should be no higher than eye level, and you should not have to tilt your head backward.
- Sit so that the distance between your eyes and the monitor is about 18 to 30 inches.
- Use the brightness and contrast controls to make sure you can read the screen clearly and with a minimum of glare.

**Keyboard:**

- Adjust the height of the computer table or other surface where the keyboard sits to make sure you can work with a minimum of strain. Your forearms should be parallel to the floor, with elbows at your sides.
- Use a keyboard extender or tray, if necessary, to ensure the proper keyboard height and appropriate distance from the monitor.
- Align your wrists and forearms. The wrists should be straight, not tilted up or down. A padded wrist rest can help you to maintain this position.

**Mouse:**

- Your forearm, wrist and hand also should be straight when using the mouse. Your arm should stay close to the body. You should not have to extend or elevate your arm to use the mouse.
- Try a padded mouse rest if this helps you to maintain straight wrists.

**Accessories:**

- If you will be typing or entering data from a document, use a document holder — either freestanding or attached to the monitor. It should be set at eye level, the same distance from your eye as the monitor, to avoid constant changes in focus or neck strain.
- If you often talk on the telephone while typing or doing other tasks with your hands, use a telephone headset to minimize neck strain.

If you have pain or discomfort despite these precautions, consult your company medical or human resources department to help you find the best way to work comfortably. Many companies will provide special equipment for employees who need it.

## Sick Building Syndrome

**SICK BUILDING SYNDROME** refers to a situation in which occupants of a building experience acute health effects that seem to be linked to time spent in a building, but no specific illness or cause can be identified. These complaints may be localized in a particular room or zone, or they may be widespread throughout the building. Sick Building Syndrome should not be confused with Building Related Illness, which refers to a specific airborne building contaminant. Legionnaire's Disease would be an example of Building Related Illness.

There is no clinically defined disease or specific chemical or biological contaminant that can be determined as the cause of the symptoms of Sick Building Syndrome. The fact that those affected feel relief upon leaving the building directly affects worker productivity and increases absenteeism.

### Symptoms

- Headaches
- Eye, nose, and throat irritation
- A dry cough
- Dry or itchy skin
- Dizziness and nausea
- Difficulty in concentrating
- Fatigue
- Sensitivity to odours



There are four main contributing factors for SBS. They may act in combination or may supplement other complaints such as inadequate temperature, humidity, or lighting. SBS may not be as hazardous or long-lasting as asbestos contamination, and the symptoms may even sound minor, but if you are uncomfortable with your office environment, the chances are you'll do less overtime and take more sick days, which can leave you behind in the promotion stakes.

### Possible Causes

- badly designed air-conditioning systems
- poorly maintained ventilation
- high office temperature, humidity and noise
- very dry air (especially for those wearing contact lenses)
- indoor surface pollutants, such as the debris from clothes, shoes, food, dust mites and ozone fumes
- abnormally low levels of negative ions in the air
- bad organizational environment and poor staff relations, which mean that complaints are not dealt with

Few people enjoy the perfect office environment, as perfection comes at a price. But, ironically, it's the modern office, with brand new, wall-to-wall carpets, that creates the greatest risk.

You may sometimes feel like you're in a hermetically sealed box and that you need ventilation fast, but it can be tricky remedying the situation when you're not actually in charge of the office, especially when recent studies have produced conflicting results on the causes of SBS. Some say that potted plants and ventilation systems can increase air pollutants and produce SBS symptoms. Others offer these 'causes' as solutions. However, by taking small, easy steps to improve your office environment, you can see what works for you.



## Key Questions for Lesson 11 (100 marks)

Please answer these questions on your own paper. If you choose to word process your answers please use double spacing and at least 12 pt font.



### KEY QUESTION # 66 – Lesson 11 ... Important Terms (5 marks)

Read through your class notes and write the definition for each of the following terms:

1. Bullying
2. Sexual Harassment
3. Sick School Syndrome
4. Building-related Illness
5. Sick Building Syndrome



### KEY QUESTION # 67 – Violence at School (25 marks)

1. What are the nine (9) areas of concern regarding youth violence in Canadian schools?
2. List three (3) warning signs that a person may be close to acting in a dangerous manner.
3. Identify three (3) policies or procedures that schools use to ensure safety for staff and students.
4. (a) List three (3) TV shows or movies you have seen that showed some form of violence.  
(b) What message do they send to teens about violence?
5. List three (3) precautions that might keep you from becoming a victim of violence.
6. Summarize strategies you might apply in your selection of friends as a means of avoiding violence, gangs, weapons and drugs.

**KEY QUESTION # 68 – Violence in the News (15 marks)**

Headlines focusing on violent acts are common in local and national newspapers.

Directions: Find and cut-out three (3) news stories that centre on acts of violence (preferably teen, gang and/or school violence). Analyse the messages delivered by these stories.

1. Cut out EACH news story & mount your article on a piece of blank paper (1 mark)

***(Note: If you do not include a copy of the news story for this assignment you will receive a mark of “zero” for the entire key question. The news story must be included with your answer.)***

2. Read each news story and analyse or summarize the message about violence IN YOUR OWN WORDS. (4 marks each = 12 marks)
3. How easy or hard was it to find articles about teen, gang and/or school violence? (1 marks)
4. Do you believe that the news stories about teens and violence are a true depiction of reality for teens today? Why or why not? (1 mark)

**KEY QUESTION # 69 – School Safety Issues (15 marks)**

1. Describe a typical “bully”.
2. What are the different types of bullying?
3. What is the difference between teasing and taunting?
4. What can schools do to stop bullying?
5. What are the similarities and differences between bullying and sexual harassment?
6. What five (5) things can YOU do if you are being sexually harassed?
7. What can YOU do if you witness sexual harassment of another person?
8. How would sexual harassment at school make it more difficult for a teen to maintain good marks and graduate from high school?
9. List three (3) things YOU can do to reduce backpack overload.
10. What are two (2) ways of avoiding unsafe or threatening situations at school?

**KEY QUESTION # 70 – Workplace Health Issues (25 marks)**

Directions: Using your class notes, the Internet, the library, encyclopedias etc. as resources, gather the information needed to complete the chart below. Copy the chart into your notebook and fill-in ALL the blank spaces

(6 marks each issue = 30 marks total)

Be sure to include all the following information:

- Description of the issue – What is it? (1 mark each)
- Possible causes – list at least 2 (1 mark each)
- Symptoms – list at least two (1 mark each)
- Prevention (2 marks each)

## WORKPLACE HEALTH ISSUES

Issue	Description	Possible Causes	Symptoms	Prevention
Carpal Tunnel Syndrome				
Hearing Loss				
Back Injuries				
Spread of Germs				
Workstation Safety				

**KEY QUESTION # 71 – Occupational Health and Safety Act (15 marks)**

In Ontario, representative of two organizations work together to help ensure the health, safety and well-being of workers:

- #1 – The Ontario government
- #2 – The Workplace Safety and Insurance Board (WSIB), formerly the Worker's Compensation Board

They have identified the duties and responsibilities of both employers and employees in ensuring safe and healthy workplaces. These duties are listed in the Occupational Health and Safety Act.

Directions: Your task is to research the Occupational Health and Safety Act using the Internet, the library, encyclopedias etc. to find the following information:

- (a) What is the definition of “workplace”?
- (b) What is the definition of “worker”?
- (c) What is the definition of “employer”?
- (d) What is the definition of “supervisor”?
- (e) What is the definition of “owner”?
- (f) List three (3) worker's rights.
- (g) List three (3) employer's responsibilities.
- (h) List two (2) “powers” a health and safety representative has.
- (i) What are the four (4) main functions of the WSIB?

Useful Websites:

<http://www.gov.on.ca/LAB/english/hs/ohsaguide/>

[http://www.gov.ns.ca/legislature/legc/statutes/occp\\_h\\_s.htm](http://www.gov.ns.ca/legislature/legc/statutes/occp_h_s.htm)

[http://www.e-laws.gov.on.ca/DBLaws/Statutes/English/90o01\\_e.htm](http://www.e-laws.gov.on.ca/DBLaws/Statutes/English/90o01_e.htm)

# PPZ30

HEALTH FOR LIFE



LESSON 12

## Lesson 12 – Global Health Issues (source: Global Health Council)

*"The world really is just one village.  
Our tolerance of disease in any place in the world is at our own peril."*  
-Nobel Laureate Joshua Lederberg (as quoted by Laurie Garrett)

*"Creating human and health security is a fundamental requirement  
for national security in the 21st century."*  
-Dr. Pascoal Mocumbi, Prime Minister of Mozambique

A **PANDEMIC** or **global epidemic** is an outbreak of an infectious disease that affects people or animals over an extensive geographical area. Pandemics such as HIV/AIDS; the resurgence of tuberculosis; the threat of bioterrorist attacks; SARS -- over the past decade, public health issues have occupied an ever more prominent spot on the global agenda.

Global health issues have become both more salient politically and more controversial ethically – just think about the debate on access to retroviral drugs in developing countries pitting advocacy groups against pharmaceutical companies. At the same time, it has become clear that we need new approaches to dealing with pressing global health problems.

In recent years a fundamental shift has taken place in the way the international community addresses public health issues towards an increasingly diverse and complex institutional landscape. Five current global health issues are Women's Health, Child Health, HIV/AIDS, Infectious Disease and Emerging Threats.

### WOMEN'S HEALTH

Women's health issues have attained higher international visibility and renewed political commitment in recent decades. While targeted policies and programs have enabled women to lead healthier lives, **significant gender-based health disparities remain in many countries.**

With limited access to education or employment in many nations, high illiteracy rates and increasing poverty levels are making health improvements for women exceedingly difficult. Many of the modest gains in women's health realized in recent decades are now threatened or have been reversed due to war, economic instability and the HIV/AIDS pandemic.

Illness or death of a woman has serious and far-reaching consequences for the health of her children, family and community. The slogan, "Healthy Women, Healthy World" embodies the fact that as custodians of family health, women play a unique role in maintaining the health and well-being of their communities.

A woman's access to quality basic health care, family planning and obstetric services can be improved through commitment to safe motherhood as a basic human right. Gender-equitable approaches to health help ensure her full participation in health service planning and delivery.

## Global Disparity

Improving the health status of women remains an unmet challenge, with great disparities existing between low- and high-income countries.

The leading causes of death for women, HIV/AIDS, pregnancy and childbirth, malaria and tuberculosis, primarily affect poor women.

The victims of gender-based violence are primarily women and the risk of violence that women face is aggravated by poverty and political instability. Inadequate access to reproductive health services contributes to unwanted pregnancy, unsafe abortion, inadequate antenatal care, and lack of skilled attendance at birth.

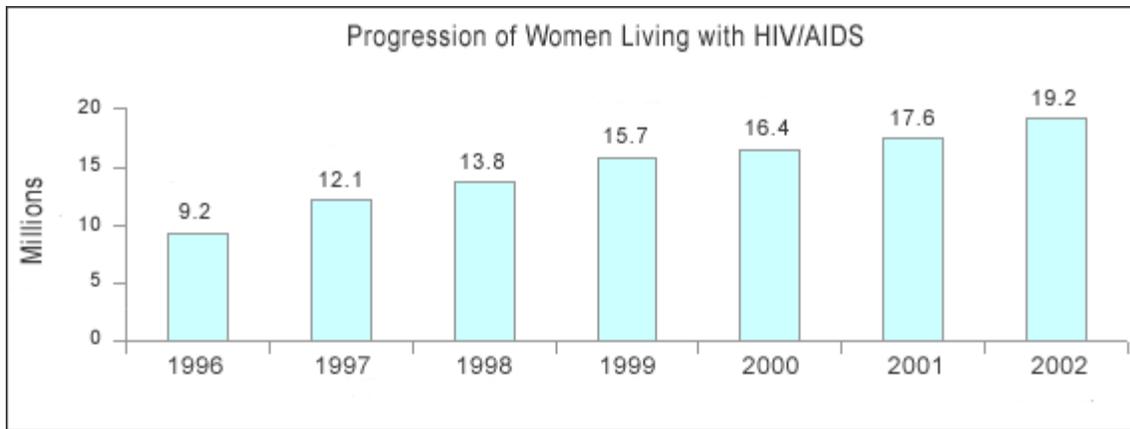
Leading Causes of Death in Women	2002
HIV/AIDS	1.3 million
Malaria	665,000
Tuberculosis	536,000
Maternal Conditions	510,000

Source: World Health Report 2004, WHO

## HIV/AIDS and Women

Nearly 50% of those living with the virus are women (see chart 1). In sub-Saharan Africa, more than twice as many women as men are living with HIV.

A woman's vulnerability to the virus is attributable not only to biological differences, but also to deeply entrenched socio-economic inequalities that further compound susceptibility. This includes economic vulnerability leading to transactional sex, forced or coerced sex and the inability to negotiate condom use. As young women and girls are even more biologically and socially vulnerable to HIV/AIDS than older women, a marked increase in their infection rates has occurred — far surpassing those of young men in some countries.



(Source: UNAIDS)

HIV-positive women are also at high risk of transmitting HIV to their children during pregnancy or childbirth or through breastfeeding. Today, mother-to-child transmission (MTCT) is the primary mode of HIV acquisition in children, and 25-35% of children born to HIV positive women in low-income settings will contract the disease in utero, during delivery or through breastfeeding.

While an inexpensive single dose of antiretroviral therapy (ART) costing only about US\$1 can reduce the risk of MTCT of HIV by half, more than 2 million children under the age of 15 today are living with HIV, most having acquired it through their mothers. ART is presently available to only about 1% of women who need it. In addition, many thousands of pregnant women do not know their HIV status, do not have access to voluntary counselling and testing (VCT) to learn of their status, or forgo testing or taking the drug for fear of violence from their partners or stigmatization from their communities. Women must be able to access VCT and ART with full protection of their rights to privacy and confidentiality.

As AIDS ravages families and communities, the burden of caring for ill family members rests mainly with women and girls — many of whom may be seriously ill themselves. Women comprise 70% of the world's poor. A woman affected by HIV/AIDS is plunged further into poverty, losing the ability to provide for herself and her children. Through pervasive social stigma and the collapse of traditional family and support structures, HIV/AIDS is eroding the already precarious social and economic status of women in many countries.

## Maternal Health

The numbers of deaths each year from maternal causes are estimated to range from 507,000 to 585,000 – equating to the death of one woman every minute, every day. Of these deaths, 99% occur in low-income countries. Women in sub-Saharan Africa have a one in 16 lifetime risk of dying from pregnancy or during childbirth as compared to a one in 1,800 lifetime risk for women in developed countries. Death and disability from maternal causes account for nearly 20% of the total burden of disease for women of reproductive age in developing countries.

As the largest proportion of maternal deaths occur among women who are considered at low risk of developing complications, emergency obstetrical care is critical to saving lives. Although it is often not possible to predict and/or prevent obstetric emergencies, most of these life-threatening events are treatable with appropriate care and support. However, many women in developing countries do not have access to the relatively low-technology, inexpensive interventions, and care that are available to women in industrialized nations.

Maternal mortality has been most often attributed to what have been termed the “**three delays**.” These are delays in recognizing that complications are serious enough to require help; delays in getting to a treatment center equipped for obstetric emergencies due to transportation problems or distance to the treatment center; and delays encountered in starting treatment once having reached a care facility due to lack of available trained health-care personnel, life-saving drugs and/or equipment. Poor women and post-abortion care patients are particularly discriminated against in receiving treatment promptly.

For 3 million women per year, complications of pregnancy or delivery lead to short-term as well as lifelong disabilities. As many as 80,000 women per year develop **FISTULA**, a hole in the birth canal that permits leakage from the bladder or rectum to enter the vagina. The condition, affecting between 500,000 and 1 million women, leaves women permanently incontinent and subject to social ostracism.

Through improved access to higher quality emergency care and aseptic standards, and improved availability of antibiotics, blood for transfusion, and other life-saving treatments, pregnancy complications do not need to lead to death and disability.

Due to the physiological stresses associated with pregnancy, pregnant women are also at greater risk for malaria, diabetes, anemia and other illnesses. Providing access to family planning services, which allows women and their partners to space and limit their pregnancies as they see fit, improves the health of women and their children.

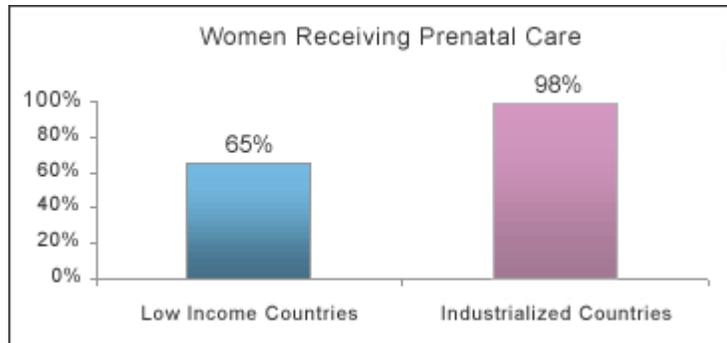
**ACCESS TO ANTENATAL CARE**, or the regular monitoring and management of the health of a pregnant woman and her fetus, is a vital component of safe motherhood initiatives. While antenatal and delivery care has improved in some parts of the world, its reach has not been to the same extent in all countries and regions (see chart).

According to UNICEF, 98% of women in industrialized nations are seen by skilled health personnel at least once during pregnancy, while only 65% of women in low-income countries receive any antenatal care. Only 53% of women in developing countries are attended by a doctor or midwife during delivery. Even fewer women (30%) receive postnatal care to detect any problems, support breastfeeding, and receive family planning information or services.

Reducing the pervasive regional gaps in care during the prenatal, birth and postnatal care period can reduce needless mortality and morbidity from maternal causes.

## Reproductive Health

**SEXUAL AND REPRODUCTIVE HEALTH** is defined as a state of physical, mental and social well-being in all matters relating to the reproductive system at all stages of life. Early and unintended childbearing, HIV and other sexually transmitted infections, and pregnancy-related illness and death account for a significant part of the burden of illness experienced by women — especially women in low-income countries.



(Sources: UNICEF, 2002)

Enabling women to choose the number and timing of their births through access to contraception is a fundamental component of reproductive health services. Despite the nearly universal commitment of the world's countries to this issue, nearly 30% of the 205 million pregnancies that occur each year are unintended.

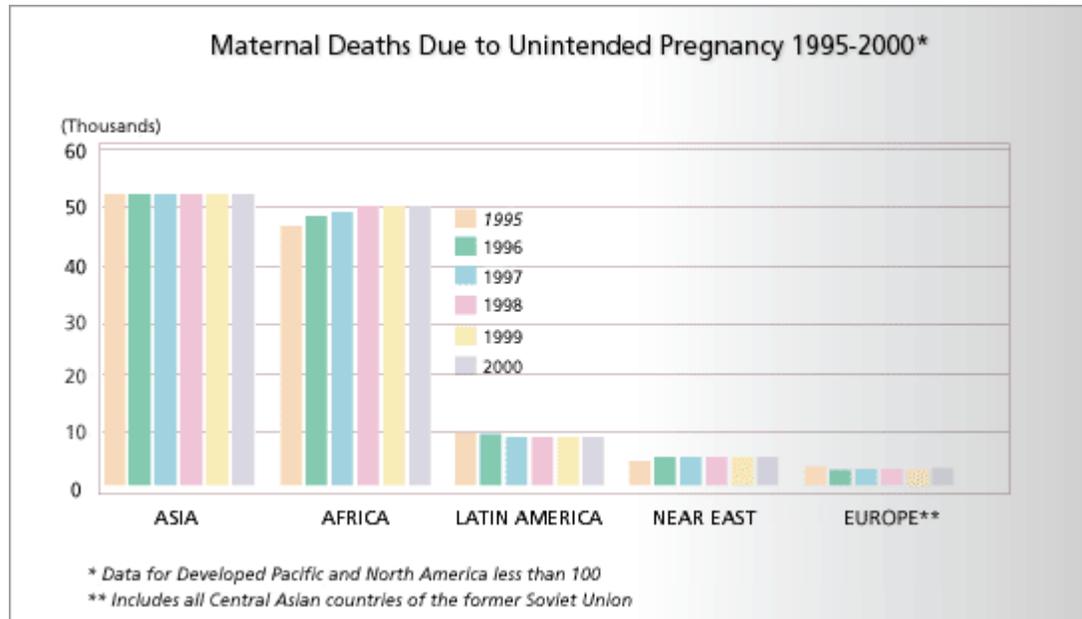
As the number of women in the reproductive ages (15-49) has reached an all time high, family planning services and contraceptive supplies have not kept pace. While the number of couples in low-income countries using family planning services has increased dramatically in the last decade, more than 120 million women who wish to space or delay their next birth still do not have access to modern methods of contraception.

Each year, some 30 million women experience miscarriage and an additional 43 million terminate their pregnancies through elective abortions. Nearly half of these abortions occur in unsafe and clandestine conditions where abortion is illegal or highly restricted.

The failure to provide women with the means to prevent unintended pregnancies creates an extraordinary and avoidable public health threat that results in the deaths of hundreds of thousands of women. From 1995-2000, nearly 700,000 women died from causes related to unintended pregnancies.

While more than one-third died from problems associated with pregnancy, labor and delivery, the majority — more than 400,000 — died as a result of complications resulting from unsafe abortions. Many hundreds of thousands more survived after hospitalization for complications of unsafe abortion.

Such life-threatening and preventable conditions also consume a vast proportion of health resources in poor countries. Some African hospitals report that one-third of gynecological expenditures are used to treat complications of unsafe abortion. Universal access to safe and effective contraception not only saves lives but also conserves health resources for use in providing improved obstetrical care. See chart 3



### SUPPORT QUESTION – Birth Control in Canada

Name three (3) common methods of birth control in Canada ranging from least to most expensive.

### Gender-based Violence

**GENDER INEQUITIES**, referring to differing and unequal socio-cultural expectations and treatment of women as compared to men, lead to many of the health disparities experienced by women and their children. A global review of studies in 36 countries found that 10-60% of women who had been married or partnered had been violently abused by an intimate partner at least once in their lifetime.

Gender disparities and gender-based violence extend to rich and poor women and between industrialized and developing countries. However, women in low-resource, refugee or conflict settings, and economically vulnerable circumstances experience higher levels of violence and more routine societal undervaluing of their lives and health.

Beyond the immediate physical consequences of violence, episodes of violence affect women's future health status. Physical violence often occurs in the presence of emotional and sexual violence. Thus women, who experience partner abuse or sexual assault, have a greater likelihood of reproductive and mental health problems, chronic health conditions, and more negative health behaviours including substance abuse. Research is just beginning to document that violence against women also affects their unborn children and is associated with higher mortality of children under five. Female genital mutilation, (FGM, also called female genital cutting or FGC) —the

removal of all or part of the female genitalia — is practiced on 2 million girls and women a year, primarily in sub-Saharan Africa. Although it is thought by the societies that practice it to benefit girls and maintain cultural norms through control of female sexuality, it has pervasive and permanent health consequences for women.

FGM has been condemned as a form of gender-based violence and a violation of women's and girls' rights to bodily integrity by every major international health and rights consensus document in the last decade. In some countries, the practice is slowing dying, while in others, nearly all women still undergo FGM, often early in childhood.

## Global Need

While financial investments in safe motherhood and other women's health programs have increased dramatically over the past 10 years, resources remain far below the levels required for significant change. A lack of clear commitment to maternal health from donor governments and United Nations (UN) organizations has contributed to the problem. Furthermore, economic difficulties at the country level often force women's health issues to take a back seat to other pressing financial concerns.

The World Bank estimates that just US\$3 per person per year would provide basic family planning, maternal and neonatal health care to women in developing countries. This package would include prenatal, delivery and post-natal care in addition to postpartum family planning and the promotion of condoms to prevent sexually transmitted infections.

## Reasons for Hope

In today's world, a young woman in Mali entering her childbearing years has a 98% probability of having experienced FGM. She also has a one in 14 chance of dying from pregnancy or childbirth. But we have good reason to hope that the daughter she brings into the world will have far better odds of surviving — and thriving — when she decides to have children of her own.

More than a decade of research has shown that small and affordable measures can significantly reduce the health risks that women face throughout their lives. National and international governing bodies have embraced these measures. Safe motherhood — along with the overall health and well-being of women — has become a primary goal for countries throughout the world.

The global community is making progress towards that goal, thanks in part to technical guidance that has become available to support efforts to make motherhood safer. Even in regions marked by instability and crisis, the World Health Organization [www.who.org](http://www.who.org) and international NGOs, such as Save the Children [www.savethechildren.org](http://www.savethechildren.org) and Family Care International, ([www.familycareintl.org](http://www.familycareintl.org)), continue to identify and disseminate best practices on quality maternal health care.

## CHILD HEALTH

### A SNAPSHOT OF TODAY'S CHILDREN

Of 100 children born during the World Summit for Children...

- 9 died before the age of five
- 32 suffered malnutrition before the age of five
- 27 were not immunized against disease
- 18 did not attend school
- 18 did not have access to safe drinking water

Source: *The State of the World's Children, 2002 UNICEF*

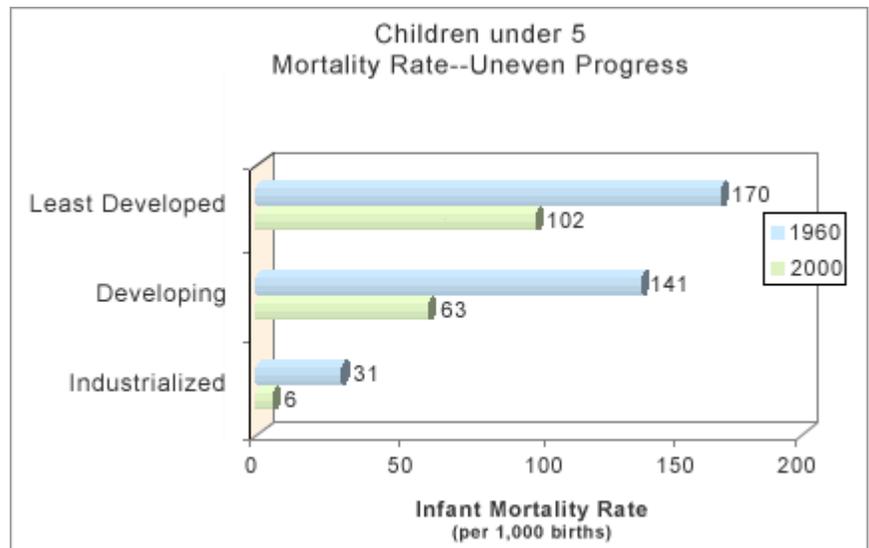
The health and well-being of children are essential to a sustainable future and critical components of the health of families and communities. **Yet every year more than 10 million children, mostly from low- and middle-income countries, die before the age of five.** Children who live to reach this milestone age are too often faced with a host of further challenges, including hunger, conflict, poverty, abuse and chronic disease. **The tragic loss of children due to avoidable and/or treatable conditions is, therefore, needless.**

Globally, there have been tangible improvements in child health. These include an overall reduction in child mortality, a halving of diarrhea-related deaths, and a significant reduction in polio, measles and neonatal tetanus cases.

However, these gains have not been enjoyed equally; children who live in the poorer countries suffer and die disproportionately from illnesses that are preventable and have been effectively controlled in wealthier countries.

### Global Disparity

According to the World Health Organization (WHO), 70% of all childhood deaths are due to five readily preventable and/or treatable causes, or a combination of these conditions:



(Source: *The State of the World's Children 2003, UNICEF*)

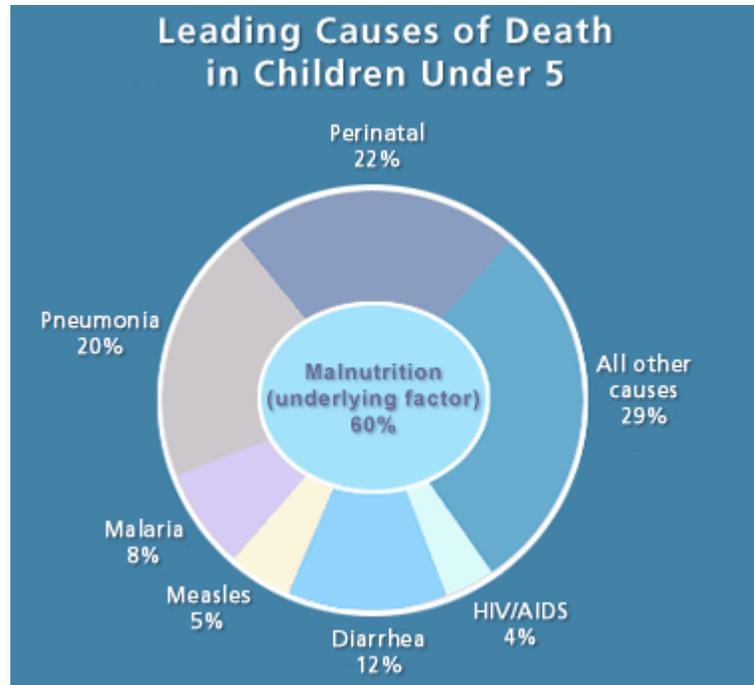
malnutrition, acute respiratory infections (principally pneumonia), diarrhea, measles, and malaria (see chart). While under-five mortality rates decreased globally over the last 40 years, child deaths actually increased in 14 countries and were unchanged in 11 others (see chart).

## Perinatal/Neonatal Deaths

The **PERINATAL PERIOD** encompassing birth and the first week of life is the most risky time of all. Twenty-two percent of all child deaths occur during this period, and 98% of all perinatal deaths take place in developing countries. Incomplete records of vital statistics and underreporting of deaths among newborns are common, suggesting that deaths during the perinatal period may actually be much higher.

About 36% of all child deaths occur during the neonatal period, or the first 28 days of life. The leading causes of death for the nearly 4 million infants who die within their first month include severe infection, birth asphyxia, complications of prematurity, and tetanus.

(Source: WHO, 2001)



## Malnutrition/Low Birth Weight

Malnutrition is an underlying factor in the majority of childhood illnesses, and being underweight and/or being deficient in essential vitamins and minerals substantially increases child mortality. WHO indicates that underweight/under-nutrition is the largest single contributor to premature death for both children and adults. Vitamin A deficiency increases the risk of dying from diarrhea, measles and malaria by 20-24% and zinc deficiency increases the risk of death from diarrhea, pneumonia and malaria by 13-21%. Infants weighing less than 2500 grams at birth (about 5.5 pounds) are at greater risk of death and disease than those who weigh more. Chronic and acute diarrhea aggravates weight loss and creates nutritional imbalances that can be fatal.



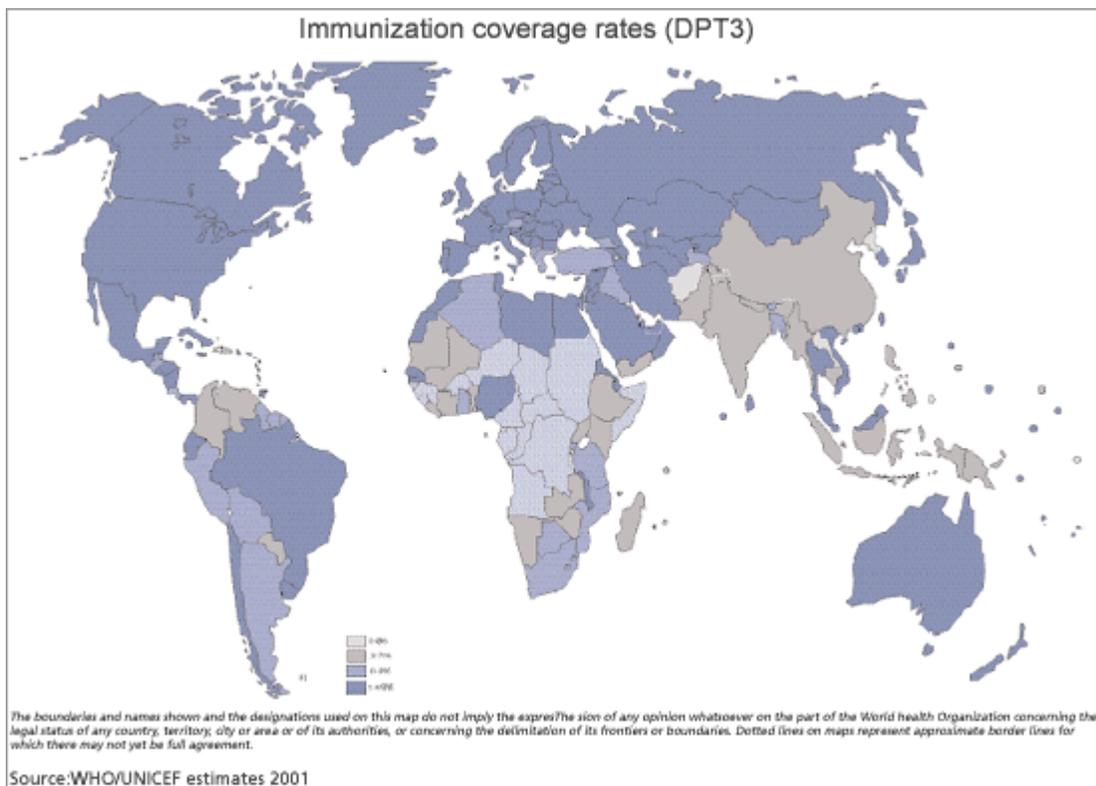
### SUPPORT QUESTION – When I was born I weighed ...

Find out how much you weighed when you were born.

## Diarrheal Disease

Diarrheal diseases including cholera, shigellosis and rotavirus kill an estimated 2 million children each year. Children are more vulnerable to dehydration and electrolyte

imbalances than adults, and diarrhea may quickly lead to death in the young, particularly among those who have vitamin deficiencies and other infections. Millions of children live in overcrowded communities with no access to safe water and adequate sanitation, making prevention of food- and water-borne diarrheal infections extremely difficult. Breastfeeding is the preferred way to prevent diarrhea in infants, as it avoids exposing the infant to impure water during the early vulnerable months of life. While nearly all fatalities attributed to diarrhea can be averted through the use of an inexpensive solution of glucose and sodium (oral rehydration solution, or ORS), repeat episodes are inevitable in the absence of safe water and improved hygiene practices. Without these, diarrhea will remain a leading global health threat for the world's children.



## Routine Vaccination

Although routine vaccination coverage has improved globally, there are severe regional disparities in the percentage of children who are immunized and those who are not (see map). Measles immunization is still not accessible for 50% of children residing in more than a dozen countries. Polio, which has been eliminated in more than 125 nations since 1988 through wide scale immunization projects, is still endemic in seven countries.

## Malaria

Most of the 1 million who die annually from malaria are children. Although malaria deaths can be prevented by use of insecticide treated nets, spraying of insecticides and effective treatment options, far too many children do not have access to these lifesaving measures.

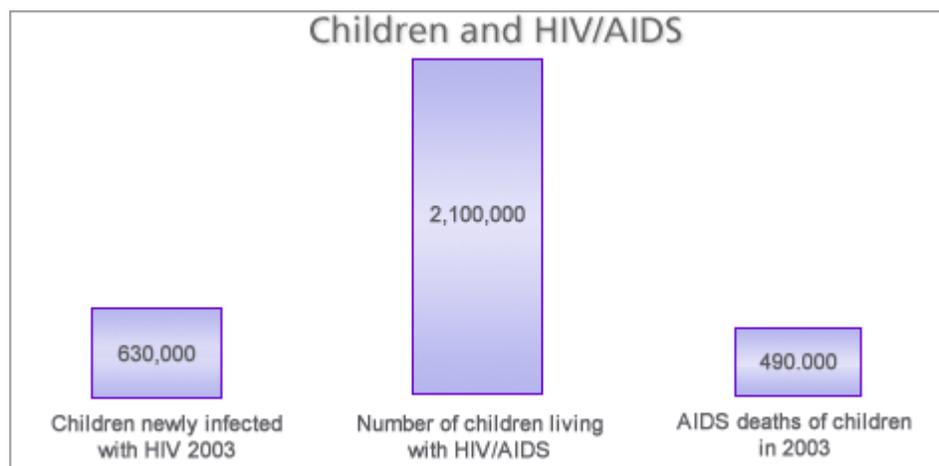
## HIV/AIDS

As the HIV/AIDS pandemic worsens, 2 million children, of whom approximately 90% reside in sub-Saharan Africa, are living with HIV/AIDS (see chart).

Worldwide, nearly 500,000 children die from AIDS every year. Without antiretroviral treatment, approximately 30% of children born to HIV-positive mothers will contract the virus before or during birth or through breastfeeding. Despite the risk of contracting HIV through breastfeeding, children in low-resource settings are often at even greater risk of death from causes other than HIV if they are not breastfed. Infants who are not breastfed are seven times more likely to die of diarrhea and five times more likely to die of pneumonia than infants who are exclusively breastfed.

A single dose of an antiretroviral drug costing only about US\$1 can cut the mother-to-child transmission (MTCT) of HIV by 50%. Yet only 1% of women in need have access to this treatment. HIV-infected mothers may not survive or be well enough to care for their children. The care-giving role of mothers inextricably links the health of children to their mothers. The risk of death for children whose mothers have died is more than double that of children with living mothers.

Today there are more than 15 million children who have lost one or both parents to AIDS, 12 million of whom are in sub-Saharan Africa. Many of these vulnerable children struggle to feed and care for themselves, and face stigmatization, exploitation and abuse.



(Source: UNAIDS, 2002)

## Reasons for Hope

We presently have the ability to eliminate virtually all of the preventable deaths of children, and countries around the world are demonstrating how to do it. Some current campaigns include:

- Improving immunization and vaccine coverage through the Global Alliance for Vaccines and Immunization (GAVI)
- Launching low-cost interventions through programs such as Vitamin A supplementation
- Building consensus around making the world a fit place for children

## HIV/AIDS

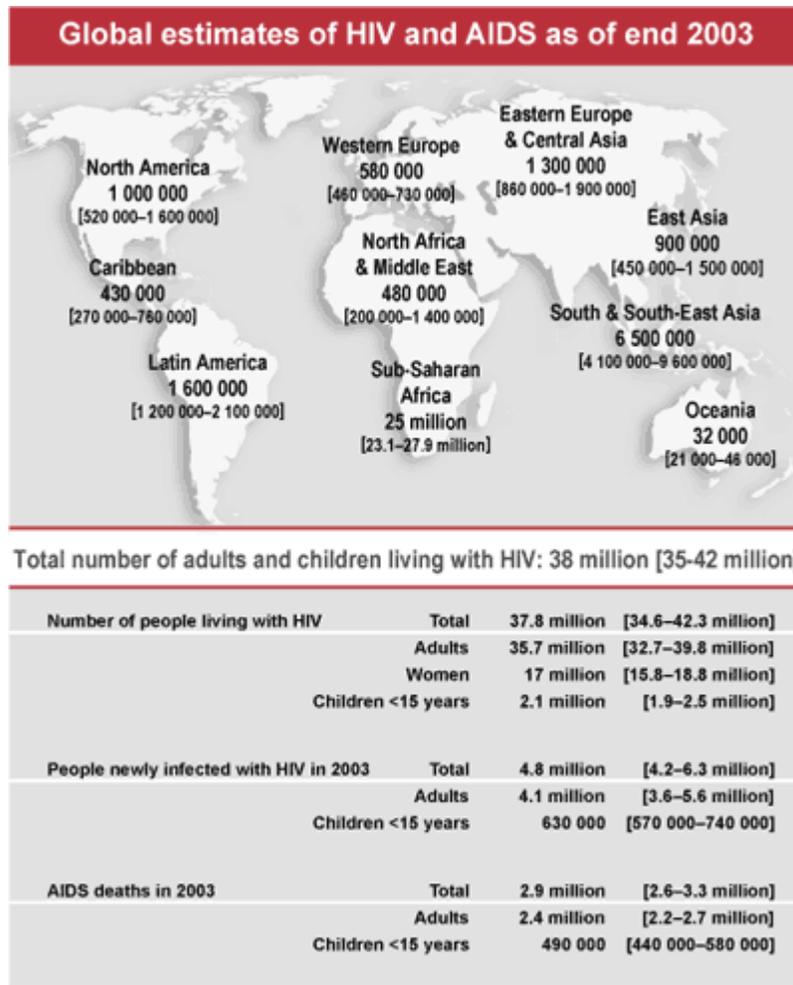
HIV has imperilled the very fabric of human society as no disease in human history has before. By 2010, it is estimated that deaths from the pandemic will rival those of the bubonic plague, which killed 93 million people.

The numbers may be staggering, but we cannot afford to let them become numbing. Evidence of successes in lowering the incidence of infection in countries such as Thailand and Uganda indicate that curbing the HIV/AIDS pandemic is not hopeless. A unified and global commitment to turning the tide on this disease is needed and is building. This effort will require effective use of sufficient resources devoted to research, prevention, care and treatment for those infected with and affected by the disease.

## Global Disparity

Global trends of infection emerging from the HIV/AIDS pandemic:

- 96% of people with HIV live in the developing world, most in sub-Saharan Africa. After sub-Saharan Africa, the Caribbean is the region with the world's second highest HIV prevalence rate.
- An estimated 5 to 6 million people in low- and middle-income countries will die in the next two years if they do not receive antiretroviral treatment (ART). As of the end of 2003, only an estimated 7% who need ART were receiving it.
- In some parts of Africa, one-third of all pregnant women have HIV/AIDS. In Swaziland, for example, nearly 40% of pregnant women are HIV-positive. In low- and middle-income countries, there is at least a 20% likelihood that an HIV-positive breastfeeding mother will pass the virus onto her newborn child. At least a quarter of newborns infected with HIV die before age one, and up to 60% will die before reaching their second birthdays.



(source: [www.unaids.org/EN/resources/epidemiology.asp](http://www.unaids.org/EN/resources/epidemiology.asp))

- Adult infection rates in sub-Saharan Africa have reached as high as 37% in Botswana and 39% in Swaziland.
- In the Russian Federation, more than 90% of the estimated one million people living with HIV were infected through injecting drug use, but they make up only 13% of those receiving antiretroviral therapy.

## Women and AIDS

By the end of 2003, women accounted for nearly half of all people living with AIDS worldwide, and represent almost 60% of infections in sub-Saharan Africa. Moreover, young women are several times more likely than young men to contract the disease through heterosexual contact. Worldwide, 62% of infected young people are girls, and that number soars to 75% in sub-Saharan Africa. A woman's vulnerability to the virus is attributable not only to biological differences, but also to deeply entrenched socio-economic inequalities that further compound her risk.

Because 70% of the world's poor are women, women have fewer economic options. They are far more vulnerable to engaging in transactional sex to pay for food, school fees and other necessities. They are also vulnerable to coercive or forced sex and often unable to negotiate condom use.

Many women, particularly married women, cannot control the circumstances under which sex takes place. Women are especially unable to negotiate sex or condom use with a husband who may have extramarital partners. Some research indicates that married women are in fact more at risk for HIV than unmarried women because they are more frequently exposed to intercourse within marriage.

HIV-positive women may transmit HIV to their children during pregnancy, in childbirth or through breastfeeding. Today, mother-to-child transmission (MTCT) of HIV is the primary mode of acquisition of HIV for the more than 2 million children living with HIV. While antiretroviral therapy significantly reduces the risk of MTCT of HIV, only 1% of women in need currently have access to this preventive therapy.

As AIDS ravages families and communities, the burden of caring for ill family members rests mainly with women and girls — many of whom may be seriously ill themselves. A woman affected by HIV/AIDS is plunged further into poverty, losing the ability to provide for herself and her children. Combined with pervasive social stigma and the collapse of traditional family and support structures, HIV/AIDS is eroding the status of women in many countries.

## Reasons for Hope

Top scientists from around the world are committed to **vaccine** development, which remains one of the greatest hopes the world has for preventing transmission of the disease. Clinical trials are now ongoing in Thailand, the Netherlands, Canada, Trinidad and the United States.

**Left untreated, AIDS is 100% fatal; however, life-prolonging antiretroviral drugs** have begun to transform HIV from an inescapable death sentence into a manageable condition for those, primarily living in developed countries, able to purchase them.

## INFECTIOUS DISEASES

More than 90% of the deaths from infectious diseases are caused by only a handful of diseases: lower respiratory infections, HIV/AIDS, diarrheal diseases, tuberculosis, malaria and measles (see table 1). Most notably, infectious diseases are the leading cause of death in sub-Saharan Africa (see chart 1).

Despite medical advances that have produced hundreds of drugs that are safe and effective against bacteria, viruses, fungi and parasites, infectious diseases are still a major cause of death, disability and social and economic upheaval for millions around the world.

Poverty, lack of access to health care, antibiotic resistance, evolving human migration patterns, new infectious agents, and changing environmental and development activities all contribute to the expanding impact of infectious diseases.

Overcrowded and poor living conditions make those living in poverty especially vulnerable to communicable diseases such as tuberculosis and cholera

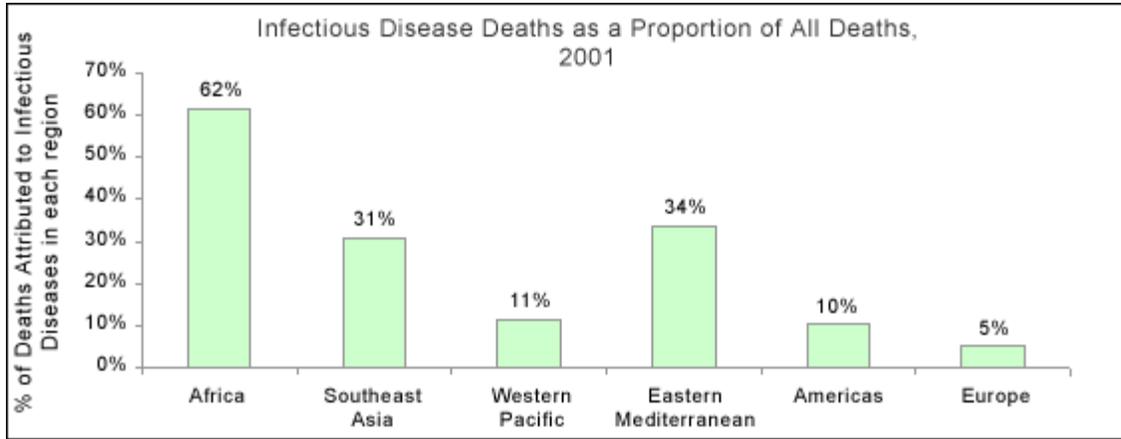
<b>Leading Causes of Death Due to Infectious Diseases</b>	<b>2002</b>
Lower respiratory infections	3.9 million
HIV/AIDS	2.8 million
Diarrheal diseases	1.8 million
Tuberculosis	1.6 million
Malaria	1.2 million
Measles	0.6 million
Source: World Health Report, 2004 WHO	

Poor nutrition and compromised immune systems are key risk factors for several major killers including lower respiratory infections, tuberculosis and measles. Limited access to health care and drugs renders otherwise treatable conditions such as malaria, HIV/AIDS and tuberculosis, fatal for the poor.

HIV/AIDS, which claimed millions of lives in the past two decades, has joined with other emerging and re-emerging diseases to have a significant impact on global health and to change global disease progression patterns. Since the early 1990s, the tuberculosis epidemic has largely been driven by the HIV/AIDS pandemic. Fueled by growing antibiotic resistance, inappropriate prescription of ineffective drugs, and poor adherence to medication, infectious diseases once believed to be under control have re-emerged as major global threats.

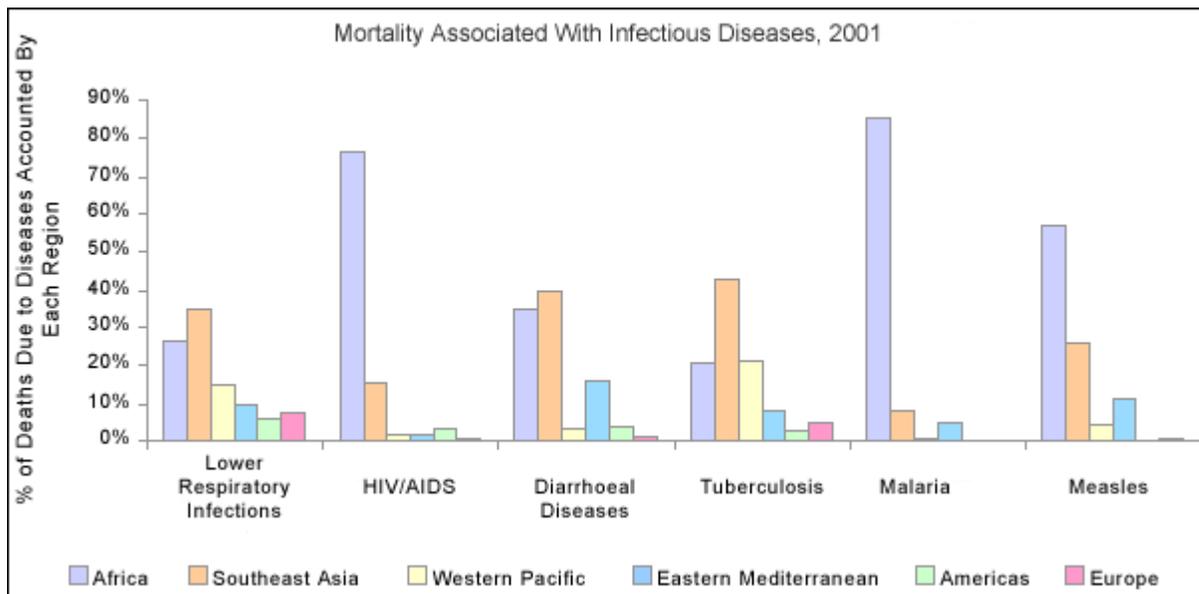
## **Global Disparity**

Illness and death from infectious diseases are particularly tragic because they are largely preventable and treatable. Not surprisingly, the poorest and most vulnerable are the most severely affected by infectious disease. For instance, in 2002, 75% of all deaths due to infectious diseases occurred in southeast Asia and sub-Saharan Africa. Southern Africa, which is home to 10% of the world's population, accounted for more than 40% of deaths due to infectious diseases. More than 60% of all deaths in the region were due to infectious diseases. (See chart).



Children and women are especially susceptible to the impact of infectious diseases. Children in developing countries, already lacking proper nutrition, may also lack access to affordable measles vaccinations and simple interventions for diarrheal diseases. They are also the group most likely to die from malaria. Women now account for more than 50% of new HIV infections and, among adults, pregnant women are the most at-risk for malaria.

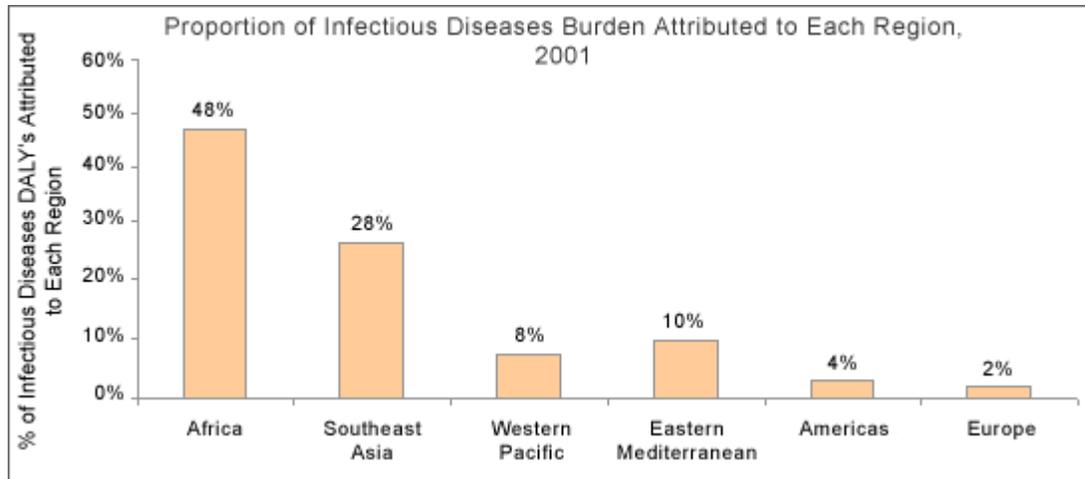
The repercussions of these diseases go well beyond morbidity and mortality statistics. Poverty not only characterizes the circumstances in which infectious diseases thrive, but poverty is exacerbated by lost productivity, missed educational opportunities, and high health-care costs for victims and families.



(Source: WHO)

Communities and societies also bear an economic burden of caring for those who are sick (see chart). Diseases such as HIV/AIDS, malaria and tuberculosis affect those who are in the prime productive stages of life while pneumonia and diarrheal diseases more

often cut short the lives of children before their fifth birthday. Fear and ignorance stigmatize those who are affected by diseases such as HIV/AIDS and tuberculosis, denying them much needed social support.



(Source: WHO)

## Lower Respiratory Infections

Among infectious diseases, lower respiratory infections are the leading cause of mortality overall and a primary cause of death for children under age five. Most of these deaths occur in developing countries where children's immune systems are often already weakened by malnutrition and other diseases. Pneumonia, primarily a bacterial infection of the lungs, is the most serious of the lower respiratory infections, despite the fact that it can usually be effectively treated with antibiotics, if they are available and affordable.

## Diarrheal diseases

Diarrhea is a leading cause of childhood morbidity and mortality in developing countries. It is caused by ingesting certain bacteria, viruses or parasites that are present in water or food, and can be spread by utensils, hands or flies. Diarrheal disease causes significant dehydration, which may quickly lead to death when not promptly treated.

Cholera, one of the most severe diarrheal diseases, is a significant cause of illness and death in developing countries. An acute bacterial infection of the intestine, cholera is spread by intake of contaminated food or water. Cholera symptoms include acute watery diarrhea and vomiting, which can result in severe dehydration and rapidly lead to death. Other diarrheal disease pathogens include: rotavirus, escherichia coli, salmonella, shigella and giardia.

Diarrheal diseases can be prevented through access to safe drinking water, and through proper sanitation measures, including hand washing and safe disposal of

human waste. While diarrhea generally can be easily treated using oral rehydration solution (ORS), a combination of glucose and sodium dissolved in water that replaces the body's essential electrolytes lost through diarrhea, long-term prevention solutions require investments in water and sanitation, as well as changes in behavior to prevent unnecessary transmission of disease agents.

## Tuberculosis

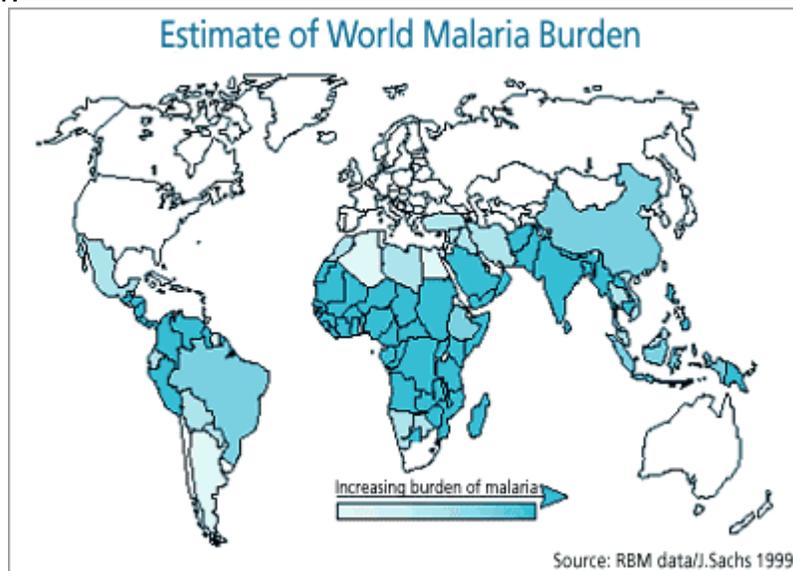
Tuberculosis (TB) kills nearly 2 million people every year, more than 90% of whom live in developing countries. While it is estimated that about one-third of the world's population is infected with the bacteria that causes TB, the infection remains dormant throughout the lives of most healthy people. The lifetime risk for developing the disease is generally 5-10%.

For HIV-positive individuals, who have compromised immune systems and other risk factors, lifetime risk is in excess of 30%. Pulmonary TB affecting the lungs is the most common and infectious form. Symptoms of pulmonary TB include a chronic cough, severe weight loss, night sweats and progressive, irreversible lung destruction.

TB transmission is less likely to occur in properly ventilated and uncrowded environments. Thus TB's association with poverty is aggravated by the fact that those who live in crowded and poor circumstances are at greater risk of exposure. Tuberculosis can be treated effectively through widely available drugs, but 50% of those left untreated will die of the disease.

## Malaria

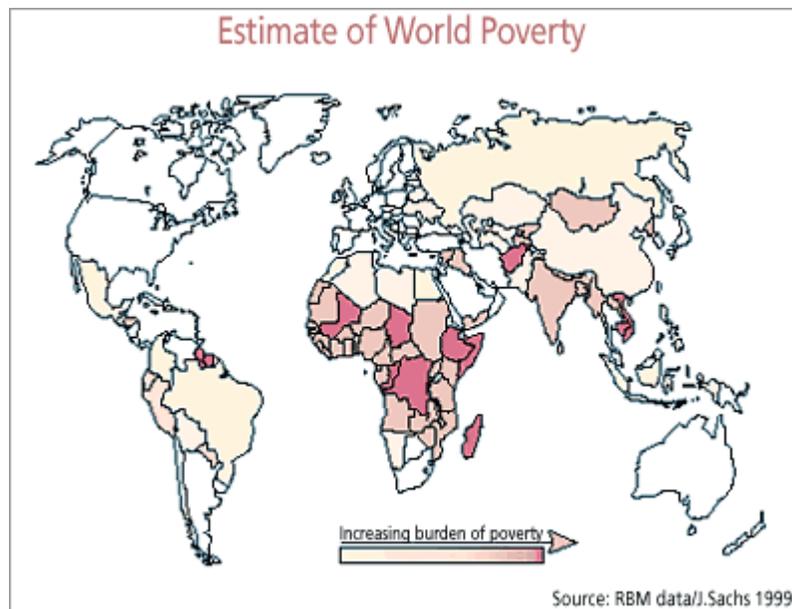
Malaria is a leading killer of children under five and a major contributor to adult morbidity in sub-Saharan Africa. More than 300 million cases and more than one million deaths occur each year.



Malaria is caused by a parasite that is transmitted through the bite of the Anopheles mosquito. Individuals infected with the parasite that causes malaria may experience several weeks or months of poor health, and children and pregnant women are less likely to recover than adults who have built up some immunity to the disease. Symptoms include fevers with chills, headache, back pain, sweating, weakness, nausea and anemia.

Malaria disproportionately affects people living in poverty (see maps). For adults who survive malarial attacks grave social and economic consequences include low productivity and depression.

Because of malaria's pervasiveness, combating malaria is an important poverty reduction strategy. Transmission may be prevented through the use of insecticide-treated nets and indoor residual spraying with insecticides. Malarial disease can be prevented with prophylactic anti-malarial drugs. Those who have been infected with the malaria parasite can be treated with relatively inexpensive anti-malarial drugs where available and affordable. However, drug resistance to the anti-malarial drugs chloroquine and sulfadoxine-pyrimethamine in some regions has now rendered them virtually ineffective.



## Measles

Despite the availability of effective vaccines, measles is still a major childhood killer in developing countries. Caused by a virus, measles is highly communicable and is transmitted by contact with nasal or throat secretions emitted through sneezing or coughing of infected persons. Measles symptoms typically consist of a high fever, cough, runny nose and a generalized rash. Complications that accompany measles,

such as pneumonia, diarrhea and malnutrition are often fatal to children living in developing countries.

## Reasons for Hope

Success stories from around the globe have provided clear evidence that infectious diseases can be controlled, even in the world's poorest countries. We know how to dramatically reduce the devastating impact of killer diseases with medicines and tools that are affordable and easy to use.

### MALARIA

- Thanks to simple interventions, such as insecticide-treated nets to prevent transmission of infection and early and effective treatment, malaria has been contained in a number of countries around the world. It is estimated that as many as one in two malaria deaths can be prevented if people have ready access to rapid diagnosis and prompt treatment with appropriate medicine.

### TUBERCULOSIS

- More than a million lives have been spared from tuberculosis in the past decade due to the success of TB control efforts in countries such as China, India, Nepal and Peru.

### CHILDHOOD ILLNESS

- In 1977, only 5 percent of the world's children were vaccinated. Today, that figure has climbed to 75 percent and more than 3 million lives have been saved each year.

If the right tools are made available worldwide, there is no question that we can reduce infectious disease and deaths.

## EMERGING THREATS

Public health issues evolve over time as a result of **planned and unplanned human activities or changing environments that bring humans in contact with organisms that are capable of causing diseases.**

While the evolution of some of these health issues may be positive, as in the case of the discovery of **ANTIBIOTICS** that enabled humans to survive bacterial infections, others could develop into major public health threats. For instance, two decades ago no one could have foreseen the devastation that HIV, a previously unknown virus, would cause worldwide.

Examples of Pathogens Recognized in the Past 30 Years		
YEAR	MICROBE	DISEASE
1973	Rotavirus	Major cause of infantile diarrhea globally
1976	<i>Cryptosporidium parvum</i>	Acute and chronic diarrhea
1977	Ebola virus	Ebola hemorrhagic fever
1983	HIV	AIDS
1992	<i>Vibrio cholerae</i> O139	New strain associated with epidemic cholera
1995	Human herpes virus-8	Associated with Kaposi sarcoma in AIDS patients
1997	Avian Influenza [Type A (H5N1)]	Influenza
2003	SARS coronavirus	SARS - Severe Acute Respiratory Syndrome

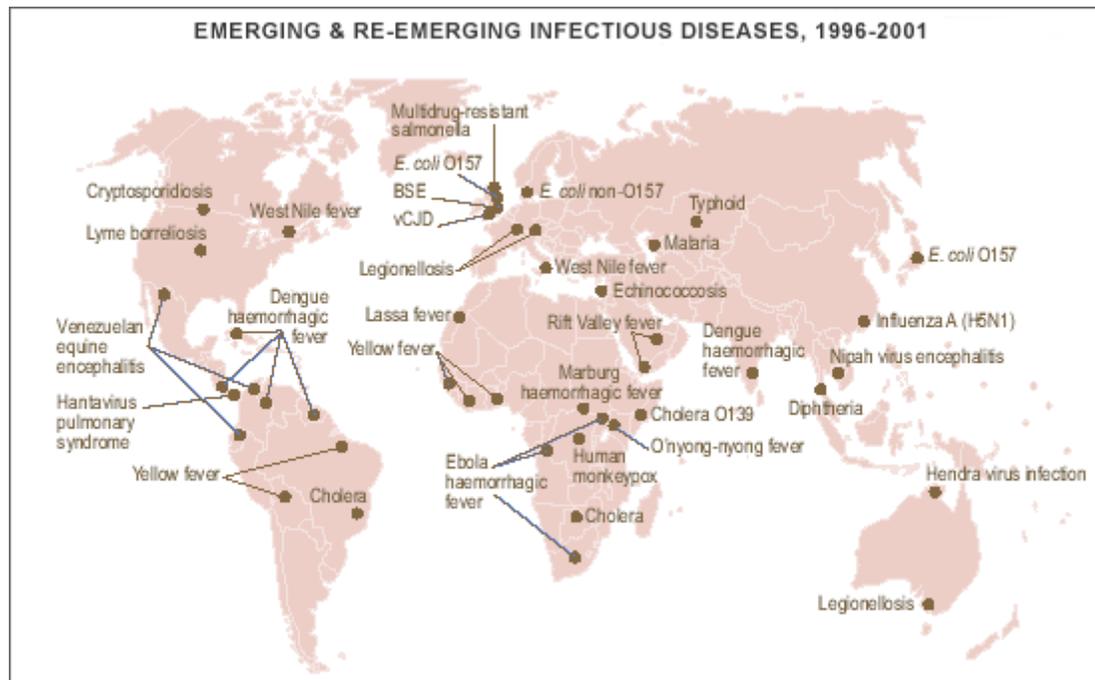
Source: Modified from WHO Fact Sheet No. 97, 1998, World Health Organization

Today, infectious agents are the main cause of new or recurring epidemics. We face a double threat of newly emerging diseases, such as HIV and Ebola, as well as the re-emergence of pathogens such as tuberculosis and cholera, long considered under control in some regions. (See map)

Some specific health problems affect the lives of large numbers of people around the world. These problems present serious threats to personal and community health. Some are the result of naturally occurring climatic and environmental conditions. Others are the result of human choices and government policies that have created unhealthy living environments. Among these health problems are the following diseases and conditions:

Malnutrition/poverty	Cholera	Typhoid
Ebola	West Nile Virus	Yellow Fever
Bubonic Plague	Malaria	Diphtheria
Lyme Disease	Typhus	Filariasis
Human Monkeypox	Lassa Fever	Legionellosis

Evolving health threats are often a direct result of human activities. Resistance to antibiotics due to inappropriate prescribing habits of physicians or poor adherence by patients to treatment is a significant emerging public health issue; a number of diseases previously thought to be under control can no longer be managed by the range of currently available medical innovations. For example, new strains of bacteria causing tuberculosis, diarrheal diseases and pneumonia have developed resistance to low-cost, first-choice antibiotics.



(Source: WHO, 2003)

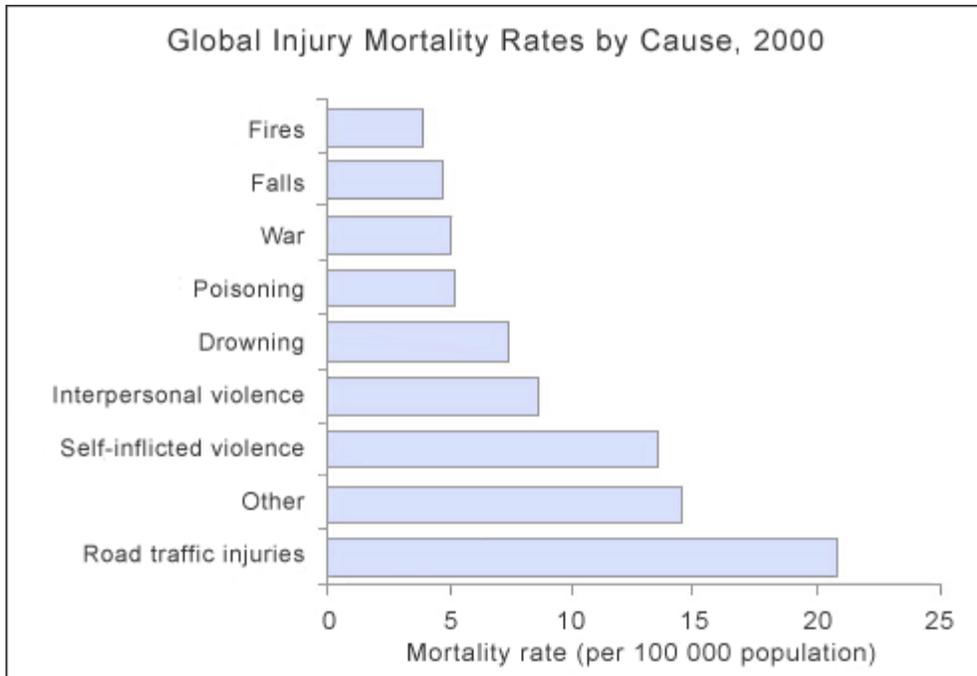
Other factors that contribute to the emergence of new health threats are development patterns that create overcrowded cities with poor infrastructures and sanitation, intensive human interactions with highly concentrated populations of animals and birds, substantially increased international trade in food, increasing human movement throughout the world, and alteration of the environment and the climate.

Air pollution resulting from modern industrial processes has been implicated in a growing number of chronic and fatal diseases such as asthma, lung cancer and respiratory infections. Threats such as global warming, habitat destruction, deforestation and loss of biodiversity affect the spread of diseases such as malaria and cholera.

Urban development patterns and global trade policies have had a direct impact on the emergence of preventable injuries and tobacco use as major public health threats.

In 2000, unintentional injuries (e.g. road traffic injuries and poisoning) and intentional injuries (e.g. interpersonal violence and war) accounted for 9% of the world deaths and 12% of the global burden of disease. (See chart)

According to WHO's Tobacco Free Initiative, tobacco use accounted for 6% of the world deaths in 1990; however, if current use patterns persist, deaths due to tobacco use are expected to increase to 18% by the year 2020.



## Global Disparity

Those who are most vulnerable to evolving health crises tend to be the poor and marginalized who already suffer from numerous inequities and lack of opportunities. While 20 years ago, HIV/AIDS was not clearly linked to poverty and inequality, it is now rapidly becoming a disease of the poor, the young, the uneducated and the disenfranchised. The risk of HIV/AIDS is exacerbated by lack of access to education, information and basic health care, deteriorating public health infrastructure, political instability and lack of political will to address issues that affect the less powerful.

Another striking example of the disparity in emerging health issues is found in environmental health. While the industrialized world, representing 15% of the world's population, consumes more than 60% of world energy, the developing world shoulders the greater health burden from modern environmental hazards.

According to the World Health Organization, more than 40% of the total disease burden (in disability adjusted life years lost – DALYs) due to urban air pollution occurs in developing countries. Children are especially vulnerable to chemical, physical and biological hazards in their environments because they are in a very active growth stage and the ability of their bodies to detoxify is not fully developed.

These global disparities hold true for injuries and tobacco use as well. More than 90% of all deaths due to injuries in 2000 occurred in low- and middle-income countries and young people between the ages of 15 and 44 accounted for 50% of these deaths (see map).

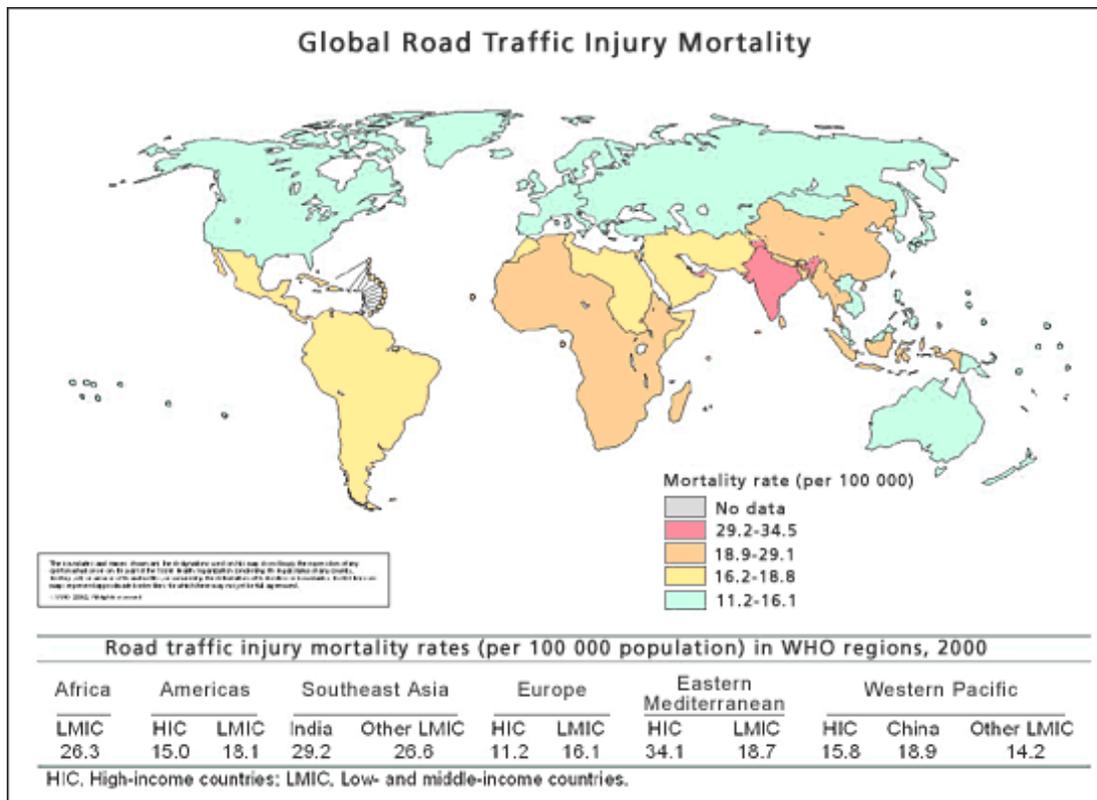
As tobacco use declines in many developed countries due to stricter regulations and public education, it is increasing rapidly in many developing countries (see chart); while projected 2020 tobacco-related deaths in developed regions are expected to rise 50% from 1990 levels, those in Asia will escalate almost four-fold.

The impact of growing population and development pressures in nations that are ill-prepared and lack the infrastructure, resources and planning necessary to deal with such growth is multifold. Development strategies that create safe environments as a sustainable basis for human health are crucial in order to reduce inequities and improve the health of the global poor.

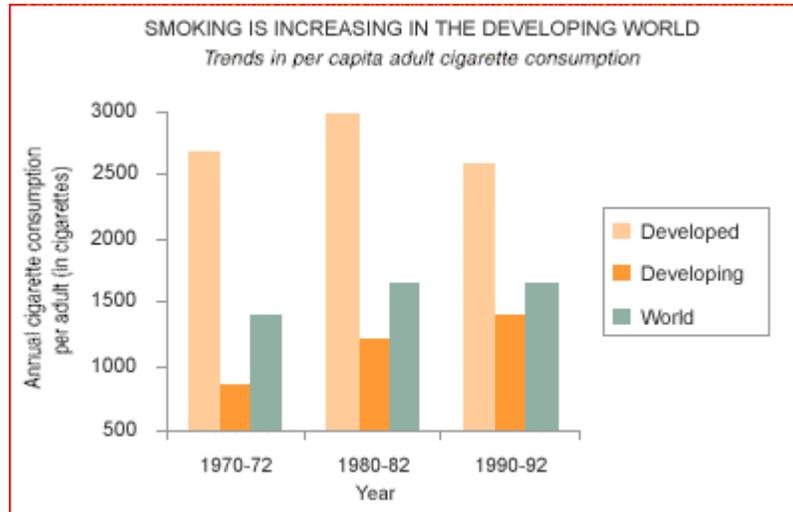
### Reasons for Hope

The rapid containment of the SARS epidemic is a clear indication that the global ability to recognize and mobilize against such a potentially catastrophic threat has become increasingly effective and sophisticated. The cooperation with which nations contributed to and engaged in this effort is truly impressive.

The leadership of the (WHO) World Health Organization ([www.who.int/csr/sars/en](http://www.who.int/csr/sars/en)) and the commitment of the Centers for Disease Control ([www.cdc.gov/ncidod/sars](http://www.cdc.gov/ncidod/sars)) to rapidly disseminate information and technical expertise have established new standards for containing highly infectious diseases.



(Source: WHO, 2002)



(Source: World Health Organization. 1997.  
*Tobacco or Health: a Global Status Report Geneva, Switzerland*)



## Key Questions for Lesson 12 (100 marks)

Please answer these questions on your own paper. If you choose to word process your answers please use double spacing and at least 12 pt font.



### KEY QUESTION # 72 – Lesson 12 ... Important Terms (8 marks)

Read through your class notes and write the definition for each of the following terms:

- |                      |                                   |
|----------------------|-----------------------------------|
| 1. Pandemic          | 2. Sexual and Reproductive Health |
| 3. Gender Inequities | 4. Perinatal Period               |
| 5. HIV               | 6. AIDS                           |
| 7. SARS              | 8. WHO                            |



### KEY QUESTION # 73 – Women's Health (15 marks)

- List three (3) reasons why health improvements for women are exceedingly difficult.
- What are the five (5) leading causes of death for women?
- What percentage of people living with HIV are women?
- What does MTCT stand for?
- What percent of the world's poor do women comprise?
- What are the "three delays" and how are they related to maternal mortality?
- What is fistula?
- What is antenatal care?
- What is a fundamental component of reproductive health services?
- What is the percentage of women receiving prenatal care in:

- (a) low income countries?
- (b) industrialized countries?
- 11. How many women wish to space or delay their next birth still do not have access to modern methods of contraception?
- 12. What do women who experience partner abuse or sexual assault have a greater likelihood of?
- 13. (a) What is FGM?
- (b) What is it's purpose? What are the long-term effects?



### KEY QUESTION # 74 – Child Health (12 marks)

1. How many children worldwide die each year before the age of five?
2. List three (3) tangible improvements in child health.
3. What five readily preventable and/or treatable causes are childhood deaths due to?
4. What is the largest single contributor to premature death for both children and adults?
5. What does a Vitamin A deficiency increase the risk of?
6. (a) Name three (3) diarrheal diseases.
- (b) Why can diarrhea quickly lead to death in the young?
- (c) Why is diarrhea a leading global health threat for the world's children?
7. What is ORS and what is it used for?
8. Which two vaccinations are still not routinely given world wide?
9. Worldwide, how many children die from AIDS each year?
10. How many children who have lost one or both parents to AIDS?



### KEY QUESTION # 75 – HIV / AIDS (11 marks)

1. How many people did the bubonic plague kill?
2. Where in the world does the largest population of people with HIV live?
3. Where is the second highest prevalence rate?
4. (a) What is ART?
- (b) How many people who need it are actually receiving it?
5. In some parts of Africa, how many pregnant women have HIV?
6. How many children born infected with HIV die before age two?
7. In 2003, what was the total number of adults and children living with HIV?
8. In Russia, what percent of people living with HIV were infected through injecting drug use?
9. What are women more vulnerable to?
10. In what three (3) ways may HIV-positive women transmit HIV to their children?

**KEY QUESTION # 76 – Infectious Diseases (10 marks)**

1. What are the six (6) Leading Causes of Death Due to Infectious Diseases?
2. What seven (7) factors contribute to the expanding impact of infectious diseases?
3. What are two (2) key risk factors for several major killers?
4. Why have infectious diseases once believed to be under control have re-emerged as major global threats?
5. Why are infectious diseases are particularly tragic?
6. Who are especially susceptible to the impact of infectious diseases?
7. What is poverty exacerbated by?
8. What are the leading cause of mortality overall and a primary cause of death for children under age five?
9. What is the most serious of the lower respiratory infections?
10. What are diarrheal diseases caused by?
11. What is the lifetime risk for developing TB?

**KEY QUESTION # 77 – Emerging Threats (14 marks)**

1. How do public health issues evolve over time?
2. What do antibiotic enable humans to do?
3. Since 1983, what five (5) pathogens have been recognized as emerging threats?
4. What are the main cause of new or recurring epidemics?
5. Why is resistance to antibiotics considered a significant emerging public health issue?
6. What five (5) factors contribute to the emergence of new health threats?
7. What has been implicated in a growing number of chronic and fatal diseases such as asthma, lung cancer and respiratory infections?
8. What affects the spread of diseases such as malaria and cholera?
9. What percent of world deaths is tobacco use accounted for?
10. Who are most vulnerable to evolving health crises?
11. (a) What are children especially vulnerable to?  
(b) Why?
12. (a) What do YOU remember most about the SARS outbreak?  
(b) What effect did it have on you and your family?



**KEY QUESTION # 78 – Global Health Problems (30 marks)**  
**(15 marks each = 30 marks total)**

Some specific health problems affect the lives of large numbers of people around the world. These problems present serious threats to personal and community health. Some are the result of naturally occurring climatic and environmental conditions. Others are the result of human choices and government policies that have created unhealthy living environments. Among these health problems are the following diseases and conditions:

Malnutrition/poverty	Cholera	Typhoid
Ebola	West Nile Virus	Yellow Fever
Bubonic Plague	Malaria	Diphtheria
Lyme Disease	Typhus	Filariasis
Human Monkeypox	Lassa Fever	Legionellosis
Rotavirus	Shigellosis	Measles
Tuberculosis	SARS	HIV/AIDS

**Directions:** Select TWO (2) of the Global Health Problems listed above. Your task is to create a one-page (8 ½ X 14) information page (FACT SHEET) for EACH Global Health Problems to educate the public. Using your class notes, the Internet, the library, encyclopedias etc. as resources, gather the information needed. Make sure you include the following information and subheadings: (10 marks each)

1. Causes and Transmission of disease/health issue/problem (3 marks)
2. Effects on personal health and on the health of others (3 marks)
3. Treatment (2 marks)
4. Prevention (2 marks)

**Style:** (5 marks each)

- |     |                            |           |
|-----|----------------------------|-----------|
| (1) | Organization & Subheadings | (1 mark)  |
| (2) | Spelling/Grammar           | (1 mark)  |
| (3) | Neatness                   | (2 marks) |
| (4) | Colour & Creativity        | (1 marks) |

# PPZ30

HEALTH FOR LIFE



LESSON 13

## Lesson 13 – Health and Environmental Factors

### ENVIRONMENTAL HEALTH



Why study about the environment in a health course? What does this have to do with you? Literally, everything has some bearing on environmental health. We are dependent on our environment for sustaining life. The health of our environment directly affects our personal level of health.

There is an important relationship between human health and environmental health. Health Canada has developed programs and resources to help maintain a safe environment for Canadians, addressing air quality, water quality, soil contamination affecting food supply, toxic management, use of pesticides and radiation-emitting devices, as well as a wide range of workplace health and safety issues.

### An Environmental Citizen... Who Me?

#### *Yes You Can Make a Difference*

#### Environmental Citizenship, you say?

As Canadians, it is our responsibility to care for the environment. It's also in our best interest. Many Canadians have already put their concern about the environment into action recycling is a good example. But we need to do much more, and get everyone involved.

#### Where do I start?

The challenge of learning about and protecting the environment may at first seem overwhelming environmental issues are often complex. But there are simple things that everyone can do to benefit the planet and themselves. The key is to start small and go from there!

Begin with your personal life. Learn about the effects your daily life has on the environment and find out how you can make some positive changes. Think about your own actions as you read about a day in the life of an average Canadian. Can you see how closely your life is connected to the land, air, and water? Are there things that you can do differently?

## Environmental Citizenship - *Staying informed, getting involved*

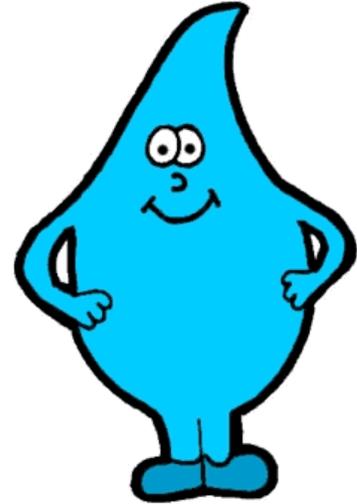
The goal of environmental citizenship is a society where individuals and groups have the knowledge and understanding that will lead to responsible environmental action.

### A Day in the Life of an Average Canadian...

**8:00 a.m.** The bathroom... where most of all household water is used *and* wasted.

#### Did You Know?

- Canadians use, on average, 390 litres of water per day about twice as much as the average European.
- Over half of Canada's fresh water drains north, while 90% of us live within 300 km of the Canada/U.S. border.
- A tap that drips once every second wastes about 10,000 litres of water per year.



#### What to Do?

- Turn off the tap when brushing your teeth or washing your face. Fill a cup or basin instead.
- Put a few drops of food colouring in your toilet tank. If colour seeps into the bowl, it's time to fix the leak!
- Install water-saving devices such as low-flow showerheads and toilet dams to save yourself water *and* money.

**9:00 a.m.** I have the day off, so I'll be able to get some chores done. This cleaner is "new and improved" I think I'll try it. What will I do with these old cleaners beneath the sink though?

#### Did You Know?

- When you put something down the drain it goes to a sewer and then *either to a wastewater* treatment plant or is discharged directly into rivers, lakes or oceans.
- Less than 65% of the urban Canadian population receives some sort of sewage treatment, and most facilities cannot treat the hazardous chemicals found in some household products.
- Most chemical household products are not hazardous *when used according to the directions on the package*. When over-used or incorrectly disposed of, however, they may have a harmful effect on the environment.

#### What to Do?

- Buy chemical household products that are the least harmful to the environment, and buy them in quantities you will use up.
- Don't use toilets, drains, or storm sewers for garbage disposal.

**10:00 a.m. Driving to the store. It sounds like a tune-up is long overdue.**

**Did You Know?**

- About 11% of all carbon dioxide (CO<sub>2</sub>) emissions in Canada are from cars more than rail, marine and air transportation combined. Increased levels of CO<sub>2</sub> threaten to enhance the atmosphere's natural greenhouse effect, leading to global warming.
- By burning fossil fuels we contribute to acid rain and smog as well as global warming.



more fuel than re-starting your engine.

**What to Do?**

- Walk, ride your bike, carpool or use public transit when possible.
- Keep engines well-tuned and tires properly inflated to maximize fuel efficiency.
- Shut off your engine even for short stops. One minute of idling uses

**12:00 noon It is so hot, I'd better turn on the air conditioner. While the house cools, I'll go outside to get some sun.**

**Did You Know?**

- Our tans and sunburns are caused by ultraviolet (UV) rays. UV is a natural part of the sun's rays, and has always been harmful. Luckily, ozone in the upper atmosphere acts like a natural sunscreen, protecting people, plants, and animals from most of this UV radiation.
- Scientists have shown that certain chemicals mainly chlorofluorocarbons (CFCs) are slowly depleting the ozone layer.
- As the ozone layer gets thinner, more UV reaches us, increasing the likelihood of sunburns, eye damage, and skin cancer.
- Although CFCs are no longer used in aerosol sprays, they are still used in products like foam cushioning, refrigerators and air conditioners.

**What to Do?**

- Avoid purchasing products containing ozone-depleting substances.
- Insist that your refrigerator repair technician use CFC recovery and recycling equipment when servicing your refrigerator or freezer.
- Protect yourself from the sun, especially between the hours of 11:00 a.m. and 4:00 p.m. when the sun's rays are the most intense. Wear a hat, UV-blocking sunglasses, long-sleeved shirt and pants. Wear sunscreen with a Sun Protection Factor (SPF) of 15 or greater.

**4:00 p.m. Time to take out the garbage. I'll toss everything into this plastic bag. In time, it will rot at the dump.**

### Did You Know?

- We generate lots of waste about 1.7 kg each per day. Per capita, this is about twice as much as in Sweden.
- Once waste gets covered over and packed down in a landfill they are exposed to very little oxygen. This means that they decay very slowly, and give off methane as they do so. Since methane is a "greenhouse gas", landfills can contribute to global warming. What's more, methane is explosive!
- Modern sanitary landfills are designed to keep out water, so that by-products don't leak into the groundwater and lakes and rivers. Some of them are also equipped with gas recovery systems that capture methane.
- Burning garbage produces gases that must be treated with expensive air pollution equipment. It also produces ash that, if toxic, must be disposed of at a hazardous waste facility.



### What to Do?

- Take unwanted articles of clothing, furniture, and books to appropriate agencies. What you no longer need may be useful to someone else.
- Shop at second-hand stores and garage sales; use the classifieds to find what you need instead of purchasing brand new items.
- Make a compost to divert organic materials away from the landfill or incinerators.

**6:00 p.m. A walk after dinner at the edge of town. How quickly the city has expanded! Most homes have their own yards and lawns.**

### Did You Know?

- More and more natural areas are being harvested, through forestry or farming, or developed for housing and industry. But natural ecosystems are crucial for the survival of *all species, including ours!*
- 90% of the original prairies, 68% of Ontario's original wetlands and 65% of Atlantic coastal marshes are gone; over 200 plant and animal species in Canada are at risk of vanishing forever.
- Rapid development in urban areas is also a threat to our cultural heritage; many historic sites have already been destroyed.

### What to Do?

- Purchase an existing home and make repairs to it instead of building on natural areas or agricultural land.

- Reduce or avoid the use of pesticides. Remove weeds by hand, or learn to like dandelions. If you do use pesticides, make sure that you follow the directions on the package and dispose of empty containers properly.
- Leave grass clippings on the lawn or compost them.
- Water the lawn early in the morning or late in the day when the air is cooler, so that less water evaporates.
- Create wildlife habitat in your backyard. Plant a hedge instead of building a fence. Plant native species adapted to local climate conditions; they require less water and care to flourish. Put up a bird feeder.
- Get involved with a local group to protect natural and cultural heritage.

**10:00 p.m. I'll relax with my new book before turning the lights out for the night. It's all about the environment and how I can be a better environmental citizen something I've been neglecting for too long!**

### **If not You, then Who?**

Quality of life for future generations on this planet will be determined by our actions today. You may find yourself saying, "but I'm just one person out of many... what difference can I make?" The answer is: a big one!

Each of us has an effect on the environment every day the key is to make this impact a positive one. We must all take responsibility for our own actions, whether as individuals, or as members of a community or an organization. Let's work together and become good Environmental Citizens! If you don't, who will?



### **SUPPORT QUESTION – Environmental Citizenship**

#### **Rate Yourself**

We all rely on the environment for food, air, water and much, much more. This means that we share the responsibility for what happens to it. Rate your own lifestyle to see how you score as an Environmental Citizen!

1. I keep water in the fridge instead of letting the tap run to let it get cold.
2. I use both sides of paper before taking it to be recycled.
3. I repair or purchase used items instead of buying new ones.
4. I learn about the nature of Canada by visiting National, Provincial or local parks and historic sites.
5. I take short showers and use a low-flow showerhead.
6. I use a compost pile.
7. I walk, ride, rollerblade, carpool or use public transit.
8. I dispose of leftover cleaners, solvents and used transmission oil properly.
9. I stay informed about the environment.
10. I let my elected representatives know how I feel about environmental issues.

**Scoring: If you answered Always – give yourself 5 points, Sometimes – 2 points, Never – 0 points. Total your answers.**

**Rating:**

45-50 You are a fine example of an Environmental Citizen! Continue your efforts by helping others do the same.

20-44 You're well on your way! Try expanding your actions to new areas.

0-19 Just taking this quiz shows you're interested in doing your part. With some simple lifestyle changes, you could help share this responsibility with other Canadians.

## Human Health and the Canadian Environmental Protection Act (CEPA): An Overview

### The Issue

More than 23,000 different chemicals and substances are available for use in consumer goods and industrial processes in Canada. While many of these substances contribute to improving our standard of living, some may also pose risks to our health.

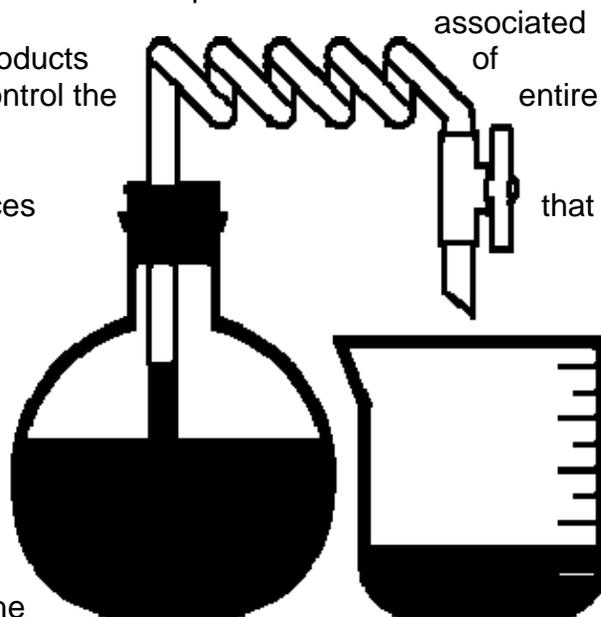
### Background

Environment Canada and Health Canada share responsibility under the *Canadian Environmental Protection Act* (CEPA) to assess threats posed by chemicals and other substances and to undertake risk reduction measures where necessary. Environment Canada focuses on risks to the environment, while Health Canada focuses on risks to human health.

CEPA gives the government the authority to take action to protect the environment and the health of the Canadian public from risks with pollution, dangerous substances, and products of biotechnology. It allows the government to control the life-cycle of a "CEPA-toxic" substance, from development to disposal. It also directs the government to conduct research on substances that may disrupt hormones.

CEPA serves as a safety net by requiring environmental and health assessments for substances and products of biotechnology that are not regulated by other Acts, such as the *Pest Control Products Act*.

Assessments are being conducted on all new substances and products of biotechnology before they are allowed onto the market in Canada, as well as on those that are currently used in Canada.



## The CEPA Definition of "Toxic"

Under the Act, a substance is considered "CEPA-toxic" if it enters or may enter the environment in amounts that may pose a risk to:

- human health
- the environment (such as fish or wildlife)
- the environment upon which life depends (such as water, soil, and air)

## Health Canada's Role

Under CEPA, Health Canada must assess and manage the human health risks associated with the use of "CEPA-toxic" substances in the environment. To assess risks, Health Canada scientists look at a number of factors, including:

- the type of hazard a substance is likely to pose. For example, does it irritate the skin, damage the lungs, affect human reproduction or have the potential to cause cancer?
- the level of exposure at which health damage is likely to occur. For example, would it take a small or large amount of the substance to trigger adverse health effects?
- the amount that people would be exposed to, and the way the exposure would happen. For example, is the substance used in consumer goods? Is it released into the air, soil, or water?



When combined, these factors determine the level of risk posed by a substance. For example, a substance used in a closed manufacturing process might be quite hazardous. But, if it is never released into the environment, the human health risk for the general public would be quite low.

On the other hand, a less hazardous substance might pose a serious risk to human health if large amounts were released near a source of drinking water. In this case, Health Canada and Environment Canada would manage the risk by imposing appropriate controls on the manufacture, import, use, release, and disposal of the substance. These controls can range from outright bans, which are rare, to restrictions, guidelines, and codes of practice.

Health Canada applies these principles of risk assessment and risk management to all of the substances it regulates under CEPA. New substances, including chemicals and

biotechnology products, are assessed **before** they are allowed to enter the Canadian marketplace.

There is also a program to identify the risks of substances that were already in use in Canada when CEPA came into effect. There are roughly 23,000 of these "existing substances." CEPA establishes a framework and certain deadlines to ensure timely implementation of risk management plans for any existing substance found to pose an undue risk to human health.

### **An Ongoing Responsibility**

The government's responsibility to protect human health and the environment is ongoing. A parliamentary committee reviews CEPA every five years. This process ensures that CEPA will remain effective and Canadians will continue to enjoy the highest standards of environmental and health protection.

### **Enforcement under CEPA**

Environment Canada carries out regular inspections and investigations to ensure that regulations governing "CEPA-toxic" substances are followed. The maximum penalties for convicted violators can include fines of up to \$1 million a day and / or prison terms of up to three years.

### **How YOU Can Help**

All Canadians have a role to play in controlling "CEPA-toxic" substances. If you know about violations of CEPA regulations, report them to the Environment Canada office nearest you. There are safeguards in place to protect your identity.

Be careful when using chemicals and other substances in your home and workplace. Follow directions carefully, and call your local municipality if you need advice about the safe disposal of toxic substances.



### **What Is An Environmental Assessment?**

An **ENVIRONMENTAL ASSESSMENT** is a process used by decision-makers to predict, identify, assess and mitigate the potential impacts that a project might have on humans, flora and fauna and the environment. By carrying out an environmental assessment before the project or action commences, irrevocable damage to the environment and to our health can be prevented.

### ***How Does This Affect Us?***

Mining of natural resources, the construction of a highway or the operation of a hydro-electric plant all have the ability to affect and influence our health and well-being. For this reason, it makes sense to carry out an environmental assessment. Since our physical health acts as a major incentive to carry out an environmental assessment, reviewing a project's potential to affect the atmosphere, soil, groundwater, and rivers needs to be examined in an environmental assessment.

Physical health is not the only issue of importance in the environmental assessment. A person's well-being is equally important. For instance, a project can improve employment opportunities for a community and therefore, significantly alter the economy of the community and the happiness/well-being of the people. Likewise, a project can also have negative effects on the happiness of an individual. Native culture and their livelihood can be lost or suffer with the introduction of a project into the community. For this reason, environmental assessment's need to address the positive and negative effects that a project can have on the environment and the people it has the potential to affect.

### ***Potential Sources Impacting on Human Health***

There are many factors that affect human health. Health Canada has listed several:



Air Pollution	Water Pollution
Land Pollution – Reduce, Reuse, Recycle	Healthy Lawns & Fertilizers
Dioxins & Furans	Radon
Proper Use & Disposal of Medication	Effects of Lead on Human Health
Hearing Loss & Leisure Noise	PCBs
Smog & Your Health	Wood Smoke
Fluorides & Human Health	U.V. Radiation from the Sun
Asbestos	Electric & Magnetic Fields
Indoor Air Quality	Aircraft Noise
Drinking Water Chlorination	Mercury and Human Health

## **So Why Worry About The Environment?**

Environmental exposure is difficult to delineate. Scientific evidence to support associations between environmental contaminants and human disease is often limited to very high exposures resulting from occupational or accidental exposures. For the general public, evidence remains circumstantial that what we eat, drink, and breathe are major risk factors for disease. Yet there are significant fears that these factors outside our control adversely affect us, making the environment-health linkage intensely political.

There is considerable concern regarding environmental influences on human health--not only because these factors are outside the control of individuals, but because there is still so much that science does not know. Significant unexplained connections remain between death and disability for many diseases--cancer, heart disease, diabetes, neurological conditions--that may be filled by "environment."

This is particularly worrying, as startling body burden evidence reveals that our bodies are harbouring pesticides, flame retardants, nicotine-metabolites, lead, and other toxic human-made chemicals. Such "invasions" add to our worries.

Furthermore, the interconnectedness of the world through trade, travel, and migration means that risk appears to be democratized, with all the world apparently at risk and little protection from such environmental exposures. The most common public health risks are indeed mundane and thus not newsworthy. High profile outbreaks of infectious disease grab the public's attention and often fuel our risk perceptions.

## Environmental Links and Health

So how exactly is environment related to health? What is meant by the term "environment"? What is meant by "health"? It is useful here to limit the definition of **ENVIRONMENT** to the biophysical and chemical surroundings that affect individuals or populations. Mostly they are human influenced or produced and have despoiled the natural environment for decades. But while most concern has been expressed about synthetic chemicals, naturally occurring factors, such as ultraviolet (UV) radiation and radon, may adversely affect humans. As for health, this may be broadly defined too in terms of physical, mental, and spiritual well-being but is limited here to physical health outcomes such as respiratory and gastrointestinal illnesses and cancer.



To bring order to this vast, complex picture, it is helpful to emphasize those exposures emanating from the environment that are hazardous to human health. For the hazard to become real, it must travel to humans along or through a medium or pathway--most commonly air, water, or food--or it must be helped along its way by human movement or by animal or insect vectors.

WHO (World Health Organization) identifies two sets of hazards that lead to human vulnerability. **Traditional hazards are associated with a lack of development.** They are related to poverty, lack of access to safe drinking water, inadequate basic sanitation in the household and community, indoor air pollution from cooking and using bio-mass fuel, and inadequate solid waste disposal. **Modern hazards are associated with unsustainable development practices** and include

water pollution from populated areas, industry, and intensive agriculture; urban air pollution from vehicular traffic, coal power stations, and industry; climate change; stratospheric ozone depletion; and transboundary pollution. WHO refines environmental hazards into risk factors: ambient air; indoor air; lead; water, sanitation, and hygiene; climate change; and selected occupational risks.

## Climate

The average weather (usually taken over a 30-year time period) for a particular region and time period. Climate is not the same as weather, but rather, it is the average pattern of weather for a particular region. Weather describes the short-term state of the atmosphere. Climatic elements include precipitation, temperature, humidity, sunshine, wind velocity, phenomena such as fog, frost, and hailstorms, and other measures of the weather.

### Weather and Meteorology:

**METEOROLOGY** is the science that studies the processes and phenomena of the atmosphere. **WEATHER** is the state of the atmosphere at a given time and place with regard to temperature, air pressure, humidity, wind, cloudiness, and precipitation. The term weather is used mostly for conditions over short periods of time.



### Climate Change (UF Global Warming):

Human activities are altering the chemical composition of the atmosphere through the build-up of greenhouse gases that trap heat and reflect it back to the earth's surface. This is resulting in changes to our climate, including a rise in global temperatures and more frequent extreme weather events.

### What is Climate Change?

**CLIMATE CHANGE** is the change in climate over a time period that ranges from decades to centuries. The term refers to both natural and human-induced changes. The term "climate variability" refers to shorter term (years to decades) fluctuations in climate such as those caused by El Niño/Southern Oscillation.

The United Nations Framework Convention on Climate Change defines climate change as: "a change of climate which is attributed directly or indirectly to human activity that alters the composition of the global atmosphere and which is in addition to natural climate variability observed over comparable time periods." In other words, the FCCC uses the term Climate Change to mean only those changes that are brought about by human activities.

## Factors Affecting Global Climate

There are many factors, both natural and of human origin, that determine the climate of the Earth.

**Greenhouse Gases** A number of minor gases in the atmosphere, although relatively transparent to sunlight, absorb most of the infrared heat energy transmitted by the Earth towards space. This phenomenon has been called the "greenhouse effect" and the absorbing gases that cause it "greenhouse gases". Important greenhouse gases include: water vapour, carbon dioxide, methane, nitrous oxide, ozone, and halocarbons.

**Climate Trends** An analysis of temperature records shows that the Earth has warmed an average of 0.5°C over the past 100 years. The warming is real and significant though its intensity has varied from decade to decade, from region to region and from season to season.

**Modeling the Global Climate** One of the most effective ways of estimating our future climate is to use powerful computer simulations of past and present climates.

## How Will This Affect You?

Climate change is one of the most significant environmental challenges the world has ever faced. We are already seeing the effects of climate change in Canada. The potential impacts on our health, economy and environment require us to take action. With the ratification of the Kyoto Protocol, the Government of Canada has made climate change a national priority, and is working closely with Canadians and the global community to meet this challenge.

Within the federal government, climate change is co-managed by the Minister of the Environment and the Minister of Natural Resources. Other key players in this nationwide effort include several federal government departments, the provincial/territorial Ministers of Energy and Environment, municipalities, as well as scientists, industry, the business community and individual Canadians.

The achievement of our climate change objectives will become part of the way the Government of Canada does business. Our investments in infrastructure, in technology, in science, and in regional development will all be considered in terms of their impact on reaching our climate change targets.

Understanding climate change means that the Government of Canada and all of its partners can address this issue in a way that will lead to reduced greenhouse gas emissions, more liveable cities, a cleaner environment and increased



competitiveness. Environment Canada's Climate Change Web site is committed to providing you with the most up-to date resources, information, ideas and approaches to protect our climate so that you too can be part of the solution.

## Effects of climate change across Canada

Canada is blessed with a wide variety of ecosystems within its borders. Some sectors of the Canadian economy are based on its richness in natural resources. Changes in regional climate patterns may have positive and negative effects on these important ecosystems and resources. In every region and institute, Environment Canada scientists are studying the effects of climate change, while looking for ways to minimize or adapt to what the future could hold. These are some of the potential regional effects of climate change:

The number of heat-related deaths could rise because of higher summer temperatures. Toronto, Montreal and Ottawa, known for their hot, humid air masses in summertime, would be most affected. Those with heart disease, respiratory conditions, the elderly, the very young, the poor and the homeless would suffer most.

Changes in temperature and precipitation may help the survival of insect (vector) borne diseases, causing increases or invasions into Canada of diseases such as Lyme disease and malaria.

In the western mountain regions of British Columbia and Alberta, there could be less late season runoff because of an accelerated retreat of glaciers. This will threaten water supplies in small communities and have an effect on the cattle industry.

In the north, loss of permafrost may cause massive terrain slumping, drainage of small lakes and increased sediment loads in rivers, threatening northern wetlands and such deltas as the Mackenzie and Peace-Athabasca.

In the Great Lakes, water levels could change. This may threaten valuable shoreline and wetland habitats, disrupt navigation, create new infrastructure requirements, have an impact on fisheries and affect shoreline property values. Bottom dwelling organisms contributing to healthy lakes could be threatened because it would take longer for lakes to be stratified, resulting in longer late season periods of low oxygen conditions.

Canada's wetlands are important for fish and wildlife habitats, water storage and as staging areas during migration of waterfowl. The ecology of these wetlands is very susceptible to water level changes and could be seriously threatened by alterations in regional water patterns. A great number of such wetlands have already been rehabilitated by Great Lakes 2000 and the North American Waterfowl Management Plan.

In the Atlantic Provinces, and other regions susceptible to spring



flooding, changes in late winter-early spring precipitation patterns could result in increased frequency of ice jams and flooding. Damages caused by these events have already cost Canadians an estimated \$60 million annually.

In the Prairies, increased temperatures may provide opportunities for growing higher valued crops, but this may not be possible where changes to regional precipitation patterns lead to insufficient rainfall and more frequent droughts.

Nationally, climate change could alter the carbon cycle, so that there is less dissolved organic



carbon in surface waters. This would reduce a sort of "water sunscreen," making those waters more susceptible to impacts from ultraviolet (UV) radiation.

## Canada's Health Concerns from Climate Change and Variability

Canada's climate is being affected by increased levels of greenhouse gases caused by human activity.

Scientists, governments, international health and environmental organizations agree that climate change will affect the environment and human health and well-being. Health Canada has identified eight significant health concerns related to climate change that cover a broad range. They include health effects from increased smog episodes, illnesses and deaths caused by heat and cold waves, water- and food-borne contamination, diseases transmitted by insects, health effects of stratospheric ozone depletion, and extreme weather events.

Some segments of our population will be affected to a greater degree: children, the elderly, the poor, disabled people, immigrant populations and Aboriginal people. We can also expect that the environmental changes brought by climate change will affect our communities' economy and quality of life. For example, severe weather events like a tornado or a flood can result in loss of income, productivity, increased stress for families, costs to health care and social services.

**Health Concerns****Examples of Health Vulnerabilities**

Temperature-related morbidity and mortality

Cold and heat related illnesses  
Respiratory and cardiovascular illnesses  
Increased occupational health risks

Health effects of extreme weather events

Damaged public health infrastructure  
Injuries and illnesses  
Social and mental health stress due to disasters  
Occupational health hazards  
Population displacement

Air pollution-related health effects

Changed exposure to outdoor and indoor air pollutants and allergens  
Asthma and other respiratory diseases  
Heart attacks, strokes and other cardiovascular diseases  
Cancer

Health effects of water- and food-borne contamination

Diarrheas and intoxication caused by chemical & biological contaminants

Vector-borne and zoonotic diseases

Changed patterns of diseases caused by bacteria, viruses and other pathogens carried by mosquitos, ticks and other vectors

Health effects of exposure to ultraviolet rays

Skin damage and skin cancer  
Cataracts  
Disturbed immune function

Population vulnerabilities in rural and urban communities

Seniors  
Children  
Chronically ill people  
Low income and homeless people  
Northern residents  
Disabled people  
People living off the land

Socio-economic impacts on community health & well-being

- Loss of income and productivity
- Social disruption
- Diminished quality of life
- Increased costs to health care
- Health effects of mitigation technologies



## Key Questions for Lesson 13 (100 marks)

Please answer these questions on your own paper. If you choose to word process your answers please use double spacing and at least 12 pt font.



### KEY QUESTION # 79 – Lesson 13 ... Important Terms (5 marks)

Read through your class notes and write the definition for each of the following terms:

- |                   |                |
|-------------------|----------------|
| 1. CEPA           | 2. Environment |
| 3. Meteorology    | 4. Weather     |
| 5. Climate Change |                |



### KEY QUESTION # 80 – Environmental Citizenship (30 marks)

1. (a) What is Environmental Citizenship?  
(b) How does one become an environmental citizen?  
(c) What is the goal of environmental citizenship?
2. (a) Where is most of all household water is used and wasted?  
(b) How many litres of water per day do Canadians use?  
(c) How can an “Environmental Citizen” reduce water usage?
3. (a) What happens when you put something down the drain?  
(b) What would an “Environmental Citizen” do with old cleaners?
4. (a) What do increased levels of CO<sub>2</sub> threaten to enhance?  
(a) What does burning fossil fuels contribute to?  
(b) What would an “Environmental Citizen” do to reduce carbon dioxide (CO<sub>2</sub>) emissions?
5. (a) What are chlorofluorocarbons doing to the ozone layer?  
(b) What happens as the ozone layer gets thinner?  
(c) What would an “Environmental Citizen” do to protect the ozone layer?  
(d) How would an “Environmental Citizen” protect him or her self from the sun?
6. (a) How much waste do we generate per day?

- (b) How do landfills contribute to global warming?
  - (c) How would an “Environmental Citizen” help to reduce the amount of garbage that goes into our landfills?
7. (a) What are natural ecosystems crucial for?  
(b) What is rapid development in urban areas a threat to?  
(c) What would an “Environmental Citizen” do to protect our natural ecosystems?
  8. List five (5) ways YOU can become an “Environmental Citizen” in and around your own home. (5 marks)
  9. If you could pass one law to protect our environment what would it be? How would you enforce it? Explain why you chose the law. (5 marks)



**KEY QUESTION # 81 – Human Health and the Canadian Environmental Protection Act (CEPA) (10 marks)**

1. What is the difference between CEPA, Environment Canada and Health Canada?
2. What does CEPA give the government the authority to do?
3. (a) What is a "CEPA-toxic" substance?  
(b) What is Health Canada’s role regarding "CEPA-toxic" substances?  
(c) What do Health Canada scientists look at?
4. How can YOU help?
5. (a) What is an “Environmental Assessment”?  
(b) How do “Environmental Assessments” affect the lives of Canadians?
6. According to the WHO, what two (2) hazards have lead to human vulnerability?



**KEY QUESTION # 82 – Climate and Climate Change (15 marks)**

1. (a) What is “Climate”?  
(b) List six (6) climatic elements.
2. How are human activities affecting climate change?
3. Describe greenhouse gases.
4. What are the current climate trends?
5. What is one of the most effective ways of estimating our future climate?
6. What five (5) groups of people suffer most during summer heat-waves in Ontario?
7. How would climate change affect British Columbia and Alberta?
8. How would climate change affect the north?
9. What effects would climate change have on the great lakes?
10. What are Canada’s wetlands important for?
11. How would climate change affect Atlantic Canada?
12. How would climate change affect the Prairies?
13. Nationally, what could climate change alter?



**KEY QUESTION # 83 – Health Concerns and Climate Change  
(10 marks)**

1. What is Canada's climate is being affected by?
2. What six (6) segments of our population will be affected to a greater degree?
3. (a) List Health Canada's eight (8) significant health concerns.  
(b) Beside each concern, list one (1) health vulnerability.



**KEY QUESTION # 84 – Environmental Health Issues (30 marks)  
(10 marks each = 30 marks total)**

Directions: Research THREE (3) of the environmental health issues listed below. Use your class notes, the Internet, the library, encyclopedias etc. as resources to gather the information needed.

Air Pollution

Land Pollution – Reduce, Reuse, Recycle

Dioxins & Furans

Proper Use & Disposal of Medication

Leisure Noise

Smog & Your Health

Fluorides & Human Health

Asbestos

Indoor Air Quality

Water Pollution

Healthy Lawns & Fertilizers

Radon

Effects of Lead on Human Health

PCBs

Wood Smoke

U.V. Radiation from the Sun

Electric & Magnetic Fields

Aircraft Noise

**REQUIRED INFORMATION**

Write sentences or short paragraph answers to the following questions:

1. Describe the issue (2 marks)
2. Give a brief history or background information about the topic (2 marks)
3. What are the health risks, effects and/or sources? (2 marks)
4. What is Health Canada's role? (2 marks)
5. Any other important information – definitions, prevention, treatment etc. (2 marks)

Use the following website to get started:

<http://www.hc-sc.gc.ca/english/iyh/environment/index.html>

# PPZ30

HEALTH FOR LIFE



LESSON 14

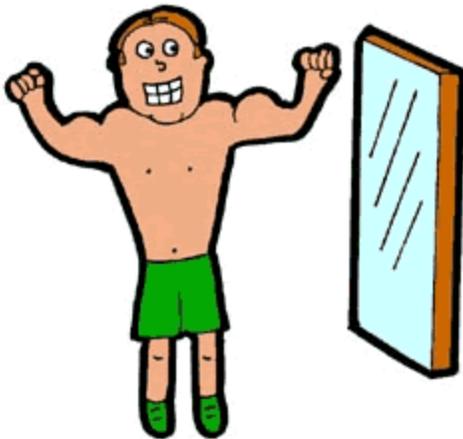
## Lesson 14 – Immune System & Chronic Diseases

### Your Immune System

Whether you're stomping through the showers in your bare feet after gym class or touching the bathroom doorknob, you're being exposed to germs. Fortunately for most of us, the immune system is constantly on call to do battle with bugs that could put us out of commission.

The immune (pronounced: ih-**myoon**) system, which is made up of special cells, proteins, tissues, and organs, defends people against germs and micro organisms every day. In most cases, the immune system does a great job of keeping people healthy and preventing infections. But sometimes problems with the immune system can lead to illness and infection.

Inside your body there is an amazing protection mechanism called the **IMMUNE SYSTEM**. It is designed to defend you against millions of bacteria, microbes, viruses, toxins and parasites that would love to invade your body. To understand the power of the immune system, all that you have to do is look at what happens to anything once it dies. That sounds gross, but it does show you something very important about your immune system.



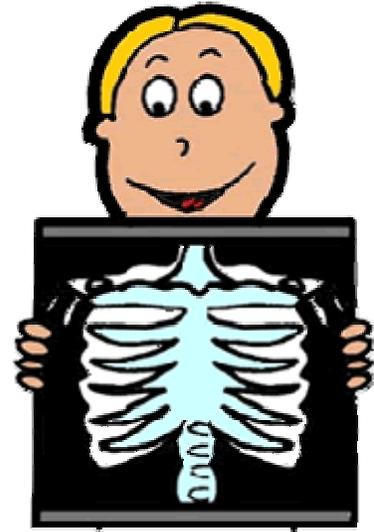
When something dies, its immune system (along with everything else) shuts down. In a matter of hours, the body is invaded by all sorts of bacteria, microbes, parasites... None of these things are able to get in when your immune system is working, but the moment your immune system stops the door is wide open. Once you die it only takes a few weeks for these organisms to completely dismantle your body and carry it away, until all that's left is a skeleton. Obviously your immune system is doing something amazing to keep all of that dismantling from happening when you are alive.

The immune system is complex, intricate and interesting. And there are at least two good reasons for you to know more about it. First, it is just plain fascinating to understand where things like fevers, hives, inflammation, etc., come from when they happen inside your own body. You also hear a lot about the immune system in the news as new parts of it are understood and new drugs come on the market -- knowing about the immune system makes these news stories understandable.

## Seeing Your Immune System

Your immune system works around the clock in thousands of different ways, but it does its work largely unnoticed. One thing that causes us to really notice our immune system is when it fails for some reason. We also notice it when it does something that has a side effect we can see or feel. Here are several examples:

- When you get a cut, all sorts of bacteria and viruses enter your body through the break in the skin. When you get a splinter you also have the sliver of wood as a foreign object inside your body. Your immune system responds and eliminates the invaders while the skin heals itself and seals the puncture. In rare cases the immune system misses something and the cut gets infected. It gets inflamed and will often fill with pus. Inflammation and pus are both side-effects of the immune system doing its job.
- When a mosquito bites you, you get a red, itchy bump. That too is a visible sign of your immune system at work.
- Each day you inhale thousands of germs (bacteria and viruses) that are floating in the air. Your immune system deals with all of them without a problem. Occasionally a germ gets past the immune system and you catch a cold, get the flu or worse. A cold or flu is a visible sign that your immune system failed to stop the germ. The fact that you get over the cold or flu is a visible sign that your immune system was able to eliminate the invader after learning about it. If your immune system did nothing, you would never get over a cold or anything else.
- Each day you also eat hundreds of germs, and again most of these die in the saliva or the acid of the stomach. Occasionally, however, one gets through and causes food poisoning. There is normally a very visible effect of this breach of the immune system: vomiting and diarrhea are two of the most common symptoms.
- There are also all kinds of human ailments that are caused by the immune system working in unexpected or incorrect ways that cause problems. For example, some people have allergies. Allergies are really just the immune system overreacting to certain stimuli that other people don't react to at all. Some people have diabetes, which is caused by the immune system inappropriately attacking cells in the pancreas and destroying them. Some people have rheumatoid arthritis, which is caused by the immune system acting



inappropriately in the joints. In many different diseases, the cause is actually an immune system error.

- Finally, we sometimes see the immune system because it prevents us from doing things that would be otherwise beneficial. For example, organ transplants are much harder than they should be because the immune system often rejects the transplanted organ.

## What Is the Immune System and What Does It Do?

The immune system is the body's defence against infectious organisms and other invaders. Through a series of steps called the **IMMUNE RESPONSE**, the immune system attacks organisms and substances that invade our systems and cause disease. The immune system is made up of a network of cells, tissues, and organs that work together to protect the body.

The cells that are part of this defence system are white blood cells or **LEUKOCYTES** (pronounced: **loo**-kuh-sytes). They come in two basic types (more on these below), which combine to seek out and destroy the organisms or substances that cause disease.

Leukocytes are produced or stored in many locations throughout the body, including the thymus, spleen, and bone marrow. For this reason, they are called the **lymphoid** (pronounced: **lim**-foyd) organs. There are also clumps of lymphoid tissue throughout the body, primarily in the form of lymph nodes that house the leukocytes.

The leukocytes circulate through the body between the organs and nodes by means of the **lymphatic** (pronounced: **lim-fah**-tik) **vessels**. (You can think of the lymphatic vessels as a type of highway between the rest stops that are the lymphoid organs and lymph nodes). Leukocytes can also circulate through the blood vessels. In this way, the immune system works in a coordinated manner to monitor the body for substances that might cause problems.

There are two basic types of leukocytes:

- The **phagocytes** (pronounced: **fah**-guh-sytes) are cells that chew up invading organisms.
- The **lymphocytes** (pronounced: **lim**-fuh-sytes) are cells that allow the body to remember and recognize previous invaders.



### SUPPORT QUESTION – Immune System Quiz

1. Go to one of the following website:

[http://www.betterhealth.vic.gov.au/bhcv2/bhcsite.nsf/pages/quiz\\_immune\\_system?Open](http://www.betterhealth.vic.gov.au/bhcv2/bhcsite.nsf/pages/quiz_immune_system?Open)  
<http://www.schoolscience.co.uk/content/4/biology/abpi/immune/immune11.html>

<http://www.cellsalive.com/quiz3.htm>

<http://www.funtrivia.com/playquiz/quiz592536cb3e0.html>

2. Complete the test. Print and carefully read the results.

A foreign substance that invades the body is called an **ANTIGEN** (pronounced: **an-tih-jun**). When an antigen is detected several types of cells work together to recognize and respond to it. These cells trigger the lymphocytes to produce **ANTIBODIES** (pronounced: **an-tye-bah-deez**). Antibodies are specialized proteins that lock onto specific antigens. Antibodies and antigens fit together like a key and a lock.

## Types of Immunity

All of these specialized cells and parts of the immune system offer the body protection against disease. This protection is called immunity. Humans have three types of immunity - innate, adaptive, and passive.

### Innate Immunity

Everyone is born with innate (or natural) immunity, a type of general protection that humans have. Many of the germs that affect other species don't harm us. For example, the viruses that cause leukemia in cats or distemper in dogs don't affect humans. Innate immunity works both ways because some viruses that make humans ill - such as the virus that causes HIV/AIDS - don't make cats or dogs sick either.

Innate immunity also includes the external barriers of the body, like the skin and mucous membranes (like those that line the nose, throat, and gastrointestinal tract), which are our first line of defence in preventing diseases from entering the body. If this outer defensive wall is broken (like if you get a cut), the skin attempts to heal the break quickly and special immune cells on the skin attack invading germs.

### Adaptive Immunity

We also have a second kind of protection called adaptive (or active) immunity. This type of immunity develops throughout our lives. Adaptive immunity involves the lymphocytes (as in the process described above) and develops as children and adults are exposed to diseases or immunized against diseases through vaccination.

### Passive Immunity

Passive immunity is "borrowed" from another source and it lasts for a short time. For example, antibodies in a mother's breast milk provide an infant with temporary immunity to diseases that the mother has been exposed to. This can help protect the infant against infection during the early years of childhood.

Everyone's immune system is different. Some people never seem to get infections, whereas others seem to be sick all the time. As a person gets older, he or she usually

becomes immune to more germs as the immune system comes into contact with more and more of them. That's why adults and teens tend to get fewer colds than children - their bodies have learned to recognize and immediately attack many of the viruses that cause colds.

## Things That Can Go Wrong With the Immune System

Disorders of the immune system can be broken down into four main categories:

- immunodeficiency disorders (primary or acquired)
- autoimmune disorders (in which the body's own immune system attacks its own tissue as foreign matter)
- allergic disorders (in which the immune system overreacts in response to an antigen)
- cancers of the immune system

### Immunodeficiency Disorders

**IMMUNODEFICIENCIES** (pronounced: ih-myoon-o-dih-**fi**-shun-seez) occur when a part of the immune system is not present or is not working properly. Sometimes a person is born with an immunodeficiency - these are called primary immunodeficiencies. (Although primary immunodeficiencies are conditions that a person is born with, symptoms of the disorder sometimes may not show up until later in life.) Immunodeficiencies can also be acquired through infection or produced by drugs. These are sometimes called secondary immunodeficiencies.

Immunodeficiencies can affect lymphocytes or phagocytes. An example of the most common immunodeficiency disorder is **IGA DEFICIENCY**. IgA is an immunoglobulin that is found primarily in the saliva and other body fluids that help guard the entrances to the body. IgA deficiency is a disorder in which the body doesn't produce enough of the antibody IgA. People with IgA deficiency tend to have allergies or get more colds and other respiratory infections, but the condition is usually not severe.

**ACQUIRED IMMUNODEFICIENCIES** usually develop after a person has a disease, although they can also be the result of malnutrition, burns, or other medical problems. Certain medicines also can cause problems with the functioning of the immune system. Some examples of secondary immunodeficiencies:

- **HIV (human immunodeficiency virus) infection and AIDS (acquired immunodeficiency syndrome)**. This disease slowly and steadily destroys the immune system. It is caused by HIV, a virus which wipes out certain types of lymphocytes called T-helper cells. Without T-helper cells, the immune system is unable to defend the body against normally harmless organisms, which can cause life-threatening infections in people who have AIDS. Newborns can get HIV infection from their mothers while in the uterus, during the birth process, or during breastfeeding. Teens and adults can get HIV infection by having

unprotected sexual intercourse with an infected person or from sharing contaminated needles for drugs, steroids, or tattoos.

- **Immunodeficiencies caused by medications.** There are several medicines that suppress the immune system. One of the drawbacks of chemotherapy treatment for cancer, for example, is that it not only attacks cancer cells, but other fast-growing, healthy cells, including those found in the bone marrow and other parts of the immune system. In addition, people with autoimmune disorders or who have had organ transplants may need to take immunosuppressant medications. These medicines can also reduce the immune system's ability to fight infections and can cause secondary immunodeficiency.

### Autoimmune Disorders

In autoimmune disorders, the immune system mistakenly attacks the body's healthy organs and tissues as though they were foreign invaders. Some examples of autoimmune diseases:

- **Lupus** is a chronic disease marked by muscle and joint pain and inflammation. The abnormal immune response may also involve attacks on the kidneys and other organs.
- **Juvenile rheumatoid arthritis** is a disease in which the body's immune system acts as though certain body parts such as the joints of the knee, hand, and foot are foreign tissue and attacks them.
- **Scleroderma** is a chronic autoimmune disease that can lead to inflammation and damage of the skin, joints, and internal organs.
- **Ankylosing spondylitis** is a disease that involves inflammation of the spine and joints, causing stiffness and pain.
- **Juvenile dermatomyositis** is a disorder marked by inflammation and damage of the skin and muscles.

### Allergic Disorders

Allergic disorders occur when the immune system overreacts to exposure to antigens in the environment. The substances that provoke such attacks are called allergens. The immune response can cause symptoms such as swelling, watery eyes, and sneezing, and even a life-threatening reaction called anaphylaxis. Taking medications called antihistamines can relieve most symptoms. Some examples of allergic disorders:

- **Asthma**, a respiratory disorder that can cause breathing problems, frequently involves an allergic response by the lungs. If the lungs are oversensitive to certain allergens (like pollen, molds, animal dander, or dust mites), it can trigger breathing tubes in the lungs to become narrowed, leading to reduced airflow and making it hard for a teen to breathe.
- **Eczema** is a scaly, itchy rash also known as atopic dermatitis. Although atopic dermatitis is not necessarily caused by an allergic reaction, it more often occurs

in kids and teens who have allergies, hay fever, or asthma or who have a family history of these conditions.

- **Allergies** of several types can occur in teens. Environmental allergies (to dust mites, for example), seasonal allergies (such as hay fever), drug allergies (reactions to specific medications or drugs), food allergies (such as to nuts), and allergies to toxins (bee stings, for example) are the common conditions people usually refer to as allergies.

### Cancers of the Immune System

Cancer occurs when cells grow out of control. This can also happen with the cells of the immune system. Lymphoma involves the lymphoid tissues and is one of the more common childhood cancers. Leukemia, which involves abnormal overgrowth of leukocytes, is the most common childhood cancer. With current medications most cases of both types of cancer in kids and teens are curable.

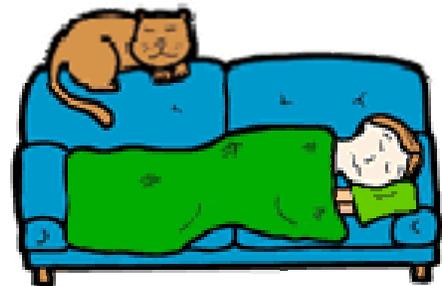
Although immune system disorders usually can't be prevented, you can help your immune system stay strong and fight illnesses by staying informed about your condition and working closely with the doctor. And if you're lucky enough to be healthy, you can help your immune system keep you that way by washing your hands often to avoid infection, eating right, getting plenty of exercise, and getting regular medical checkups.

### Basics of the Immune System

Let's start at the beginning. What does it mean when someone says "I feel sick today?" What is a disease? By understanding the different kinds of diseases it is possible to see what types of disease the immune system helps you handle.

When you "get sick", your body is not able to work properly or at its full potential. There are many different ways for you to get sick -- here are some of them:

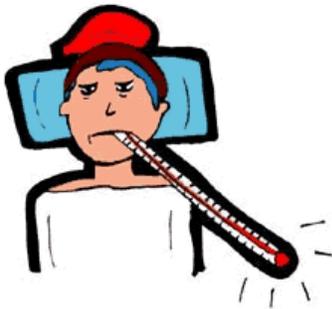
- **Mechanical damage** - If you break a bone or tear a ligament you will be "sick" (your body will not be able to perform at its full potential). The cause of the problem is something that is easy to understand and visible.
- **Vitamin or mineral deficiency** - If you do not get enough vitamin D your body is not able to metabolize calcium properly and you get a disease known as rickets. People with rickets have weak bones (they break easily) and deformities because the bones do not grow properly. If you do not get enough vitamin C you get scurvy, which causes swollen and bleeding gums, swollen joints and bruising. If you do not get enough iron you get anemia, and so on.



- **Organ degradation** - In some cases an organ is damaged or weakened. For example, one form of "heart disease" is caused by obstructions in the blood vessels leading to the heart muscle, so that the heart does not get enough blood. One form of "liver disease", known as Cirrhosis, is caused by damage to liver cells (drinking too much alcohol is one cause).
- **Genetic disease** - A genetic disease is caused by a coding error in the DNA. The coding error causes too much or too little of certain proteins to be made, and that causes problems at the cellular level. For example, albinism is caused by a lack of an enzyme called tyrosinase. That missing enzyme means that the body cannot manufacture melanin, the natural pigment that causes hair color, eye color and tanning. Because of the lack of melanin, people with this genetic problem are extremely sensitive to the UV rays in sunlight.
- **Cancer** - Occasionally a cell will change in a way that causes it to reproduce uncontrollably. For example, when cells in the skin called melanocytes are damaged by ultraviolet radiation in sunlight they change in a characteristic way into a cancerous form of cell. The visible cancer that appears as a tumour on the skin is called melanoma.

## Components of the Immune System

One of the funny things about the immune system is that it has been working inside your body your entire life but you probably know almost nothing about it. For example, you are probably aware that inside your chest you have an organ called a "heart". Who doesn't know that they have a heart? You have probably also heard about the fact that you have lungs and a liver and kidneys. But have you even heard about your thymus? There's a good chance you don't even know that you have a thymus, yet its there in your chest right next to your heart. There are many other parts of the immune system that are just as obscure, so let's start by learning about all of the parts.



The most obvious part of the immune system is what you can see. For example, skin is an important part of the immune system. It acts as a primary boundary between germs and your body. Part of your skin's job is to act as a barrier in much the same way we use plastic wrap to protect food. Skin is tough and generally impermeable to bacteria and viruses. The epidermis contains special cells called Langerhans cells (mixed in with the melanocytes in the basal layer) that are an important early-warning component in the immune system. The skin also secretes antibacterial substances. These substances explain why you don't wake up in the morning with a layer of mould growing on your skin -- most bacteria and spores that land on the skin die quickly.

Your nose, mouth and eyes are also obvious entry points for germs. Tears and mucus contain an enzyme (lysozyme) that breaks down the cell wall of many bacteria. Saliva is

also anti-bacterial. Since the nasal passage and lungs are coated in mucus, many germs not killed immediately are trapped in the mucus and soon swallowed. Mast cells also line the nasal passages, throat, lungs and skin. Any bacteria or virus that wants to gain entry to your body must first make it past these defences.

Once inside the body, a germ deals with the immune system at a different level. The major components of the immune system are:

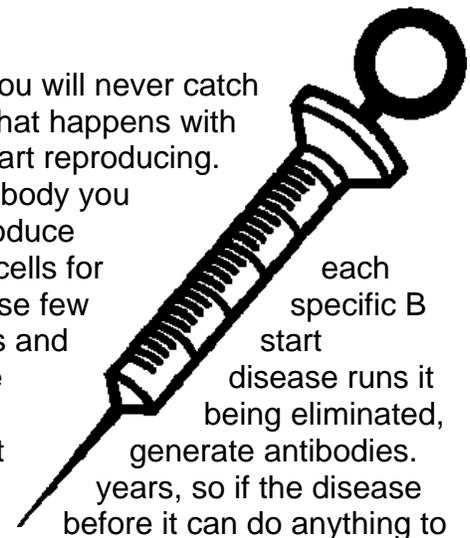
- Thymus
- Spleen
- Lymph system
- Bone marrow
- White blood cells
- Antibodies
- Complement system
- Hormones

## Vaccinations

There are many diseases that, if you catch them once, you will never catch again. Measles is a good example, as is chicken pox. What happens with these diseases is that they make it into your body and start reproducing.

The immune system gears up to eliminate them. In your body you already have B cells that can recognize the virus and produce antibodies for it. However, there are only a few of these cells for antibody. Once a particular disease is recognized by these few cells, the B cells turn into plasma cells, clone themselves and pumping out antibodies. This process takes time, but the course and is eventually eliminated. However, while it is other B cells for the disease clone themselves but do not. This second set of B cells remains in your body for reappears your body is able to eliminate it immediately

you.



A **VACCINE** is a weakened form of a disease. It is either a killed form of the disease, or it is a similar but less virulent strain. Once inside your body your immune system mounts the same defence, but because the disease is different or weaker you get few or no symptoms of the disease. Now, when the real disease invades your body, your body is able to eliminate it immediately.

Vaccines exist for all sorts of diseases, both viral and bacterial: measles, mumps, whooping cough, tuberculosis, smallpox, polio, typhoid, etc. In Canada, vaccines to prevent the following diseases are considered routine, and are given free of charge to children in all provinces and territories:

- diphtheria
- tetanus (lockjaw)
- pertussis (whooping cough)
- polio
- rubella (German measles)
- measles (red measles)
- mumps
- hepatitis B
- Haemophilus influenza type b disease

These vaccines are given by needle "shots." In Canada, the hepatitis B vaccine is given alone. The other vaccines are given in combination, according to specific schedules that usually start when your baby is two months old. If you have young children, you should check with your doctor or public health nurse to make sure they are getting the right shots at the right time.

There are also vaccines to protect against varicella (chickenpox), influenza, and some forms of meningitis, but these are not given on a routine basis across Canada. Talk to your health care provider to find out if these shots are right for your child. If your family is planning to travel outside of Canada, you should also make sure that everyone's shots are up to date.

Many diseases cannot be cured by vaccines, however. The common cold and Influenza are two good examples. These diseases either mutate so quickly or have so many different strains in the wild that it is impossible to inject all of them into your body. Each time you get the flu, for example, you are getting a different strain of the same disease.

## **Misconceptions about Vaccine Safety**

Misconceptions about vaccine safety could cause a decrease in the number of Canadians who are immunized against vaccine-preventable diseases such as measles, polio, and mumps. This could possibly result in epidemics of diseases that are seldom seen these days in developed countries.

### **Common Misconceptions about Vaccines**

Here are some common **misconceptions** about vaccines, followed by the **facts**:

**Misconception:** *Vaccines are not safe.*

**The Facts:** Vaccines are among the safest tools of modern medicine. You may have some swelling or tenderness at the spot where you get the needle, or a mild fever, but these reactions are most often minor and temporary. Serious side effects can happen, but are extremely rare. For example, severe allergic reactions occur in Canada less often than once per million doses of vaccine.

On the other hand, the diseases that vaccines fight pose serious threats. Diseases such as polio, diphtheria, measles, and whooping cough can lead to paralysis, pneumonia, choking, brain damage, heart problems, and even death. The dangers of vaccine-preventable diseases are many times greater than the risk of a serious adverse reaction to the vaccine.

**Misconception:** *Vaccines are linked to chronic diseases such as autism, multiple sclerosis (MS), and Crohn's disease.*

**The Facts:** These are false claims made by anti-vaccine books and Web sites. Recent research using the best scientific methods, and reviews of studies from around the world, provide strong evidence that:

- MMR (measles, mumps and rubella) vaccine does not cause autism or inflammatory bowel disease (Crohn's).
- Hepatitis B vaccine does not cause multiple sclerosis (MS) or relapses of pre-existing MS.
- Pertussis (whooping cough) vaccine does not cause brain damage.
- Childhood vaccines do not increase the risk of asthma.
- Vaccines do not cause sudden infant death syndrome (SIDS).

**Misconception:** *Vaccines are not necessary because the diseases are gone.*

**The Facts:** You are not safe from a vaccine-preventable disease just because it is uncommon in Canada. Travelers can carry diseases from country to country, and if you are not immunized you could be at serious risk. It is also important to realize that some people cannot have vaccines because of certain medical conditions or severe allergies. When you are vaccinated, you help protect the people who can't have vaccines.

Experience from other countries shows that diseases return quickly when fewer people are immunized. For example, in 1994 there were 5,000 deaths from diphtheria in Russia after the organized immunization system was suspended. Previously, Russia (like Canada) had only a few cases of diphtheria each year, and no deaths. Unless a disease has completely disappeared, there is a real risk that small outbreaks can turn into large epidemics if most of the community is not protected.

**Misconception:** *Vaccines contain toxic substances.*

**The Facts:** Every batch of vaccine in Canada is tested for safety and quality before it is released for public use. The main ingredient in most vaccines is the killed or weakened germ (virus or bacterium), which stimulates the immune system to recognize and prevent future disease. Some vaccines also contain extremely small amounts of preservatives or antibiotics to prevent bacterial growth.

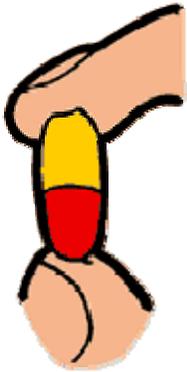
**Misconception:** *Vaccines weaken the immune system.*

**The Facts:** Vaccines strengthen the immune system to protect children and adults from specific diseases. Scientists estimate that the immune system can recognize and respond to hundreds of thousands, if not millions, of different organisms. The vaccines recommended for Canadian children and adults use only a small portion of the immune system's "memory."

### **To Minimize Your Risks**

There is no reason to suffer from a disease if there is a safe and effective way to prevent it. Take steps to protect your family against vaccine-preventable diseases.

## Antibiotics



Sometimes your immune system is not able to activate itself quickly enough to outpace the reproductive rate of a certain bacteria, or the bacteria is producing a toxin so quickly that it will cause permanent damage before the immune system can eliminate the bacteria. In these cases it would be nice to help the immune system by killing the offending bacteria directly.

Antibiotics work on bacterial infections. **ANTIBIOTICS** are chemicals that kill the bacteria cells but do not affect the cells that make up your body. For example, many antibiotics interrupt the machinery inside bacterial cells that builds the cell wall. Human cells do not contain this machinery, so they are unaffected. Different antibiotics work on different parts of bacterial machinery, so each one is more or less effective on specific types of bacteria. You can see that, because a virus is not alive, antibiotics have no effect on a virus.

One problem with antibiotics is that they lose effectiveness over time. If you take an antibiotic it will normally kill all of the bacteria it targets over the course of a week or 10 days. You will feel better very quickly (in just a day or two) because the antibiotic kills the majority of the targeted bacteria very quickly. However, on occasion one of the bacterial offspring will contain a mutation that is able to survive the specific antibiotic. This bacterium will then reproduce and the whole disease mutates. Eventually the new strain is infecting everyone and the old antibiotic has no effect on it. This process has become more and more of a problem over time and has become a significant concern in the medical community.

### Antibiotic Resistant Germs

There is an increasing concern around the world that certain germs such as bacteria, viruses, fungi and parasites are becoming more resistant to antibiotics, which is resulting in fewer effective antibiotics to prevent and treat infections and diseases

### The Causes of Drug Resistance

A major cause of resistance is believed to be overuse or inappropriate use of drugs such as antibiotics, in preventing or treating infection in people, animals and plants. Germs are smart. They constantly change and adapt to their environment and have the ability to take on the characteristics of other germs. When antibiotics are used inappropriately, the weak bacteria are killed, while the stronger, more resistant ones survive and multiply. Also, germs that develop resistance to one antibiotic have the ability to develop resistance to another antibiotic. This is called **cross-resistance**. Direct links have been made between giving antimicrobial drugs to animals and the development of resistance in humans. An example of this is drug resistant Salmonella, which can be transferred from animals to humans through the food chain.

Other factors that cause resistance include an incorrect diagnosis that results in an inappropriate drug being prescribed; or, not taking an antibiotic prescription according to the instructions.

You can be exposed to resistant germs in the same way you get other infections, through contaminated food, water or soil; unsafe sexual practices; contact with infected people or animals; or during treatment in a clinic or hospital. Drug-resistant germs can also enter Canada through imported food or international travel.

### **Preventing Drug Resistance**

You can help prevent and reduce drug resistance by taking the following steps:

- Avoid the use of antibacterial soap and "bacteria-fighting" household cleaning products. Cleaning with plain soap and water, or disinfecting with vinegar or household bleach is usually adequate.
- Wash your hands regularly with plain soap and water for at least 20 seconds. It is the most effective way of preventing any type of infection.
- Vaccinate yourself and your children and keep vaccinations up to date.
- Store, handle and prepare food safely. When you're preparing food, be sure to wash cutting boards and knives with detergent and water. Thoroughly wash all fruits and vegetables that will be eaten raw.
- If you use well water, have it tested two or three times a year.
- If you handle livestock, make sure conditions are hygienic so that antibiotics are not needed as often. Follow label instructions for the use and disposal of animal medications.
- Practise and teach safe sexual practices.



### **SUPPORT QUESTION – Antibiotics**

1. When was the last time YOU took an antibiotic?
2. Which one were you prescribed?
3. Did you finish the entire prescription?

## How to Boost Your Immune System?

Do you catch colds and viruses often? Are you sick a lot? Do you have allergies? Are you run down and fatigued most of the time? You may have a weak immune system. Did you ever notice how some people catch everything and others are never sick and always full of energy? Different people have different immune systems. Our immune system is how we fight off infections and germs and cancer. Sometimes the immune system does not work properly, as with immunodeficiency disorders. These people are extremely susceptible to infection and cancer.



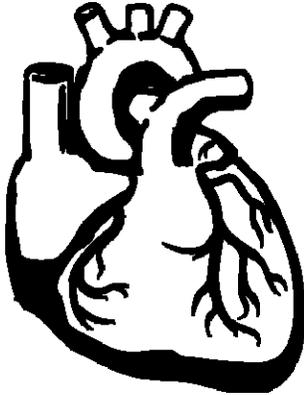
There are natural ways we can strengthen our immune system. Some of these ways are listed here:

1. Get plenty of sleep and rest, the body rejuvenates and strengthens when it is at rest. Many people like to think they can function just fine on 5 to 7 hours a night, but the truth is, we require at least 8 to 10 hours per night.
2. Cut down worry and learn to de-stress, there are studies that prove that stress and depression effect the body physically and can even weaken the immune system.
3. Eat a well balanced diet, don't skip meals. The four food groups have everything our bodies need to thrive. Learn the vitamins in your food and get a good dose of each one.
4. Always take a multivitamin, learn what your body is lacking. Ask your doctor what vitamins and minerals you should increase for your age. For example, women need extra calcium. We need extra folic acid as well.
5. Have a regular exercise regimen. Exercise makes our body stronger, increase circulation of blood and nutrients, and helps flush the body of toxins.
6. Drink plenty of water, this helps flush the body of toxins and keeps you well hydrated
7. Eat foods with high antioxidant levels. They are listed below. Antioxidants are vitamins in your diet that can reduce your risk of cancer and other diseases and can give your immune system a boost. Eat a diet full of fresh fruits and vegetables, which are excellent sources of antioxidants. Antioxidant vitamins include vitamin A, vitamin C, vitamin E, and beta carotene. Food sources include: fruits and vegetables, dairy products, melons, berries, dark greens, whole grains, dairy and meats (high protein).

There are things we can do to strengthen our immune system. Start today for a healthier you!

## Chronic Diseases

**CHRONIC DISEASES** are typically characterized as having an uncertain etiology, multiple risk factors, long latency, prolonged affliction, a non-infectious origin, and can be associated with impairments or functional disability. Chronic diseases—such as heart disease, cancer, arthritis and diabetes—are the leading causes of death and disability in the Canada. The profile of diseases contributing most heavily to death, illness, and disability among Canadians changed dramatically during the last century.



Today, chronic diseases—such as cardiovascular disease (primarily heart disease and stroke) are among the most prevalent, costly, and preventable of all health problems.

Although chronic diseases are among the most common and costly health problems, they are also among the most preventable. Adopting healthy behaviors such as eating nutritious foods, being physically active, and avoiding tobacco use can prevent or control the devastating effects of these diseases. Examples include cardiovascular diseases (heart disease and stroke), cancer, diabetes, arthritis, asthma, and mental illness.

### What are the Primary Risk Factors?

According to the World Health Report 2002, the major risk factors include:

<ul style="list-style-type: none"> <li>▪ tobacco</li> <li>▪ alcohol</li> <li>▪ blood pressure</li> <li>▪ physical inactivity</li> </ul>	<ul style="list-style-type: none"> <li>▪ cholesterol</li> <li>▪ overweight</li> <li>▪ unhealthy diet</li> </ul>
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### In Individuals, we can classify the risks factors as follows:

**Background risk factors**, such as age, sex, level of education and genetic composition;

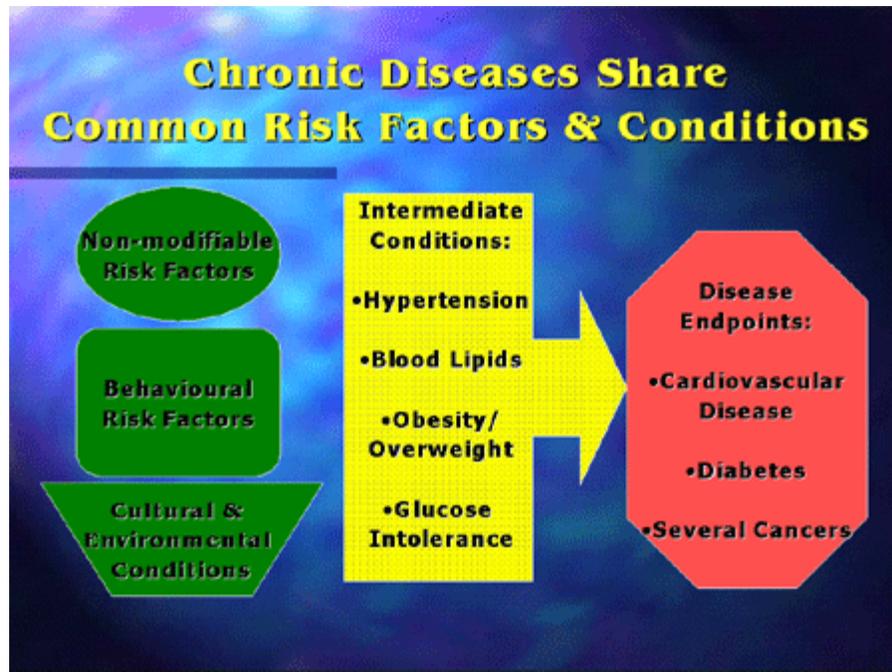
**Behavioural risk factors**, such as smoking, unhealthy diet and physical activity inactivity; and

**Intermediate risk factors**, such as serum cholesterol levels, diabetes, hypertension and obesity/overweight

### In Communities, the main factors that can impact health include:

- **Social and economic conditions**, such as poverty, employment, family composition;
- **Environment**, such as climate, air pollution;
- **Culture**, such as practices, norms and values; and
- **Urbanization**, which influences housing, access to products and services.

The following graph depicts the relationship between risk factors, conditions and common disease end-points:



Chronic diseases share common risk factors and conditions. While some risk factors, such as our age, sex, and our genetic make-up, cannot be changed, many behavioural risk factors can be modified, as well as a number of intermediate biological factors including hypertension, being overweight, hyperlipidemia, and glucose intolerance. Societal, economic, and physical conditions influence and shape behaviour and indirectly affect other biological factors. The recognition of these common risk factors and conditions is the conceptual basis for an integrated approach to chronic disease.



### SUPPORT QUESTION – Your Disease Risk

1. Go to the following website:  
  
<http://www.yourdiseaserisk.harvard.edu/>
2. Here, you can find out your risk of developing five of the most important diseases: cancer, diabetes, heart disease, osteoporosis and stroke.
3. Complete the each test. Print and carefully read the results.  
What are YOU at risk of?

## The Burden of Chronic Disease in Canada

### Individuals and Families:

- 16,000,000 live with chronic illness
- Chronic Disease accounts for 87% of disability

### High Risk Groups:

- Increased prevalence in vulnerable communities (e.g. Aboriginals and in socio-economically disadvantaged groups)

### Economy:

- Direct health care costs: 67% of total direct costs are expended on chronic diseases
- Indirect costs: 60% of total indirect costs (\$52B), translating into loss of productivity and foregone income

### The facts:

- six in ten Canadians die of a chronic disease annually
- up to 70 % of premature deaths and two-thirds of cases of chronic disability are preventable
- eight in ten Canadians have at least one modifiable risk factor for chronic disease: smoking, low levels of physical activity, unhealthy eating habits or overweight and obesity
- low-income families, people with disabilities, Aboriginal peoples are at a higher risk for poor health, early death and chronic disease

## Non-Communicable Chronic Illness

As a relatively long-living people, Canadians experience a number of illnesses and problems that begin slowly and last for years.

When people age, of course, these problems intensify: in 2000/01, almost 87% of Canadians aged 65 and older reported that they struggled with at least one chronic condition. The most common of these are arthritis, hypertension, cataracts, heart disease, back problems, allergies, diabetes and thyroid conditions.

The prevalence of arthritis, hypertension, bronchitis and emphysema has actually declined in the last two decades, whereas evidence points to an increase in both asthma and diabetes.

More than 60,000 Canadians are diagnosed each year with diabetes. Moreover, an estimated 2.3 million Canadians have diabetes, but a great many of these people are unaware of it, since only 1 million people aged 12 and over reported having diabetes in 2000/01. In 2000/01, about 6% of Canadians aged 45 to 64 and 13% aged 65 and over reported having diabetes.

Diabetes has become the seventh leading cause of death in the country. It is an even more serious problem among Aboriginal people. Rates of Type 2 diabetes are three to five times higher in Aboriginal communities than in the general population.

Over 5.9 million Canadians aged 12 and over in 2000/01 reported experiencing some limitation in their normal daily activities from a continuing health condition.

### Chronic Disease Clock Extended

<b>Current estimated Canadian Population</b>	32,078,819
<b>Deaths so far this year</b>	
<b>Chronic Diseases</b>	82,674
<b>Cardiovascular Disease</b>	37,782
<b>Cancer</b>	31,694
<b>Chronic Respiratory Disease</b>	6,226
<b>Diabetes</b>	3,318
<b>Mental Disorders</b>	2,961
<b>Musculoskeletal Diseases</b>	690
<b>Deaths so far today (as of 12:00 midnight)</b>	
<b>Chronic Diseases</b>	267
<b>Cardiovascular Disease</b>	122
<b>Cancer</b>	102
<b>Chronic Respiratory Disease</b>	20
<b>Diabetes</b>	11
<b>Mental Disorders</b>	10
<b>Musculoskeletal Diseases</b>	2

(source: [http://www.phac-aspc.gc.ca/ccdpc-cpcmc/index\\_e.html](http://www.phac-aspc.gc.ca/ccdpc-cpcmc/index_e.html))

\* These numbers are being generated in real-time and are updating constantly. The numbers may flicker on your screen for this reason. This clock is an estimation only and should not be used as evidence.



## Key Questions for Lesson 14 (100 marks)

Please answer these questions on your own paper. If you choose to word process your answers please use double spacing and at least 12 pt font.



### KEY QUESTION # 85 – Lesson 14 ... Important Terms (12 marks)

Read through your class notes and write the definition for each of the following terms:

- |                  |                       |
|------------------|-----------------------|
| 1. Immune System | 2. Immune Response    |
| 3. Leukocytes    | 4. Phagocytes         |
| 5. Lymphocytes   | 6. Antigen            |
| 7. Antibodies    | 8. Immunodeficiencies |
| 9. IgA           | 10. Vaccine           |
| 11. Antibiotics  | 12. Chronic Diseases  |



### KEY QUESTION # 86 – YOUR Immune System (25 marks)

1. Explain how your immune system works when you get a cut.
2. Explain how your immune system works when you get a mosquito bite.
3. How and why do we get colds?
4. What are two of the most common symptoms of a breach of the immune system?
5. Why does the human body sometime reject organ transplants?
6. List the briefly describe each:
  - (a) innate immunity
  - (b) adaptive immunity
  - (c) passive immunity
7.
  - (a) What are Acquired Immunodeficiencies?
  - (b) Give two (2) examples.
8.
  - (a) What are autoimmune disorders?
  - (b) Give five (5) examples.
9.
  - (a) What are Allergic Disorders?
  - (b) Five three (3) examples.
10. Describe what Cancers of the immune system are.
11. What is Organ Degradation?
12. Explain how your skin is an important part of the immune system.
13. Describe the immune defenses found in your nose, mouth and eyes.

**KEY QUESTION # 87 – Immune System Disorders (16 marks)**

Scleroderma  
Juvenile dermatomyositis  
Eczema

Ankylosing spondylitis  
Asthma

Directions: Choose two (2) of the disorders listed above. Use your class notes, the Internet, the library, encyclopedias etc. as resources to gather the following information for each: (8 marks each = 16 marks total)

- (a) Description of the disorder – What is it?
- (b) Signs and Symptoms
- (c) Treatment
- (d) Prevention
- (e) Include a bibliography

**KEY QUESTION # 88 – Vaccinations and Antibiotics (20 marks)**

1. What is the role of B-cells in your body?
2. List the vaccines you have received in your lifetime.
3. What is the method used in Canada to administer vaccines?
4. List the three (3) optional vaccines available in Canada.
5. Explain why vaccines are safe.
6. Explain why vaccines cannot lead to chronic illness.
7. Why is it important to always be up-to-date with your vaccines?
8. Explain why vaccines are not toxic.
9. Explain how vaccines strengthen the immune system
10. Explain the reasons why we sometimes need to take antibiotics.
11. Why do antibiotics lose effectiveness over time?
12. List three (3) causes of drug resistance.
13. List five (5) ways YOU can prevent and reduce drug resistance.

**KEY QUESTION # 89 – Boost Your Immune System Poster (12 marks)**

Directions: Create a poster that could be used in community centres or schools to illustrate six (6) ways to Boost Your Immune System. Your poster should be created on 8 ½ X 11 inch paper. Your poster will be marked out of 10 marks, with consideration given to the following:

- 🔑 Accurate information
- 🔑 Sufficient information to make your message clear and informative
- 🔑 Appropriateness of poster for subject and for target group
- 🔑 Use of pictures, cut-outs or colour for visual appeal

**KEY QUESTION # 90 – Chronic Disease (15 marks)**

1. What are the seven (7) primary risk factors for developing a chronic disease?
2. What are background risk factors?
3. What are behavioural risk factors?
4. Intermediate risk factors?
5. What four (4) factors impact health in communities?
6. What are the seven (7) most common chronic diseases in Canada?
7. Who is at a higher risk for poor health, early death and chronic disease?
8. Research the following:
  - (a) What are the signs that someone is going to have a heart attack?
  - (b) What are the signs that someone is having a stroke?

# PPZ30

HEALTH FOR LIFE



LESSON 15

## Lesson 15 – Community Health

### Community Health Resources in Ontario

Ontario has a vast selection of health services including community care access centres, hospitals and public health units, provided by the Ontario Ministry of Health and Long Term Care. You can also find community health centres that provide primary health and health promotion programs for individuals, families and communities. These health services provide education and advice on helping families access the resources they need from other community agencies.

#### Community Care Access Centres

There are 43 Community Care Access Centres (CCACs) in Ontario, two of which are hospital-based. CCACs provide a simplified point of access to long-term care for more than 400,000 people each year.

##### Community Care Access Centres :

- arrange and authorize visiting health and personal support services in peoples' homes
- authorize services for special needs children in schools
- manage admissions to long-term care facilities
- provide information and referrals to the public about other community agencies and services

#### Community Health Centres

Community Health Centres (CHC) are non-profit organizations that provide primary health and health promotion programs for individuals, families and communities. A health centre is established and governed by a community-elected board of directors. CHCs work with individuals, families and communities to strengthen their capacity to take more responsibility for their health and wellbeing. They provide education and advice on helping families access the resources they need from other community agencies. CHCs work together with others on health promotion initiatives within schools, in housing developments, and in the workplace. They link families with support and self-help groups that offer peer education, support in coping, or are working to address conditions that affect health. As such, the Community Health Centre Program contributes to the development of healthy communities.

CHCs' health promotion programs that contribute to child and family health include:

- domestic violence prevention/treatment including direct counseling, addictions counselling, conflict resolution, anger management, stress management, self-esteem enhancement
- parenting education, both individual and group, to improve healthy child development
- parent-child resource rooms and drop-ins
- anti-racist initiatives and other programs to promote tolerance, cultural diversity and acceptance of minority groups
- education, counselling and groups related to weight/body image issues, peer relationships, healthy sexuality
- programs for street youth including drop-ins
- programs for teen mothers

### Community Health Centre Programs for Youth

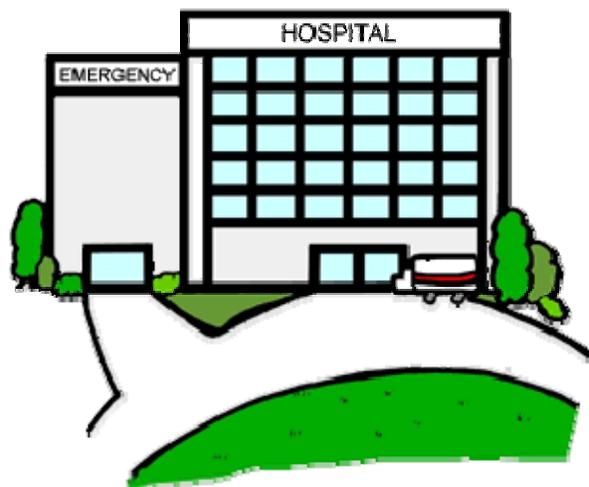
There are 56 Community Health Centres (CHCs) in Ontario. Each centre is an incorporated, non-profit agency, governed by a volunteer Board of Directors. CHCs provide primary care services with an emphasis on health promotion, disease prevention. CHCs also work with local residents to build the capacity of the community to improve its general health. Typical CHC primary care teams include physicians, nurse practitioners, nurses, social workers, health promoters, community health workers and often chiropodists, nutritionists or dieticians.

All CHCs offer primary care services for youth, ages 14-24. A wide range of programs based on local needs are offered to this age group. Examples of youth programs offered by CHCs include addressing risks associated with poverty and teen pregnancy through prenatal/postnatal support programs, sponsorship of community kitchens and food buying co-operatives, self help groups related to family violence, drop-ins for street youth, support to find employment and family counselling.

### Hospitals

The Ministry of Health and Long-Term Care is committed to a strong, stable, publicly-funded hospital system that efficiently provides high-quality patient services through a system of mixed hospital types and funding methods.

Ontario has four different hospital types including Public Hospitals, Private Hospitals, Federal Hospitals, and Cancer Care Ontario Hospitals.



There are 211 hospital sites. Of that number, 155 are hospital corporations (e.g. Hamilton Health Sciences Centre), and an additional 56 facilities are hospitals under an umbrella corporation (e.g. Hamilton Health Sciences Centre's Henderson site). Ontario has eight private hospitals currently providing services under the Private Hospitals Act and receiving funding for their operation from the ministry.

## OHIP

The Ontario Ministry of Health and Long-Term Care provides provincially funded health coverage for all Ontarians under the Ontario Health Insurance Plan (OHIP). An Ontario resident must have a **health card** to show that he or she is entitled to health care services paid for by OHIP. The Ministry of Health and Long-Term Care pays for a wide range of services; however, it does not pay for services that are not medically necessary such as cosmetic surgery.

## Psychiatric Hospitals

The hospitals commonly referred to as 'Provincial Psychiatric Hospitals' are owned by the Province and operated by the Ministry of Health and Long-Term Care pursuant to the **Mental Hospitals Act**. They are funded solely by, and report directly to, the ministry.

Public hospitals are incorporated under corporations legislation or by an Act of the Legislature. They receive funding from the ministry, but have other funding sources such as charitable foundations. Public hospitals must comply with the **Public Hospitals Act** and regulations under that Act.

The **provincial psychiatric hospitals** are designated psychiatric facilities under the Mental Health Act and comply with that Act when providing specialized mental health services. However, many public hospitals are also designated psychiatric facilities under the Mental Health Act and provide a range of in-patient and out-patient mental health services, in addition to the medical, surgical and other services provided at general hospitals.

## Public Health Units

A **PUBLIC HEALTH UNIT** is an official health agency established by a group of urban and rural municipalities to provide a more efficient community health program, carried out by full-time, specially qualified staff.

There are 37 public health units in Ontario. Health units administer health promotion and disease prevention programs to inform the public about healthy life-styles, communicable disease control including education in STDs/AIDS, immunization, food premises inspection, healthy growth and development including parenting education, health education for all age groups and selected screening services.

Each health unit is governed by a board of health, which is an autonomous corporation under the Health Protection and Promotion Act, and is administered by the medical officer of health who reports to the local board of health. The board is largely made up of elected representatives from the local municipal councils. The ministry cost-shares the expenses with the municipalities.

## Community Support Systems



The health of the entire family depends on the health of its individual members. Sometimes families must turn to outside help to deal with problems. Most communities in Ontario offer a variety of services to families & individuals who need help. They provide parenting & conflict resolution classes, food, clothing, shelter, financial aid, medical care, job training and help in finding employment ... what else?

### Community Health For Families

A number of resources exist to help families in crisis. Which one is appropriate depends on the particular situation. Domestic violence may require the intervention of law enforcement and/or child protection agencies (such as the Children's Aid Society). Abused women may seek refuge in a **TRANSITION HOUSE** – a facility that provides temporary shelter as well as counselling and other services for women and their children. Problems such as substance abuse may require medical help. Many communities have telephone numbers, called crisis or help lines, that people can call to receive help 24 hours a day.

### Community Help For Children

Sometimes parents are unable to care adequately for their children. Children whose basic needs are not being met or who live in abusive situations may be placed in **FOSTER CARE** – a temporary arrangement in which a child is placed under the guidance & supervision of a family or adult who is not related to the child by birth. Sometimes foster families adopt the children they have been caring for.

### Community Help For Victims Of Spousal Abuse

Victims of spousal abuse can seek help by contacting an organization dealing with domestic violence. Many communities provide shelters and a network of other transition houses throughout Canada. These organizations offer shelter, food, clothing and counselling for women in crisis and their children.

## Support Groups

Some people find help through **SUPPORT GROUPS**, meetings in which individuals share their problems and get advice from others facing similar issues. Participants discuss their concerns and often take comfort in knowing that they are not alone. Support groups help many people cope on a day-to-day basis.

The purpose of support groups is to deal with various types of personal or family health concerns. For example, there are groups for personal health issues such as substance abuse, eating disorders, domestic violence, dealing with grief and coping with a family member's long-term illness.



## Family Counselling

**FAMILY COUNSELLING** is therapy to restore healthy relationships in a family. It is another source of help for families facing problems. Family members meet regularly with counsellors to discuss issues and to try to find solutions. Such counselling often provides families with the skills they need to resolve future conflicts on their own.

In some cases, a family member will benefit from individual counselling. When dealing with issues of domestic violence, one-on-one sessions with a counsellor, a psychologist, or a psychiatrist may help an abuser see that he or she learned abusive family patterns in childhood. The cycle of violence may then be broken as the individual learns to recognize the abusive pattern and replace them with healthful behaviours.

## Mediation

Families often have difficulty working out problems that involve divorce, including custody of children or disbursement of property. In such cases, mediation may help. A **MEDIATOR** is a person who helps others resolve issues to the satisfaction of both parties. The mediator sets ground rules and aids in effective communication that permits each party to speak and be heard. The mediation process encourages family members to communicate, cooperate and compromise. Mediators often help both parties find the resources and make the emotional connections that will result in mutual agreement.



### SUPPORT QUESTION – Community Health Programs

- (1) Have YOU ever visited a community health centre?
- (2) Do you believe that the programs offered by community health centres are beneficial to the health of Canadians? Why or why not?

## Roles of Social Agencies

All **social agencies** that are in place to support parents and families are locally defined and arise out of a community's own peculiar history, strengths, interests and needs. There are several characteristics of social agencies in Ontario. They are generally comprehensive, either directly offering a wide array of services, or providing an easy entry point to services, delivered flexibly and coherently. They move beyond crisis management and even early intervention to focus on prevention and development.

Social service agencies cross professional and bureaucratic boundaries to offer coherent services, often in non-traditional settings and at non-traditional hours. They provide staff with the time, training, and skills necessary to build relationships of trust and respect. They hire staff members from the local community. They involve care-givers, families and parents in the communication loop. They deal with the child as part of the family, and the family as part of the neighbourhood or community. They build in accountability, with creative and meaningful measures.



### Ways in which Society and Communities can promote the Development and Learning

- ✎ social services, child welfare agencies and social workers programs can be focused on the early years of the child's development
- ✎ public health units, community health centres and nurses playing a coordinating role bringing community resources, services and programs together and providing preventative health services
- ✎ voluntary health, welfare and other organizations can promote the status of young children and provide education and community development services
- ✎ child-serving organizations and professionals in private practice can offer services and programs adapted for young children
- ✎ municipalities, public libraries, museums/science centres and recreations departments can focus on early childhood programs and activities
- ✎ local businesses can support activities and ensure their products or services are not harmful to youth
- ✎ local service clubs can include early childhood activities and materials in their programs
- ✎ local media outlets, including community newspapers, local radio stations and television outlets as well as Internet providers can encourage and promote policies, programs and activities supporting young children.



### SUPPORT QUESTION – Social Agencies

Brainstorm a list of ALL the social agencies you can think of.

## Some Social Agencies and Associations in Ontario and Canada

### Children’s Aid Society – Child Protection Agency

The CAS is committed to children and youth by protecting them from abuse and neglect; strengthening the abilities of their parents and families to meet their needs and provide safe, enduring placements when they are at risk. The CAS is committed to high quality, flexible and innovative child welfare services so that children and youth can live in safe, healthy family environments that promote their becoming socially responsible adults. They are responsible for providing child protection services to children under the age of 16 and their families who live in Ontario.



<http://www.durhamcas.ca/links/government.html>

### Big Brothers / Big Sisters

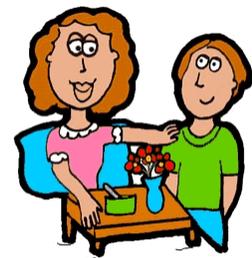
Big Brothers Big Sisters of Canada (BBBSC) is the leading child and youth serving organization providing mentoring programs across the country. Providing support to more than 300 Canadian communities, our over 170 local agencies offer the service that the organization was founded on one-to-one matching. Men and women (age 18 or older) give of their time to become a mentor to a youngster who can greatly benefit from having an adult role model to look up to.



<http://www.bbbsc.ca/>

### Canadian Institute of Child Health

This organization is dedicated to promoting and protecting the health, well-being and rights of all children and youth through monitoring, education and advocacy. The Institute has had an effect on the policies and practices of caring for our children through its three core areas of focus: monitoring children’s health, education professionals, caregivers and policy makers and advocating for legislation and policies that improve child health.



[www.cich.ca](http://www.cich.ca)

### Community Care Access Centres

Community Care Access Centres provide single point access to health care community-based services. Community Case Managers, Placement Coordinators and Hospital Case Managers, assist clients with access to community services and information. They also provides referrals to other community-based health care programs.



[http://www.health.gov.on.ca/english/public/contact/ccac/ccacloc\\_mn.html](http://www.health.gov.on.ca/english/public/contact/ccac/ccacloc_mn.html)

## Child and Family Canada

*Child & Family Canada* is a unique Canadian public education website. Fifty Canadian non-profit organizations have come together under the banner of Child & Family Canada to provide quality, credible resources on children and families on an easy-to-navigate website



[www.cfc-efc.ca](http://www.cfc-efc.ca)

## Caring for Kids – Canadian Pediatric Society

The Canadian Pediatric Society is a national advocacy association committed to the health needs of children and youth. Since 1922, the CPS has worked to advocate for the health and well-being of children and youth; promote quality health care for all Canadian children and youth; provide professional development opportunities for pediatricians, and other health care providers who care for children and youth; establish Canadian standards and guidelines for pediatric care and practice and promote the interests of children and youth and their physicians.



<http://www.caringforkids.cps.ca/>

## Child Welfare League of Canada

Dedicated to protecting and promoting the well-being of Canada's children, particularly those who are disadvantaged in areas of physical, social and mental health. The CWLC is a federally incorporated charitable organization active in Canadian policy, research and advocacy.



<http://www.cwlc.ca/>

## Centre for Addiction and Mental Health (CAMH)

The Centre for Addiction and Mental Health (CAMH) is Canada's leading addiction and mental health teaching hospital. CAMH succeeds in transforming the lives of people affected by addiction and mental illness, by applying the latest in scientific advances, through integrated and compassionate clinical practice, health promotion, education and research.



[http://www.camh.net/about\\_camh/](http://www.camh.net/about_camh/)

## Healthy Ontario

Launched in October 2002, Healthy Ontario is Ontario's leading web destination for trusted health information, services and advice for healthier living.



[www.HealthyOntario.com](http://www.HealthyOntario.com)

## Growing Healthy Canadians

Growing Healthy Canadians: A Guide for Positive Child Development was created to promote and illustrate a simple idea: that the healthy development of children and youth is a shared responsibility. There has been much debate about who should be doing what in order to grow healthy children. The truth is, everyone has important contributions to make in ensuring that young people grow up in the kinds of conditions they require to thrive. At the same time, no one type of contributor – not families, communities, workplaces, nor governments – can successfully raise the next generation on their own.



[www.growinghealthykids.com/](http://www.growinghealthykids.com/)

## Health Canada, Childhood & Youth Division

The Division Childhood and Adolescence is a focal point for policy development, research, and strategic analysis of trends regarding broad determinants of health regarding children and youth in Canada.



[www.hc-sc.gc.ca/hppb/childhood-youth/index.html](http://www.hc-sc.gc.ca/hppb/childhood-youth/index.html)

## Invest in Kids

Invest in Kids is a national, charitable organization dedicated to ensuring the healthy social, emotional and intellectual development of children from birth to age five. Guided by a staff of experts in child development and parenting, our research, parent education and professional education initiatives are aimed at strengthening the parenting knowledge, skills and confidence of all those who touch the lives of Canada's youngest children.



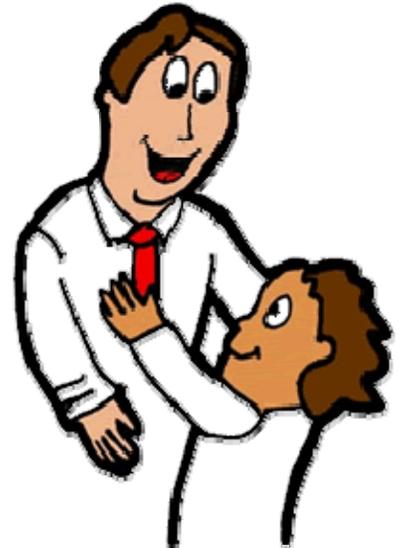
[www.investinkids.ca](http://www.investinkids.ca)

## Kinark Child and Family Services

Kinark is a non-profit children's mental health centre that offers free programs and services to children, youth and their families in 5 regions across the province of Ontario. Kinark is one of the largest children's mental health centres in the province. Their mission is to strengthen the well-being of children and their families, thereby contributing to safe and healthy communities. They seek to achieve this goal by being a provider of choice in the delivery of the highest quality services to their clients in partnership with community resources.



<http://www.kinark.on.ca/>



## Ontario Works

Ontario Works provides financial and employment assistance to people in temporary financial need. People receiving assistance through Ontario Works participate in a wide range of employment assistance activities, which help them prepare for, find and keep a job.



<http://www.cfcs.gov.on.ca/CFCS/en/programs/IES/OntarioWorks/default.htm>

## Planned Parenthood Federation of Canada

The Planned Parenthood Federation of Canada is a pro-choice, volunteer organization dedicated to promoting sexual and reproductive health and rights in Canada and in developing countries



<http://www.ppfca.ca>

## YWCA

The YWCA (Young Women's Christian Association) is the oldest and largest women's service organization in Canada. Forty YWCAs and YMCA - YWCAs operate across the country, meeting the needs of more than one million women and their families annually. Their aim is to provide opportunities for women's self-development through recreation and education programming, and supportive housing services for women and their children.



<http://www.ywcacanada.ca/>

## YMCA

The YMCA (Young Men's Christian Association) provides values-based programs and services that teach the importance of caring, honesty, respect, responsibility and inclusiveness. It's a place where friendships are formed and family ties are strengthened. A YMCA is a centre of community where people meet and discover common needs or interests. To reach as many people as we can, the YMCA offers financial assistance to those who would otherwise be unable to benefit from its services.



<http://www.ymca.ca/>



## SUPPORT QUESTION – More Social Agencies

List ANY the social agencies you can think of that were missed on this list.

## Maintaining Healthy Families

"You don't get to choose your family," is a common saying heard everywhere.  
Oh, but you do get to choose how you relate to them.

Although growing up you had good times and bad times, it is those painful moments that sometimes come to define your relationship with your loved ones.



Difficulties in relationships trigger childhood and other past wounds that require healing. Unfortunately, most of us do not embrace these struggles. Instead we tend to avoid them or set up defensive reactions that end up damaging, not only ourselves, but those around us.

Unfortunately, past wounds can continue to hurt you. Negative emotions appear to be more potent and have longer lasting effects than positive emotions. For your health, it is important to take

time to re-examine your relationships.

### Reinventing family relationships

Learning how to relate to our families takes work—a lot of it.

There isn't a formula that can fix all relationships, but there are steps that can make relationships healthier—not perfect, but more manageable and even enjoyable.

Letting go of expectations is key. Changing your expectations of how you relate with your loved ones will allow you to begin anew and establish healthier relationships. Keep the focus on yourself and your behaviour and reactions. Remember, you cannot change others, but you can change yourself.

Here are some suggestions for repairing and maintaining healthy relationships:

- **Communicate.** This is the single most important component in relationships. Share your feelings in a positive way and don't keep angry feelings to yourself. Communicate directly and not through a relative, which can further complicate things.
- **Learn to identify and express emotions.** As women, we often learn to pay more attention to others' feelings and deny our own feelings and experiences. While this often results in very good sensitivity to others, we may neglect sensitivity to ourselves. Stop each day and identify emotions you are or have been experiencing. What triggered them? How might you affirm or respond to them? Try keeping a daily feelings journal to put them in perspective.

- **Allow yourself to feel angry.** It is usually helpful to find productive ways to vent your anger. This can be done in support groups or with good friends. Try writing a letter to the relative who hurt you, even if you don't mail it.
- **Know when to accept help.** If the problems between you and your estranged family members are too big to handle, seek counseling from a psychotherapist or a minister. This will help you think more clearly about what is going on, and give you the support you need to try out some new strategies.
- **Forgive the people who have hurt you.** Forgiveness allows you to escape being trapped and bound by negative emotions and move on with your life.
- **Redefine manipulative relationships.** If any of your family members manipulate you in any way, set specific rules to relate to them in a healthier manner. You cannot solve everyone's problems and everyone needs to contribute to the family's well-being.
- **Know when to let go.** If you have tried to save a relationship, but it continues to hurt you, you may need to consider letting go, even if temporarily. Being relatives does not mean that being good friends is a given. Both parties must be willing to make it work. Give it your best, but know when to say enough.

By re-evaluating your relationships and focusing on the positive, you and your family can find a better path to healthier communication.



## Lifestyle Diseases & Ailments

**LIFESTYLE DISEASES** (also called *diseases of longevity* or *ailments of civilization*) are diseases that appear to increase in frequency as countries become more industrialized and people live longer.

Lifestyle diseases are diseases that appear to become ever more widespread as countries become more industrialized. Lifestyle diseases are different from other diseases because they are potentially preventable, and can be lowered with changes in diet, lifestyle, and environment.

They include:

- U.V. radiation from the sun
- Tanning lamps
- Selling Second-hand Products
- Personal stereo systems & hearing loss
- Cosmetic laser treatments
- Tattooing & piercing
- Safe Use of Home Tooth Whitening Kits
- Trans Fat
- Fluorides
- Sunscreens
- Cosmetics
- Hormone Replacement Therapy
- Contact lenses
- Type 2 Diabetes
- Holiday Safety
- Responsible Holiday Drinking

Changes in diet, lifestyle, and environment are thought to be factors which influence susceptibility to such diseases & ailments. What is heartening is that most of the lifestyle ailments are preventable. Many of the lifestyle ailments owe their origin to work atmosphere, changes in daily routine, eating patterns, personal habits and vanity. In some interpretations, such diseases are a result of an inappropriate relationship between people and their environment.

The onset of degenerative diseases is insidious, they take years to develop, and once encountered are not readily cured. The basic evidence that supports the existence of lifestyle diseases is the different incidences of diseases and causes of death in various nations and cultures, as evidenced in compiled statistics.



Three levels of prevention are now known: primary (intended to prevent disease among healthy people), secondary (directed towards those in whom the disease has already developed), tertiary (to reduce the disability consequent to disease). In addition discoveries in the field of nutrition have added a new dimension to preventive medicine. New strategies have been developed for combating specific deficiencies.



## Key Questions for Lesson 15 (100 marks)

Please answer these questions on your own paper. If you choose to word process your answers please use double spacing and at least 12 pt font.



### KEY QUESTION # 91 – Lesson 15 ... Important Terms (9 marks)

Read through your class notes and write the definition for each of the following terms:

- |                       |                     |
|-----------------------|---------------------|
| 1. CCAC               | 2. CHC              |
| 3. Public Health Unit | 4. Transition House |
| 5. Foster Care        | 6. Support Groups   |
| 7. Family Counselling | 8. Mediator         |
| 9. Lifestyle Diseases |                     |



### KEY QUESTION # 92 – Community Health (10 marks)

- List five (5) types of programs offered by Community Health Centres.
- Find the name of one (1) Community Health Centres in YOUR community.
- What are the four different hospital types in Ontario?
- What are provincial psychiatric hospitals designed to do?
- What is the role of social agencies?



### KEY QUESTION # 93 – Community Health Resources (25 marks)

Regardless of where you live in Ontario, social service agencies are there to help. By using the social service websites provided in your class notes or your local phone book, contact five (5) social service agencies in YOUR community and record the following information. (5 marks each = 25 marks total)

- Full name of the organization
- Full mailing address and Web / e-mail address
- Phone Number
- What are the “goals” of the agency?
- What services or programs does the agency offer to support families in YOUR community?



### KEY QUESTION # 94 – Maintaining Healthy Families Poster (16 marks)

Directions: Create a poster that could be used in community centres or schools to illustrate six (6) ways to **Maintaining Healthy Families**. Your poster should be created on 8 ½ X 11 inch paper. Your poster **MUST** include all seven (7) suggestions from your class notes **PLUS** three (3) of your own.

- Be sure that your flyer has a clear title
- Make sure you have used correct spelling, grammar and punctuation
- Apply ALL knowledge & answers in a well-crafted flyer
- Use subheadings, pictures, colour, desktop publishing etc.



**KEY QUESTION # 95 – Lifestyle Diseases**  
(20 marks each = 40 marks total)

**Directions:** Create two (2) flyers that could be used in community centres or schools to illustrate one or more ways to alert people to the dangers of LIFESTYLE DISEASES AND AILMENTS. Choose TWO (2) topics from the list below.

U.V. radiation from the sun & Sunscreens  
Tanning Lamps (indoor)  
Cosmetics  
Personal stereo systems & hearing loss  
Tattooing & piercing  
Safe Use of Home Tooth Whitening Kits

Fluorides  
Selling Second-hand Products  
Contact lenses  
Cosmetic laser treatments  
Hormone Replacement Therapy  
Trans Fat

**Include the following information: (12 marks)**

1. What is the “issue”? (2 marks)
2. Describe any background information. (2 marks)
3. What are the risks? What are the lifestyle conditions that can cause this disease or ailment? (3 marks)
4. How can you minimize the risks? (3 marks)
5. What is the government (Health Canada’s) role with this “issue”? (2 marks)
6. Include a bibliography (use this website to get started:  
<http://www.hc-sc.gc.ca/english/iyh/products/index.html>)

**Style: (8 marks)**

- |     |                                   |           |
|-----|-----------------------------------|-----------|
| (1) | Organization, Title & Subheadings | (2 marks) |
| (2) | Spelling/Grammar                  | (2 marks) |
| (3) | Neatness                          | (2 marks) |
| (4) | Colour & Creativity               | (1 mark)  |
| (5) | Pictures & Cut-outs               | (1 mark)  |

**Make sure your name is clearly labelled on the BACK of EACH flyer.**

**You are now FINISHED Unit 3. Congratulations!!!**