

# PPZ30

HEALTH FOR LIFE



GRADE 11, OPEN

# Introductory Information for PPZ30 Health for Life

## Introduction

This course helps students develop a personalized approach to healthy living. Students will examine the factors that affect their own health and the health of individuals as members of the community. They will learn about the components of the *Vitality* approach to healthy living – an initiative that promotes healthy eating, an active lifestyle, and a positive self-image. Throughout this course, students will develop the skills necessary to take charge of and improve their own health, as well as to encourage others to lead healthy lives. (*The Ontario Curriculum – Health and Physical Education, Grades 11 and 12*).

## Materials Required

This course consists of a lesson book made up of **4 units**. In the lesson book you will find most of the reading material necessary to complete the support and key questions. The lesson book may suggest web-sites and additional resources that you may find necessary for the assignments.

## Evaluation

In each lesson, there are support questions and key questions. You will be evaluated on your answers to the key questions in each lesson, the mid-term exam and the final exam.



## **Support Questions**

These questions will help you understand the ideas and master the skills in each lesson. They will also help you improve the way you communicate your ideas. The support questions will prepare you for the key questions.

Write your answers to the support questions in your notebook. **Do not** submit these answers for evaluation. Since many of the support questions are personal exploration, answers are not provided.



## Key Questions

The key questions evaluate your achievement of the expectations for the lesson. Your answers will show how well you have understood the ideas and mastered the skills. They will also show how well you communicate your ideas.

You must try all the key questions and complete most of them successfully in order to pass each unit. Write your answers to the key questions on your own paper and **submit them for evaluation** at the end of each unit. Make sure each lesson number and question is clearly labelled on your submitted work.

### What You Must Do To Get a Credit

In order to be granted a credit in this course, you must

1. Successfully complete the Key Questions for each unit and submit them for evaluation within the required time frame.
2. Complete the mid-term test.
3. Complete and pass the final examination.

The evaluation will include assessment in the four categories as outlined by the Ministry of Education (knowledge and understanding, application, research and inquiry, and communication). The evaluation is balanced according to the divisions outlined in Durham Continuing Education's *Guidelines for Grading Practices*.

The weighting for the course will be as follows:

- **Each unit has 5 lessons each worth 2% (total 10% per unit x 4 units = 40%)**
- **Midterm Test worth 30%**
- **Final Examination worth 30%**

### What You Need to Get Started:

You will need determination and self-discipline in order to complete this course. Make sure that you have:

- a regular time to work on your lessons,
- a quiet space to work,
- a dictionary and a thesaurus,
- access to the internet and
- resource material relating to managing personal resources.

## LESSON OUTLINE

### Unit 1 - Determinants of Health

- Lesson 1 Total Health
- Lesson 2 Healthful Eating
- Lesson 3 Health Issues and Risks
- Lesson 4 Heredity, Genetics & Health
- Lesson 5 Maintaining a Healthy Weight

### Unit 2 - Consumer Health

- Lesson 6 Stress and Your Health
- Lesson 7 Mental Health
- Lesson 8 Health Canada
- Lesson 9 Food Safety and Nutrition Labelling
- Lesson 10 Complimentary Medicine

### Unit 3 - Community Health

- Lesson 11 Health at School and Work
- Lesson 12 Global Health Issues
- Lesson 13 Health and Environmental Factors
- Lesson 14 Immune System and Chronic Diseases
- Lesson 15 Community Health and Lifestyle Diseases

### Unit 4 - Health Promotion and Vitality

- Lesson 16 Preventative and Emergency Health
- Lesson 17 What is Vitality?
- Lesson 18 Behavioural Change Theory and Careers in Health Care
- Lesson 19 Evidences of Good Health and Organ Donation
- Lesson 20 Promoting Vitality

**Note:** PPZ 30 is based on the Ministry of Education's curriculum guidelines, Health and Physical Education, The Ontario Curriculum, Grades 11 and 12.

## Overall Expectations

- identify and describe the workplace essential skills necessary for success in life, school, and work;
- analyse the role of individual responsibility in enhancing personal health;
- analyse the social factors that influence personal health.
- analyse the value of health information and health-promoting products and services;
- analyse how the environment influences the health of the community;
- demonstrate an understanding of concepts and approaches related to health promotion and disease prevention.
- demonstrate an understanding of the *Vitality* concept;
- use strategies to promote the *Vitality* concept.

## Specific Expectations

- identify and describe the workplace essential skills, using a variety of electronic, print, and human resources (e.g., the Human Resources and Skills Development Canada [HRSDC] website, the *Ontario Skills Passport*, brochures on essential skills, employers);
- describe the interrelationship of physical, social, and mental health in enhancing personal health;
- describe the heredity factors that influence personal health (e.g., a family history of an illness such as diabetes, breast cancer, cardiovascular disease, or mental illness; body shape and size);
- analyse how various lifestyle choices (e.g., decisions pertaining to nutrition, physical activity, and smoking) affect health;
- evaluate the factors (e.g., personal responsibility; the influence of peers, culture, and the media) that influence personal choices with regard to health-related products and services;
- explain how stress and one's ability to cope with stress affect personal health; implement a personal plan for healthy living.
- describe how family, peers, and community influence personal health;
- analyse the social factors that influence personal health (e.g., employment, education, socio-economic status, isolation, rural and urban settings, access to health and recreational services);
- describe the influence of culture on health (e.g., foods eaten, methods of treating illness, gender roles).
- determine the validity of health information, products, and services (e.g., information on food labels, health and exercise equipment) based on research (e.g., Ministry of Health publications, scientific publications);
- identify the factors (e.g., the consumption of foods after their expiration dates, certain food additives) that lead to food-generated ailments (e.g., food poisoning, food allergies);
- analyse alternative health care practices and services (e.g., acupuncture, homeopathy, naturopathy);

- analyse the cost and accessibility of health care services;
- evaluate the effectiveness of school and community health services (e.g., public health units, community agencies, mental health facilities) for themselves and others;
- evaluate the effectiveness of the methods and means used to communicate health information and ideas (e.g., the Internet, print media, research journals).
- analyse the environmental factors (e.g., air and water quality, living conditions) that affect personal health (e.g., increase in respiratory and communicable diseases);
- describe environmental influences on health on the local, national, and global levels (e.g., pollution, industrial activity, weather);
- describe the impact of specific health problems (e.g., malnutrition, skin cancer, lung cancer, cholera, typhoid) on personal health and the health of others;
- analyse the impact of public health policies and government regulations on environmental health and community health (e.g., water treatment, waste disposal management, immunization program);
- identify school and workplace health issues (e.g., air quality, occupational injuries).
- explain the factors that contribute to the strengthening of the immune system (e.g., proper nutrition, physical exercise);
- explain methods used to prevent the transmission of communicable diseases (e.g., abstinence from practices that may lead to contamination, avoidance of drugs);
- evaluate the effectiveness of different types of treatment for the most common communicable diseases (e.g., hepatitis B, tuberculosis, STDs, HIV/AIDS);
- describe how to reduce the risks and/or delay the onset of chronic diseases in adulthood (e.g., cardiovascular disease, cancer, arthritis, diabetes);
- demonstrate specific skills that can help others in emergency health situations (e.g., CPR, first aid);
- demonstrate an awareness of the contributions that individuals can make to the health of others (e.g., by giving blood, by consenting to be an organ donor, by participating in an anti-smoking campaign);
- analyse how research and medical advances influence the prevention and control of health problems;
- identify career opportunities in health promotion and disease prevention.
- demonstrate an understanding of the components of the *Vitality* concept (i.e., healthful eating, an active lifestyle, a positive self-concept);
- describe a model that reflects their personal philosophy of health;
- describe the stages identified in behavioural change theory (e.g., precontemplation, contemplation, preparation, action, maintenance) as they relate to modifying personal lifestyle;
- describe barriers to decision making with respect to the *Vitality* concept.
- demonstrate a commitment to the promotion of personal health and a healthy lifestyle within the school community (e.g., by conducting a school fitness survey or organizing a health fair; by conducting a violence prevention program for younger students);
- explain facts, theories, and personal opinions related to health issues (e.g., by debating current issues, presenting information);

- implement plans for attaining personal health that involve the components of the *Vitality* concept;
- demonstrate an ability to influence and support others in making positive health choices.

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# PPZ30

HEALTH FOR LIFE



LESSON 1

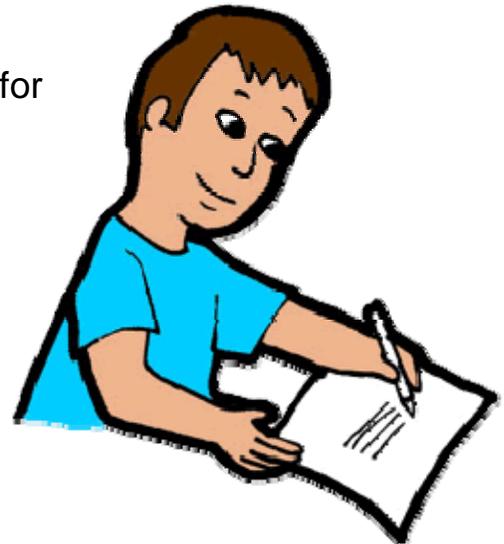
## Lesson 1 – Total Health

### What You Will Achieve In This Course?

**YOU** will become a health-literate individual. **HEALTH LITERACY** is a person's capacity to learn about the understand basic health information and services and use these resources to promote his or her health and wellness

This course will guide you to become:

- a critical thinker and problem solver
  - o you will be able to evaluate health information before making a decision and you will learn how to make responsible, healthy choices
- a responsible, productive citizen
  - o you will begin to act in a way that promotes the health of the community and show respect for individuals and others
- a self-directed learner
  - o you will learn how to develop criteria for evaluating health information
- an effective communicator
  - o you will learn how to express your health knowledge in a variety of ways



## Why Is Good Health So Important?

Being healthy means that your body and mind function as they are supposed to. In your role as a student, it is important that you are both physically and emotionally healthy. You can't do a good job in school and work, if you don't feel well. Being healthy makes you feel good and allows you to perform more effectively. You can maintain your health by taking care of yourself and avoiding toxic situations. Health is much more than the absence of disease. A state of well-being comes from a balance between the physical, mental/emotional and social aspects of your life. **HEALTH** means more than simply not being sick. Health is a state of physical, mental and social well-being. If individuals are to reach such a state of well-being, they must be able to identify and realize their goals, satisfy their needs, and change or cope effectively within their environment. Being healthy means striving to be the best you can be at any given time. A person with a balanced life is said to have a high degree of wellness. **WELLNESS** is an overall state of well-being, or total health. It comes from a way of living each day that includes making decisions and practicing behaviours that are based on sound health knowledge and healthful attitudes.

### Importance and Benefits of Good Health

Having good health is important and beneficial to a student. Health is a necessity, so ill health can prevent you from doing what you want in an effective manner or at all. Good health is necessary to effectively do your schoolwork. You can't do well if you don't feel well.



School is only one part of your life. You want to be able to enjoy all aspects of your life and to live a long, productive and enjoyable life. Being healthy will also allow you to gain knowledge and skills, do excellent work, be valuable to others, and be honorable to those with whom you deal.



### SUPPORT QUESTION – Benefits of Good Health

1. Give an example on how relationships can have a positive impact on health.
2. List three (3) ways to help others make healthy decisions.

## DETERMINANTS OF HEALTH (Source: Health Canada)

Our health is affected by many factors, which include: where we live, the state of our environment, genetics, our income and education level, and our relationships with friends and family. Factors such as these have an impact in determining our health and, combined together, are significant.

### *What makes people healthy?*

A number of factors work together to make people healthy, or not. They include:

- the social and economic environment,
- the physical environment, and
- the person's individual characteristics and behaviours.

These factors are called the **DETERMINANTS OF HEALTH**.

The determinants of health do not exist in isolation from one another. Rather, they work together in a complex system. What is clear though, is that people's circumstances affect their health and well-being. For example, research shows that living and working conditions have a greater impact on people's health than health care. Things like housing, income, social support, work stress and education also make a big difference in how long people live, and the quality of their lives.



These determinants—or things that make people healthy or not—include the above factors, and many others:

1. **Income and social status**

Research shows that poor people are less healthy than rich people. Income distribution in a society is also a key element. The greater the gap between the richest and poorest people, the greater the differences in health.

2. **Social support networks**

Support from families, friends and communities is linked to better health. This kind of support helps people handle difficult situations.

3. **Employment and working conditions**

Unemployment is linked with poor health. Those who *are* employed are healthier when they have more control over their working conditions.

4. **Education**

There is a lot of research that shows that low literacy skills are linked with poor

health. Moreover, people with low literacy skills can suffer from stress and reduced self-confidence. This often makes it hard for them to seek employment or social support. So the more education we have, the more likely we are to be healthy.

5. **Physical environments**

Clean air and water, healthy workplaces, safe houses, communities and roads all contribute to good health.

6. **Genetics**

Physical characteristics we inherit play a part in deciding how long we live, how healthy we'll be and how likely we are to get certain illnesses.

7. **Personal health practices and coping skills**

Personal practices include whether a person eats well and is physically active, and whether they smoke or drink. Coping skills refer to the way we relate to the people around us and handle life's stresses and challenges.

8. **Healthy child development**

There is good evidence that things that happen to us when we are children affect our health and well-being. These experiences affect us not only during childhood, but also through the rest of the life cycle.

9. **Health services**

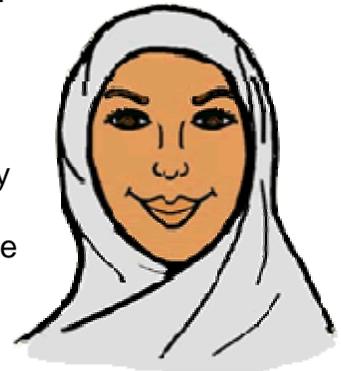
It benefits people's health when they have access to services that prevent disease, as well as maintain and promote health.

10. **Gender**

Men and women get different kinds of diseases and conditions at different ages. They also tend to have different income levels, and to work at different kinds of jobs. Many of these realities result from the differences in the way society treats men and women.

11. **Culture**

People's customs and traditions, and the beliefs of their family and community all affect their health. This is because these factors will influence what they think, feel, do and believe to be important.



It is important to think about all of these factors when thinking about health. Eating good food, exercising or visiting the doctor are not the only things that make people healthy; it is far more complicated than that. We need to look at the context of people's lives, and not simply blame them for having poor health or credit them for having good health. Many of the determinants of health are not directly under a person's control.



## SUPPORT QUESTION – Your Decisions and Your Health

Make a list of five (5) decisions you made this week that have had a positive effect on your health.

## Promoting Good Health

### What are the factors affecting health?

The decisions you make each day have an impact on your health. Making responsible decisions about health and developing health-promoting habits is crucial to achieving and maintaining wellness.

Some people find the idea of promoting good health difficult to grasp; they think of their

health as an entirely personal matter requiring outside intervention only when things

go wrong. Yet many of the greatest advances in health have had nothing to do with medical treatment: think of the developments in hygiene which eliminated the killer diseases of the nineteenth century; or our improved understanding of nutrition, higher safety standards at work, cultural changes like the decline in popularity of smoking and legislative action like compulsory wearing of seat belts. Many different things have been shown to determine how healthy we are, some of them are quite unexpected. Here are a few examples:

- Where we live;
- Your school and work;
- What we learn throughout our lives;
- Your genetic make-up;
- How we feel about ourselves.



### The Influence of Your Lifestyle

Many health experts and doctors have identified habits that affect people's overall health, happiness and longevity. These habits, or lifestyle factors, are personal behaviours related to the way a person lives. They help determine his or her level of health. Certain lifestyle factors are linked to specific diseases (smoking and lung cancer). Others promote good health. Although who we are is due in large part to genes, research has shown the importance of lifestyle factors in life expectancy:

**Sleep:** the average young adult needs 8 to 10 hours of sleep each night

**Healthy Eating:** A healthy diet is good for preventing or managing all chronic diseases, and for losing weight, boosting energy and promoting overall good health. Eating healthy is part of a healthy lifestyle. Healthy living means taking action by eating a healthy diet, on a daily basis. Start each day with a healthy breakfast and eat a variety of nutritious foods each day.

**Physical Activity:** Improving fitness is like quitting smoking from a health standpoint. Studies have shown that exercise:

- reduces blood pressure;
- prevents heart disease, diabetes, some cancers, and osteoporosis;
- fights depression and anxiety;
- controls obesity, which is linked to premature mortality;
- boosts the immune system;
- improves functional capacity, quality of life, and ability to be independent.

**Healthy Weight:** Obtain and maintain a normal body weight. The very bottom line for optimizing personal longevity is **eating less**. Always munching on junk food is **not** part of a healthy lifestyle. Healthy living means taking action by eating in moderation.

**Destructive Habits:** Smoking, excessive alcohol and recreational drug use devastates your health and can have lingering effects for many years after you stop these habits. In some cases, the damage is irreversible. These habits are widespread in the Canadian population. These are **not** part of a healthy lifestyle.

**Managing Stress:** Stress and mental turmoil enhance susceptibility to most illnesses. By creating a milieu of harmony and peace of mind, one can reduce the incidence of these illnesses. Use stress management techniques to reduce your level of stress. Being stressed-out effects your ability to live a normal and fulfilling life. It influences your longevity. Stress is nothing more than EXCESS contact with your environment. Stress is a result of living life at too high an event density.

**Maintaining Positive Relationships:** Friends, family, and a purposeful life benefit health. For



#### SUPPORT QUESTION – Healthy Lifestyle Quiz

1. Go to one of the following website:

<http://www.saintelizabethonline.com/body.cfm?id=519>

<http://www.warburtons.co.uk/cgi-bin/quiz.cgi>

<http://www.svcmc.org/quickcheck/lifestyle/hlquiz.asp>

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



## Preventive Health

*If an ounce of prevention is worth a pound of cure -- think what a good prevention plan is worth.*

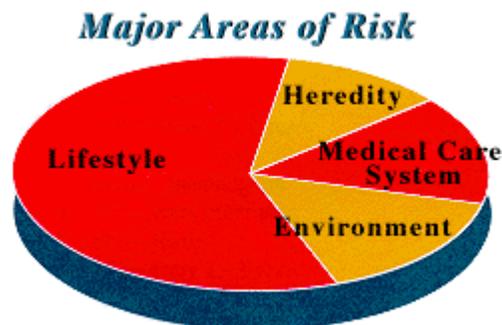
A good plan starts with evaluating health behavior and health risk factors. Both your behavior (lifestyle) and health risk factors affect your chances of developing a serious disease. Many of the most serious health problems today can be prevented or postponed by immunizations and healthier lifestyles, or detected early with screenings and then treated effectively. **PREVENTION** means practicing health and safety habits to remain free of disease and injury

## Healthy Lifestyle Choices

While there are risk factors that we can't change -- who our parents are or how old we are -- there are risk factors we can change. We have the power to give ourselves the best chance for good health by the everyday choices we make in the ways we live, what we eat, and our general outlook on life.

Here are some healthy lifestyle choices that you can make:

- eating a variety of fruits, vegetables and whole grain breads
- drinking alcohol in moderation, or not drinking at all
- following a regular program of aerobic exercise, such as walking for 20 minutes 3 times a week
- eating foods low in fat and cholesterol
- practicing "safe sex or no sex"
- not smoking or using tobacco products
- protecting your eyes when you play sports
- wearing a helmet when you ride a bike or motorcycle
- wearing your seat belt even if your car has an air bag
- paying attention to your body and knowing when it changes
- learning about lifestyle choices that can lower the risk factors for illness



## Health Education

**HEALTH EDUCATION** is the providing of accurate health information to help people make healthy choices. There are two aspects to this: Promoting Awareness and Understanding of different Health Issues. Giving people the skills and confidence to make healthy choices and maintain healthy behaviours.

## Health Canada

**HEALTH CANADA** is the federal government ministry responsible for health education for all Canadians. Health Canada's mission is to help Canadians maintain and improve their health. One of the ways this is accomplished is through health promotion. Health promotion is giving people the tools to improve their own health - tools in the form of information and health programming to help people take care of themselves.

Encouraging Canadians to take a more active role in their health is one way that Health Canada helps the people of Canada maintain and improve their health. Health Canada has many useful health promotion resources and guides that will aid health professionals and community leaders.

Many factors can influence our health from our family history to our social, physical and economic environment to our own individual coping skills. Some of these factors are, to varying degrees within our control, but one area where people can influence their health positively is through their own personal health practices.

Keeping yourself informed to make healthy food and lifestyle choices is an important way to improve your overall health and sense of well-being. Encouraging Canadians to take a more active role in their health is one way that Health Canada helps the people of Canada maintain and improve their health.

Canada's health care system has been a work in progress since its inception. Reforms have been made over the past four decades and will continue in response to changes within medicine and throughout society. The basics, however, remain the same - universal coverage for medically necessary health care services provided on the basis of need, rather than the ability to pay.

Canada's publicly funded health care system is best described as an interlocking set of ten provincial and three territorial health insurance plans. Known to Canadians as "Medicare", the system provides access to universal, comprehensive coverage for medically necessary hospital and physician services.

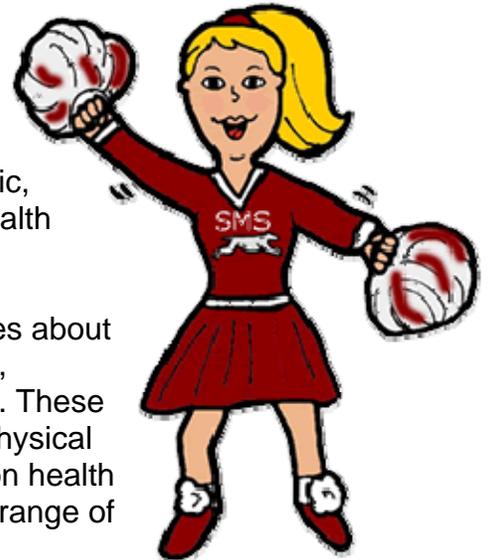
## What Is Healthy Living?

The choices we make about what we eat, the amount and kind of physical activity in which we engage, as well as other personal health practices, are influenced by many factors:

- **Knowledge:** We need to know which behaviours will improve our health and well-being.
- **Skills:** We need the skills to carry out healthy behaviours.
- **Motivation:** We need to feel good about engaging in healthy behaviours.
- **Opportunity and access:** We need to have reasonable opportunities to carry out healthy behaviours, given our life circumstances.
- **Supportive environments:** We know that supportive policies and environments will make it easier for us to engage in healthy behaviours.

The choices and behaviours that are influenced by these factors can have a significant influence on our health. At a population level, healthy living refers to the practices of populations and sub-population groups that are consistent with improving, maintaining and/or enhancing health. At the individual level, healthy living is the practice of health enhancing behaviours, or put simply, living in healthy ways. At all levels, the social, economic, political, cultural and environmental conditions that support health must be in place for healthy living to become a reality.

In practical terms, healthy living means making positive choices about personal health practices such as healthy eating, not smoking, building a circle of social contacts, and being physically active. These choices are strongly influenced by the social, economic and physical environments where we live, work, learn and play. A population health approach to promoting healthy behaviours considers how the range of factors listed above can influence healthy behaviours.



The healthy living strategy is a broad national plan of health education and action. In the meantime, individuals, families and communities each have a role to play in their own health and well-being:

*Individuals* – can take an active role in their own health

*Families* – can shape the attitudes and beliefs that result in healthful behaviours

*Communities* – can offer behaviour-changing classes and provide health services

## Ontario's Health Goals

- \* achieve equity in health opportunities
- \* enable Ontarians to achieve their health potential
- \* increase the health expectancy of Ontarians
- \* provide environments which support health
- \* encourage behaviours which support health
- \* provide health services which support health
- \* establish public policy which supports health



### SUPPORT QUESTION – Healthy Living Life Expectancy Quiz

1. Go to one of the following websites:

<http://www.agingresearch.org/calculator/quiz.cfm>

<http://www.hksrch.com.hk/life.html>

[http://www.bbc.co.uk/apps/ifl/health/gigaquiz?infile=health\\_calculator&path=calculator\\_living](http://www.bbc.co.uk/apps/ifl/health/gigaquiz?infile=health_calculator&path=calculator_living)

[http://www.weightlossresources.co.uk/diet/healthy\\_eating/healthy\\_living\\_quiz.htm](http://www.weightlossresources.co.uk/diet/healthy_eating/healthy_living_quiz.htm)

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



## The Health Triangle

Health is a combination of physical, mental/emotional, and social well-being. This concept can be illustrated by use of a triangle. When one side receives too much or too little attention, the whole triangle can become lopsided and unbalanced. To be truly healthy, you need to keep all three sides of your health triangle in balance. We all should try to keep our health triangle in balance. This will bring us wellness- an overall state of well-being.



***SOCIAL HEALTH*** – the way you get along with others:

- the ability to make & keep friends
- to work & play cooperatively
- seeking & lending support
- showing respect & care for others

***PHYSICAL HEALTH*** – how well your body functions:

- being physically healthy involves getting adequate sleep, eating nutritious foods, drinking enough water & being physically active on a regular basis
- practicing good hygiene
- avoiding harmful substances

***MENTAL HEALTH*** – your feelings about yourself, how well you meet the demands of daily life & your ability to process information:

- liking and accepting self
- expressing emotions in a healthy manner
- facing life's problems
- dealing with pressure or stress in a positive way

## Influences on Health

The main influences on changes in health have contributed to greatly increased life expectancy. Environmental conditions have improved considerably over the last century, reducing the threat of outbreaks of infectious disease.

### In the Past ...

In 1900 there were no mass immunizations against major killers such as measles, neither were there antibiotics. Families were considerably larger, since birth control did not exist. . But childhood diseases meant that infant mortality was very much higher than it is now.



### Now ...

Around the year 2000 some developments had a negative effect. New infectious diseases (such as HIV/AIDS) and re-emerging ones (such as tuberculosis) are a threat, even though some diseases such as smallpox and polio have been all but eradicated by immunization. Smoking and alcohol abuse remain a problem. People have less active lives now; leisure time is greater, but it is often spent in static pursuits such as watching television and using computers. People's diets are also high in fats and sugar. There is a so-called 'obesity epidemic', too. This is associated with degenerative diseases linked with affluence, such as heart problems, cancer and diabetes.

## Influences on Your Health

**Heredity** refers all traits that were biologically passed on to you from your parents. Each of us inherits a unique set of health risks from our ancestors. For some diseases, family history is defined by a single scrap of DNA. Anyone cursed with the gene for Huntington's disease will eventually suffer the symptoms, but hereditary risks are rarely so straightforward. Most medical conditions involve multiple genes, which get passed along in different combinations. As a general rule, having a first-degree relative with heart disease, asthma, osteoporosis or type 2 diabetes doubles your own risk. When two or more cases occur in the same immediate family, the odds increase by fourfold or more. The same pattern holds for cancers of the breast, colon and prostate. Yet none of these conditions is inevitable, even in people at high risk. With a detailed knowledge of your family medical history, you can often take the steps needed to protect yourself. If you discover that a serious health problem runs in your family, don't despair. By eating well, exercising and monitoring your intake of essential nutrients and vitamins, you can offset and sometimes even neutralize your genetic susceptibilities. This is especially true for atherosclerosis, type 2 diabetes and osteoporosis. We don't have as much evidence for cancer prevention, but family history can help guide decisions about

screening and early detection. However, some genes may strengthen your resistance to disease.

**Environment** is the sum of your surroundings (family, neighbourhood, school, job & your life experiences). It is composed of three main elements:

- Your Physical Environment – it is safe or unsafe?
- Your Social Environment includes family & other people you see each day
  - o PEERS are people of the same age who share similar interests
- Your Culture is the collective beliefs, customs & behaviours of a group

Physical and social environments play an important role in people's health and well-being. While this has been known for many years and is well documented, it is not generally reflected in Canada's health care delivery systems for in the design of our physical settings and social programs and institutions.

In virtually every physical setting in Canada – in homes, schools and the workplace, and in public places, whether built or natural – there are major health and safety issues that need to be addressed. Moreover, many people in Canada are trapped in social conditions that are unhealthy. Poverty and unemployment, for example, are major contributors to ill health. Too often individuals are kept confined to these unhealthy environments by overt or subtle forms of discrimination.

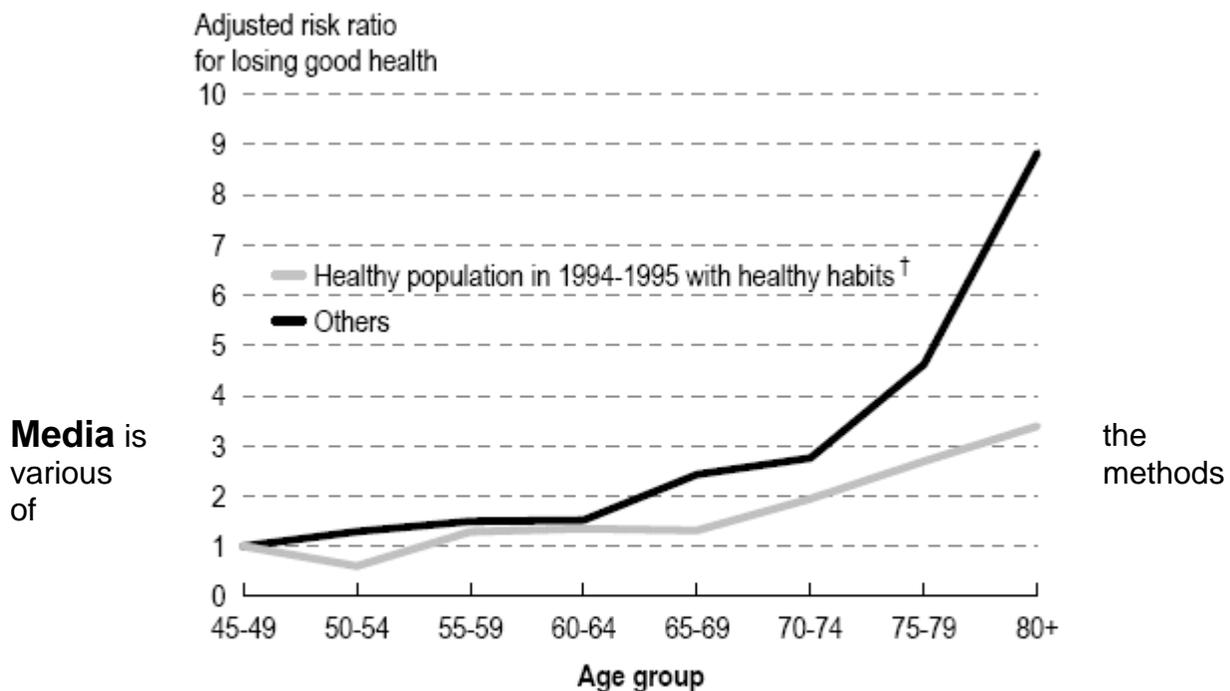
The fact is that Canadians share many environments which ignore the true range of the physical and cultural differences between them. Although some of our more specialized environments do take heed of our physical differences, they often overlook the rest of our human characteristics and needs. Thus, while they may be safe and accessible, they may also be psychologically or socially unhealthy.

**Attitude** is the way you view situations, you should always try to keep it positive! Healthy attitude means living with a sense of purpose and self-worth, feeling optimistic, soothed and supported. Does your attitude affect your health? Does a positive, happy one keep you healthier? Or a negative, unhappy, even angry, one hurt you? The answer to all these questions is yes. The mind and body are snugly interwoven, and this connection affects you in more ways than you might be aware of.

It used to be thought that the mind and the immune system existed independently of each other. But research now shows that they may act as a single unit. Feeling stressed, for example, can make you more susceptible to whatever virus is going around. On the other hand, when you feel joyous and lighthearted, your immune system has a better chance of protecting you from it. It's a good bet that expectation also plays an important role. If you expect to be healthy, you increase your chances of enjoying good health. If you expect to be ill, you increase your chances of that.

**Behaviour** is what you do on a daily basis. Overall, Ontarians enjoy long and healthy lives. We want to live as long as possible in good health and prevent deaths and injuries from causes we can do something about.

Chronic diseases, such as heart disease, diabetes, cancer and chronic obstructive lung disease, are the leading causes of death in Ontario, and the greatest drain on our health care resources. The most common chronic diseases are linked by a few risk factors—unhealthy diets, lack of exercise, tobacco use and substance abuse as well as other risk-taking behaviours. These risk factors reflect choices we make in our daily lives. If we make healthier choices, we can move closer to the vision of healthy Ontarians in a healthy Ontario.



**Data source:** 1994/95 to 2002/03 National Population Health Survey, longitudinal file

† Never smoked or quit for at least 10 years, physically active in leisure time, normal weight range

communication (radio, TV, movies, Internet etc.).

Children and adolescents daily absorb and interact with messages from a wide range of media – television, movies, music videos, magazines, the Internet and video games. While media can offer children many opportunities to learn and be entertained, some media images and messages have been linked to public-health concerns, such as aggressive behaviour and violence, tobacco and alcohol use, poor nutrition and obesity, unhealthy body image, and risky sexual behaviour and attitudes.

**Technological** advances also influence health. Today, people are living longer and healthier lives thanks, in large part, to technological advances in the field of medicine. For most of the 19th century doctors cared for their patients much as they had in prior

eras. Most medical tools fit easily into the doctor's little black bag, and diagnoses were based more on instinct than on science. But then in 1895 German physicist Wilhelm C. Roentgen accidentally discovered a form of electromagnetic radiation that could pass through the body and leave an image of its bones or organs on a photographic plate. The birth of the X ray sparked a revolution. Diagnostic tools such as the electrocardiograph, CAT scan, and MRI followed, as did the development of artificial and transplanted organs and joints and myriad other surgical devices and techniques designed to keep the body functioning. These advancements and the discovery of antibiotics and other life-saving drugs contributed to increasing the life span of people throughout the developed world—on average nearly 30 years longer than their ancestors a century ago.

Many of these improvements involved the combined application of engineering and biological principles to the traditional medical arts, giving physicians new perspectives on the body's workings and new solutions for its ills. From providing better diagnostic tools and surgical procedures to creating more effective replacements for the body's own tissues, engineering helped the 20th century's doctors successfully address such long-standing problems of human health as heart disease and infectious disease.

Other important technological inventions / treatments / advances include the:

- electrocardiograph machine
- Artificial pacemaker
- Plastic contact lens
- Artificial heart valve
- open-heart bypass surgery
- Arthroscope
- cochlear implant
- MRI (magnetic resonance imaging) scanner
- artificial heart
- Human Genome Project
- respirator
- kidney dialysis machine
- artificial hip replacement
- cardiac pacemaker
- kidney transplant
- CAT or CT scan



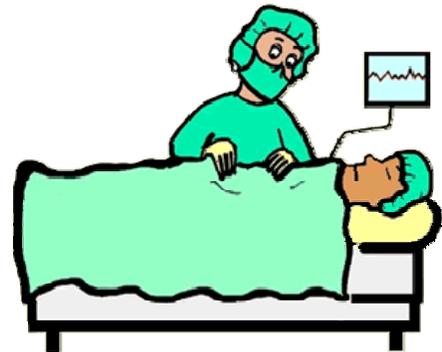
### **SUPPORT QUESTION – Interesting Human Body Facts**

Go to one of the following websites and find out interesting facts about the human body you probably didn't know:

<http://www.lehman.cuny.edu/faculty/jfleitas/bandaides/bodies.html>

<http://www.corsinet.com/trivia/h-triv.html>

<http://www.coolquiz.com/trivia/explain/docs/worth.asp>

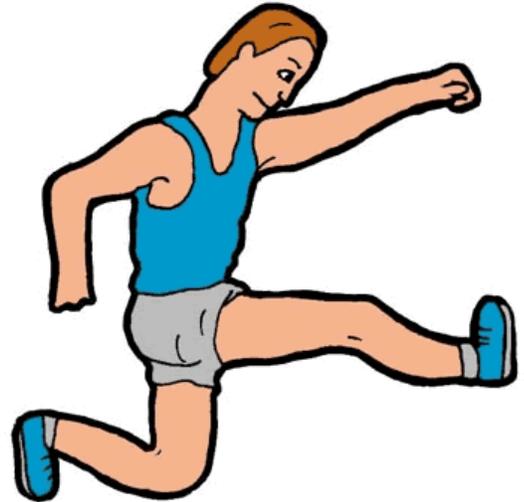


## Physical Activity

**PHYSICAL ACTIVITY** is any form of movement that causes your body to use energy. This body movement can include active physical leisure, exercise, sport, work and energy expenditure. The personal life and self-care choices you make greatly influence your health. Eating well, being active and feeling good about yourself. These three key elements work together to help you achieve a healthier, more active lifestyle.

Physical activity reduces stress, strengthens the heart and lungs, increases energy levels, helps you maintain and achieve a healthy body weight - and it improves your outlook on life

**PHYSICAL FITNESS** is the ability to carry out daily tasks easily & have enough reserve energy to respond to unexpected demands



## What are the Benefits of Physical Activity?

Health risks associated with physical inactivity can be offset by the benefits of physical activity.

### BENEFITS of PHYSICAL ACTIVITY

- better health
- improved fitness
- better posture & balance
- better self-esteem
- greater weight control
- stronger muscles & bones
- more energy
- more relaxation & reduced stress

### RISKS of INACTIVITY

- premature death
- heart disease
- obesity
- high blood pressure
- adult-onset diabetes
- osteoporosis
- stroke
- depression
- colon cancer

## How Much Physical Activity is Needed?



Health Canada recommends 30 to 60 minutes of activity every day. Choose activities from each of the three activity groups – endurance, flexibility and strength. How much and how long depends on effort.

If you are going from being inactive to active, start slowly and progress gradually, using a mix of activities:

**Endurance Activities** (walking, gardening) help your heart, lungs and circulatory system stay health.

**Flexibility Activities** (yoga, yard work) keep muscles and joints moving.

**Strength Activities** (weight training, lifting groceries) keep muscles and bones strong and improve posture.

People may achieve physical activity goals by adding up continuous 10-minute bouts of daily exercise.

	Light Effort	Moderate Effort	Vigorous Effort
<b>How much?</b>	60 minutes of daily light activity that slightly increased breathing rate	30 to 60 minutes of moderate activity on 4 to 7 days per week that stimulates a greater increase in breathing rate	20 to 30 minutes of vigorous activity on 4 to 7 days per week that results in being more out of breath
<b>Examples</b>	Light walking, gardening & vacuuming	Brisk walking, biking & dancing	Jogging, aerobics & fast cycling
<b>Results</b>	Increases in health benefits (e.g. reduced risk of coronary heart disease) when going from being inactive to accumulating 60 minutes of light activity daily	Lead to small increases in fitness (e.g. higher bone mineral density, increase in aerobic power reduces mildly elevated blood pressure)	Additional health and fitness benefits (e.g. lower mortality risk, protects against fatal coronary heart disease)



### SUPPORT QUESTION – Body trivia

1. Go to one of the following websites:

<http://www.teengrowth.com/>

<http://www.regionshospital.com/Regions/Menu/0,1640,11371,00.html>

<http://www.kidzworld.com/site/p3276.htm>

<http://www.prongo.com/human/game.html>

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

## Physical Activity Levels across Canada and Ontario

(Source: Canadian Community Health Survey (CCHS))

### How many Canadians are not active enough?

Current estimates from the 2000/01 Canadian Community Health Survey (CCHS) indicate that the majority of Canadians (56%) are physically inactive.

- the level of physical inactivity decreased between the late 1990s and 2002;
- the majority of Canadians still face increased risk of chronic disease and premature death due to physically inactive lifestyles;
- more women than men are physically inactive; and
- physical inactivity increases with age.



### Physical activity among teenagers

Over half of Canadian teenagers are sedentary, accumulating the equivalent of less than one hour of walking a day. Furthermore, only 18% are accumulating enough daily activity to meet the international guidelines for optimal growth and development. Over half of Canadians aged five to 17 are not active enough for optimal growth and development. The term "active enough" is equivalent to an energy expenditure of at least eight kilocalories per kilogram of body weight per day (e.g., 30 minutes of martial arts, plus one hour of walking for a total of 90 minutes). Fifty-one per cent of Canadian children aged five to 17 rely on inactive modes of transportation to get to and from school.

- **Participation in physical education classes** — Half of Canada's children aged 6–17 years reportedly take physical education classes three or more days a week at school and 17% have daily physical education. More active parents are more likely to report that their child takes physical education classes at least three days a week.

### Ontario - Physical activity profile

- As many as 57% of Ontarians are insufficiently active for optimal health benefits.
- Physical inactivity declined significantly since the early 1990s, going from 62% in 1994 to 57% in 2000. In Ontario, 56% of youth aged 12-19 are not active enough for optimal growth and development.

### Physical Inactivity among Youth (12-19) by Province

Newfoundland	58%
Prince Edward Island	52%
Nova Scotia	56%
New Brunswick	59%
Quebec	63%
Ontario	56%
Manitoba	59%
Saskatchewan	49%
Alberta	50%
British Columbia	50%
North	54%

### What are Popular Physical Activities for Youth in Canada?

Walking is reportedly the most popular activity for adolescents aged 12-19, with 60% of youth reporting walking in the three months prior to the survey. Here is the list of most popular physical activities for youth:

Walking for exercise	60%	Weight training	25
Bicycling	48	Bowling	20
Swimming	46	Baseball, softball	17
Jogging, running	44	Skating	14
Basketball	37	Exercise classes, aerobics	14
Social dancing	37	Fishing	13
Home exercise	36	Golf	13
Gardening, yard work	28	Ice hockey	13
In-line skating	28	Tennis	11
Volleyball	26	Alpine skiing	7

(1998/99 National Population Health Survey (NPHS))



## Key Questions for Lesson 1 (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 # 1 – My Health Knowledge (15 marks)

Respond to the following statements to the best of your knowledge (in your own words):

1. Health is ...
2. Wellness is ...
3. The main influences on my health are ...
4. Benefits of physical activity are ...
5. One important value in life to me is...
6. Health risks are ...
7. The best way to manage my weight is to ...
8. One example of a “fad diet” is ...
9. Stress is ...
10. An example of a communicable disease is ...
11. An example of a non-communicable disease is ...
12. The greatest health concern in Canada today is ...
13. A chronic disease is ...
14. Eating Disorders are ...
15. A health-related occupation is ...



### KEY QUESTION # 2 – Determinants of Health (10 marks)

There are many influences on your health each day. Your task for this question is to record the determinants of health that affect your health each day.

1. Copy the following chart and fill in ALL the empty spaces for 10 of the 11 Determinants of Health.
2. Throughout the day record activities that influence your health.
3. The first one is done for you.

Activity	Determinant of Health	Influence
I went to school today. I completed all my work.	Education	The more education we have, the more likely we are to be healthy. I will have less chance of suffering from stress and reduced self-confidence.
	Income and social status	
	Social support networks	
	Etc.	

**KEY QUESTION # 3 – The Influence of Your Lifestyle (10 marks)**

Read your class note “Promoting Good Health”

- (a) List five (5) lifestyle factors you practice that promote good health.
- (b) List one (1) lifestyle factor you practice that DOES NOT promote good health.
- (c) List four (4) healthy lifestyle choices you would like to make in the future.

**KEY QUESTION # 4 – Healthy Living (15 marks)**

1. Write a paragraph describing what “Healthy Living” is. Be sure to include the following factors in your paragraph: (10 marks)
  - Knowledge
  - Skills
  - Motivation
  - Opportunity and access
  - Supportive environments
2. In a second paragraph, explain the roles individuals, families and communities play in their own health and well-being. (5 marks)

**KEY QUESTION # 5 – Health Triangle (15 marks)**

Health is a combination of physical, mental/emotional, and social well-being. This concept can be illustrated by use of a triangle. Physical health includes total care of your body- fitness, cleanliness, and proper diet. Mental/Emotional health includes liking and accepting self, expressing emotions in a healthy manner, facing life's problems, and dealing with pressure or stress in a positive way. Social health involves getting along with others, making and keeping friends, and working and getting along in a group. We all should try to keep our health triangle in balance. This will bring us wellness- an overall state of well-being.

Directions: On a single sheet of blank white paper create a “Health Triangle” cut-and-paste to represent a balanced triangle of health. Cut and paste five (5) pictures for each area of the health triangle and neatly paste them on your triangle.

**KEY QUESTION # 6 – Influences on Your Health (7 marks)**

1. List and briefly describe the six (6) categories of influences on your health.
2. List the influences on health you have the most control over.

**KEY QUESTION # 7 – Assessing Personal Health (13 marks)**

1. (a) Why do you think many teens lead a sedentary lifestyle?  
(b) List three (3) sedentary activities from your daily life and suggest a physical activity you could do in place of each.
2. What physical activities do you already include in your daily routine?
3. Explain how physical activity can strengthen all three sides of the health triangle.
4. (a) List three (3) benefits of physical activity.  
(b) Which province in Canada is the most physically active?
5. (a) List three (3) risks of inactivity.  
(b) Which province in Canada is the most physically inactive?
6. In 2000/2001, what percent of Canadians were physically inactive?
7. (a) What percentage of Canada's children aged 6–17 years have DAILY physical education?  
(b) Do you think this is a good percentage? Why or why not?
8. From the list "Popular Physical Activities for Youth in Canada" which activities do you most like to do?

**KEY QUESTION # 8 – Lesson 1 ... Important Terms (15 marks)**

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

- |                          |                             |
|--------------------------|-----------------------------|
| 1. Health Literacy       | 2. Health                   |
| 3. Wellness              | 4. Determinants of Health   |
| 5. Prevention            | 6. Health Education         |
| 7. Health Canada         | 8. Social Health            |
| 9. Physical Health       | 10. Mental/Emotional Health |
| 11. Physical Activity    | 12. Physical Fitness        |
| 13. Endurance Activities | 14. Flexibility Activities  |
| 15. Strength Activities  |                             |

# PPZ30

HEALTH FOR LIFE



LESSON 2

## Lesson 2 – Healthful Eating

### What Is Healthy Eating?

What we choose to eat can have a direct affect on our ability to enjoy life to its fullest. This is true for everyone, despite his or her age and current health. Our food choices play a major role in:

- promoting and maintaining good health;
- promoting growth in infants, children and adolescents;
- preventing some chronic diseases (like heart disease and diabetes) and treating others; and,
- speeding recovery from injuries and surgery.

### *What is Canada's FOOD GUIDE to Healthy Eating?*

IT IS A GUIDE to help you make wise food choices. The rainbow side of the Food Guide places foods into 4 groups: Grain Products, Vegetables and Fruit, Milk Products, Meat and Alternatives. It also tells you about the kinds of foods to choose for healthy eating.

The bar side of the Food Guide helps you decide how much you need from each group every day. It shows you serving sizes for different foods.

The bar side of the Food Guide tells you how other foods that are not part of the 4 food groups can have a role in healthy eating. Because some of these 'other foods' are

These guidelines were developed as the key messages to be communicated to healthy Canadians, over two years of age.

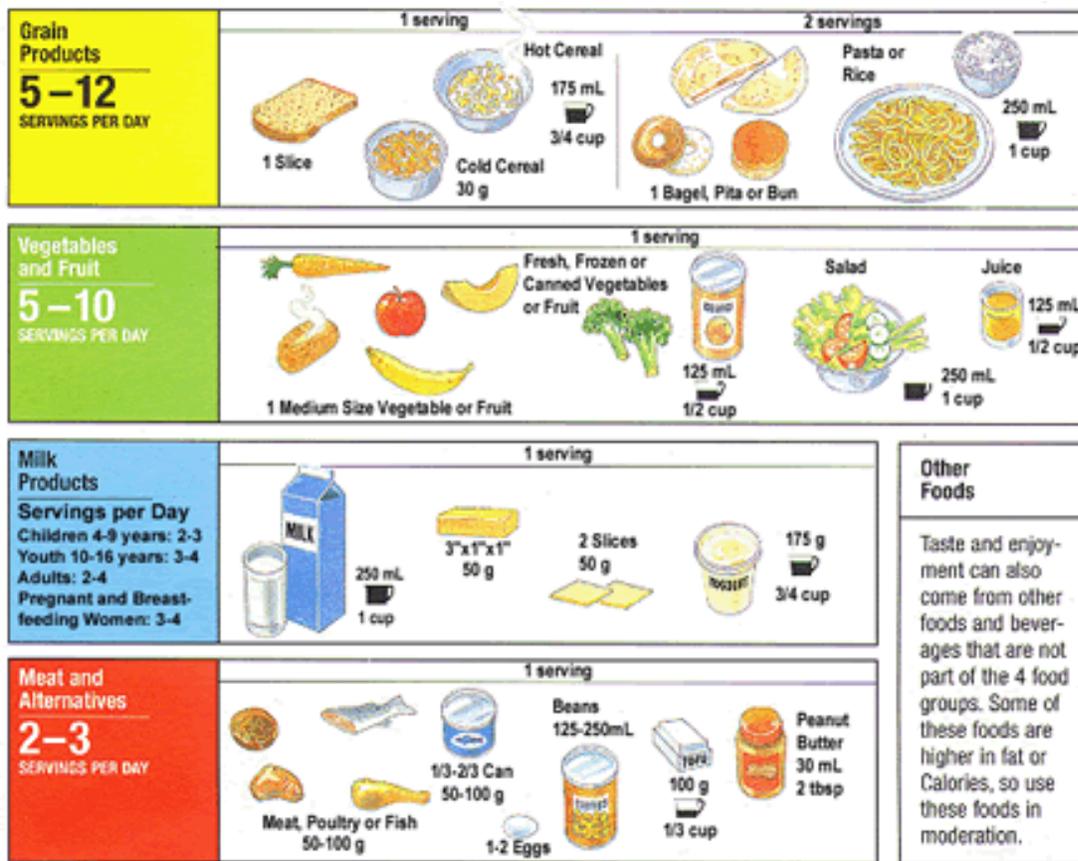
1. Enjoy a VARIETY of foods.
2. Emphasize cereals, breads, other grain products, vegetables and fruit.
3. Choose lower-fat dairy products, leaner meats and food prepared with little or no fat.
4. Achieve and maintain a healthy body weight by enjoying regular physical activity and healthy eating.
5. Limit salt, alcohol and caffeine.



Eating is one of the best things life has to offer. Food helps you celebrate with your family and friends. It nourishes your body. It gives you energy to get through each day. The right balance of food and activity helps you stay at a healthy body weight. You don't have to give up foods you love for the sake of your health. But you do need to aim for variety and moderation. Let Canada's Food Guide to Healthy Eating help you make your choices.



Grain Products	Vegetables and Fruit	Milk Products	Meat and Alternatives
Choose whole grain and enriched products more often.	Choose dark green and orange vegetables and orange fruit more often.	Choose lower-fat milk products more often.	Choose leaner meats, poultry and fish, as well as dried peas, beans and lentils more often.



### Different People Need Different Amounts of Food

The amount of food you need every day from the 4 food groups and other foods depends on your age, body size, activity level, whether you are male or female and if you are pregnant or breast-feeding. That's why the Food Guide gives a lower and higher number of servings for each food group. For example, young children can choose the lower number of servings, while male teenagers can go to the higher number. Most other people can choose servings somewhere in between.

### What does the Food Guide tell you?

The rainbow side of the Food Guide gives you advice on how to choose foods.

**'Enjoy a variety of foods from each group every day.'**

Try something new! Explore the rainbow of foods that make up the 4 food groups. Enjoy foods with different tastes, textures and colours.

The 4 food groups provide you with the nutrients you need to be healthy. You need foods from each group because each group gives you different nutrients. You also need to choose different foods from within each food group to get all the nutrients your body

needs. Look at the chart on the opposite page for the key nutrients each food group offers.

**'Choose lower-fat foods more often'.**

Everyone needs some fat in their diet, but most people eat too much fat. Eating more breads, cereals, grains, vegetables, fruit, peas, beans and lentils will help you cut down on fat. You can also choose lower-fat dairy products and leaner meats, poultry and fish. Each of the 4 food groups includes foods that contain fat. Eat lower-fat foods from each group every day. Choose smaller amounts of higher-fat foods. If you do, you'll be able to enjoy the foods you love and eat well at the same time.

Choose whole grain and enriched products more often.

Choose dark green and orange vegetables and orange fruit more often.

Choose lower-fat milk products more often.

Choose leaner meats, poultry and fish, as well as dried peas, beans and lentils more often.

Enjoy a variety of foods from each group every day.

Choose lower-fat foods more often.

**Tips to Reduce Fat**

Spread less butter or margarine on bread, buns or bagels.

Have salads with less dressing or with a lower-fat dressing.

Try vegetables without butter, margarine or rich sauces.

Try skim, partly-skim or reduced-fat milk products in recipes.

Choose meat, poultry or fish that are baked, broiled or micro waved. Serve with light broth or herbs.

Have fried or deep-fried foods less often.

Have snacks such as chips and chocolate bars less often.

**'Choose whole grain and enriched products more often.'**

Whole grain products such as whole wheat, oats, barley or rye are suggested because they are high in starch and fibre. Enriched foods are recommended because they have some vitamins and minerals added back to them. Treat yourself to multi-grain breads, pumpernickel bagels, enriched pasta, brown rice, ready-to-eat bran cereals or oatmeal.

**'Choose dark green and orange vegetables and orange fruit more often.'**

These foods are higher than other vegetables and fruit in certain key nutrients like vitamin A and folacin. Go for salads, broccoli, spinach, squash, sweet potatoes, carrots, cantaloupes or orange juice.

### 'Choose lower-fat milk products more often.'

Lower-fat milk products have less fat and Calories, yet still provide the high quality protein and calcium essential to healthy eating. Whether it's milk, yogurt, cheese or milk powder, choose the lower-fat option. Look at labels and choose products with a lower % M.F. (Milk Fat) or % B.F. (Butter Fat). Then you can have the refreshing taste of milk products with less fat.

### 'Choose leaner meats, poultry, and fish, as well as dried peas, beans and lentils more often.'

Many leaner meats, poultry, fish and seafood choices are available to help you reduce your fat intake without losing important nutrients. Be sure to trim visible fat. Try baking, broiling, roasting or microwaving instead of frying, and drain off extra fat after cooking. To lower your fat while increasing your intake of starch and fibre, choose foods like baked beans, split pea soup or lentil casserole.

The bar side of the Food Guide shows you the serving sizes for different foods. It also explains that different people need different amounts of food.



with foods from the 4 food groups.

### What are 'Other Foods'?

'Other Foods' are foods and beverages that are **not part of any food group**.

They include:

- foods that are mostly fats and oils such as butter, margarine, cooking oils and lard
- foods that are mostly sugar such as jam, honey, syrup and candies
- high-fat and/or high-salt snack foods such as chips (potato, corn, etc.) or pretzels
- beverages such as water, tea, coffee, alcohol and soft drinks
- herbs, spices and condiments such as pickles, mustard and ketchup.

These foods can be used in making meals and snacks and are often eaten

## More about 'Other Foods'

### Water

Always satisfy your thirst. Choose water often and be sure to drink more in hot weather or when you are very active.

### Alcohol

For most adults, moderate drinking means no more than 1 drink a day and no more than 7 drinks a week. More than 4 drinks on one occasion, or more than 14 drinks a week is a risk to health and safety.

1 drink = 1 bottle (or about 350 mL) of beer

1 drink = 150 mL (or about 5 oz) of wine

1 drink = 50 mL (or about 1 1/2 oz) of liquor

If you are pregnant or breast-feeding, avoid alcohol.

### Caffeine

Use in moderation. Caffeine is found in drinks such as coffee, tea or colas and foods that contain cocoa. It's also in drugs such as cold remedies and headache medicine.



## How many servings from each food group do I need?

### Too many servings?

It may seem like a lot, so check to see how many you really need. And, you may be eating more servings than you realize. For example, a plate of pasta can count as 3-4 servings of Grain Products and a juice box as 2 servings of Vegetables and Fruit.

The number of servings you need every day from the 4 food groups and other foods depends on your age, body size, activity level, whether you are male or female and if you are pregnant or breast-feeding.

Most people will need to have more than the lower number of servings, especially pregnant and breast-feeding women, male teenagers and highly active people. Because different people need different amounts of food, the bar side of the Food Guide suggests the following number of servings:

### Grain Products

5-12 Servings per day

### Vegetables and Fruit

5-10 Servings per day

### Milk Products

Children 4-9 years: 2-3 servings/day

Youth 10-16 years: 3-4 servings/day

Adults: 2-4 servings/day

Pregnant and Breast-feeding Women: 3-4 servings/day



### Meat and Alternatives

2-3 Servings per day

## Ways to use the Food Guide

This is your Food Guide. Use it to make wise food choices **where ever you are.**

### At Home

Keep the Food Guide in a handy place such as on your fridge. It will remind you which foods to eat more often. Make meals and snacks that are packed with nutrients, lower in fat and higher in starch and fibre. Use the Food Guide to prepare your shopping list. It can help you make smarter food choices.



### Shopping

Choose foods from the 4 food groups first. Be sure to check food labels when you shop. Labels can tell you about the ingredients and nutrients found in foods. To help you decide, ingredients are listed by weight, from most to least.

### Eating Out

When you are eating out, choose carefully. Look for places that offer a variety of lower-fat choices from each of the 4 food groups with lots of grain products, vegetables and fruit. If you always choose fried foods, creamy sauces and rich desserts, you may be getting too much fat. Go for moderation. Whether it's eating on the run or a special evening out, enjoy your favourite restaurant foods and choose wisely by following the Food Guide.



## Putting it all together

Eating well is just one way to get the most out of life. It's also important to be active and feel good about yourself.

**Eating well** means following Canada's Food Guide to Healthy Eating. Use the ideas in this booklet to help you make wiser food choices. After all, food is one of life's great pleasures.

**Being active** means making physical activity a part of your everyday life. It helps you manage your weight and strengthen your heart, lungs and muscles. Find fun ways to be active in your own way. Walk part of the way to and from work. Head outdoors to skate, swim or hike. Play ball with the kids.

**Feeling good about yourself** means believing in yourself. The best way to do that is to accept who you are and how you look. So treat yourself well. Healthy bodies come in a variety of shapes and sizes. A good weight is a healthy weight, not just a low weight. A healthy weight helps you stay active and lowers the risk of health problems.

Take a fresh approach to living. Enjoying eating well, being active and feeling good about yourself. That's Vitality!

### Healthy Eating Checklist

After reading this booklet, ask yourself: will I choose...

- a variety of foods from each of the 4 food groups?
- foods within the suggested number of servings for all 4 food groups?
- whole grain and enriched grain products more often?
- dark green and orange vegetables and orange fruit more often?
- lower-fat milk products more often?
- leaner meats, poultry and fish, as well as peas, beans and lentils more often?
- other foods wisely?
- foods prepared with little or no fat?
- to enjoy eating with my family and friends regularly?
- to be active every day?

For more information on Canada's Food Guide to Healthy Eating visit their website:

## Nutrients and Nutrition

What you eat has a life long effect on your health and well-being. To look and feel your best, you have to eat adequate amounts of the proper foods. Many teenagers don't always choose the food that is best for them. They may not want to eat what the rest of the family is eating or they may eat poorly at school.

Nutrition... Nutrition... Nutrition... Adults are always talking about good nutrition and eating the right foods. Isn't it enough to eat the things that we enjoy eating? Not necessarily, unless you like eating foods rich in vitamins, minerals and other essential nutrients. Sounds boring? It doesn't have to be. If you are going to eat well you have to take some of the initiative and responsibility for what you eat. You'll be doing your family a big favor as well as learning how to take care of yourself.

**Nutrition** is a science about how the body functions and what nourishment it needs for maximum performance. It is the study of nutrients and how they are used in the body.

**Nutrients** are chemical substances the body needs to function, grow, repair itself and produce energy. Nutrients build your body and allow it to function. Each nutrient has at least one specific job, and no other nutrient can cover for any of the others. Because you need many different nutrients to stay healthy, you have to eat a wide variety of foods in order to get all of them. If you stick to just one or two favorite foods, you'll run short of the nutrients you must have to stay well.

A lot of the foods that we like to eat don't have much nutritional value. These foods are referred to as "junk food" = empty calories, because while they provide calories that can be turned into energy, they don't provide much else in the way of things our bodies can use.

There are six types of nutrients: protein, carbohydrates, fats, vitamins, minerals, and water. In simple terms, nutrients are the chemicals that your body gets from food. If your body gets the right fuel, just like a car, it will run smoother. Nutrients in food allow your body to break down the food you eat into energy so can use function. When you go for a run, swim a few laps, or even talk on the phone you are using energy that your body has produced. When you are taking a test, you're using brain power, which is really energy that is coming from the food you had last night for dinner and this morning for breakfast. One nutrition key is to never skip breakfast, especially the morning of tests. Your body has not received energy for more than 12 - 15 hours and will not be able to function at its peak without that boost you get from food.

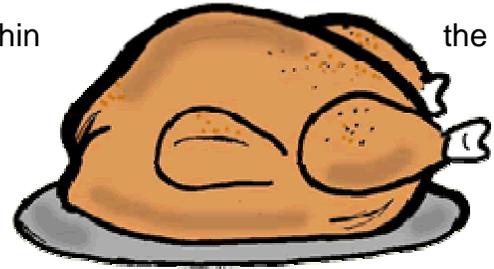
## The Six Essential Nutrients

There are six nutrients which are essential for a healthy balanced diet: protein, fat carbohydrates, water, vitamins, and minerals.

### 1. PROTEIN

Protein is required for the building of all new cells within the body.

High protein foods include animal foods (meats, chicken, eggs, cheese, milk), peas, beans and lentils.

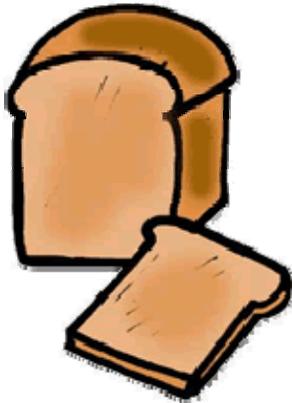


### 2. FAT

Fat forms part of cells and tissues in the body. Fat is a concentrated source of energy, and a source of the fat-soluble vitamins (i.e. vitamins that can only dissolve in fat - see section below on Vitamins).

Pure fats include butter, oils, and spreads. Meat and meat products are high fat foods.

### 3. CARBOHYDRATES



Carbohydrates are a vital source of energy for the body. When these foods are digested, they release sugars which are the main fuel which the brain and body uses every day.

Rich sources of carbohydrate include breads, cereals, potatoes, pasta, rice, natural and refined sugars. Wheaten and wholegrain carbohydrates are a source of fibre.

Only protein, fat and carbohydrate provide the body with energy in the form of calories. The remaining essential nutrients are not a source of calories but are required for other functions.

### 4. WATER

The average human body contains 40 litres of water - contributing to approx. 60% of body weight. An adequate fluid intake is important to prevent dehydration, bladder and kidney infections, and to prevent constipation.

Along with water itself, water based drinks (e.g. juices and squash) help to provide the daily fluid requirement. However, it is preferable to take some daily fluid as water.

## 5. VITAMINS

Vitamins help the body turn food into energy and tissues. There are 13 vitamins in all: vitamin A; the vitamin B complex, which includes thiamine, riboflavin, niacin, vitamin B<sub>6</sub>, folic acid, vitamin B<sub>12</sub> pantothenic acid, and biotin; and vitamins C, D, E, and K. There are many different vitamins - each has its own essential function in the human body.

## 6. MINERALS

Minerals are needed for growth and maintenance of body structures. They also help to maintain digestive juices and the fluids found in and around cells. Unlike vitamins, carbohydrates, fats, and proteins, minerals are not made by plants and animals. Plants get minerals from water or soil, and animals get minerals by eating plants or plant-eating animals

Effects of Poor Nutrition. When people make poor food choices or do not have enough to eat, serious health conditions can result. One such condition is a nutrient deficiency. **Deficiency** means a severe nutrient shortage. Poor nutrition results from lack of the proper nutrients daily to too much of a particular nutrient. **Malnutrition** refers to serious health problems caused by poor nutrition over a prolonged period of time. **Starvation** is the result of a serious, or total, lack of nutrients needed for the maintenance of life.

### ***What foods are the source of the most important vitamins & minerals, and how will my body benefit?***

The best way to get the vitamins and minerals you need is by eating a varied, balanced diet, rich in fruits, vegetables, and whole grains. This table describes the health benefits of the most important vitamins and minerals and the foods you can eat to get those nutrients. Vitamins are divided into two categories— fat soluble and water soluble. Fat-soluble vitamins are found in fats and oils in foods and they are stored in body fat. Water-soluble vitamins dissolve in water and mix easily in the blood. Your body stores only small amounts of them and they are excreted in urine. Some vitamins are antioxidants—chemicals that prevent damaging changes in cells and may help protect against cancer, heart disease, and aging.

The information on the next two pages explains the role that different vitamins and minerals play in your health and describes the signs of either deficiency or excess, as well as good food sources for these vitamins and minerals.

Vitamin/Mineral	Sources	Function in the Body	Deficiency	Overdose
<p><b>Fat Soluble Vitamins</b> can be stored in the body and need not be consumed daily. While it is difficult to "overdose" on them from ordinary sources, consuming mega doses of fat soluble vitamins, especially A and D, can lead to a dangerous buildup in the body.</p>				
<b>Vitamin A Retinol</b>	Liver, fortified Milk (Retinol form - see below for Carotene sources.)	Essential for eyes, skin and the proper function of the immune system. Helps maintain hair, bones and teeth.	Night blindness; reduced hair growth in children; loss of appetite; dry, rough skin; lowered resistance to infection; dry eyes.	Headaches; blurred vision; fatigue; diarrhea; irregular periods; joint and bone pain; dry, cracked skin; rashes; loss of hair; vomiting, liver damage.
<b>Beta Carotene</b>	Carrots, Squash, Broccoli, Green Leafy Vegetables	Antioxidant. Converted to Vitamin A in the body. (See Vitamin A)		
<b>Vitamin D</b>	Egg Yolk, Milk, Exposure to sun enables body to make its own Vitamin D.	Helps build and maintain teeth and bones. Enhances calcium absorption.	Rickets in children; bone softening in adults; osteoporosis.	Calcium deposits in organs; fragile bones; renal and cardiovascular damage.
<b>Vitamin E</b>	Corn or Cottonseed Oil, Butter, Brown Rice, Soybean Oil, Vegetable oils such as Corn, Cottonseed or Soybean, Nuts, Wheat Germ.	Antioxidant. Helps form red blood cells, muscles and other tissues. Preserves fatty acids.	Rare, seen primarily in premature or low birth weight babies or children who do not absorb fat properly. Causes nerve abnormalities.	Unknown.
<b>Vitamin K</b>	Green Vegetables, Liver, also made by intestinal bacteria.	Needed for normal blood clotting.	Defective blood coagulation.	Jaundice in infants.
<p><b>Water Soluble Vitamins</b> are not stored in the body and should therefore be consumed daily.</p>				
<b>Thiamine Vitamin B1</b>	Sunflower Seeds, Pork, whole and enriched Grains, dried Beans.	Necessary for carbohydrate metabolism and muscle coordination. Promotes proper nerve function.	Anxiety; hysteria; depression; muscle cramps; loss of appetite; in extreme cases beriberi (mostly in alcoholics).	Unknown, although excess of one B vitamin may cause deficiency of others.
<b>Riboflavin Vitamin B2</b>	Liver, Milk, Spinach, enriched Noodles, Mushrooms.	Needed for metabolism of all foods and the release of energy to cells. Essential to the functioning of Vitamin B6 and Niacin.	Cracks and sores around the mouth and nose; visual problems.	See Vitamin B1.
<b>Niacin Vitamin B3</b>	Mushrooms, Bran, Tuna, Chicken, Beef, Peanuts, enriched Grains.	Needed in many enzymes that convert food to energy. Helps maintain a healthy digestive tract and nervous system. In very large doses, lower cholesterol (large doses should only be taken under the advice of a physician).	In extreme cases, pellagra, a disease characterized by dermatitis, diarrhea and mouth sores.	Hot flashes; ulcers; liver disorders; high blood sugar and uric acid; cardiac arrhythmias.
<b>Pantothenic Acid</b>	Abundant in animal tissues, whole grain cereals and legumes.	Converts food to molecular forms. Needed to manufacture adrenal hormones and chemicals that regulate nerve function.	Unclear in humans.	See Vitamin B1.
<b>Vitamin B6 Pyridoxine</b>	Animal protein foods, Spinach, Broccoli, Bananas.	Needed for protein metabolism and absorption, carbohydrate metabolism. Helps form red blood cells. Promotes	Anemia, irritability, patches of itchy, scaling skin; convulsions.	Nerve damage.

		nerve and brain function.		
<b>Vitamin B12 Cyanocobalamin</b>	Found almost exclusively in animal products.	Builds genetic material. Helps form red blood cells.	Pernicious anemia; nerve damage. (Note: Deficiency rare except in strict vegetarians, the elderly or people with malabsorption disorders.)	See Vitamin B1.
<b>Biotin</b>	Cheese, Egg, Yolk, Cauliflower, Peanut Butter	Needed for metabolism of glucose and formation of certain fatty acids. Essential for proper body chemistry.	Seborrhic dermatitis in infants. Rare in adults, but can be induced by consuming large amounts of egg whites - anorexia, nausea, vomiting, dry scaly skin.	See Vitamin B1.
<b>Folic Acid (Folacin)</b>	Green, leafy vegetables, Orange Juice, organ Meats, Sprouts.	Essential for the manufacture of genetic material as well as protein metabolism and red blood cell formation.	Impaired cell division; anemia; diarrhea; gastrointestinal upsets.	Convulsions in epileptics. May mask pernicious anemia (see Vitamin B12 deficiency).
<b>Vitamin C Ascorbic Acid</b>	Citrus Fruits, Strawberries, Broccoli, Green Peppers	Antioxidant. Helps bind cells together and strengthens blood vessel walls. Helps maintain healthy gums. Aids in the absorption of iron.	Muscle weakness, bleeding gums; easy bruising. In extreme cases, scurvy.	Diarrhea, kidney stones, breakdown of red blood cells and vomiting
<b>Minerals</b> in organic products essential for body functions.				
<b>Calcium</b>	Milk, Yogurt, Cheese, Sardines, Broccoli, Turnip Greens.	Helps build strong bones and teeth. Promotes muscle and nerve function. Helps blood to clot. Helps activate enzymes needed to convert food to energy.	Rickets in children; osteomalacia (soft bones) and osteoporosis in adults.	Constipation, Kidney Stones, calcium deposits in body tissues. Hinders absorption of iron and other minerals.
<b>Phosphorus</b>	Chicken Breast, Milk, Lentils, Egg Yolks, Nuts, Cheese	With calcium builds bones and teeth. Needed for metabolism, body chemistry, nerve and muscle function.	(Rare) Weakness; bone pain; Anorexia.	Hinders body's absorption of calcium.
<b>Magnesium</b>	Spinach, Beef Greens, Broccoli, Tofu, Popcorn, Cashews, Wheat Bran	Activates enzymes needed to release energy in body. Needed by cells for genetic material and bone growth.	Nausea, irritability, muscle weakness; twitching; cramps, cardiac arrhythmias.	Nausea, vomiting, low blood pressure, nervous system disorders. <b>Warning:</b> Overdose can be fatal to people with kidney disease.
<b>Potassium</b>	Peanuts, Bananas, Orange Juice, Green Beans, Mushrooms, Oranges, Broccoli, Sunflower Seeds.	Helps maintain regular fluid balance. Needed for nerve and muscle function.	Nausea, anorexia, muscle weakness, irritability. (Occurs most often in persons with prolonged diarrhea.)	Rare.
<b>Iron</b>	Liver, lean Meats, Kidney beans, enriched Bread, Raisins. Note: Oxalic acid in spinach hinders iron absorption.	Essential for making hemoglobin, the red substance in blood that carries oxygen to body cells.	Skin pallor; weakness; fatigue; headaches; shortness of breath (all signs of iron-deficiency anemia)	Toxic buildup in liver and in rare instances the heart.
<b>Zinc</b>	Oysters, Shrimp, Crab, Beef, Turkey, whole Grains,	Necessary element in more than 100 enzymes that are essential to digestion	Slow healing of wounds; loss of taste; retarded growth and	Nausea, vomiting; diarrhea; abdominal pain; gastric bleeding

	Peanuts, Beans.	and metabolism.	delayed sexual development in children.	
<b>Copper</b>	The richest sources of copper in the diet are Liver and other organ Meats, Seafood, Nuts and Seeds.	Component of several enzymes, including on needed to make skin, hair and other pigments. Stimulates iron absorption. Needed to make red blood cells, connective tissue and nerve fibres.	Rare in adults. Infants may develop a type of anemia marked by abnormal development of bones, nerve tissue and lungs.	Liver disease; vomiting; diarrhea
<b>Manganese</b>	Tea, whole Grains and Cereal products are the richest dietary sources. Adequate amounts are found in Fruits and Vegetables.	Needed for normal tendon and bone structure. Component of some enzymes important in metabolism.	Unknown in humans.	Generally results from inhalation of manganese containing dust or fumes, not dietary ingestion.

## Key Nutrients in Canada's Food Guide to Healthy Eating

Each group is essential. That's because it provides its own set of nutrients

Key Nutrients in Canada's Food Guide to Healthy Eating				
The Food Guide	Grain Products	Vegetables & Fruits	Milk Products	Meat & Alternatives
protein	protein	-	protein	protein
fat	-	-	fat	fat
carbohydrate	carbohydrate	carbohydrate	-	-
fibre	fibre	fibre	-	-
thiamin	thiamin	thiamin	-	thiamin
riboflavin	riboflavin	-	riboflavin	riboflavin
niacin	niacin	-	-	niacin
folacin	folacin	folacin	-	folacin
vitamin B <sub>12</sub>	-	-	vitamin B <sub>12</sub>	vitamin B <sub>12</sub>
vitamin C	-	vitamin C	-	-
vitamin A	-	vitamin A	vitamin A	-
vitamin D	-	-	vitamin D	-
calcium	-	-	calcium	-
iron	iron	iron	-	iron
zinc	zinc	-	zinc	zinc
magnesium	magnesium	magnesium	magnesium	magnesium

## 10 Tips to Healthy Eating and Physical Activity

### Start Your Day with Breakfast

Breakfast fills your "empty tank" to get you going after a long night without food. Eating a good breakfast can help you do better in school. Easy to prepare breakfasts include: cold cereal with fruit and low-fat milk, whole-wheat toast with peanut butter, yogurt with fruit, whole-grain waffles or even last night's pizza.

## Get Moving

It's easy to fit physical activities into your daily routine. Walk, bike or jog to see your friends. Take a 10 minute activity break every hour while you read, do homework or watch TV. Climb stairs instead of taking an escalator or elevator. Try to do these things for a total of 30 minutes every day.

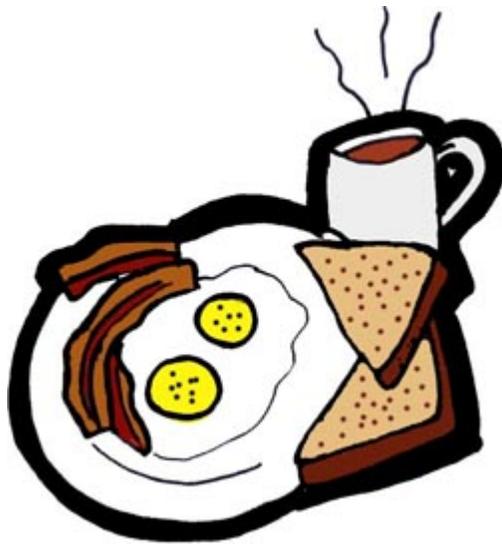
## Snack Smart

Snacks are a great way to refuel. Choose snacks from different food groups - a glass of low-fat milk and a few graham crackers, an apple or celery sticks with peanut butter and raisins, or some dry cereal. If you eat smart at other meals, cookies, chips, and candy are okay for occasional snacking.

## Work up a sweat

Vigorous work-outs, when you're breathing hard and sweating, help your heart pump better, give you more energy and help you look and feel your best. Start with a warm-up that stretches your muscles. Include 20 minutes of aerobic activity, such as running, jogging or dancing. Follow-up with activities that help make you stronger such as push-ups or lifting weights. Then cool-down with more stretching and deep breathing.

## Balance your food choices - don't eat too much of one thing



You don't have to give up foods like hamburgers, french fries, and ice cream to eat healthfully. You just have to be smart about how often and how much of them you eat. Your body needs nutrients like protein, carbohydrates, fat, and many different vitamins and minerals such as vitamins C and A, iron, and calcium from a variety of foods.

## Get fit with friends or family

Being active is much more fun with friends or family. Encourage others to join you and plan one special physical activity event, like a bike ride or hiking, with a group each week.

## Eat more grains, fruits, and vegetables

These foods give you carbohydrates for energy, plus vitamins, minerals, and fibre. Besides, they taste good! Try breads such as whole-wheat, bagels, and pita. Spaghetti and oatmeal are also in the grain group.

## Join in physical activities at school

Whether you take a physical education class or do other physical activities at school, such as intramural sports, structured activities are a sure way to feel good, look good and stay physically fit

## Foods aren't good or bad

A healthy eating style is like a puzzle with many parts. Each part, or food, is different. Some foods may have more fat, sugar or salt, while others may have more vitamins or fibre. There is a place for all these foods. What makes a diet good or bad is how foods fit together. Balancing your choices is important. Fit in a higher-fat food, like pepperoni pizza, at dinner by choosing lower-fat foods at other meals. And don't forget about moderation. If two pieces of pizza fill you up, don't eat a third.

Make healthy eating and physical activities fun!

Take advantage of physical activities you and your friends enjoy doing together and eat the foods you like. Be adventurous - try new sports, games, and other activities as well as new foods. You'll grow stronger, play longer, and look and feel better! Set realistic goals - don't try changing too much at once.

## Factors Influencing Food Choices

Food choices are influenced by many factors, age, gender, friends, family, cultural background and where we live. Although the main purpose of food is to nourish the body, food means far more than that to many people. It can represent much of who and what we are.



People bond and foster relationships around the dinner table and at celebrations with special meals and foods, such as birthday cake. Some people express their creative side by serving dinner guests, as well as expressing their awareness and appreciation for others. Some people also use food to help them cope with stress by overeating or depriving themselves. Food may also be used as a reward for accomplishing a specific goal. Consequently, what people eat can reveal much about who they are socially, politically and religiously.

Factors influencing food preferences include:

**Psychological Factors**— foods often have an emotional meaning as a result of an association of time, place, person or situation. Taste, texture and appearance also play a role.

**Cultural Factors** – most cultural food patterns are based on geographic location, religious beliefs, social traditions and lifestyle. Religious rules can affect food choices. For example, Hindus do not eat beef, and some Jewish people do not eat pork. The region that people are from can also affect eating behaviors. Swedish people would not eat an ear of corn, because it is considered food for hogs. In the United States, we don't normally eat insects, but many other cultures regard them as preferred foods. Culture can also dictate the times to eat and what to eat at certain meals.

**Geographical Factors** – climate and soil of a country determine the foods eaten

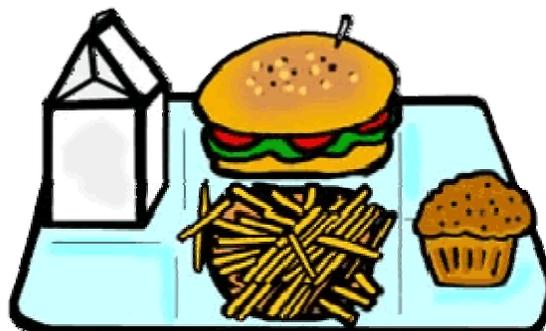
**Religious Factors** – some religious doctrine prohibit the eating of certain foods, either completely or on specific occasions

**Social & Family Factors** – many food customs are founded on social occasions and special events such as birth, marriage, anniversary, and national holidays. Food is also a sign of hospitality.

**Lifestyle & Time Factors** – people “on the run” have little time to prepare meals and therefore may choose a food pattern largely consisting of convenience foods, frozen foods or fast food. Social changes have a big effect on the food industry. Our fast-paced society demands drive-through restaurants. Gas stations now have convenience stores and restaurants attached to them, so people can do one-stop shopping. Malls also cater to their customers with food courts offering a wide variety of foods.

**Individual Preference Factors** – like and dislikes determine personal food choices. Most of us eat from a particular core group of foods. About one hundred items account for 75 percent of the foods most people eat.

Having a narrow range of food choices provides us with security. For example, going to a particular fast-food restaurant provides common expectations and experiences. Many people also have the cooking habits of our mothers or grandmothers.



**Nutrition Factors** – many of the traditional foods in our diet make a significant contribution to our nutritional needs

**Cost and Budget Factors** - The cost of food affects what we eat.

**Age Factors** – What you eat is determined by your age.

**Health Factors** - Numerous physiological and biological factors such as hunger, gender, age, disease states, and treatments influence food choices. For example, some persons with lactose intolerance may exclude milk and other dairy foods from their diet, thereby compromising their calcium and nutrient intake.

**Skills Factors** – Many foods required special skills and knowledge to prepare.

**Media and Advertising Factors** - To capture the interest of the consumer, food producers spend billions of dollars each year on advertising and packaging, both for food bought in grocery stores and restaurants. The power of persuasion is very strong, and so food producers and restaurants try to make their products as appealing as possible to consumers, even if that means making false claims.

**Technology Factors** – Many new gizmos and gadgets have been developed to help make cooking easier. There are many new modern technologies we use everyday to help prepared meals.

**Past Experiences Factors** - Food preferences begin early in life and change as we are exposed to new people and places. As children, our choices were in the hands of our parents. However, as we get older, our experiences with new people and places increase, thereby broadening our food preferences and choices.



### **SUPPORT QUESTION – Food Guide Plan**

Canada's Food Guide is currently under revision. Soon there will be an on-line version of the guide that can be tailor-made to every Canadian. In the meantime, see what the American version has to offer. Simply go to the following website and input the required information. In a snap you will have a food guide made just for you, your age, your sex and your activity level. Go ahead ... what have you got to loose???

<http://www.mypyramid.gov/>

click: My Pyramid Plan

or

click: My Pyramid Tracker



## Key Questions for Lesson 2 (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 # 9 – Introduction to Food and Nutrition (10 marks)

Respond to the following statements:

1. List all the things you have eaten today
2. List foods which are high in carbohydrates
3. List all the kinds of breakfast cereal you can
4. List all the foods that have sugar in them
5. Name all the foods you can think of that contain protein
6. Write a name of a food for every letter in the alphabet (A to Z)



### KEY QUESTION # 10 – Canada's Food Guide (15 marks)

1. What is Canada's Food Guide?
2. Using the following chart, identify the four food groups and give 3 food examples of each group.

FOOD GROUP	3 FOOD EXAMPLES	RECOMMENDED NUMBER OF SERVINGS

3. Canada's Food Guide is based on the following guidelines:
  - (a) Enjoy ...
  - (b) Emphasize ...
  - (c) Choose ...
  - (d) Achieve ...
  - (e) Limit ...
4. What six messages does the Food Guide tell you?
5. Where do "other foods" fit into the Food Guide?  
Explain and give two (2) examples.
6. Explain how YOU can use the Food Guide:
  - (a) at home
  - (b) shopping
  - (c) eating out
7. Why is it important to eat foods from each group every day?



**KEY QUESTION # 11 – What Does Food Mean to YOU?** (12 marks)

Directions: Discovering your attitudes about food – how you feel about them. In your notebook, write the word in the blank space beside a food that best describes it (Match a Food in Column A with a description from Column B). Each word must be used once and only once.

COLUMN A

- Steak \_\_\_\_\_
- Brown Rice \_\_\_\_\_
- Hamburgers \_\_\_\_\_
- Coke \_\_\_\_\_
- Chocolate Bar \_\_\_\_\_
- Pizza \_\_\_\_\_
- Ice Cream Cone \_\_\_\_\_
- Sushi \_\_\_\_\_
- Toast \_\_\_\_\_
- Coffee \_\_\_\_\_
- Pancakes \_\_\_\_\_
- Grilled Cheese \_\_\_\_\_
- Potato Chips \_\_\_\_\_
- Cereal \_\_\_\_\_
- Milk \_\_\_\_\_
- Orange \_\_\_\_\_
- Bacon \_\_\_\_\_
- Green beans \_\_\_\_\_
- Baked potato \_\_\_\_\_
- Yogurt \_\_\_\_\_
- Fried Chicken \_\_\_\_\_
- Squash \_\_\_\_\_
- Roast beef \_\_\_\_\_
- Cake \_\_\_\_\_

COLUMN B

- Celebration food
- Foreign food
- Unpopular food
- Party food
- Fun food
- Lunch food
- Soul food
- Breakfast food
- Refreshing food
- Summer food
- “Company food”
- Family meal food
- Health food
- Punishment food
- Popular food
- Children
- Man
- Woman
- Expensive food
- Happy food
- Home
- Friendship
- Diet food
- Unusual food



**KEY QUESTION # 12 – Influences on Food Choices** (15 marks)

Directions: Give an example of one (1) food for each of the fifteen (15) factors which influence your food choices. Briefly describe each factor. Copy the following chart and fill in ALL the empty spaces.

	Influence	Example
1	<b>Psychological Factors</b> - foods often have an emotional meaning as a result of an association of time, place, person or situation. Taste, texture and appearance also play a role.	The smell of banana muffins reminds me of my grandmother. She made the best banana muffins ever!
2	Etc.	



### KEY QUESTION # 13 – Lesson 2 ... Important Terms (8 marks)

Match the definition with the word.

1. nutrient	(A) required for the building of all new cells within the body
2. nutrition	(B) when these foods are digested, they release sugars which are the main fuel which the brain and body uses every day
3. protein	(C) an adequate fluid intake is important to prevent dehydration, bladder and kidney infections, and to prevent constipation
4. fat	(D) chemical substances the body needs to function, grow, repair itself and produce energy
5. carbohydrates	(E) help the body turn food into energy and tissues
6. water	(F) needed for growth and maintenance of body structures
7. vitamins	(G) a science about how the body functions and what nourishment it needs for maximum performance
8. minerals	(H) a concentrated source of energy



### KEY QUESTION # 14 – Vitamin and Nutrient Poster Assignment (15 marks each = 30 marks total)

Directions: Choose one NUTRIENT and one VITAMIN from your class notes and create a POSTER for EACH which includes the following information:

*(Note: not all of this information is in your class notes. You will have to use other sources to gather all the required information)*

- TITLE** – your title must coloured, large and easily read
- DESCRIPTION** – describe the nutrient
- FUNCTION** - you must describe in detail the use of the nutrient in the body
- FOOD SOURCE** – include a list of at least five (5) different foods which are excellent sources (high sources) of the nutrient
- COLLAGE** – you should include a collage of pictures of the various foods that are HIGH in this nutrient
- DEFICIENCY** – you must state what results if there is TOO LITTLE of the nutrient in our diets
- TOXICITY/EXCESS** – you must state what results if there is TOO MUCH of the nutrient in our diets
- ADDITIONAL INFORMATION** – state additional interesting information and facts about your nutrient (you may include a diagram or chart)
- APPEARANCE** – neatness / spelling / grammar

Website References: <http://www.whfoods.com/nutrientstoc.php>  
<http://www.umass.edu/nibble/infolist.html>  
<http://dir.yahoo.com/Health/Nutrition/Nutrients/Vitamins/>



**KEY QUESTION # 15 – Food Expressions (10 marks)**

Directions: Translate the following expressions related to food. Copy the following chart and fill in ALL the empty spaces.

cool as a cucumber	_____	cut the cheese	_____
acts like a hot dog	_____	slow as molasses	_____
easy as pie	_____	you bought a lemon	_____
something's fishy	_____	in a jam	_____
flat as a pancake	_____	in a pickle	_____
she's a little shrimp	_____	top banana	_____
cauliflower ear	_____	plum job	_____
ham it up	_____	full of beans	_____
that's peachy	_____	full of bologna	_____
bad egg	_____	full of soup	_____
corny joke	_____	you're chicken	_____
cream of the crop	_____	in a stew	_____
sour grapes	_____	egghead	_____
smart cookie	_____	it's a piece of cake	_____
bring home the bacon	_____	make the dough	_____
earn the bread	_____	squash that idea	_____
bust your chops	_____	he was sauced	_____
I don't relish the idea	_____	spicy novel	_____
apple of my eye	_____	I'm on a roll	_____
pudding of a job	_____	couch potato	_____
butter up the teacher	_____	give him the raspberries	_____
two peas in a pod	_____	cold turkey	_____
bowl of cherries	_____	turkey	_____
nutty as fruitcake	_____	all clammed-up	_____
nutty	_____	your face is beat red	_____
sit & vegetate	_____	not my cup of tea	_____
that's the way the cookie crumbles	_____	What am I, chopped liver?	_____

# PPZ30

HEALTH FOR LIFE



LESSON 3

## Lesson 3 – Health Issues & Risks

Many teens face serious health threats from risk-taking behaviors such as unprotected sex and drug use, including alcohol and tobacco. In addition, a growing number of teens are developing medical conditions once thought to afflict only adults. Overweight and obesity have become widespread, contributing to a steady rise in high blood pressure and diabetes among children and adolescents.

Teens smoke, drink or commit violence for many reasons, including peer pressure, the need to assert their independence, to relieve stress and to satisfy their curiosity. However, risk-taking behavior initiated during adolescence often extends into adulthood and can contribute to serious illnesses, such as cardiovascular disease and cancer. Through routine medical exams, health care professionals can screen teens for risk-taking behaviors, identify early stages of physical or emotional disorders and provide information and counseling to both teens and parents.

### Understanding Health Risks



Part of becoming an adult is learning how to make responsible decisions. It is important to remember that the choices you make during adolescence can have an effect on your health for the rest of your life. The first step in becoming responsible for your health is to increase your awareness of risk behaviours in your life. **RISK BEHAVIOURS** are actions that can potentially threaten your health or the health of others

Canadian youth today are often considered to be in a state of crisis. Approximately half of all adolescents are at moderate to high risk of engaging in one or more self-destructive behaviors, including unsafe sex, teenage pregnancy and childbearing; drug and alcohol abuse; under achievement, failure, or dropping out of school; and delinquent or criminal behaviors. Many of these problem behaviors are interrelated. Some of these behaviors are related to the multitude of physical, social, and emotional changes adolescents are experiencing. Some are related to dysfunction in families; violence in the streets and at home; and media which portrays alcohol and drug use, extramarital sex, and violence as often-occurring, normal behaviors.

The consequences of risk behaviours may add up over time. **CUMULATIVE RISKS** are related risks that increase in effect with each added risk.

## ***The Difference between Boys and Girls***

Too many high school students nationwide continue to practice behaviors that place them at risk for serious health problems. Certain risk behaviors are more likely to be found among particular sub populations of students. For example, ***male students were more likely than female students to report:***

- rarely or never wearing seat belts;
- rarely or never wearing motorcycle helmets;
- being injured while exercising, playing sports, or being physically active;
- driving after drinking alcohol;
- weapon carrying;
- gun carrying;
- participating and being injured in a physical fight;
- weapon carrying on school property;
- being threatened or injured with a weapon on school property;
- being in a physical fight on school property;
- current smokeless tobacco use;
- current cigar use;
- episodic heavy drinking;
- lifetime and current marijuana use;
- current cocaine use;
- lifetime heroin, illegal steroid, and injected drug use;
- initiating cigarette, alcohol, and marijuana use before age 13 years;
- smokeless tobacco, alcohol, and marijuana use on school property;
- being offered, sold, or given an illegal drug on school property;
- initiating sexual intercourse before age 13 years;
- having had >4 sex partners during their lifetime;
- alcohol or drug use at last sexual intercourse;
- their partner not using birth control pills before last sexual intercourse; and
- being at risk for overweight and being overweight.



***In contrast, female students were more likely than male students to report:***

- being forced to have sexual intercourse;
- feeling sad or hopeless;
- suicide-related behaviors;
- their partner not using a condom at last sexual intercourse;
- drinking less than 3 glasses/day of milk;
- fasting to lose weight or control weight gain;
- taking diet pills, powders, or liquids to lose weight or control weight gain;
- taking laxatives or vomiting to lose weight or control weight gain;
- not participating in vigorous or moderate physical activity;

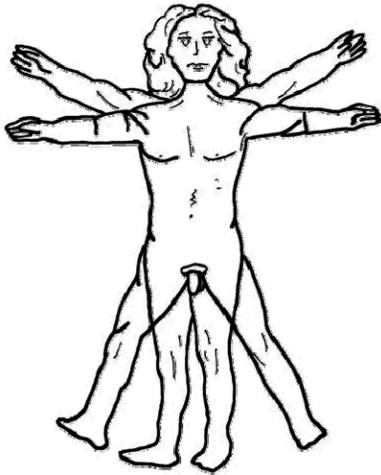
- not participating in strengthening exercises; and
- not participating on sports teams

### **Do young men have different health risks than young women?**

Yes. Young men don't wear seat belts as often as young women do. They're also more likely to carry weapons, to get into physical fights, to use smokeless tobacco or marijuana, to drink alcohol heavily, and to have more sexual partners. On the other hand, young women have some special risks. They try to commit suicide more often and they try to lose weight in harmful ways more often than young men.

## **Relationship between Adolescence and High Risk Behavior**

Three fundamental human needs are crucial to survival and to healthy development. First is the need to be a valued member of a group that provides mutual support and caring relationships. Second is the need to become a socially competent individual who has the skills to cope successfully with life. Third is the need to believe in a promising future with real opportunities. The purpose here is to examine how high risk behavior interferes with the developmental tasks required to meet these needs during adolescence.



### **Developmental changes**

Young adolescents experience biological, cognitive, and psychological changes that lead them to reappraise themselves and their relationships. The need to be a valued member of a group demands their attention and peers become increasingly important in meeting this developmental need. They are vulnerable to the influence of others, and seek out approval and recognition. Often it seems that young adolescents are so absorbed by the physical changes and emotional turmoil of puberty that they are unteachable. Educators and parents may simply make the best of a difficult situation by reducing their

interaction with them. They attribute many of the problems children face to their being at "that age."

### **School changes**

As these children enter high school they go through many changes simultaneously. Suddenly they must go from having a stable relationship with one adult teacher and one set of classmates to having as many as seven or eight teachers and as many as four sets of classmates--all in one day! This can make it difficult to establish stable peer groups and to form close, supportive relationships with adults. The feelings of uncertainty and the stress of these changes are often accompanied by disengagement from school and the onset of experimentation with drugs.



### **Risk factors**

Factors such as rebelliousness, indifference to school, tolerance for social deviance, family disruption, and parental tolerance of drug use are frequently blamed for initiation into high risk behaviors. Young people are often overwhelmed, feel controlled by their emotions, and use drugs to avoid these feelings, or to hide their feelings of inadequacy. Many adolescents use drugs to relax and to feel more comfortable with themselves. This is a critical time when they need positive, supportive relationships with caring adults. They need guidance and encouragement so that they can develop the skills necessary to cope successfully with life.

### **Developmental tasks of adolescents**

Several developmental tasks essential for moving into adulthood and forming a philosophy of life begin at this time. The young adolescent begins to develop the ability to relate intimately to others. The rate of physiological development usually surpasses the rate of development of social skills and emotional maturity. This phenomenon is a source of considerable frustration and anxiety. Gradually, adolescents develop coping skills to handle stress, and they begin to decide who they are and develop their own identity. Drug abuse, however, forces the individual to become isolated and to withdraw into the self. Risky behavior at this stage of life interferes with the developmental task of becoming socially competent.

### **Mixed messages**

Compounding the confusion that accompanies change and normal development during this stage, young people enter a society that simultaneously denounces and glorifies the use of high risk behaviors such as violence, alcohol, and extramarital sex. Such mixed messages create confusion and uncertainty in choosing a life course at a time when they are developing habits for life. These early adolescent years represent a critical time when poorly informed decisions have lifelong consequences.

### **Thrill-seeking behavior**

Young adolescents may see high risk behaviors as experimental, thrill-seeking, and a way to impress their peers. They are incapable of realizing the consequences of their actions. Those who experience the results they desire may learn to rely more and more on such behaviors to avoid reality at this inherently difficult time, thus setting a pattern for life. Young adolescents make decisions that affect their entire life course, even though they are immature in cognitive development, knowledge, and social experience.

## Understanding of risk-taking

A better understanding of the meaning of risk-taking behavior from the adolescent's perspective could provide valuable insight into this behavior. Engaging in potentially life-threatening activities such as substance abuse may appear casual, recreational, and tension-relieving to adolescents. They are often unaware that these activities carry very high risks, and the adverse effects may be near-term (such as accidents related to drug use), or long-term (such as cardiovascular disease). Long-term effects often entail a narrowing of options available to the young adult, such as with a school-age mother who drops out of high school and diminishes her employment prospects for life. The only way to avoid the consequences of some of the most serious risk behaviours is to practice abstinence. **ABSTINENCE** is avoiding harmful behaviours. Choosing to abstain from high-risk behaviours is one of the most important health decisions you can make as a teen.

## Teen Health Risks

During your teenage years, some risks are good, like trying new activities or sports. Going away to camp or to school in a different place from where your family lives can be exciting; it's an adventure. You are taking a risk, doing something you haven't done before and feeling unsure about it. Usually those risks pay off. You make new friends, develop new talents, expand your interests and increase your self-confidence. You become more independent with every challenge you successfully tackle.

However, the following risk-taking behaviours usually have negative effects.

### Preventable Accidents

Modern life brings many worries for young people (and their parents) such as bullying, drugs and the dangers from strangers. However, one of the most common cause for concern is the possibility of getting injured. This can happen at home, school, work, during sports...anywhere and at anytime! Many of us believe injuries are accidents. If you think about it though, most injuries are predictable and preventable. The facts tell us that it's actually misleading to say that an injury was caused by an "accident." To keep yourself and others safe, you need to know why accidents happen and how to prevent them. Most injuries, 95 percent, are the result of a predictable and preventable circumstances!



Most of the deaths among youth between the ages of 10 and 24 were from four causes: motor vehicle crashes, other types of accidents, homicide and suicide. To help keep safe, use seat belts in cars,

drive sober and don't ride with friends who drive while under the influence of drugs or alcohol. Remember to always wear a helmet when biking, skateboarding and skiing. Be alert to signs of depression. Also, be aware of the dangers of handling guns.

### **Sex / Sexually Transmitted Infections / Unwanted Pregnancy**

Sex! One little word that causes so much confusion, worry and problems. But it shouldn't be that way. Your sexuality is part of who you are, it's part of life. Sexual activity often involves getting close to another person. Being close allows infections present in one person to be passed on to the other. You can't be much closer to anyone when you are sexually intimate, so it isn't surprising if germs get spread that way. Sexually transmitted infections (also called sexually transmitted diseases or STDs) pose a threat to the general health, well-being, and reproductive capacity of a sizeable number of Canadians. Sexually risky behaviours can increase your chances of acquiring a sexually transmitted infection (STI). STIs include chlamydia, gonorrhea, genital herpes, human papillomavirus and syphilis.

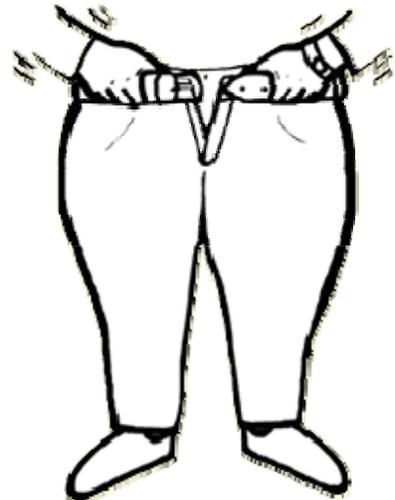
STD or STI? – the term STI is now commonly used in the place of STD. STI is more encompassing, including infections that may be asymptomatic. The term STI is used more frequently on this site but please note that the term STD may still be used. There are at least 25 different STIs. What they all have in common is that they can be spread by sex (vaginal, oral and anal).

Many sexually active young people are faced with unintended pregnancy scares or actual pregnancies at some stage. Of course, this can be avoided through practicing safe sex by using contraception or by abstinence. Be sure to inform yourself about sex, relationships and the health risks involved with early sexual activity.

### **Obesity**

**OBESITY** can be defined as an excessive accumulation of body fat, which results in individuals being at least 20% heavier than their ideal body weight. "Overweight" is defined as any weight in excess of the ideal range. Obesity is a common eating disorder associated with adolescence.

Although children have fewer weight-related health problems than adults, overweight children are at high risk of becoming overweight adolescents and adults. Overweight people of all ages are at risk for a number of health problems including heart disease, diabetes, high blood pressure, stroke and some forms of cancer.



Obesity can weaken physical health and well-being, and can shorten life expectancy. It can also lead to social disabilities and unhappiness, which may cause stress and even

mental illness. In the past two decades, obesity rates have more than doubled among children and adolescents. This trend is strongly related to non-active lifestyles and a national craving for foods high in refined carbohydrates and fats.

### **Eating Disorders**

Most of those who have eating disorders are women between the ages of 12 and 25. An eating disorder is an obsession with food and weight that harms a person's well-being. Although we all worry about our weight sometimes, people with an eating disorder go to extremes to keep from gaining weight. There are two main eating disorders: anorexia nervosa and bulimia. Anorexia nervosa and bulimia are potentially life-threatening--they can lead to heart failure and death. Anorexic girls perceive themselves as overweight, regardless of how emaciated they become. Teens with binge-eating disorders can develop high blood pressure, high cholesterol and Type 2 diabetes.

### **Substance Abuse**

At some stage in our lives, most people experiment with alcohol or drugs, or both. Being curious about life and all its offerings is perfectly normal. However, it's vital you know what you're getting into when making choices relating to alcohol and drugs. There are the possibilities of becoming addicted, damaging your health, neglecting friends and relationships, losing your interests, and breaking the law. These are all factors that you need to weigh before trying alcohol or drugs.

In order to purchase alcohol you need to be 19 in Canada, otherwise both you and the supplier are breaking the law. While there has been recent inroads towards decriminalizing cannabis (or marijuana) it still remains illegal with many other drugs.

Smoking kills thousands of Canadians each year. It's very addictive and many people who start smoking regularly, carry on until the day they die, even though they have tried to stop many times. Most smokers take up smoking in their school years.

Just remember - weigh up the risks and if you really must do it - be aware of the dangers and risks and try to minimize them. Although the risks are serious many people are still smoking. The trouble is that the younger you are when you start, the worse the effects on your health. There are three main types of substances that can lead to destructive lifestyles:

- tobacco
- alcohol
- medicines & drugs



## SUPPORT QUESTION – Smoking Quiz

1. Go to one of the following websites:

<http://www.intelihealth.com/IH/ih/IH/WSIHW000/22017/24554/339536.html?d=dmConte>  
nt

[http://www.cdc.gov/tobacco/tips\\_4\\_youth/quiz.htm](http://www.cdc.gov/tobacco/tips_4_youth/quiz.htm)

[http://www.yourfamilyshealth.com/cardiology/smoking\\_quiz/](http://www.yourfamilyshealth.com/cardiology/smoking_quiz/)

[http://quiz.ivillage.co.uk/uk\\_health/tests/smoking.htm](http://quiz.ivillage.co.uk/uk_health/tests/smoking.htm)

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

## The Health Risks of Tobacco

You can eat five to ten servings of fruit and vegetables a day and exercise regularly, but healthy behaviour means little if you smoke. The message that 'smoking is bad for you' is an old one, so not everyone gives it their full attention. Unless they quit, up to half of all smokers will die from their smoking, most of them before their 70th birthday and only after years of suffering a reduced quality of life.

### *How Do Cigarettes Damage Your Health?*

Cigarettes contain more than 4000 chemical compounds and at least 400 toxic substances.

When you inhale, a cigarette burns at 700°C at the tip and around 60°C in the core. This heat breaks down the tobacco to produce various toxins.

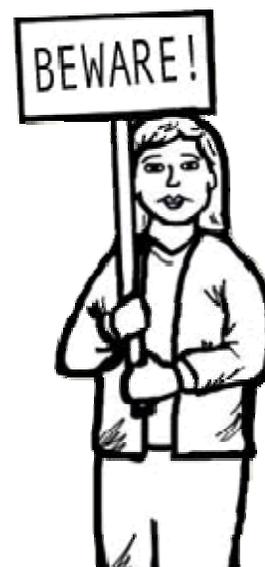
As a cigarette burns, the residues are concentrated towards the butt.

The products that are most damaging are:

- **tar**, a carcinogen (substance that causes cancer)
- **nicotine** is addictive and increases cholesterol levels in your body
- **carbon monoxide** reduces oxygen in the body
- components of the gas and particulate phases cause chronic obstructive pulmonary disorder (COPD).

The damage caused by smoking is influenced by:

- the number of cigarettes smoked
- whether the cigarette has a filter
- how the tobacco has been prepared.



## Smoking Affects How Long You Live

Research has shown that smoking reduces life expectancy by seven to eight years. On average, each cigarette shortens a smoker's life by around 11 minutes

The number of people under the age of 70 who die from smoking-related diseases exceeds the total figure for deaths caused by breast cancer, AIDS, traffic accidents and drug addiction.

Non-smokers and ex-smokers can also look forward to a healthier old age than smokers.

## Major Diseases Caused By Smoking

### Cardiovascular disease

Cardiovascular disease is the main cause of death due to smoking.

Hardening of the arteries is a process that develops over years, when cholesterol and other fats deposit in the arteries, leaving them narrow, blocked or rigid. When the arteries narrow (atherosclerosis), blood clots are likely to form. Blood clots in the heart and brain are the most common causes of sudden death.

Smoking accelerates the hardening and narrowing process in your arteries: it starts earlier and blood clots are two to four times more likely.

Cardiovascular disease can take many forms depending on which blood vessels are involved, and all of them are more common in people who smoke.



- Coronary thrombosis: a blood clot in the arteries supplying the heart, which can lead to a **heart attack**. Around 30 per cent are caused by smoking.
- Cerebral thrombosis: the vessels to the brain can become blocked, which can lead to **collapse, stroke** and **paralysis**.
- If the kidney arteries are affected, then **high blood pressure** or kidney failure results.
- Blockage to the vascular supply to the legs may lead to **gangrene** and **amputation**.

## Cancer

Smokers are more likely to get cancer than non-smokers. This is particularly true of lung cancer, throat cancer and mouth cancer, which hardly ever affect non-smokers.

The link between smoking and lung cancer is clear.

- Ninety percent of lung cancer cases are due to smoking.
- If no-one smoked, lung cancer would be a rare diagnosis - only 0.5 per cent of people who've never touched a cigarette develop lung cancer.
- One in ten moderate smokers and almost one in five heavy smokers (more than 15 cigarettes a day) will die of lung cancer.

The more cigarettes you smoke in a day, and the longer you've smoked, the higher your risk of lung cancer. Similarly, the risk rises the deeper you inhale and the earlier in life you started smoking.

For ex-smokers, it takes approximately 15 years before the risk of lung cancer drops to the same as that of a non-smoker.

If you smoke, the risk of contracting mouth cancer is four times higher than for a non-smoker. Cancer can start in many areas of the mouth, with the most common being on or underneath the tongue, or on the lips.

Other types of cancer that are more common in smokers are:

- bladder cancer
- cancer of the oesophagus
- cancer of the kidneys
- cancer of the pancreas
- cervical cancer



## COPD

Chronic obstructive pulmonary disease (COPD) is a collective term for a group of conditions that block airflow and make breathing more difficult, such as:

- **emphysema** - breathlessness caused by damage to the air sacs (alveoli)
- **chronic bronchitis** - coughing with a lot of mucus that continues for at least three months.

Smoking is the most common cause of COPD and is responsible for 80 per cent of cases.

<p><b>Female smokers are at an extra risk for</b></p> <ul style="list-style-type: none"> <li>• Cancer of the cervix (womb)</li> <li>• Menstrual problems</li> <li>• Fertility problems</li> <li>• Spontaneous abortion (miscarriage)</li> </ul>	<p><b>Male smokers have an extra risk of</b></p> <ul style="list-style-type: none"> <li>• Erectile dysfunction (impotence)</li> <li>• Fertility problems (problems with sperm)</li> </ul>
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### **How harmful are cigars and pipes?**

Cigar and pipe smokers experience the same types of health problems as cigarette smokers.

### **What about other types of tobacco?**

Smoking isn't the only type of tobacco that causes health problems. Smokeless tobacco, including chewing tobacco and snuff, contain many of the same harmful and addictive substances as cigarettes, pipes and cigars. Smokeless tobacco is a major cause of cancer of the mouth and throat. It can also cause serious dental health problems including recession of the gums, tooth loss and discolouration of the teeth and gums.

### **Benefits of Quitting Smoking**

Almost everyone knows that smoking is bad for you but do you know all the benefits of quitting? For the vast majority of smokers, quitting smoking is the best single thing they can do to improve the length and quality of their lives. Persons who quit smoking immediately begin to reduce their chances of developing heart disease, cancer, breathing problems, or infections.

Former smokers also live longer than those who continue to smoke. For example, those who quit before age 50 have only half the chance of dying in the next 15 years compared with those who continue to smoke.

Women who stop smoking before pregnancy or early in their pregnancy reduce their chances of having a low birth weight baby. Quitting can also reduce the chances of stillbirth, early infant death, and improve the health of the woman.

**Within 8 hours**

carbon monoxide level drops in your body  
oxygen level in your blood increases to normal

**Within 48 hours**

your chances of having a heart attack start to go down  
sense of smell and taste begin to improve

**Within 72 hours**

bronchial tubes relax making breathing easier  
lung capacity increases

**Within 2 weeks to 3 months**

circulation improves  
lung functioning increases up to 30%

**Within 6 months**

coughing, sinus congestion, tiredness and shortness of breath improve

**Within 1 year**

risk of smoking-related heart attack is cut in half

**Within 10 years**

risk of dying from lung cancer is cut in half

**Within 15 years**

risk of dying from a heart attack is equal to a person who never smoked.

**Does every smoker benefit by quitting?**

The health benefits of quitting occur for all types of smokers, men and women, young and old. Even those who have developed smoking-related problems like heart disease can benefit. For example, compared to continuing smokers, people who quit smoking after having a heart attack reduce their chances of having another heart attack by 50%. They also reduce their risk of dying prematurely by 50%.

**What are the other benefits of quitting?**

Although reducing your chances of premature death and illness is important, they aren't the only benefits of quitting smoking.

- Think of the money you will save by not having to buy tobacco, lighters, ashtrays, matches and so on.
- Your costs for cleaning clothes, carpets, and furniture may go down.
- The re-sale value of your car and house may go up.
- Your clothes may last longer (no chance of accidentally burning a hole).
- Your life and house insurance premiums may go down.

- Your sense of taste and smell will be enhanced. You will enjoy your food more.
- You will look and feel younger. Smoking causes wrinkling and the appearance of premature aging.
- You will have more energy to do the things you love.
- No more yellow teeth or fingers.
- You'll feel proud of your ability to overcome something so challenging. Many smokers remember the exact day they quit because it is a source of great pride.
- Cigarettes will no longer control your life. You will be setting a great example for children and other smokers.
- No need to worry about which restaurant you go to or whether you can smoke in a particular place.
- No more looks of disapproval or feelings of guilt. No more nagging from people asking when you're going to quit.

The message is clear. **It's never too late to quit smoking.** The sooner you quit the better, but even quitting after smoking for many years will bring an array of important benefits.



#### SUPPORT QUESTION – Alcohol Quiz

1. Go to one of the following websites:  
<http://notes.camh.net/efeed.nsf/feedback>  
<http://www.pamf.org/teen/risk/alcohol/quiz.html>  
<http://www.metrohealth.org/HI/indexes/HEAL4651.htm>
2. Complete the test. Print and carefully read the results.



## The Health Risks of Alcohol

### What Is Alcohol?

Alcohol is created when grains, fruits, or vegetables are **fermented**. Fermentation is a process that uses yeast or bacteria to change the sugars in the food into alcohol. Fermentation is used to produce many necessary items - everything from cheese to medications. Alcohol has different forms and can be used as a cleaner, an antiseptic, or a sedative.

So if alcohol is a natural product, why do teens need to be concerned about drinking it? When people drink alcohol, it's absorbed into their bloodstream. From there, it affects the central nervous system (the brain and spinal cord), which controls virtually all body functions.

### How Does It Affect the Body?

Alcohol is a **DEPRESSANT**, which means it slows the function of the central nervous system. Alcohol actually blocks some of the messages trying to get to the brain. This alters a person's perceptions, emotions, movement, vision, and hearing.

In very small amounts, alcohol can help a person feel more relaxed or less anxious. More alcohol causes greater changes in the brain, resulting in **INTOXICATION**. People who have overused alcohol may stagger, lose their coordination, and slur their speech. They will probably be confused and disoriented. Depending on the person, intoxication can make someone very friendly and talkative or very aggressive and angry. Reaction times are slowed dramatically - which is why people are told not to drink and drive. People who are intoxicated may think they're moving properly when they're not. They may act totally out of character.

When large amounts of alcohol are consumed in a short period of time, **ALCOHOL POISONING** can result. Alcohol poisoning is exactly what it sounds like - the body has become poisoned by large amounts of alcohol. Violent vomiting is usually the first symptom of alcohol poisoning, as the body tries to rid itself of the alcohol. Extreme sleepiness, unconsciousness, difficulty breathing, dangerously low blood sugar, seizures, and even death may result.

### Why Do Teens Drink?

Experimentation with alcohol during the teen years is common. Some reasons that teens use alcohol and other drugs are:

- curiosity
- to feel good, reduce stress, and relax



- to fit in
- to feel older

From a very young age, kids see advertising messages showing beautiful people enjoying life - and alcohol. And, because many parents and other adults use alcohol socially, having beer or wine with dinner, for example, alcohol seems harmless to many teens.

## ***How Does Alcohol Damage Your Health?***

### **Alcohol affects your brain**

Alcohol is the most socially accepted addictive substance. Drinking alcohol leads to a loss of coordination, poor judgment, slowed reflexes, distorted vision, memory lapses, and even blackouts. Many people mistakenly believe alcohol is a stimulant, like coffee, when in fact it is a depressant.



A "hang over" is what happens when your body enters alcohol withdraw and the head aches you get are caused by extreme dehydration of your brain - your brain is literally being pulled away from your skull, leading to throbbing aches and sharp pains at attachment points like the temples and base of the neck.

### **Alcohol affects your body**

Alcohol can damage every organ in your body. It is absorbed directly into your bloodstream and can increase your risk for a variety of life-threatening diseases, including cancer. Alcohol dehydrates you: it does not quench thirst, it makes thirst worst. Alcohol is also extremely high in empty calories. Drinking alcohol while you are pregnant can cause permanent brain damage and often causes physical deformations in babies.

Alcohol causes varying degrees of the following side effects in EVERYONE who uses it; dullness of sensation, lowered sensory motor skills, lowered reactive or reflexive motor responses, impaired thought processes, impaired memory, impaired judgement, sleep or sleeplessness, and in extreme cases can cause coma and death.

70% of alcoholics and alcohol abusers will suffer the following irreversible physical side effects; cirrhosis of the liver (fatal in over 60% of cases), "cauliflowering" of the nose and ears (where your ears and nose become cauliflower shaped), permanent restructuring of the brain including loss of long term memory, heart problems, obesity, premature dementia (partial and full), loss of bladder control and slurred speech even when sober.

### Alcohol affects your self-control

Alcohol depresses your central nervous system, lowers your inhibitions, and impairs your judgment. Drinking can lead to risky behaviors, such as driving when you shouldn't, or having unprotected sex. One of the first things to go when you have been drinking alcohol is your sense of "good judgement" and your "inhibitions".

### Alcohol can kill you

Drinking large amounts of alcohol at one time or very rapidly can cause alcohol poisoning, which can lead to coma or even death. Driving and drinking also can be deadly.

### Alcohol can hurt you—even if you're not the one drinking

If you're around people who are drinking, you have an increased risk of being seriously injured, involved in car crashes, or affected by violence. At the very least, you may have to deal with people who are sick, out of control, or unable to take care of themselves.

#### Percentage of Blood Alcohol and How it Effects Behavior

<i>Blood Alcohol in Percentage</i>	<i>Behavioral Effects</i>
<b>0.05</b> (5%)	Lowered alertness, "feeling fine", no inhibitions, lack of "good judgement".
<b>0.10</b> (10%)	Slowed reaction times, impaired motor functions, recklessness and "dare devil" behavior.
<b>0.15</b> (15%)	Large lapses in reaction time and judgement, some short term memory loss.
<b>0.20</b> (20%)	Marked depression, "coming down", decreasing sensory and motor ability, slurring words.
<b>0.25</b> (25%)	Severe motor disturbance (stumbling, staggering, falling down), little to no sensory input (can't smell or taste, blurred vision)
<b>0.30</b> (30%)	Stuporous (totally unaware of what is going on around you) but still conscious, no awareness of pain, no pain reflexes.
<b>0.35</b> (35%)	Unconscious and in some cases in distress, vomiting occurs, no motor skills (can't roll over when vomiting), similar to being under surgical anesthesia. Occasionally, coma can occur at this level.



### **SUPPORT QUESTION – Alcohol – Yes or No?**

Fold a sheet of paper in half. On the left side, list reasons why drinking alcohol is risky for teens. On the right side, list alternatives to alcohol use.

### ***How Can YOU Avoid Drinking?***

If all your friends drink and you don't want to, it can be hard to say "no thanks." No one wants to risk feeling rejected or left out. Different strategies for turning down alcohol work for different people. Some people find it helps to say no without giving an explanation, others think offering their reasons works better ("I'm not into drinking," "I have a game tomorrow," or "my uncle died from drinking," for example).

If saying no to alcohol makes you feel uncomfortable in front of people you know, blame your parents or another adult for your refusal. Saying, "My parents are coming to pick me up soon," "I already got in major trouble for drinking once, I can't do it again," or "my coach would kill me," can make saying no a bit easier for some.

If you're going to a party and you know there will be alcohol, plan your strategy in advance. You and a friend can develop a signal for when it's time to leave, for example. You can also make sure that you have plans to do something besides just hanging out in someone's basement drinking beer all night. Plan a trip to the movies, the mall, a concert, or a sports event. You might also organize your friends into a volleyball, bowling, or softball team - any activity that gets you moving.

Girls or guys who have strong self-esteem are less likely to become problem drinkers than people with low self-esteem.

### **Warning Signs of a Drinking Problem**

The following behaviors may indicate an alcohol or other drug problem, but it's important to note that some also reflect normal teenage growing pains. Experts believe that a drinking problem is more likely if you notice several of these signs at the same time, if they occur suddenly, and if some of them are extreme in nature:

- Mood changes: flare-ups of temper, irritability, and defensiveness
- School problems, including poor attendance, low grades, and/or recent disciplinary action
- Rebelling against family rules
- Switching friends, along with a reluctance to have you get to know the new friends
- A "nothing matters" attitude, for example sloppy appearance, a lack of involvement in former interests, and general low energy

- Finding alcohol in your child's room or backpack, or smelling alcohol on his or her breath
- Physical or mental problems: memory lapses, poor concentration, bloodshot eyes, lack of coordination, or slurred speech

If you think you or your friend(s) may be in trouble with drinking, you can protect yourself and them from years of pain by seeking advice from a mental health professional specializing in alcohol problems as soon as possible.

## The Health Risks of Medicines and Drugs

Medicines are taken for many different reasons. There are countless medicines that treat a wide range of health problems. **MEDICINES** are drugs that are used to treat or prevent disease or other conditions. **DRUGS** are substances other than food that change the structure or function of the body or mind. A drug is any chemical that produces a therapeutic or non-therapeutic effect in the body. **CHEMICALS**, on the other hand, are a broad class of substances -- including drugs -- that may or may not produce noticeable effects in the body. Many chemicals (such as tin, lead, gold) have harmful effects on the body, especially in high doses. Most foods are not drugs.

Alcohol is a drug -- not a food, in spite of the calories it provides. Nicotine is a chemical that is also a drug. The group of "illegal" drugs includes dangerous chemicals that have only toxic actions, such as inhalants. All medicines are drugs but not all drugs are medicines. Medicines can be sorted into four broad categories:

1. Medicines that help prevent disease (vaccines & antitoxins)
2. Medicines that fight pathogens or infectious agents that cause disease (antibiotics)
3. Medicines that relieve pain (analgesics)
4. Medicines that maintain or restore health and regulate the body's systems (allergy pills, insulin, antidepressants)



### Why Do Drugs?

Everyone has something to say about drugs, and fiction can get in the way of facts. It's no good just knowing that drugs are dangerous - you need to know how and why. People don't use drugs only because they are having problems. Some use them for the same reasons they use alcohol:

- they enjoy the short-term effects
- their friends have tried them or use them
- they want the same kind of experience that they get from drinking a lot of alcohol

- they are curious about the effects
- the drugs are easily available
- as part of growing up, they might want to 'break the rules'
- because they are bored.

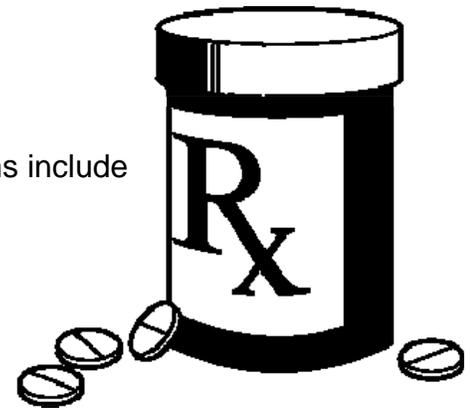
This doesn't mean that they will become drug addicts or seriously damage their health, although some young people do die from strong adverse reactions. However, taking drugs can become a habit. Some people depend on them just to cope with normal life. Their drug use is likely to have a serious effect on their physical and mental health. Many addicts also resort to theft and burglary to get enough money to pay for drugs and consequently get into trouble with the law.

Whatever you might hear, taking illegal drugs is not a part of normal life, and most people who do try it don't carry on.

### Who is At Risk?

Teenagers at risk for developing serious alcohol and drug problems include those:

- with a family history of substance abuse
- who are depressed
- who have low self-esteem
- who feel like they don't fit in or are out of the mainstream



## Teenagers abuse a variety of drugs, legal and illegal

### Alcohol

**Tobacco:** Teens who smoke are three times more likely than nonsmokers to use alcohol, eight times more likely to use marijuana, and 22 times more likely to use cocaine. Smoking is associated with a host of other risky behaviors, such as fighting and engaging in unprotected sex.

**Prescribed medications** (such as Ritalin and OxyContin)

**Inhalants:** Known by such street names as huffing, sniffing and wanging, the dangerous habit of getting high by inhaling the fumes of common household products is estimated to claim the lives of more than a thousand children each year. Many other young people, including some first-time users, are left with serious respiratory problems and permanent brain damage.

**Over-the-counter cough, cold, sleep, and diet medications** (such as Dexatrim)

**Marijuana:** Many Canadians are currently using it and some will require treatment for marijuana abuse and dependence.

**Stimulants:** The possible long-term effects include tolerance and dependence, violence and aggression, malnutrition due to suppression of appetite. Crack, a powerfully addictive stimulant, is the term used for a smoke able form of cocaine

**Club drugs:** This term refers to drugs being used by teens and young adults at all-night dance parties such as "raves" or "trances," dance clubs, and bars. Ecstasy, Rohypnol (Rophies), ketamine, methamphetamine, and LSD are some of the club or party drugs gaining popularity. Because some club drugs are colorless, tasteless, and odorless, they can be added unobtrusively to beverages by individuals who want to intoxicate or sedate others. In recent years, there has been an increase in reports of club drugs used to commit sexual assaults.

**Depressants:** These are drugs used medicinally to relieve anxiety, irritability, and tension. There is a high potential for abuse and, combined with alcohol, effects are heightened and risks are multiplied.

**Heroin:** Several sources indicate an increase in new, young users across the country who are being lured by inexpensive, high-purity heroin that can be sniffed or smoked instead of injected. Heroin has also been appearing in more affluent communities.

**Steroids:** Anabolic steroids are a group of powerful compounds closely related to the male sex hormone testosterone.



The use of illegal drugs is increasing, especially among young teens. The average age of first marijuana use is 14, and alcohol use can start before age 12. The use of marijuana and alcohol in high school has become common.

Drug use is associated with a variety of negative consequences, including increased risk of serious drug use later in life, school failure, and poor judgment which may put teens at risk for accidents, violence, unplanned and unsafe sex, and suicide.

### Using any illegal drug is risky because:

- You never know exactly what's in it.
- It's probably not pure, and you don't know what's been mixed with it.
- You don't know how strong it is and could accidentally overdose which could be fatal.
- You can't be sure what effect it will have on you, even if you've taken it before.
- It's very dangerous to mix different drugs, including drugs and alcohol.

- Sharing needles is also dangerous as you can get infections such as HIV or hepatitis B or C.
- It is a criminal offence - you might find you can't get a travel visa, or even a job later on. Some jobs - such as the police, armed forces and some childcare jobs - require a police search. Some firms keep records of people who have been convicted in court, which employers can search.

<b>HEALTH RISKS: Commonly Abused Substances</b>				
<b>Category</b>	<b>Drug</b>	<b>Dependence Potential</b>	<b>Common Complications</b>	<b>Possible Effects</b>
Alcohol	Beer, wine, liquor	Yes	Severe impairment of all physical and mental functions; high risk of choking or injury from falls or accidents; loss of consciousness; coma; death due to anesthesia of brain centers controlling breathing and heart rate.	Muscle relaxation; impaired motor control, memory and judgment; depression; intoxication.
Cannabis	Marijuana, hashish, hashish oil	Yes	Fatigue; reactions ranging from mild anxiety to panic and paranoia; confusion, disorientation; hallucinations and distortion of sense perceptions.	Altered sense of time and visual perception; euphoria; memory interference; reduced coordination and reflex response capacity.
Hallucinogens	LSD (acid), psilocybin, peyote, mescaline, many other natural and synthetic hallucinogens	Unknown	Impaired judgment leading to impulsive actions; paranoia; rapid mood swings; "bad trip" - fear, anxiety, paranoia, panic, and hallucinations to match; exhaustion after use; depression; fears - often of death, of one's mind not working right, or flashbacks.	Altered sense of time, space, and visual perception; disorientation; hallucinations; nausea; dilated pupils; cross sensory perceptions; dizziness; increased temperature, blood pressure and heart rate; sweating and chills.
Narcotics	Heroin, codeine, morphine, opium, percodan, percocet, fentanyl	Yes	Shallow and slow breathing; dizziness; vomiting; sweating; convulsions; coma; possible death.	Euphoria; drowsiness; nausea; respiratory depression.

Nicotine	Cigarette, cigar, pipe smoking; chewing tobacco	Yes	Increased risk of: heart attack; cardiovascular disease; mouth, throat and lung cancer and other pulmonary diseases.	Increased heart rate and blood pressure; irritation of eyes, nose and respiratory tract; shortness of breath; decreased sensitivity to taste; depression.
Sedatives	Barbiturates, tranquilizers, methaqualone, other depressant drugs	Yes	Shallow respiration; weak and rapid pulse; coma; possible death from depression of central nervous system functions.	Drowsiness; slurred speech; disorientation; impaired coordination.
Steroids	Anabolic steroids	Yes	Aggressive behavior; rage; psychosis; reduced fertility; stroke; liver damage; increased cancer risk.	Acne; aggressive behavior; anger management problems; cholesterol imbalance; impotence; psychosis.
Stimulants	Cocaine, crack, speed, amphetamines, diet pills, and many other natural and synthetic stimulant products	Yes	Agitation; irritability; dizziness; confusion; tactile or visual hallucinations; seizure; convulsion; stroke; possible death. After effects of exhaustion and depression.	Increased alertness; increased pulse and blood pressure; euphoria; pupil dilation; insomnia; loss of appetite. Fatigue and some depression after effects wear off.
“Club Drugs”	GHB, Rohypnol, Ketamine, Ecstasy	Yes for some in this category	Nausea, vomiting, dehydration, impaired coordination, confusion, muscle spasms, blurred vision, dizziness, slurred speech, hallucinations, unconsciousness, amnesia, aggressive behavior, rapid mood swings.	These drugs are often associated with sexual assaults due to their amnesia inducing and intoxication like effects. Partial or complete amnesia; intoxication effects similar to alcohol. Ketamine can create hallucinations.



### SUPPORT QUESTION – Drugs and Society

Substance abuse had effects on both individuals and on society as a whole. List as many dangerous effects of drugs you can think of that affect the user, the user's family and the rest of society.

### *How Do Drugs Affect Your Body?*

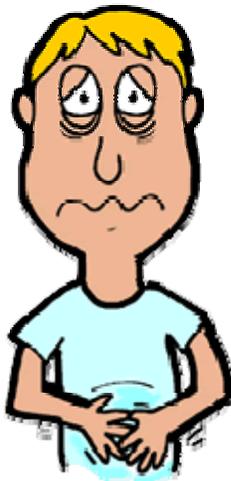
Taking drugs can make a person feel **tense and panicky**. They may be shaking all over or very jumpy and feel scared that they are having a heart attack or dying.

- Calm them and be reassuring.
- Explain that the feelings will pass.
- Settle them in a quiet, dimly lit room.
- If they start breathing very quickly, calm them down and tell them to take long, slow breaths.

Some drugs can make a person **feel drowsy**. Some signs include drooping eyelids, mumbled speech, a nodding head, or an unwillingness to move.

- Calm them and be reassuring.
- Don't frighten or startle them, or let them exert themselves.
- Never give coffee or other drink to rouse them.
- If symptoms persist, place them in the recovery position so they won't choke if they vomit.
- Call an ambulance if necessary.

Some drugs affect the body's temperature control and can cause **overheating**. Warning signs include: cramps, fainting, headache or sudden tiredness. Move them to a cooler, quiet area. Remove excess clothing and try to cool them down. Encourage them to sip non-alcoholic fluids such as water, fruit juice or isotonic sports drinks (about a pint every hour). If symptoms persist call an ambulance but make sure someone stays with them.



Falling **unconscious** after taking drugs can be very serious. If this happens to someone:

- Call an ambulance immediately (DIAL 911).
- Place them in the recovery position so they won't choke if they vomit.
- Check breathing - be prepared to do mouth-to-mouth resuscitation.
- Keep them warm, but not too hot.
- Stay with them at all times.

If you know what drug has been taken, tell the ambulance crew. If you have a sample of the drugs, give them to the ambulance crew

## Substance Abuse

**SUBSTANCE ABUSE** is any unnecessary or improper use of chemical substances for non-medical purposes. Substance abuse includes overuse or multiple use of a drug, use of an illegal drug and use of a drug in combination with alcohol or other drugs. Not all abused substances are medicines. Many are **ILLEGAL DRUGS** (street drugs) which are chemical substances that people of any age may not lawfully manufacture, possess, buy or sell. People who use illegal drugs are guilty of a crime called **ILLICIT DRUG USE** or the use of any substance that is illegal or otherwise not permitted.

An **OVERDOSE** is a strong, sometimes fatal reaction to taking a large amount of a drug.

### What is teen substance abuse?

While many teens try alcohol or drugs, using these substances is neither safe nor legal. Some teens experiment with drugs or alcohol only a few times, but experimentation can become substance abuse and lead to serious problems, such as poor school performance, loss of friends, problems at home, and even lasting legal consequences.

### Why do teens abuse drugs and alcohol?

Teens use alcohol and other drugs for many reasons. They may do it because they want to fit in socially, they like the way drugs or alcohol makes them feel, or they want to feel more grown up. Teens tend to be risk-takers, and they may take drugs or drink because it seems exciting. Teens who are at the biggest risk for developing serious alcohol or drug problems include those with family members who have problems with alcohol or other drugs. Also, teens who feel that they are not connected to or valued by their parents or who have poor self-esteem or emotional or mental health problems (such as depression) are at increased risk.



### What substances do teens abuse?

Teens may try a variety of substances, including cigarettes, alcohol, household chemicals (inhalants), prescription and nonprescription medications, and illegal drugs (most commonly marijuana).

### What are the consequences of teen substance abuse?

Substance abuse can increase risk-taking behaviors, which can have serious consequences. Alcohol and drug abuse is a leading cause of teen death or injury

related to car accidents, suicides, violence, and drowning. Substance abuse can increase the risk of pregnancy and sexually transmitted diseases resulting from unprotected sexual activity.

Teen substance abuse can have a negative impact on self-esteem, relationship skills, physical and emotional independence, and future plans. As a result, teen drug or alcohol problems may lead to difficulty building meaningful personal relationships or holding a job.

Some drugs produced today are extremely potent, and even casual use of certain substances such as heroin or cocaine can cause severe medical problems, such as overdose or brain damage. Teens who try highly addictive drugs such as cocaine, methamphetamine, or heroin run an increased risk of becoming dependent (addicted).

In addition, many illegal drugs today are made in backyard labs, so they can vary greatly in potency and can easily become contaminated with bacteria, dangerous chemicals, and other unsafe substances.

### Warning Signs of Teen Substance Abuse

<p><b>Physical</b></p> <ul style="list-style-type: none"> <li>• fatigue</li> <li>• repeated health complaints</li> <li>• red and glazed eyes</li> <li>• lasting cough</li> </ul> <p><b>Emotional</b></p> <ul style="list-style-type: none"> <li>• personality change</li> <li>• sudden mood changes</li> <li>• irritability</li> <li>• irresponsible behavior</li> <li>• low self-esteem</li> <li>• poor judgment</li> <li>• depression</li> <li>• general lack of interest</li> </ul> <p><b>Family</b></p> <ul style="list-style-type: none"> <li>• starting arguments</li> <li>• negative attitude</li> <li>• breaking rules</li> <li>• withdrawing from family</li> <li>• secretiveness</li> </ul>	<p><b>School</b></p> <ul style="list-style-type: none"> <li>• decreased interest</li> <li>• negative attitude</li> <li>• drop in grades</li> <li>• many absences</li> <li>• truancy</li> <li>• discipline problems</li> </ul> <p><b>Social problems</b></p> <ul style="list-style-type: none"> <li>• new friends who make poor decisions and are not interested in school or family activities</li> <li>• problems with the law</li> <li>• changes to less conventional styles in dress and music</li> </ul>
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## What Can YOU do now to keep Myself Healthy?

- Avoid using any type of tobacco product. Try not to breathe second-hand cigarette smoke.
- Always use your seat belt.
- Don't drink and drive. Don't get into a car with a driver who has been drinking alcohol or using drugs.
- Wear protective headgear, such as motorcycle or bike helmets when participating in sports.
- Never swim alone.
- Talk to your parents or your doctor if you're feeling really sad or if you're thinking about harming yourself.
- Get regular exercise.
- Eat a healthy diet.
- Avoid situations where violence or fighting may cause you to be physically injured.
- If you have sex, use condoms to avoid pregnancy and sexually transmitted diseases. (Remember, however, the "safest" sex is no sex.)
- See your doctor regularly.

### What should TEENS especially be concerned about?

Car accidents, unintentional physical injury, homicide and suicide are the top killers of teenagers and young adults. Cancer and heart disease can also affect you at this age. Unplanned pregnancy and sexually transmitted diseases (including HIV and AIDS) can cause you social and personal problems, in addition to harming your health.

It's important to talk to your doctor if you have any concerns about your health or your body. Your doctor is there to help you.





## Key Questions for Lesson 3 (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 # 16 – Teen Health Risks (13 marks)

#### Part 1 (6 marks)

Directions: Imagine that each of the three messages were sent to you by a teen needing health advice. Read each message. Use the information from Lessons 1, 2 & 3 to write a brief response to each message.

Teen #1 – Tyrell says he can pick me up tomorrow in his dad's care, but I know the front seat belt are not working. Tyrell sometimes drives very fast, but he is a pretty good driver. Should I go with Tyrell or look for another way to get to school?

Teen #2 – When Brandy and I go shopping we sometimes get super size shakes, burgers and fries for lunch. After lunch, Brandy always want me to go for a walk with her, but I am usually tired from all the shopping and I just end up going home for a nap. What should I do?

Teen #3 – I have finally been invited to a party at Adam's house. He is the most popular guy in school and has really cool parties. I know there will be lots of drinking there, but I want to go because I want to fit in. What should I do?

#### Part 2 (7 marks)

Directions: Answer the following questions by referring to your class notes:

1. In your own words, explain five (5) major differences between boys and girls and certain risk behaviours.
2. What are the five (5) most common teen health risks.
3. Why is it important to learn about risk behaviours in the teen years?



### KEY QUESTION # 17 – Health Risks of Tobacco (15 marks)

1. Most people know that using tobacco is harmful. Why do YOU think some people continue to use tobacco products?
2. What factors influence a teen's decision to use tobacco?
3. What is nicotine? Why is it harmful?
4. Why is cigarette smoke toxic?
5. List three (3) short term and three (3) long term effects of tobacco use.
6. List three (3) benefits of staying tobacco free.
7. (a) What are the current laws regarding teens and tobacco use?

- (b) How do laws that prohibit smoking in specified areas contribute to community health?
8. What are the harmful effects of environmental (second hand smoke) on each of the following groups:
- (a) non-smokers
  - (b) unborn children of mothers who smoke
  - (c) infants and children of smokers
9. In your opinion, what are the main benefits of quitting smoking?
10. List two (2) sources of help for people who want to quit tobacco use.

**KEY QUESTION # 18 – It’s Time to Butt-out! (5 marks)**

Directions: Studies show that anti-smoking ads aimed at teen audiences are effective in helping teens make the healthful decisions to avoid tobacco use. Some ads use humour, others use “gross-out” pictures and still others give hard facts about the health risks of tobacco use.. Using the Internet, the library or popular magazines as resources, find an anti-smoking advertisement.

1. Print-off or cut-out the ad and glue it to a blank piece of paper
2. On the back of the picture answer the following In your own words:
  - (a) What is the message of the ad?
  - (b) What techniques are used in the ad?
  - (c) Does the ad contain credible information? How do you know it is credible?
  - (d) How does the ad explain or show the harmful effects of smoking?

**KEY QUESTION # 19 – Health Risks of Alcohol Consumption (10 marks)**

1. How can avoiding alcohol use help you succeed in school?
2. How does YOUR family support you in your healthy choice to be alcohol free?
3. What effects does alcohol have on a person’s ability to control and drive a vehicle? What is the legal limit?
4. How does alcohol control your:
  - (a) brain
  - (b) body
  - (c) self control
5. Why is it dangerous to mix alcohol and medications or other drugs?
6. What should YOU do if you suspect someone has alcohol poisoning?
7. How does alcohol affect your liver?
8. List three (3) signs of s drinking problem.
9. What is sobriety? Why is sobriety a lifelong commitment?
10. List three (3) places to get information about treatment for alcohol dependency in Canada.



### KEY QUESTION # 20 – The Truth Behind Alcohol Advertising (6 marks)

Directions: Many alcohol advertisers appeal to your emotions and desires to influence people to buy their products. By understanding and critically analyzing the ways in which advertisers market alcohol, teens can make the informed choice to avoid using it. Using the Internet, the library or popular magazines as resources, find an alcohol advertisement. Use a critical eye when looking at the ads.

1. Print-off or cut-out the ad and glue it to a blank piece of paper  
**(Note: If you do not include a copy of the ad with this assignment you will receive a mark of “zero” for the key question. The ad must be included with your answer.)**
2. Below the picture answer the following In your own words:
  1. What is REALLY being advertised?  
 - analyse how the ad appeals to an emotion or a desire in the teen population
  2. What is the HIDDEN MESSAGE?  
 - describe what the advertisers want the teen audience to believe about drinking alcohol
  3. What is the TRUTH?  
 - explain why the ad is misleading, using at least three (3) facts about alcohol use that the ad does not mention



### KEY QUESTION # 21 – Types of Medicines (8 marks)

Directions: Using 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

	Specific names of products or Common types of these medicines (list 3 each)	What do they do? (in your own words)
Medicines that prevent disease		
Medicines that fight pathogens		
Medicines that relieve pain		
Medicines that promote health		


**KEY QUESTION # 22 – Drug Analysis (15 marks)**
***Stimulants***

Cocaine  
Crack  
Amphetamines (speed)  
Methamphetamines

***Depressants***

Barbiturates  
Tranquilizers  
Rohypnol  
GHB

***Narcotics***

Opium  
Morphine  
Heroin  
Codeine

***Hallucinogens***

Ecstasy  
LSD  
Magic mushrooms  
PCP  
Ketamine

***Other***

Marijuana  
Inhalants - Gases, glues & aerosols  
Anabolic Steroids

Directions: Select three (3) drugs from the list above and complete the following information for each:

- (a) other names
- (b) appearance
- (c) effects
- (d) health risks
- (e) legal status in Canada


**KEY QUESTION # 23 – Substance Abuse (8 marks)**

1. What are the factors that influence a teen's decision about substance abuse?
2. List three (3) costs of drug use to society and give examples of how each of these costs might affect YOU.
3. What are the physical consequences of substance abuse?
4. What are the mental consequences of substance abuse?
5. What are the social consequences of substance abuse?
6. What are the legal consequences of substance abuse?
7. Explain why it is difficult for a person with an addiction to stop using a drug.
8. Explain in your OWN WORDS how drugs affect your body.

**KEY QUESTION # 24 - Public Speaking (5 marks)**

Directions: Write a speech you might give to a class of younger students about the importance of avoiding risk behaviours during their teenage years.

- (a) Be persuasive in your speech and give examples of how risk behaviors can lead to physical, mental, emotional and social harm.
- (b) Be sure to discuss all five (5) most common teenage risks.

**KEY QUESTION # 25 – Lesson 3 ... Important Terms (15 marks)**

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

- |                      |                      |
|----------------------|----------------------|
| 1. Risk Behaviours   | 2. Cumulative Risks  |
| 3. Abstinence        | 4. Obesity           |
| 5. Depressant        | 6. Intoxication      |
| 7. Alcohol Poisoning | 8. Medicines         |
| 9. Drugs             | 10. Chemicals        |
| 11. Club Drugs       | 12. Substance Abuse  |
| 13. Illegal Drugs    | 14. Illicit Drug Use |
| 15. Overdose         |                      |

# PPZ30

HEALTH FOR LIFE



LESSON 4

## Lesson 4 – Heredity, Genetics and Health

No two individuals are exactly alike. Each of us inherits a unique set of health risks from our ancestors. For some diseases, family history is defined by a single scrap of DNA. In virtually every cell of every living organism, there exists a complete set of instructions (genome) for creating that organism and regulating its cellular structures and activities over its lifespan. With recent breakthroughs in deciphering the human genome, predictions of miracle cures for many diseases have been forecast.

Beyond the prospect of understanding the genetic basis of specific diseases, there is a further potential for individualized medicine in which drugs can be tailored to the unique genetic code of each person. Whereas a particular drug might be toxic to one individual, a customized version based on genetic compatibility may be optimally effective for someone else.

**HEREDITY** is the passing of traits from parents to their children. It is common knowledge that a person's appearance -- height, hair color, skin color, and eye color -- are determined by genes. **GENES** are the basic units of heredity. You have thousands of genes in every cell of your body. Most cells of your body contain a nucleus – the cell's control centre. Inside each nucleus is a set of chromosomes. **CHROMOSOMES** are threadlike structures found within the nucleus of a cell that carry the codes for inherited traits. Most cells in the body contain 46 chromosomes arranged in 23 pairs. The chemical unit that makes up chromosomes is called **DNA** (deoxyribonucleic acid). All living things are made of DNA.

Mental abilities and natural talents are also affected by heredity, as is the susceptibility to acquire certain diseases.

Have people ever said to you, "It's in your genes?" They were probably talking about a physical characteristic, personality trait, or talent that you share with other members of your family. We know that genes play an important role in shaping how we look and act and even whether we get sick. Now scientists are trying to use that knowledge in exciting new ways, such as preventing and treating health problems.

### What Is a Gene?

To understand how **genes** (pronounced: **jeens**) work, let's review some biology basics. Most living organisms are made up of cells that contain a substance called deoxyribonucleic (pronounced: dee-**ahk**-see-rye-bow-noo-**klee**-ik) acid (**DNA**). DNA is wrapped together to form structures called **chromosomes** (pronounced: **krow**-muh-soams).

As we already mentioned, most cells in the human body have 23 pairs of chromosomes, making a total of 46. Individual sperm and egg cells, however, have just 23 unpaired chromosomes. You received half of your chromosomes from your mother's egg and the other half from your father's sperm cell. A male child receives an X chromosome from

his mother and a Y chromosome from his father; females get an X chromosome from each parent.

So where do genes come in? Genes are sections or segments of DNA that are carried on the chromosomes and determine specific human characteristics, such as height or hair color. Because each parent gives you one chromosome in each pair, you have two of every gene (except for some of the genes on the X and Y chromosomes in boys because boys have only one of each). Some characteristics come from a single gene, whereas others come from gene combinations. Because every person has from 25,000 to 35,000 different genes, there is an almost endless number of possible combinations!

### Genes and Heredity

Heredity is the passing of genes from one generation to the next. You inherit your parents' genes. Heredity helps to make you the person you are today: short or tall, with black hair or blond, with green eyes or blue.

Can your genes determine whether you'll be a straight-A student or a great athlete?



Heredity plays an important role, but your environment (including things like the foods you eat and the people you interact with) also influences your abilities and interests.

### How Do Genes Work?

DNA contains four chemicals (adenine, thymine, cytosine, and guanine - called A, T, C, and G for short) that are strung in patterns on extremely thin, coiled strands in the cell. How thin? Cells are tiny - invisible to the naked eye - and each cell in your body contains about 6 feet of DNA thread, for a total of about 3 billion miles (if all your DNA threads were stretched out straight) of DNA inside you! The DNA patterns are the codes for manufacturing **proteins**, chemicals that enable the body to work and grow.

Genes hold the instructions for making protein products (like the enzymes to digest food or the pigment that gives your eyes their color). As your cells duplicate, they pass this genetic information to the new cells. Genes can be **dominant** or **recessive**. Dominant genes show their effect even if there is only one copy of that gene in the pair. For a person to have a recessive gene, disease or characteristic, the person must have the gene on both chromosomes of the pair.



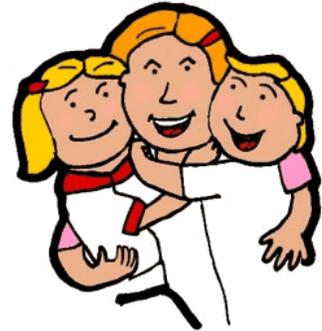
## SUPPORT QUESTION – Me and My Family

Fold a sheet of paper in half. Think about YOUR family. Make two columns, one listing the ways family members are alike and one listing the ways they are different.

## What Are Genetic Disorders?

Sometimes the genes that an individual inherits contain a mutation or abnormality in the genetic code. An inherited, abnormal trait or "anomaly" may:

- Have no consequence to a person's health or well being (for example, a white patch of hair or an extended ear lobe).
- Be of minor consequence (for example, color blindness).
- Have dramatic effect on the quality or length of life



**GENETIC DISORDERS** are disorders caused partly or completely by a defect in genes. Some genetic disorders, such as those that cause birth defects, are apparent right away. One example of such a defect is cleft palate. However, other genetic disorders do not show up until later in life. Almost all diseases have a genetic component, but the importance of that component varies. For most people with genetic disorders, genetic counseling is advised. Many people may also want to seek prenatal diagnosis.

### What EXACTLY Are Genetic Disorders?

Cells can sometimes contain changes or variants in the information in their genes. This is called **gene mutation**, and it often occurs when cells are aging or have been exposed to certain chemicals or radiation. Fortunately, cells usually recognize these mutations and repair them by themselves. Other times, however, they can cause illnesses, such as some types of cancer. And if the gene mutation exists in egg or sperm cells, children can inherit the mutated gene from their parents.

Researchers have identified more than 4,000 diseases that are caused by genetic variants. But having a genetic mutation that may cause disease doesn't always mean that a person will actually get that disease. Because you inherit a gene from each parent, having one disease gene usually does not cause any problems because the normal gene can allow your body to make the normal protein it needs.

On average, people probably carry from 5 to 10 variant or disease genes in their cells. Problems arise when the disease gene is dominant or when the same recessive disease gene is present on both chromosomes in a pair. Problems can also occur when several variant genes interact with each other - or with the environment - to increase susceptibility to diseases.

If a person carries the dominant gene for a disease, he or she will usually have the disease and each of the person's children will have a 1 in 2 (50%) chance of inheriting the gene and getting the disease. Diseases caused by a dominant gene include achondroplasia (pronounced: ay-kon-druh-**play**-zhuh, a form of dwarfism), Marfan syndrome (a connective tissue disorder), and Huntington disease (a degenerative disease of the nervous system).

People who have one recessive gene for a disease are called carriers, and they don't usually have the disease because they have a normal gene of that pair that can do the job. When two carriers have a child together, however, the child has a 1 in 4 (25%) chance of getting the disease gene from both parents, which results in the child having the disease. Cystic fibrosis (a lung disease), sickle cell anemia (a blood disease), and Tay-Sachs disease (which causes nervous system problems) are caused by recessive disease genes from both parents coming together in a child.

Some recessive genetic variants are carried only on the X chromosome, which means that usually only guys can develop the disease because they have only one X chromosome. Girls have two X chromosomes, so they would need to inherit two copies of the recessive gene to get the disease. X-linked disorders include the bleeding disorder hemophilia (pronounced: hee-muh-**fi**-lee-uh) and color blindness. Sometimes when an egg and sperm unite, the new cell gets too many or too few chromosomes. Most children born with Down syndrome, which is associated with mental retardation, have an extra chromosome number 21.

In some cases, people who are concerned that they might carry certain variant genes can have genetic testing so they can learn their children's risk of having a disease. Pregnant women can also have tests done to see if the fetus they are carrying might have certain genetic illnesses. **Genetic testing** usually involves taking a sample of someone's blood, skin, or amniotic fluid, and checking it for signs of genetic diseases or disorders.

## Health Risk Factors



A **health risk factor** is anything that increases your chances of getting a disease. A health risk factor can be your age, sex, lifestyle, personal health history, or family health history. Having certain risk factors means that you are "at high risk". However, being at high risk does not mean that you are sure to develop a disease, just as "not at high risk" does not mean you won't develop a disease. Because of the relationship between risk factors and disease, risk factors are used to determine how often you should receive preventive care services from your healthcare provider. Preventive care has proven value in the prevention

and early detection of many diseases. These services include screenings for cancer and other diseases, immunizations, and clinical exams. You may need preventive care services every year, or only a health assessment every 3 to 5 years.

## Examples of Genetic Disorders

### Cystic Fibrosis

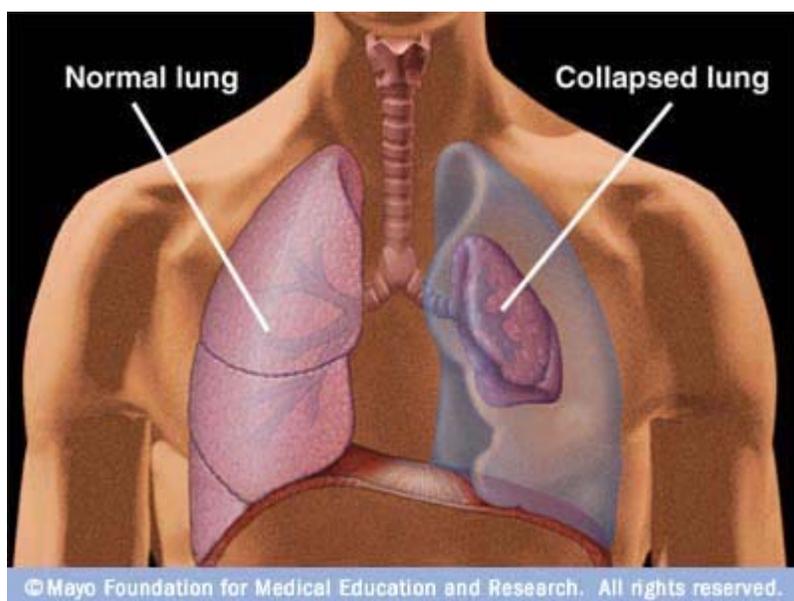
CF is a very common hereditary disorder (1 out of 2,000 Caucasian births). A defective gene causes the body to produce an abnormally thick, sticky mucus that clogs the lungs and leads to life-threatening lung infections. These thick secretions also obstruct the pancreas, preventing digestive enzymes from reaching the intestines to help break down and absorb food. In some newborns with CF, associated symptoms may include vomiting, abdominal bloating (distension), and blockage of the small intestine with meconium, the thick, dark material that forms a newborn's first stools.

Affected infants often fail to grow and gain weight at the expected rate (failure to thrive), may continue to have abdominal bloating, and may have abnormally large, loose, foul smelling stools that contain an excess of fat (steatorrhea) and other nutrients due to malabsorption.

During childhood or adolescence, associated characteristics may include a chronic cough that may occur in association with vomiting; sleep disturbances; a high-pitched whistling sound with breathing (wheezing); breathlessness; chronic inflammation of the lung's airways (bronchitis); and recurrent lung infections.

With disease progression, increasingly severe lung damage, respiratory failure, and progressive inability of the heart to pump blood effectively (heart failure) may lead to life-threatening complications. Affected individuals rarely survive to the age of 40.

Currently, cure for CF, many new use and even horizon.



there is no but there are promising treatments in more on the

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## Phenylketonuria

PKU is a rare, inherited metabolic disease that results in mental retardation and other neurological problems when treatment is not started within the first few weeks of life. When a very strict diet is begun early and well-maintained, effected children can expect normal development and a normal life span..

The disease arises from the absence of a single enzyme (phenylalanine hydroxylase). This enzyme normally converts the essential amino acid, phenylalanine, to another amino acid, tyrosine. Failure of the conversion to take place results in a buildup of phenylalanine. Through a mechanism that is not well understood, the excess phenylalanine is toxic to the central nervous system and causes the severe problems normally associated with PKU. Not every child has the same degree of enzyme deficiency, however; some have enough enzyme activity that the diet can be quite liberal, while others must have the very strict diet. The nature of the diet for an individual child must be determined by an experienced PKU treatment program.

Damage to the brain causes marked mental retardation by the end of the first year of life if the offending proteins are not scrupulously avoided. Older children may develop movement disorders, rocking, and hyperactivity. PKU is a treatable disease that can be easily detected by a simple blood test. Most states require a screening test for all newborns, generally done with a heel stick shortly after birth.

Because phenylalanine is involved indirectly in the production of melanin, the pigment responsible for skin and hair color, children with phenylketonuria often have lighter complexions than their unaffected siblings. There is a characteristic "mousy" odor that results from the accumulation of phenylacetic acid. This odor may be detected on the breath, skin, and urine if the condition has not been treated immediately from birth or if foods containing phenylalanine are consumed.

## Sickle Cell Anemia

Sickle cell anemia is a disorder common in individuals with an African ethnic background. Sickle cell anemia occurs when a person inherits two abnormal genes (one from each parent) that cause their red blood cells to change shape. Instead of being flexible and round, these cells are more rigid and curved in the shape of the farm tool known as a sickle - that's where the disease gets its name. The shape is similar to a crescent moon.

Although sickle cell disease is inherited and present at birth, symptoms usually don't occur until after 4 months of age. Sickle cell anemia may become life-threatening when damaged red blood cells break down (hemolytic crisis), when the spleen enlarges and traps the blood cells (splenic sequestration crisis), or when a certain type of infection causes the bone marrow to stop producing red blood cells (aplastic crisis). Repeated crises can cause damage to the kidneys, lungs, bones, eyes, and central nervous system.

Teens with sickle cell anemia may develop **jaundice** (pronounced: **jon-dis**), a condition that results from the high rate of red blood cell breakdown. Jaundice can cause the skin and the whites of a person's eyes to develop a yellowish tint.

People with sickle cell anemia also may have bouts of pain in the chest, stomach, arms, legs, or other parts of the body. This is caused by sickle cells blocking blood flow through the blood vessels. Feeling tired and having trouble fighting infections are also common among teens with sickle cell anemia, and they may grow more slowly and reach puberty later than other teens.

Periods of pain are commonly referred to as **crises**, which vary in their severity, how often they happen, and how long they last. Whereas one person may have only one sickle cell crisis a year, another may experience crises more often. Crises may be brief, or may last hours, days, or even weeks. Symptoms can develop in any body organ or tissue and include aching arms, legs, hips, and shoulders. When people with sickle cell disease get acute chest syndrome, they may have severe chest and abdominal pain, fever, cough, and trouble breathing.



Many manifestations of this disease are a result of the fragility and inflexibility of the sickle red blood cells. When patients experience dehydration, infection, and low oxygen supply, these fragile red blood cells assume a crescent shape, causing red blood cell destruction and poor flow of these blood cells through blood vessels, resulting in a lack of oxygen to the body's tissues

## Hemophilia

If you ride a skateboard or play a sport, you probably know about bruises and banged-up knees and elbows. But for guys with a rare bleeding disorder called hemophilia (pronounced: hee-muh-**fi**h-lee-uh), minor cuts and bruises can be a big deal.

**Hemophilia** is a disease that prevents a person's blood from clotting properly, which means that the person bleeds more than a person without hemophilia does. It's a genetic disorder, which means it's the result of a change in genes that's either inherited (passed on from parent to child) or that happens during development in the womb. "Hemo" means blood and "philia" means a tendency toward. A person who has hemophilia has a tendency to bleed excessively. Hemophilia affects mostly boys, although it's very rare: Only about one in every 8,000 boys is born with hemophilia. The disease can affect people of any race or nationality.

For most people, when they get a cut, the body naturally protects itself. Sticky cells in the blood called platelets go to where the bleeding is and plug up the hole. This is the

first step in the clotting process. When the platelets plug the hole, they release chemicals that attract more sticky platelets and also activate various proteins in the blood known as **clotting factors**. These proteins mix with the platelets to form fibers, and these fibers make the clot stronger and stop the bleeding.

Most people with hemophilia discover they have the condition when they are babies or young kids. Sometimes the disease is so mild that a guy doesn't even know he has it until he has minor surgery - like getting his tonsils or appendix out - and it's found in blood tests that doctors perform before surgery.

Men and women each have 23 pairs of chromosomes (pronounced: **kro-muh-soamz**). Women have two X chromosomes; men have one X and one Y chromosome. Hemophilia is an X-linked genetic disorder, which means that it's passed from mother to son on the X chromosome. If the mother carries the gene for hemophilia on one of her X chromosomes, each of her sons will have a 50% chance of having hemophilia. Although girls rarely develop the symptoms of hemophilia itself, they can be carriers of the disease. For a girl to get hemophilia, she would have to receive the disease on the chromosome she receives from her father, who would have hemophilia, as well as from the X chromosome of her mother, who would be a carrier. Although this is not impossible, it is highly unlikely.

If you have hemophilia, your day-to-day life is probably pretty normal. Exercise is important for teens with hemophilia because it makes muscles stronger, which protects the joints and decreases bleeds. Swimming and cycling are great because they don't put pressure on the joints. In fact, you can participate in just about any sport, although team sports, such as soccer, basketball, or baseball, present a higher risk and all contact sports (like football, boxing, and hockey) are off-limits because there's a high risk of injury. It's also important to maintain a healthy weight because extra pounds can strain the body. And don't take any product that contains aspirin, ibuprofen, or naproxen sodium. All of these can keep blood from clotting.



### Tay-Sachs Disease

Tay-Sachs disease is a fatal genetic disease. A fatty substance called GM2 ganglioside gradually accumulates in the brain. As the brain cells become engorged with this fat, mental and physical abilities disappear, never to be regained. The great majority of those with Tay-Sachs disease have the infant-onset form.

This is a recessive genetic disease. Both parents must be carriers for the child to be affected. When both parents are carriers, about one fourth of their children will have the disease. Half will be carriers.

The trait is fairly rare, except in the Ashkenazi Jewish population where as many as 1 in 25 are carriers.

Most babies with classic Tay-Sachs disease are born happy and healthy, a dream come true. The first 5 or 6 months or so of the first year have all of the ups and downs familiar to most parents: smiling, crying, sleepless nights, tender late-night feedings, learning to roll over, the adventure of starting solids, lighting up when the parents walk in the room, laughing with delight, and cooing peacefully.

Then, at about 5 or 6 months of age, the baby begins to make less and less eye contact with the parents. There is an exaggerated startle response to noise. In retrospect, many parents recall that their baby had always been sensitive to loud noises.

The babies, who had been developing normally, now begin to lag behind. They still grow and develop, but the milestones all come a bit late. This is usually when parents worry that something is wrong. They usually learn to stand, but for these babies this is the pinnacle, the peak. By the first birthday, when most parents of other children are celebrating achievement, these parents are grieving loss. By now their babies have lost the ability to stand, to sit, and even to vocalize.

From there, the deterioration is relentless. Seizures begin in the second year. Before long, the ‘toddler’ is completely blind, deaf, and dumb. Progressive spasticity is interrupted by convulsions. The spasticity gives way only as the muscles atrophy. Paralysis sets in. Some can’t even swallow. Even with the best of care, most have died by the time their peers are skipping off to kindergarten. Death usually comes from inhaling vomit and developing pneumonia.

Far less common is the juvenile form of Tay-Sachs. Here, children appear normal until middle childhood. Clumsiness is the usually the first sign, but this is often dismissed until it can’t be ignored. Coordination continues to slip away even as uncontrolled, unwanted movements begin. Children lose the ability to speak while they are still grappling with their loss, often before the seizures begin. Eyesight darkens very gradually. Most die before their peers have gotten their driver’s licenses.

## **Muscular Dystrophy**

Muscular dystrophy (MD) is a genetic disorder that weakens the muscles that help the body move. People with MD have incorrect or missing information in their genes, which prevents them from making the proteins they need for healthy muscles. Because MD is genetic, people are born with the problem - it's not contagious and you can't catch it from someone who has it.

MD weakens muscles over time, so children, teens, and adults who have the disease can gradually lose the ability to do the things they take for granted, like walking or sitting up. Someone with MD might start having muscle problems as a baby or their symptoms might start later. Some people even develop MD as adults.

The life expectancy (in other words, how long a person may live) depends on the degree to which a person's muscles are weakened as well as how much the heart and lungs are affected.

There is no cure for MD, but doctors and scientists are working hard to find one. Some scientists are trying to fix the defective genes that lead to MD so they will make the right proteins. Others are trying to make chemicals that will act like these proteins in the body. They hope that this will help the muscles to work properly in people with MD.

Doctors are also dedicated to finding the best ways to treat the symptoms of MD so that kids, teens, and adults with the disease can live as comfortably and happily as possible. There are things that teens with MD can do to help their muscles. Certain exercises and physical therapy can help them avoid **contractures**, a stiffening of the muscles near the joints that can make it harder to move and can lock the joints in painful positions. Often, teens are fitted with special braces to ensure flexible joints and **tendons** (the strong, rubber band-like tissues that attach muscles to bones). Surgery is sometimes used to reduce pain and increase movement from contractures.

Because we rely on certain muscles to breathe, some teens with MD need respiratory aids, such as a ventilator, to help them breathe. Teens with MD also might need to be treated for problems like scoliosis, which can be caused by weakened muscles or muscles that are contracting or pulling too tightly

Teens have different experiences depending on the type of MD. One person might have weakened shoulder muscles and not be able to raise a hand in class. Someone might be unable to smile because of weak facial muscles. Another person might have weak muscles in the pelvis or legs, making it hard to walk from class to class. In some cases, you might not even be able to tell that a teen has MD.

For teens with MD, it can be hard to come to terms with the disease, especially because it gradually gets worse. For example, when someone who walks to class must start using a wheelchair in school, it can be a difficult adjustment. Support from doctors, family, and friends can make it easier to deal with MD, and changes like wider doorways at home and school can make it easier for teens with MD to do many of the things they enjoy.

## Huntington's Disease

Huntington's disease (HD) is an inherited degenerative neuro-psychiatric brain disorder which affects both body and mind. It is caused by the degeneration of brain cells in certain parts of the brain.

It is caused from brain cells in the caudate nucleus destroying themselves. It takes several years before symptoms begin to show and can have devastating effects both on the pHD (person with Huntington's disease) and on their families and friends, co-

workers and communities. Onset of Huntington's Disease generally begins in mid-life, although symptoms may occur as early as the age of two years. In cases of childhood onset of the disease, children affected rarely live through their teens.

Early signs of Huntington's Disease include depression, mood swings, forgetfulness, clumsiness, involuntary twitching and lack of coordination. As the disease progresses, lack of concentration, diminished short-term memory and judgement, and involuntary movements of the head, trunk and limbs become more evident. Walking, speaking and swallowing become more and more difficult and eventually, an individual with Huntington's Disease is unable to care for him or herself. Death may occur from choking, infection or heart failure.

There is no way to prevent the onset of HD if a person has inherited the gene for the disorder. A prospective parent with HD or a family history of HD can seek genetic counseling when deciding whether or not to have children. Genetic counseling is extremely important since one-half of the children of an affected parent are at risk for inheriting HD, and symptoms of the disorder do not usually start until after the child-bearing years.

## **Down Syndrome**

You have probably seen people who have Down syndrome. They have certain physical features, such as a flatter face, upward slanting eyes, and a somewhat larger tongue. They may have medical problems, too, such as heart defects. And they usually have some mental retardation, which means they may have trouble learning. But despite their challenges, kids with Down syndrome can go to regular schools, make friends, enjoy life, and get jobs when they're older.

Babies with Down syndrome tend to develop more slowly than other babies do. They may start walking later than other babies. About half are born with heart defects, which means there is something different with the way their hearts developed. Usually, these problems can be corrected by surgery.

Some babies also may have problems in their stomachs or a blockage in their intestines that prevents them from digesting food properly. Kids with Down syndrome are more likely to get infections that affect their lungs and breathing. When they do get infections, they often last longer. They may have eye or ear problems or digestion problems like constipation. Some may develop leukemia, a type of cancer. Each person with Down syndrome is different and may have one, several, or all of these problems.

We've mentioned a little about the features people with Down syndrome often have. In addition to the eyes and face, they may have small or misshapen ears, a large space between the big toe and the second toe, and a crease that goes across the palms of their hands. It's important to note, though, that not all people with Down syndrome look alike or have all these features.

About one out of every 800 babies born has Down syndrome, no matter what race or nationality the parents are. It is not contagious, so you can't catch it from someone else. You are born with it. No one gets Down syndrome later in life.

Now you know that Down syndrome is caused by a problem with a chromosome. You might already know that we get our chromosomes from our mother and father. Remember the 23 pairs of chromosomes - half are from your mom and half are from your dad. But doctors aren't sure why this chromosome problem happens to some babies. It's nothing the mom or dad did before the child was born. Anyone can have a baby with Down syndrome. But the older the mother, the greater the risk.



There is no cure for Down syndrome. It is something a person will have all of his or her life. But scientists continue to do research in the hope of finding ways to prevent Down syndrome or at least improve the health and lives of people who have it.

## Turner Syndrome

Turner syndrome (TS) is a medical problem that affects about one in every 2,500 girls. Although researchers don't know exactly what causes Turner syndrome, they do know that it's the result of a problem with a girl's **chromosomes**. Most girls are born with two X chromosomes, but girls with Turner syndrome are born with only one X chromosome or they are missing part of one X chromosome. The effects of the condition vary widely among girls with Turner syndrome. It all depends on how many of the body's cells are affected by the changes to the X chromosome.

Girls with Turner syndrome are usually short in height. Girls with Turner syndrome who aren't treated reach an average height of about 4 feet 7 inches (1.4 meters). The good news is that when Turner syndrome is diagnosed while a girl is still growing, she can be treated with hormones to help her grow taller.

In addition to growth problems, Turner syndrome prevents the ovaries from developing properly, which affects a girl's sexual development. Because the ovaries are responsible for making the hormones that control breast growth and menstruation, most girls with Turner syndrome will not go through all of the changes associated with puberty unless they get treatment for the condition. Nearly all girls with Turner syndrome will be infertile, or unable to become pregnant on their own.

Girls with Turner syndrome are usually diagnosed either at birth or around the time they might be expected to go through puberty. If a baby girl has some of the signs of Turner

syndrome, a doctor will usually order a special blood test called a **karyotype**. The test counts the number of a person's chromosomes and can identify any that are abnormally shaped or have missing pieces. In some cases, there are no recognizable signs that a girl has the condition until she reaches the age at which she'd normally go through puberty.

Because Turner syndrome is a condition that is caused by a chromosomal abnormality, there's no specific cure. However, scientists have developed a number of treatments that can help correct some of the problems associated with the condition - such as growth problems - and researchers are constantly looking into new forms of treatment. Growth hormone treatment can improve growth and influence a girl's final adult height. In fact, in many cases, the treatment can help many girls with Turner syndrome reach a final height in the average range, especially if treatment is started early enough.

## Genetic Research

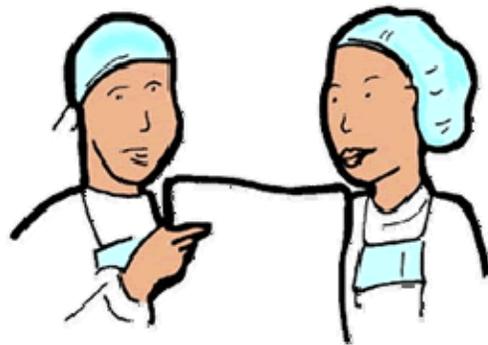
Sometimes scientists alter genes on purpose. For many years, researchers have altered the genes in microbes and plants to produce offspring with special characteristics, such as an increased resistance to disease or pests, or the ability to grow in difficult environments. We call this **genetic engineering**.

**Gene therapy** is a promising new field of medical research. In gene therapy, researchers try to supply copies of healthy genes to cells with variant or missing genes so that the "good" genes will take over. Viruses are often used to carry the healthy genes into the targeted cells because many viruses can insert their own DNA into targeted cells.

But there are problems with gene therapy. Scientists haven't yet identified every gene in the human body or what each one does. Huge scientific efforts like **The Human Genome** (pronounced: jee-nome) **Project** and related projects have recently completed a map of the entire human genome (all of the genetic material on a living thing's chromosomes), but it will take many more years to find out what each gene does and how they interact with one another. For most diseases, scientists don't know if and how genes play a role. Plus, there are major difficulties inserting the normal genes into the proper cells without causing problems for the rest of the body.

There are also concerns that people might try changing genes for ethically troubling reasons, such as to make smarter or more athletic children. No one knows what the long-term effects of that kind of change would be.

Still, for many people who have genetic diseases, gene therapy holds the hope that they - or their children - will be able to live better, healthier lives.



## Genetic Predisposition

If you have a Genetic predisposition it means you have an increased risk of condition from genetic history. There are various diseases that are not fully genetic diseases, but are partially inherited. Some examples are **polygenic diseases** which are diseases that are triggered by the combination of genetic and environmental factors. A person with a "genetic predisposition" has an increased risk of getting a disease, but will not necessarily get the disease unless it is triggered by some other means.

Heredity is only one factor in the equation of health and illness. In most illness, genetic predisposition in itself is not sufficient to produce disease. Numerous retrospective studies of identical twins (hence identical genes) document that in most illnesses, one twin may develop a specific disease while the other sibling can remain free of the disorder. Thus, it is the entangled interplay between heredity and environment (internal and external) that results in the complex manifestations of health and illness.

## What Are Polygenetic Diseases?

A polygenetic disease is under the influence of multiple genes, but not a single gene. Usually this means that a disease does not have a high level of genetic causes (i.e. is not a genetic disease), and is not strongly inherited down families, but there may be a slight familial inheritance pattern. In fact, saying a disease is polygenic is almost like saying it is "mostly non-genetic".

Many of the big name diseases are in this class of diseases including cancers, heart disease, autoimmune diseases, and many others. With most of these conditions, they are not regarded as being caused by genetics, nor are they directly inherited from parents. However, a family history of the disease is a risk factor for the disease, indicating that there is some inherited risk in the genes (though shared environmental risk factors is also a possibility in some cases). The genetics of this type of disease is an area of current research for all of the major diseases.

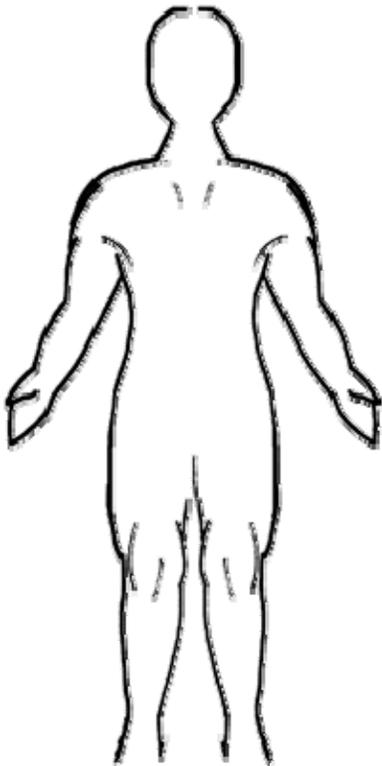
**Polygenic** means "multiple genes" and polygenic diseases are affected by many genes. In a sense, saying that a disease is polygenic almost means "not genetic". Polygenic diseases usually have a small genetic basis, often less than 10% chance of inheritance from parents. This is often described by saying that a child inherited a "genetic predisposition" to getting a disease, but will not always get the disease (unless some other trigger occurs).



The following conditions result from a GENETIC predisposition combined with ENVIRONMENTAL factors. You CANNOT control whether or not you inherit the genes that cause these diseases, but you can sometimes control the onset or the effects of the diseases through lifestyle choices. The list of conditions in the Polygenic diseases group includes:

## Cancers

Approximately 10% are inherited. Cancer is caused by genetic mutations of cells that occur as a result of environmental factors (cigarettes, radiation etc.)



## Autoimmune diseases

Disease caused by a malfunctioning immune system leading to self-attacks or self-stimulation of other body cells. **Autoimmune diseases:** The word "auto" is the Greek word for self. The immune system is a complicated network of cells and cell components (called *molecules*) that normally work to defend the body and eliminate infections caused by bacteria, viruses, and other invading microbes. If a person has an autoimmune disease, the immune system mistakenly attacks self, targeting the cells, tissues, and organs of a person's own body. A collection of immune system cells and molecules at a target site is broadly referred to as inflammation. <sup>1</sup>

**Conditions list:** The list of conditions in the Autoimmune diseases group includes:

- Type 1 diabetes
- rheumatoid arthritis
- Multiple Sclerosis
- Crohn's disease
- Lupus

## Hypertension

Hypertension is the condition of having high blood pressure. Blood pressure measures the force of blood against the walls of your blood vessels. Blood pressure that remains high over time is called hypertension. Extra fluid in your body increases the amount of fluid in your blood vessels and makes your blood pressure higher. Narrow or clogged blood vessels also raise blood pressure. Hypertension is an under-diagnosed condition because it causes damage to the body with no symptoms or only mild symptoms. It has been called a "silent killer" for this reason.

## Diabetes

Diabetes (pronounced: dye-uh-**be**-tees). is a disease that affects how the body uses **glucose** (pronounced: **gloo**-kose), a sugar that is the body's main source of fuel. Like a car needs gasoline, your body needs glucose to keep running. Here's how it should work.

1. You eat.
2. Glucose from the food gets into your bloodstream.
3. Your pancreas makes a hormone called **insulin** (pronounced: **in**-suh-lin).
4. Insulin helps the glucose get into the body's cells.
5. Your body gets the energy it needs.

The pancreas is a long, flat gland in your belly that helps your body digest food. It also makes insulin. Insulin is kind of like a key that opens the doors to the cells of the body. It lets the glucose in. Then the glucose can move out of the blood and into the cells. But if someone has diabetes, the body either can't make insulin (this is called **type 1 diabetes**) or the insulin doesn't work in the body like it should (this is called **type 2 diabetes**). The glucose can't get into the cells normally, so the blood sugar level gets too high. Lots of sugar in the blood makes people sick if they don't get treatment.

There is an unknown genetic link which points to obesity & inactivity as causes of diabetes.

## Obesity

Being obese and being overweight are not exactly the same thing. An obese person has a large amount of extra body fat, not just a few extra pounds. People who are obese are very overweight and at risk for serious health problems.

People gain weight when the body takes in more calories than it burns off. Those extra calories are stored as fat. The amount of weight gain that leads to obesity doesn't happen in a few weeks or months. Because being obese is more than just being a few pounds overweight, people who are obese have usually been getting more calories than they need for years.

Genes - small parts of the DNA that people inherit from their parents and that determine traits like hair or eye color - can play an important role in this weight gain. Some of your genes tell your body how to metabolize food and how to use extra calories or stored fat. Some people burn calories faster or slower than others do because of their genes. Obesity can run in families, but just how much is due to genes is hard to determine. Many families eat the same foods, have the same habits (like snacking in front of the TV), and tend to think alike when it comes to weight issues (like urging children to eat a lot at dinner so they can grow "big and strong"). All of these situations can contribute to weight gain, so it can be difficult to figure out if a person is born with a tendency to be obese or overweight or learns eating and exercise habits that lead to weight gain. In

most cases, weight problems arise from a combination of habits and genetic factors. Certain illnesses, like thyroid gland problems or unusual genetic disorders, are uncommon causes for people gaining weight.

## Heart disease (Cardiovascular Disease)

Heart / Cardiovascular Diseases are diseases of the heart & blood vessels (hypertension, arteriosclerosis & stroke). Strokes usually “run” in the family. Lifestyle is a factor caused by heavy alcohol use, smoking, inactivity & obesity.

Various heart conditions include:

Heart attack, High blood pressure, Ischemic heart disease, Heart rhythm disorders, Tachycardia, Heart murmurs, Rheumatic heart disease, Pulmonary heart disease, and Hypertensive heart disease

**Atherosclerosis** - Hardening of the arteries. (High Cholesterol)

Eating foods high in saturated fat & dietary cholesterol clogs the bloodstream. It is usually caused by an inactive lifestyle & being overweight. It increases chances of developing heart disease & stroke.



## Mental Illness

Mental Illnesses such as schizophrenia, bi-polar disorder, depression, ADD (Attention Deficit Disorder) & ADHD (Attention Deficit Hyperactivity Disorder) – all result from a combination of many genes acting together with environmental factors.

## Peptic Ulcers

Peptic ulcer refers to an area of the stomach or duodenal lining which becomes eroded by the stomach acid. These are known as stomach and duodenal ulcers, collectively known as peptic ulcers.

You may notice no symptoms although you have an ulcer, but frequently they are associated with indigestion or pain in the upper abdomen or even lower chest. This pain may be worse before or after eating and frequently wakes you in the early hours of the morning. The pain may go to the back or sometimes be perceived elsewhere. If an ulcer bleeds you may vomit blood or partially digested blood (which looks like coffee grounds) or pass black stools (melaena), which contain changed blood, when you go to the toilet. If any of these happen call the doctor immediately (even after hours).

Many factors make you more likely to have an ulcer.

- It often seems to run in families.
- Smoking increases the risk.
- Heavy drinking.
- Certain drugs such as aspirin and other anti-inflammatory drugs.

## Asthma

Asthma (pronounced: **az**-muh) is a lung condition that causes a person to have difficulty breathing. Asthma is a common condition: More than 6 million kids and teens have it.

Asthma affects a person's **bronchial** (pronounced: **brahn**-kee-ul) tubes, also known as airways. When a person breathes normally, air is taken in through the nose or mouth and then goes into the **trachea** (windpipe), passing through the bronchial tubes, into the lungs, and finally back out again. But people with asthma have airways that are inflamed. This means that they swell and produce lots of thick mucus. They are also overly sensitive, or **hyper reactive**, to certain things, like exercise, dust, or cigarette smoke. This hyper reactivity causes the smooth muscle that lines the airways to tighten up. The combination of airway inflammation and muscle tightening narrows the airways and makes it difficult for air to move through.



No one knows exactly what causes asthma. It's thought to be a combination of environmental and genetic (hereditary) factors. A teen with asthma may have a parent or other close relative who has asthma or had it as a child. Asthma isn't contagious, though, so you can't catch it from someone who has it.

## Cleft Lip and Palate

Cleft lip and palate are birth defects that occur while a baby is developing in the uterus. During the 6th to 10th week of pregnancy, the bones and tissues of the baby's upper jaw, nose, and mouth normally fuse (close) together to form the roof of the mouth and the upper lip. If there isn't enough tissue in the developing mouth and the palate doesn't fuse together, a baby could be born with a partial (or incomplete) cleft palate or a complete cleft palate. Babies who are born with cleft lip have a gap or opening in the skin of the upper lip.

In babies with cleft palate, there is an opening between the roof of the mouth and the nose. An incomplete cleft palate is when there is an opening in only the soft palate in the back of the roof of the mouth. A complete cleft palate occurs when the front part of

the roof of the mouth - the hard palate - and the soft palate haven't fused together. In many cases, a baby born with a complete cleft palate also has a cleft lip.

A cleft lip can be either **unilateral** or **bilateral**. A unilateral cleft lip occurs on only the right or left side of the lip under the nostril, and the noses of babies with unilateral cleft lip may look slightly tilted or lower than normal. A bilateral cleft lip involves both sides of the lip, and babies with bilateral cleft lips may have a deep split in the lip that extends into both nostrils and may cause the nose to look broader and shorter than normal. In most cases, the cleft occurs only in the upper lip and doesn't affect the lower lip. A person with a cleft could have only a cleft palate, only a cleft lip, or both a cleft lip and a cleft palate. One in 700 to 1000 babies is born with a cleft-related defect, and it is more common in babies of Asian, Latino, and Native American descent. It is less common among babies of African ancestry. Boys are twice as likely as girls to have cleft lip and palate.

Doctors don't know exactly why a baby develops cleft lip or cleft palate, but they believe it may be a combination of genetic (inherited) and environmental factors. Women with a relative with a cleft have a slightly higher risk of having a child with a cleft. Both mothers and fathers can pass on a gene or genes that cause cleft palate or cleft lip



## Key Questions for Lesson 4 (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 # 26 – Heredity and Genetics (5 marks)

1. Explain how an individual acquire his or her genetic make-up.
2. How does a dominant trait appear in an individual?
3. How does a recessive trait appear in an individual?
4. Examine you own genetic make-up.  
Identify five (5) traits that you know you have inherited from your parents.  
Name the traits and the parent that you have inherited the trait from.  
Do you have any traits that you have inherited from grandparents? If yes, describe them
5. How are chromosomes, genes and DNA significant in determining human traits?

**KEY QUESTION # 27 – Family Terms (5 marks)**

Directions: Determine who you would be related to in each of the descriptions below. Write their name and relation to you. Assume that each relation exists.

1. Your mother's brother?
2. Your sister's mother?
3. Your husband's daughter's brother?
4. Your father's wife's sister's daughter's brother?
5. Your uncle's father's only grandchild?
6. Your brother's sister's mother's husband's wife?
7. Your sister's father's brother's daughter's mother?
8. Your brother's mother's sister's father?
9. Your brother's son's sister's mother?
10. Your aunt's mother's father's wife?

**KEY QUESTION # 28 – Heredity & Genetics True or False? (5 marks)**

Directions: answer true or false to the following questions.

- |    |   |   |  |
|----|---|---|--|
| 1. | T | F | Scientists have identified hundreds of human genetic disorders.                                    |
| 2. | T | F | Poor nutrition cannot affect a person's inherited traits.  |
| 3. | T | F | In humans, two pairs of chromosomes determine gender.  |
| 4. | T | F | All living things are made of DNA.   |
| 5. | T | F | Genetic engineering is a well-established tool used by the medical profession.                     |
| 6. | T | F | All cells in the human body contain 23 pairs of chromosomes.                                       |
| 7. | T | F | All human traits are determined by a single pair of genes.   |
| 8. | T | F | Genetic disorders are always evident at birth.   |
| 9. | T | F | The Human Genome Project is an international effort to map all the genes on the human chromosomes. |

**KEY QUESTION # 29 – My Genetic Family Tree (20 marks)**

Directions: Some traits are biological; they are caused by genes. Other traits are not present at birth but are learned from a parent or some factor in the environment. It is not always easy to determine which category-genetics or environment-is responsible for a particular trait. In this activity YOU will trace one of these "undecided categories" through YOUR ancestors. Afterwards they you try to conclude whether the characteristic was inherited or learned.

1. Choose a trait which is not clearly biological and is present in several family members, such as:
  - musical ability
  - an unusual intellectual interest
  - shyness/introversion
  - a love of acting or drama
  - ability to roll up one's tongue or wiggle ears
  
2. Construct a family tree, beginning with your siblings and going back through at least three generations of your ancestors (back to your grandparents). Trace the trait through the generations, indicating its presence on the family tree through color-coding or some other means. You may design the family tree on the computer, using a program for word processing, publishing, or any other appropriate software.
  - (a) Choose a sturdy piece of coloured paper for the background.
  - (b) On paper of a different colour(s), trace circles or create shapes and figures that would best represent each member of your family. Write their names. If desired, you may vary size, shape or colour to represent special characteristics. Pick a symbol to represent the trait you are researching. Include people who have deceased (grandparents)
  - (c) Glue everything into place securely.
  - (d) Include a key.
  - (e) Attach a written explanation. After you have completed this family tree, do you believe the trait / characteristic was inherited or learned? Why?


**KEY QUESTION # 30 – Genetic Disorders (20 marks)**
**Part 1 (18 marks)**

Directions: Copy the following chart into your notes and complete all the required information.

<b>Genetic Disorder</b>	<b>Characteristics of the Disorder</b>	<b>People at Risk</b>
Sickle-cell Anemia		
Tay-sachs Disease		
Cystic Fibrosis		
Down Syndrome		
Hemophilia		
Phenylketonuria		
Muscular Dystrophy		
Huntington's Disease		
Turner Syndrome		

**Part 2 (2 marks)**

What is the different between Genetic Disorders and Polygenic Diseases?

**KEY QUESTION # 31 – Polygenic Diseases (30 marks)**

Directions: Read over the information about “Polygenic Diseases” in your class notes and select five (5) polygenic diseases to research. Choose only ONE disease from each category. (ex: do not research two different types of cancer, only one).

NOTE: DO NOT RESEARCH MENTAL ILLNESS, THIS TOPIC WILL BE COVERED IN LESSON 7.

For each, gather the following information:

- (a) Description / Characteristics / Summary of the disease
- (b) Symptoms
- (c) Diagnosis / Types
- (d) Treatment(s) / Prognosis
- (e) Cause(s)
- (f) Risk Factors / People at Risk / Prevention

**KEY QUESTION # 32 – Lesson 4 ... Important Terms (15 marks)**

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

- |                          |                        |
|--------------------------|------------------------|
| 1. Heredity              | 2. Genes               |
| 3. Chromosomes           | 4. DNA                 |
| 5. Dominant genes        | 6. Recessive genes     |
| 7. Genetic disorders     | 8. Gene mutation       |
| 9. Gene testing          | 10. Health risk factor |
| 11. Genetic engineering  | 12. Gene therapy       |
| 13. Human Genome Project | 14. Polygenic diseases |
| 15. Autoimmune diseases  |                        |

# PPZ30

HEALTH FOR LIFE



LESSON 5

## Lesson 5 – Maintaining a Healthy Weight

### Maintaining a Healthy Weight

#### Body Mass Index (BMI)

Experts have developed a way to help figure out if a person is in the healthy weight range for his or her height. It's called the **body mass index**, or BMI. BMI is a formula that doctors use to estimate how much body fat a person has based on his or her weight and height.



The BMI formula uses height and weight measurements to calculate a BMI number. This number is then plotted on a chart, which tells a person whether he or she is underweight, average weight, at risk of becoming overweight, or overweight. The BMI (weight (kg)/height(m)<sup>2</sup>) is not a direct measure of body fat but it is the most widely investigated and most useful indicator, to date, of health risk associated with under and overweight. The Canadian Guidelines for Body Weight Classification in Adults uses the body mass index and waist circumference as indicators of health risk.

Figuring out the body mass index is a little more complicated for teens than it is for adults (that puberty thing again). BMI charts for teens use **percentile** lines to help individuals compare their BMIs to those of a very large group of people the same age and gender. There are different BMI charts for guys and girls under the age of 20.

A person's BMI number is plotted on the chart for their age and gender. Each BMI chart has eight percentile lines for 5th, 10th, 25th, 50th, 75th, 85th, 90th, and 95th percentiles. A teen whose BMI is at the 50th percentile is close to the average of the age group. A teen above the 95th percentile is considered overweight because 95% of the age group has a BMI less than he or she does. A teen below the 5th percentile is considered underweight because 95% of the age group has a higher BMI.

**OVERWEIGHT** – a condition in which a person is heavier than the standard weight range for her height

**OBESITY** – having an excess amount of body fat



#### SUPPORT QUESTION – Calculate YOUR BMI

Go to one of the following websites and calculate your BMI:

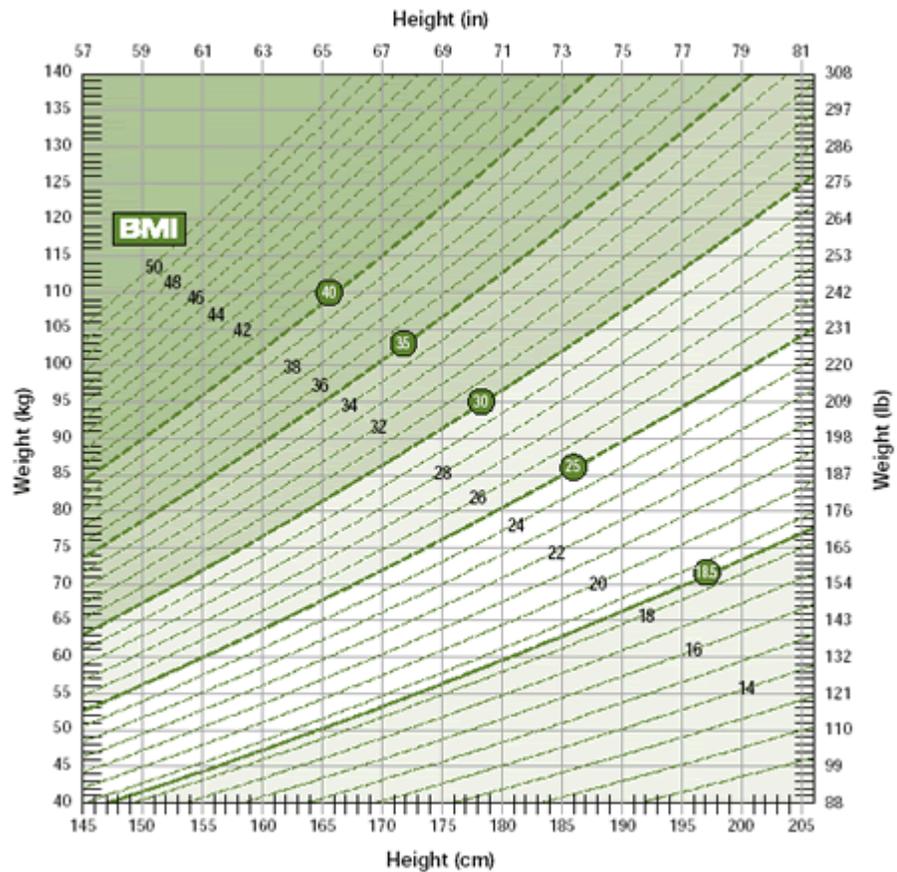
[http://pediatrics.about.com/cs/usefultools/l/bl\\_bmi\\_calc.htm](http://pediatrics.about.com/cs/usefultools/l/bl_bmi_calc.htm)

<http://www.teengrowth.com/index.cfm?action=bmi>

[http://www.obesehelp.net/BMI\\_Calculator.htm](http://www.obesehelp.net/BMI_Calculator.htm)

[http://www.kidshealth.org/teen/food\\_fitness/dieting/weight\\_height.html](http://www.kidshealth.org/teen/food_fitness/dieting/weight_height.html)

**Body Mass Index (BMI) Nomogram**



ADULTS: For a quick determination of BMI (kg/m<sup>2</sup>), use a straightedge to help locate the point on the chart where height (in or cm) and weight (lb or kg) intersect. **Read the number on the dashed line closest to this point.** For example, an individual who weighs 69 kg and is 173 cm tall has a BMI of approximately 23.

**Some health problems associated with body weight:**

<p><b>Overweight and obesity</b>                  Type 2 diabetes                  Dyslipidemia                  Hypertension                  Coronary heart disease                  Gallbladder disease                  Obstructive sleep apnea                  Certain cancers</p>	<p><b>Underweight*</b>                  Under nutrition                  Osteoporosis                  Infertility                  Impaired immunocompetence</p>
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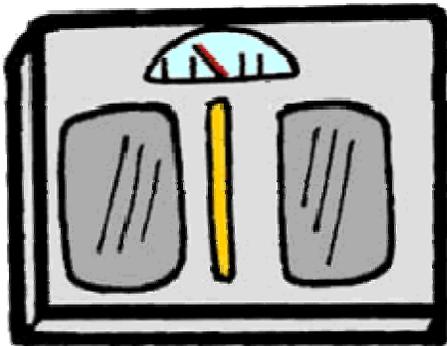
## What Does BMI Tell Us?

Although you can calculate BMI on your own, it's a good idea to ask your doctor or fitness counselor to help you figure out what it means. That's because a doctor can do more than just use BMI to assess a person's current weight. He or she can take into account where a girl or guy is during puberty and use BMI results from past years to track whether that person may be at risk for becoming overweight. Spotting this risk early on can be helpful because the person can then make changes in diet and exercise before he or she goes on to develop a weight problem.

## Getting Into Your “Genes”

Heredity plays a role in body shape and what a person weighs. People from different races, ethnic groups, and nationalities tend to have different body fat distribution (meaning they accumulate fat in different parts of their bodies) or body composition (amounts of bone and muscle versus fat). But genes are not destiny. No matter whose genes you inherit, you can have a healthy body and keep your weight at a level that's normal for you by eating right and being active.

Genes aren't the only things that family members may share. It's also true that unhealthy eating habits can be passed down, too. The eating and exercise habits of people in the same household probably have an even greater effect than genes on a person's risk of becoming overweight. If your family eats a lot of high-fat foods or snacks or doesn't get much exercise, you may tend to do the same. The good news is these habits can be changed for the better. Even simple forms of exercise, such as walking, have huge benefits for a person's health.



It can be tough dealing with the physical changes our bodies go through during puberty. But at this time, more than any other, it's not a specific number on the scale that's important. It's keeping your body healthy - inside and out.

### How Can I Be Sure I'm Not Overweight or Underweight?

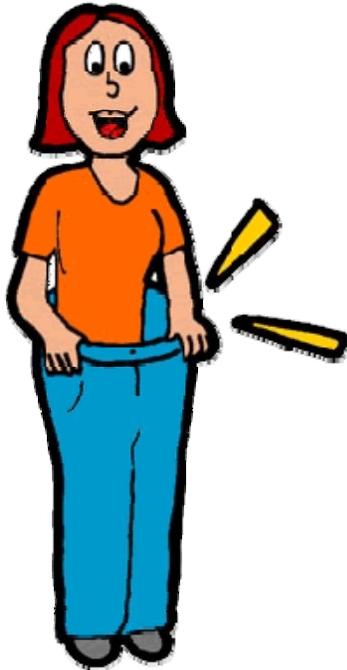
If you think you've gained too much weight or are too skinny, a doctor should help you decide whether it's normal for you or whether you really have a weight problem. Your doctor has measured your height and weight over time and knows whether you're growing normally.



### SUPPORT QUESTION – Factors and Feelings

On a separate sheet of paper, list three (3) feelings a person might have about his or her weight. Then write down three factors that might influence these feelings.

## Healthful Ways to Manage Weight



Weight management is a tricky topic. Lots of people are unhappy with their present weight, but most are not sure how to change it - and many would be better off staying where they are. You may want to look like the models or actors in magazines and on TV, but those goals might not be healthy or realistic for you. Besides, no magical diet or pill will make you look like someone else.

So what should you do about maintaining a healthy weight?

Being healthy is really about being at a weight that is right for you. The best way to find out if you are at a healthy weight or if you need to lose or gain weight is to talk to a doctor or dietitian. He or she can compare your weight with healthy norms to help you set realistic goals. If it turns out that you can benefit from weight loss then you can follow a few of the simple suggestions listed below to get started.

### ***How Do YOU Feel About Your Weight?***

Are you sick of feeling unhappy about your weight? Have you lost track of the number of diets you've tried, but that haven't worked? Are you tired of worrying about how to lose that last 10 pounds?

It's time to try a new way of thinking about your weight!

For many years, body fat has been seen as "bad". It is assumed that everyone can be thin. If a person is not thin, there must be something wrong with them. Fatness is seen something to be fixed, regardless of the cost. People who are fat are often stigmatized as being lazy and weak, with no willpower to control their eating.

In our society, the "cure" for fatness has often been to follow a strict diet or exercise plan until an "ideal" weight is reached. Success is defined by the amount of weight that is lost. The key word in this way of thinking is "control".

But, this view of body weight does not seem to reflect reality. Over the past few years, the population has been getting larger, not thinner, even though well over 25% of

Canadians are dieting. In most cases, the weight lost while on a diet is regained within a year. Apparently, being thin is not as easy, or as "normal", as we have been led to believe.

In contrast, the new way of looking at weight recognizes that people come in many different shapes and sizes. It accepts that people are large for a variety of reasons, including because they are genetically programmed to be so. It is not possible for all people to be thin.

While it is true that excess body fat can increase the risk of disease such as heart disease and some cancers, it does not mean that being fat is unhealthy. Good health is possible at any body size.

The new way of thinking encourages people to accept and understand their bodies. Instead of strict diet and exercise plans designed to cause weight loss, the focus is on learning information and skills that help people to feel better and to improve the quality of their lives. People are invited to look at all their options and to set their goals based on what is right for them. They are taught to get in touch with their internal signals of hunger and fullness and to balance healthy eating with enjoyable physical activity.

## ***Healthy Weight Management Techniques***

**Weight management is about long-term success.** People who lose weight quickly by crash dieting or other extreme measures usually gain back all (and often more) of the pounds they lost because they haven't permanently changed their habits. Therefore, the best weight management strategies are those that you can maintain for a lifetime. That's a long time, so we'll try to keep these suggestions as easy as possible!

**Be realistic about your body.** Recognize that your body size is, to some extent, dependent on your genes. It is part of your family heritage! Take a close look at your extended family (grandparents, aunts, uncles, cousins) to see what body shapes and sizes are realistic for you.

**Be good to yourself.** Learn to accept yourself for who you are. View yourself from many perspectives. Emphasize your strengths and beauties and be objective about your weaknesses and limitations. Celebrate the unique body and self that is you!

**Challenge the current values of our society.** Accept all body sizes as good. Don't be fooled by the media myth that only thin people can be happy, successful and fulfilled. Look for and create role models that are a better reflection of reality.

**Change your viewpoint.** Instead of asking "How can I get thin?" ask yourself "What can I do to be healthier and happier?" Your weight is not necessarily something you can change. The way you live your life is.

**Choose your own path or direction.** Don't let others tell you what you need to do to make your life better. Explore your options and make the choices that are right for you.

**Get in touch with your body.** Learn to recognize your internal signals of hunger and fullness. Listen to your body when it says "I need more" or "I've had enough". Work with your body, not against it, to maintain a balance between the amount of food you eat and the amount of energy you use.

**Make it a family affair.** Ask your mom or dad to lend help and support and to make dietary or lifestyle changes that might benefit the whole family, if possible. Teens who have the support of their families tend to have better results with their weight management programs. But remember, you should all work together in a friendly and helpful way - making weight loss into a competition is a recipe for disaster!



**Watch your drinks.** It's amazing how many extra calories can be lurking in the sodas, juices, and other drinks that you take in every day. Simply cutting out a couple of cans of soda or switching to diet soda can save you 360 calories or more each day. Drink lots of water or other sugar-free drinks to quench your thirst and stay away from sugary juices and sodas. Switching from whole to nonfat or low-fat milk is also a good idea.

week. Once you have that down, start gradually introducing healthier foods and exercise into your life.

**Start small.** Small changes are a lot easier to stick with than drastic ones. Try reducing the size of the portions you eat and giving up regular soda for a

**Stop eating when you're full.** Lots of people eat when they're bored, lonely, or stressed, or keep eating long after they're full out of habit. Try to pay attention as you eat and stop when you're full. Slowing down can help because it takes about 20 minutes for your brain to recognize how much is in your stomach. Sometimes taking a break before going for seconds can keep you from eating another serving.

**Avoid eating when you feel upset or bored** - try to find something else to do instead (a walk around the block or a trip to the gym are good alternatives). Many people find it's helpful to keep a diary of what they eat and when. Reviewing the diary later can help them identify the emotions they have when they overeat or whether they have unhealthy habits. A registered dietitian can give you pointers on how to do this.

**Eat less more often.** Many people find that eating a couple of small snacks throughout the day helps them to make healthy choices at meals. Stick a couple of healthy snacks (carrot sticks, a low-fat granola bar, pretzels, or a piece of fruit) in your backpack so that you can have one or two snacks during the day. Adding healthy snacks to your three squares and eating smaller portions when you sit down to dinner can help you to cut calories without feeling deprived.

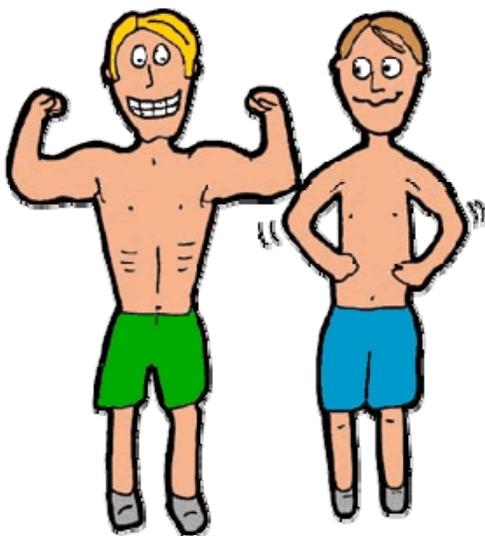
**Five a day keep the pounds away.** Ditch the junk food and dig out the fruits and veggies! Five servings of fruits and veggies aren't just a good idea to help you lose weight - they'll help keep your heart and the rest of your body healthy. Other suggestions for eating well: replace white bread with whole wheat, trade your sugary sodas for lots of water and a few cups of low-fat milk, and make sure you eat a healthy breakfast. Having low-sugar, whole grain cereal and low-fat milk and a piece of fruit is a much better idea than inhaling a donut as you run to the bus stop or eating no breakfast at all! A registered dietitian can give you lots of other snack and menu ideas.

**Avoid fad diets.** It's never a good idea to trade meals for shakes or to give up a food group in the hope that you'll lose weight - we all need a variety of foods to stay healthy. Stay away from fad diets because you're still growing and need to make sure you get proper nutrients. Avoid diet pills (even the over-the-counter or herbal variety). They can be dangerous to your health; besides, there's no evidence that they help keep weight off over the long term.

**Don't banish certain foods.** Don't tell yourself you'll never again eat your absolutely favorite peanut butter chocolate ice cream or a bag of chips from the vending machine at school. Making these foods forbidden is sure to make you want them even more. Also, don't go fat free: You need to have some fat in your diet to stay healthy, so giving up all fatty foods all the time isn't a good idea. The key to long-term success is making healthy choices most of the time. If you want a piece of cake at a party, go for it! But munch on the carrots rather than the chips to balance it out.

**Get active.** Find forms of physical activity that you can do and that you enjoy. Forget all the rules and the "shoulds" about exercise and have fun! Try a variety of different activities until you find the ones that really "move" you.

Not a jock? Find other ways to fit activity into your day: walk to school, jog up and down the stairs a couple of times before your morning shower, turn off the tube and help your parents in the garden, or take a stroll past your crush's house - anything that gets you moving. Your goal should be to work up to 60 minutes of exercise every day. But everyone has to begin somewhere. It's fine to start out by simply taking a few turns around the block before bed and building up your levels of fitness gradually.



**Build muscle.** Muscle burns more calories than fat. So adding strength training to your exercise routine can help you reach your weight loss goals as well as give you a toned bod. A good, well-balanced fitness routine includes aerobic workouts, strength training, and flexibility exercises.

**Forgive yourself.** So you were going to have one cracker with spray cheese on it and the next thing you know the can's pumping air and the box is empty? Drink some water, brush your teeth, and move on. Everyone who's ever tried to lose weight has found it challenging. When you slip up, the best idea is to get right back on track and don't look back. Avoid telling yourself that you'll get back on track tomorrow or next week or after New Year's. Start now.

**Try to remember that losing weight isn't going to make you a better person - and it won't magically change your life. It's a good idea to maintain a healthy weight because it's just that: healthy.**

## Diets, Diets, Diets

If you watch television, see movies, read newspapers, or flip through magazines, you've probably noticed that diets are everywhere. High-protein diets. Low-fat diets. All-vegetable diets. No-carb diets. No white food diets. But with all the focus on dieting, how do you figure out what's healthy and what isn't?

Many teens feel pressured to lose weight and try different types of diets, but if you really need to lose weight, improving your eating habits and exercising will help you more than any diet.

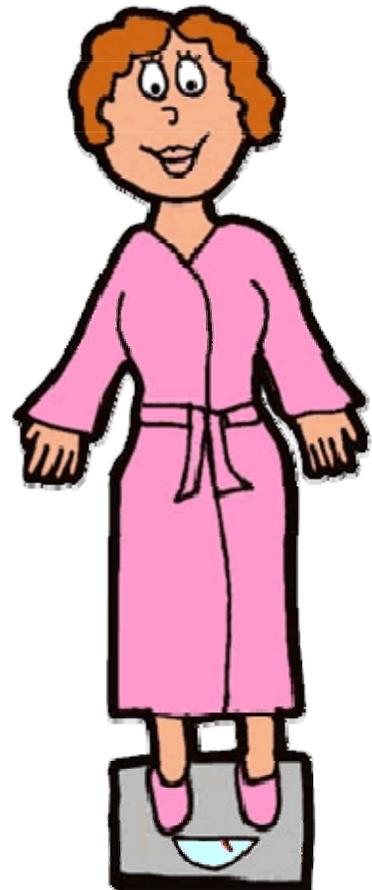
### Why Diet?

People diet for many reasons. Some teens are an unhealthy weight and need to pay closer attention to their eating and exercise habits. Some teens play sports and want to be in top physical condition. Other teens may feel they would look and feel better if they lost a few pounds.

### Diet Dangers

The word diet usually means restricting calories or certain food groups. When you're a teen, dieting can be dangerous because you may not get the right kinds and amounts of nutrients, which can lead to poor growth and other health problems. In other words, by not eating right your height could even fall short!

Any diet on which you eat fewer calories than you need to get through the day without feeling like you're going to keel over - like an 800-calorie-per-day diet, for instance - is dangerous. Diets that don't allow any fat can also be bad for you. You should have a certain amount of fat in



your diet, up to 30% of your total calories. Although a low-fat diet may be OK, don't eat a diet completely free of fat.

Don't fall for diets that restrict certain food groups, either. A diet that says no to breads or pastas or allows you to eat only fruit is unhealthy. You won't get the vitamins and minerals you need and although you may lose weight, you'll probably gain it back as soon as you start eating in your usual way.

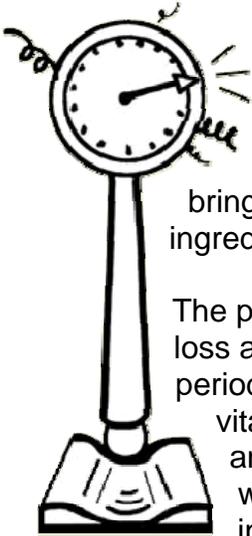
## A “Good” Diet

The most important diet is to eat a wide variety of enough food to meet your body's needs. Try to cut back on meats high in fat (like burgers and hot dogs), eat more fruits and veggies, and drink more water instead of sugary drinks like sports drinks or sodas.

## Fad Diets

Fads come and go, but when it comes to fad diets, the health effects can be permanent - especially for teenagers. Not all teens who go on diets need to lose weight. Pressure from friends, TV - and sometimes parents - to be very thin may create a distorted body image. According to health experts fad diets can keep teenagers from getting the calories and nutrients they need to grow properly.

There is no secret to successful weight loss. Despite ads to the contrary, no new fad diet or pill will "burn away" fat or bring about fast weight loss. The fact is, the only way to lose weight is to consistently eat fewer calories than your body needs and uses. This can be done by eating less food, doing more exercise, or both.



Among the many diets that may look attractive to teenagers are powdered drinks that act as meal substitutes, diets that focus on one food or a group of foods that are promoted as having almost "magical" properties that bring about weight loss, or pills that claim to have special weight loss ingredients.

The popularity of most fad diets is usually short-lived, and so is the weight loss associated with the diet. If teens stay on a restrictive diet over a long period of time, they may deprive their bodies of the well-balanced diet that is vital during the teen years when the body goes through dramatic change and growth. Also, depending on the ingredients, some pills promoted for weight loss can cause side effects such as nervousness, vomiting or insomnia, and can be addictive.

Fad Diets are weight-loss plans that are popular for only a short time. A fad diet is a weight loss plan or aid that promises dramatic results. These diets don't offer long-term success, and they are usually not very healthy. Some of them can actually be dangerous to your health. Some common diet types are listed in the box below.

**TYPES OF FAD DIETS**

<b>Diet Type</b>	<b>Some Examples</b>
Controlled Carbohydrates	<ul style="list-style-type: none"> <li>• Atkins' New Diet Revolution</li> <li>• The Carbohydrate Addict's Diet</li> <li>• Protein Power</li> <li>• Sugar Busters</li> <li>• The Zone</li> <li>• Dr. Bernstein</li> </ul>
High Carbohydrate/Low Fat	<ul style="list-style-type: none"> <li>• Dr. Dean Ornish: Eat More, Weigh Less</li> <li>• The Good Carbohydrate Revolution</li> <li>• The Pritikin Principle</li> <li>• Save-Your-Life Diet</li> </ul>
Controlled Portion Sizes	<ul style="list-style-type: none"> <li>• Dr. Shapiro's Picture Perfect Weight Loss</li> <li>• Volumetrics Weight-Control Plan</li> </ul>
Food Combining	<ul style="list-style-type: none"> <li>• Fit for Life</li> <li>• Suzanne Somers' Somersizing</li> </ul>
Liquid Diets	<ul style="list-style-type: none"> <li>• Cambridge Diet</li> <li>• Slim-Fast</li> </ul>
Diet Pills/Herbal Remedies	<ul style="list-style-type: none"> <li>• Herbal Magic</li> <li>• Dexatrim Natural</li> <li>• Hydroxycut</li> <li>• Metabolife 356</li> <li>• Dexatrim</li> <li>• Anorexin Capsules</li> <li>• Appedrine</li> <li>• Hungrex Plus</li> <li>• Nature's Bounty Slim</li> <li>• Pretts Tablets</li> <li>• Prolamine</li> <li>• Trimspa</li> </ul>
Other	<ul style="list-style-type: none"> <li>• Eat Right For Your Type: The Blood Type Diet</li> <li>• Macrobiotics</li> <li>• Mayo Clinic Diet</li> <li>• LA Weight Loss Clinics</li> <li>• Weight Watchers</li> <li>• Jenny Craig</li> <li>• Cider Vinegar</li> <li>• South Beach Diet</li> </ul>

## ***If FAD DIETS DON'T WORK, WHY are they SO popular?***

People are often willing to try anything that promises to help them lose weight because they want to look or feel better, or because they are worried about getting weight-related diseases. Companies that promote fad diets take advantage of this fact. They appeal to people by promising weight loss that's very quick and easy. Many people prefer to try the quick fix of a fad diet instead of making the effort to lose weight through long-term changes in their eating and exercise habits.

Fad diets also become popular because many of them do work for a short time. In many cases, this is because when you stop eating certain types of food or eat "special" combinations of foods, you are getting fewer calories than you normally would. You are also paying more attention to what you are eating. However, it's likely that much of the weight you lose is from water and lean muscle, not body fat. Also, most people are not able to keep up with the demands of a diet that strictly limits their food choices or requires them to eat the same foods over and over again. People who use fad diets usually end up gaining back any weight that they lost.

### **How can I recognize fad diets?**

As a general rule, steer clear of diets or diet products that do any of the following:

- Claim to help you lose weight very quickly (more than 1 or 2 pounds per week). Remember, it took time for you to gain unwanted weight and it will take time to lose it.
- Promise that you can lose weight and keep it off without giving up "fatty" foods or exercising on a regular basis. If a diet plan or product sounds too good to be true, it probably is.
- Base claims on "before and after" photos.
- Offer testimonials from clients or "experts" in weight loss, science or nutrition. Remember that these people are probably being paid to advertise the diet plan or product.
- Draw simple conclusions from complex medical research.
- Limit your food choices and don't encourage you to get balanced nutrition by eating a variety of foods.



Require you to spend a lot of money on things like seminars, pills or prepackaged meals in order for the plan to work.

## Validity of Health, Weight Loss & Exercise Equipment

The sale of home exercise equipment and diet plans is a billion-dollar industry. You are bombarded with magazine ads & infomercials that tell you that exercising 5 minutes a day with an apparatus will flatten your stomach, reduce your thighs & firm your butt. You are also told that exercise is not required, because a diet pill will allow you to eat whatever you want, while ensuring that you DO NOT gain weight. Thousands of weight loss schemes have been marketed -some sincere but flawed, others frankly fraudulent.

The validity of “quick-fix” claims is questionable. Losing weight requires a combination of a healthy diet & regular exercise. You cannot “spot-reduce” weight in certain areas. The place that you store most of your fat will be the place you lose it last. Weight-loss scams thrive because people look for, and expect to find, easy solutions to their problems, and a better body with little effort. *If weight loss was easy, everyone would be in good shape!*

Infomercials, shown on cable TV promise that you can lose all the weight you want while you eat everything you want are false and not to be believed. This is what everyone wants of, course, a quick cure, but there is no easy path. It doesn't matter what they are trying to sell you - crab shells (chitin), fat absorbers, fat burners, magic mushrooms, wonder bark from Brazil, magic cellulite pills, green goop, algae, magic genies in a bottle - it's all a great fantasy that will not come true.

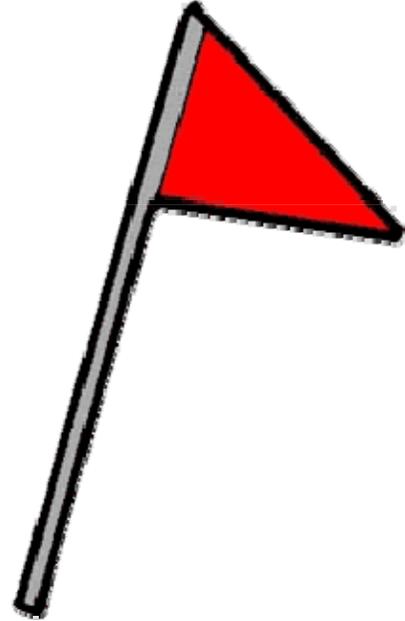


Every year, new weight-loss books appear on the bookstalls, and magazines run repetitious articles on the subject. Millions of people have proven that it is easier to gain weight than to lose it. Dieters have proven that weight-loss attempts by following a "weight-loss diet" may succeed for a short time but ultimately fail. There is no magic diet. None of the weight loss schemes printed in any book over the past 50 years has had any real advantage over common sense.

The medical community, food industry, dietitians government health and regulatory agencies, magazine publishers and diet businesses are all watching helplessly as Canadians consume excessive amounts of food and become increasingly obese.

**RED FLAGS ... It's likely to be a SCAM if it:**

- lacks scientific evidence or demonstrated links between the result and the effects of the program, food, supplement, gadget or process being promoted
- is sold outside normal commercial distribution channels such as through the Internet, by unqualified individuals or mail order advertisements
- claims effortless, large or fast weight loss such as 'lose 30 kilos in 30 days', 'lose weight while you sleep', 'lose weight and keep it off for good'
  - o Causes permanent weight loss (even when the consumer stops using the product).
  - o Blocks the absorption of fat or calories to enable consumers to lose substantial weight.
  - o Safely enables consumers to lose more than three pounds per week for more than four weeks.
- claims to achieve weight loss without exercise, or without managing food or energy intake
- fails to recommend medical supervision, particularly for low-calorie diets
- claims to reduce fat or 'cellulite' in specific areas
- uses emotive terms such as 'miraculous exclusive breakthrough'
- recommends the exclusive use of any type of gadget
- claims to be a treatment for a wide range of ailments and nutritional deficiencies
- promotes a particular ingredient, compound or food as the key factor of success
- demands large advance payments or long-term contracts



## How it's done!

Weight-conscious people are always looking for an easy way to control their weight. Scammers know that, and promote new diets and new weight-loss products to make easy money.

Often attractive people or celebrities are used to sell the products. These may be people with a different body shape and metabolism to you and who use the product in conjunction with an exercise regime and strict diet.

However, fad diets and products produce temporary weight loss at best and are too dangerous for long-term use. This type of weight-loss nearly always triggers the body to go back to its previous size. Unless a dieter develops and maintains better eating and physical activity habits, weight lost (often water or muscle rather than fat) will soon return.

## How to Protect Yourself

### Say 'No' or hold off

'No, I will not waste my money on your plan. I know that the only way to lose weight is to burn off more energy than I consume, so I choose to eat appropriately and to increase my physical activity.'

'No, this sounds too good to be true. I will check with my doctor first.'

### Look further

A healthy body requires a tailored program which balances diet and physical activity to suit your individual body type. Remember, everyone has a different body shape and there are no special products that will help you achieve celebrity fitness.

### Question

Do not blindly accept the claims of a celebrity, an unqualified friend, or even a fitness professional, especially if they profit from supplying diet products. Before you decide on an exercise or diet program of any kind, you should check with your doctor.



### Decide

Remember that to achieve a new body you will require new attitudes and life habits, and often professional assistance.

## Know the Facts about Diet Claims

### "LOSE WEIGHT WHILE YOU SLEEP."

**Fact:** Losing weight requires significant changes affecting what kind of food, and how much of it, you eat. Claims for diet products and programs that promise weight loss without sacrifice or effort are bogus.

### "LOSE WEIGHT AND KEEP IT OFF FOR GOOD."

**Fact:** Weight loss maintenance requires permanent changes in how you eat and how much you exercise. Be skeptical about products that claim you will keep off any weight permanently or for a long time.

### "JOHN DOE LOST 84 POUNDS IN SIX WEEKS."

**Fact:** Someone else's claim of weight loss success may have little or no relevance to your own chances of success. Don't be misled. Poor Joe might be dying of AIDS.

### "LOSE ALL THE WEIGHT YOU CAN FOR JUST \$99."

**Fact:** There may be hidden costs. For example, some programs do not publicize the fact that you must buy prepackaged meals from them at costs that exceed program fees. Before you sign up for any weight loss program, ask for all the costs. Get them in writing.

### "LOSE 30 POUNDS IN JUST 30 DAYS."

**Fact:** As a rule, the faster you lose weight, the more likely you are to gain it back. In addition, fast weight loss may harm your health.

### "SCIENTIFIC BREAKTHROUGH... MEDICAL MIRACLE"

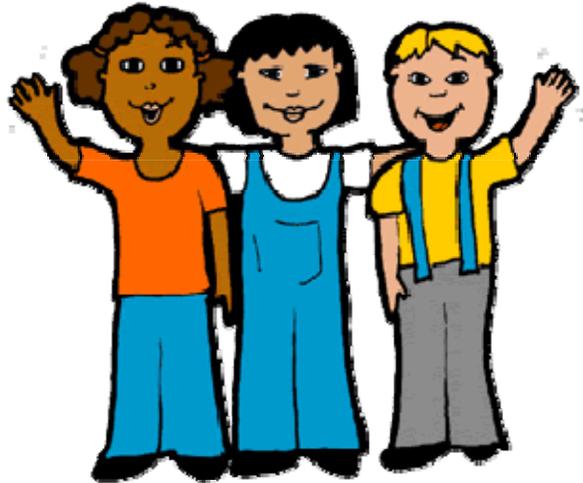
**Fact:** To lose weight, you have to reduce your intake of calories and increase your physical activity. Be skeptical of extravagant claims to the contrary.

## **YOUR Health, Not Weight, is Most Important**

We all want to look our best, it makes us feel good and gives us confidence. The key to an overall attractive appearance is projecting a positive, friendly attitude. On a more cosmetic level, you'll look your best enhancing your best features. You may have a great smile, big gorgeous eyes, fab hair, or long legs. Learn how to use those assets to look your best; to feel good and confident too.

This is a great time of your life to experiment with makeup, hair styles and clothes. Discover which styles best accentuate your coloring and features. Magazines can be a source of inspiration, but can make many teens feel inadequate about their looks. The media bombards us with images of super models who are often too thin and too "perfect" to be true. Keep in mind, you want to look like "you" and not someone else.

When you're in good health and take care of yourself on the inside, it's bound to radiate to the outside!





## Key Questions for Lesson 5 (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 # 33 – Healthy Weight Management (15 marks)

1. List three (3) factors that influence what an individual's appropriate weight should be.
2. Sandra want to be sure that she maintains a healthy weight range as she moves through her teen years. What five (5) strategies can Sandra use to help her meet this goal? Describe each strategy in detail.
3. How does regular physical activity help promote a healthy weight?
4. Analyse the relationship between maintaining a healthy weight and disease prevention. Name three (3) diseases that can be prevented by maintaining a healthy weight.



### KEY QUESTION # 34 – Fad Diets (10 marks)

1. Write the word "Fad Diet" in the centre of a sheet of paper. Around the term, write five (5) words or phrases that come to mind when you hear the term "fad diet"
2. List three (3) "fad diets" you have heard of or have tried (refer to your class notes)
3. List five (5) ways to inform teens about the dangers of fad diets and other risky weight-loss strategies.
4. Why are fad diets only popular for only a short time?
5. Fad diets may promise quick and easy weight loss, but any weight lost on these diets is usually gained back. What features does a HEALTHY weight loss program have?



### KEY QUESTION # 35 – Lesson 5 ... Important Terms (5 marks)

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

- |                |               |
|----------------|---------------|
| 1. BMI         | 2. Overweight |
| 3. Obesity     | 4. Fad diets  |
| 5. "Good" diet |               |

**KEY QUESTION # 36 – My Food Diary (45 marks)**

If you're looking to **begin a diet** or just to begin **eating healthier**- it's worth keeping a diary to help set goals and understand your current eating habits. It will help **identify** the points of the day, the people, or tasks that trigger you to eat.

A piece of cake, a handful of nuts, a can of cola or a small donut may not seem like much at the time, but over time these calories add up. Keep your diary with you all day, and write down everything you eat or drink. As part of your food diary try to keep track of the number of glasses of water you drink a day - aim for 2 litres / 4 pints of water a day.

Copy and use the following page to record what you eat and when. Most experts say you need to keep your first food diary for at least three consecutive days before you can really get an idea of what your diet is normally like and what your problem areas are.

**Part 1 – Food Diary (5 marks each day = 35 marks total)**

For ONE WEEK keep track of EVERYTHING you eat. You will probably have to make seven (7) copies of the food diary chart, one for each day. Be sure to include all the following information on your daily food diary:

- (a) the time the food item was eaten
- (b) the name of the food and beverage consumed
- (c) the portion size
- (d) the food group it was from
- (e) your hunger level (using a scale of 0 to 5 with 5 being really hungry and 0 being not hungry at all)
- (f) where you ate it
- (g) who you were with
- (h) mood you were in

**Part 2 – Food Diary Reflection (10 marks)**

1. Does your diet consist mainly of “junk food” or healthy and nutritious foods?
2. How does your diet fit into Canada’s Food guide? (refer to lesson 2)
3. Does your diet support a healthy lifestyle? Why or why not?
4.
  - (a) Did you find any meal in particular to be a problem area?
  - (b) Which foods can you exchange for a healthier alternative?
5.
  - (a) Did you eat anything today when you weren't hungry?
  - (b) What were you feeling before you ate it?
  - (c) What were you feeling after you ate it?
6. How could you have handled the situation and/or your feelings without turning to food?
7. List at least one alternative activity you will use instead of eating in response to feelings.



**KEY QUESTION # 37 – SCAM or SAFE? (15 marks)**

Directions: Find an ad for a nutritional health product, diet advertisements or exercise equipment found in magazines, newspapers, flyers, online, etc and evaluate its validity. Students identify and analyze the credibility, risks, and benefits of advertised nutritional products or diets.

1. Cut out your ad & mount it on a piece of coloured paper (5 marks)

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

2. Answer the following in complete sentences: (10 marks)
  - (a) List three to five “scam” guidelines (from your class notes) that apply to the product being advertised?
  - (b) Are the claims made in the ad realistic? Explain
  - (c) What are the realistic benefits to be achieved by using this product?
  - (d) What are the possible negative effects of using this product?
  - (e) What is your overall opinion of this product? Write reasons to support the use of this product or to warn against the use of the product
  - (f) How does the information or principles of the product support or contradict *Canada’s Food Guide to Healthy Eating*?

**KEY QUESTION # 38 – The Power of Persuasion (10 marks)**

Directions: After looking through and analyzing Ads from magazines you are now going to invent and create your own! Your task is to design an ad as if you are a “Quack” or doctor or “Scam” artist with a special health, diet or exercise product of your own.

Please include the following information in your ad:

- (a) Name of product
- (b) Use of product
- (c) Ingredients / features
- (d) Price
- (e) How to get it
- (f) Your credentials
- (g) Any other important information
- (h) CREATIVITY – make me want to buy your product!

**You are now FINISHED Unit 1. Congratulations!!!**