

ATHLETIC SCIENCE 10

MODULE 1: HEALTH AND WELLNESS FUNDAMENTALS

OUTCOMES

1. What does it mean to be in good health according to Canadian society?
 - international and national definitions of health and wellness
 - twelve key determinants of health according to Health Canada
 - who uses these health determinants?
 - roles and responsibilities of individuals/government/community
 2. Dimensions of wellness and factors affecting personal wellness
 - define wellness (physical/emotional/spiritual/intellectual/social)
 - Strategies to optimize health and wellness
 3. Hand washing importance and technique
 4. Apply basic principles of movement that contribute to health and wellness
 5. Explain basic principles of anatomy, physiology, and disease related to systems of the human body
 6. Basic legal obligation of people in health care, volunteer, community support and recreation settings
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WHAT DOES IT MEAN TO BE OF GOOD HEALTH?

Many factors combine together to affect the health of individuals and communities. Whether people are healthy or not, is determined by their circumstances and environment. To a large extent, factors such as where we live, the state of our environment, genetics, our income and education level, and our relationships with friends and family all have considerable impacts on health, whereas the more commonly considered factors such as access and use of health care services often have less of an impact.

The determinants of health include:

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

WHAT DETERMINES GOOD HEALTH?

WHO
determinants

The context of people's lives determine their health, and so blaming individuals for having poor health or crediting them for good health is inappropriate. Individuals are unlikely to be able to directly control many of the determinants of health. These determinants—or things that make people healthy or not—include the above factors, and many others:

- **Income and social status** - higher income and social status are linked to better health. The greater the gap between the richest and poorest people, the greater the differences in health.
- **Education** – low education levels are linked with poor health, more stress and lower self-confidence.
- **Physical environment** – safe water and clean air, healthy workplaces, safe houses, communities and roads all contribute to good health. Employment and working conditions – people in employment are healthier, particularly those who have more control over their working conditions
- **Social support networks** – greater support from families, friends and communities is linked to better health. Culture - customs and traditions, and the beliefs of the family and community all affect health.
- **Genetics** - inheritance plays a part in determining lifespan, healthiness and the likelihood of developing certain illnesses. Personal behaviour and coping skills – balanced eating, keeping active, smoking, drinking, and how we deal with life's stresses and challenges all affect health.
- **Health services** - access and use of services that prevent and treat disease influences health
- **Gender** - Men and women suffer from different types of diseases at different ages

EVIDENCE BASED DECISION MAKING

Definition:

- The aim of evidence-based decision making (EBDM) is to ensure that decisions about health and health care are based on the best available knowledge.
 - To use EBDM one must first assess what constitutes evidence, both in relation to health-enhancing interventions and to organizational or policy level decision making.
 - One also needs to explore the availability and accessibility of reliable information and knowledge that identifies how interventions, practices and programs affect health outcomes.
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EVIDENCE BASED DECISION MAKING – DETERMINANTS OF HEALTH

An evidence base about the impact that projects, programs and policies have had on health is required to carry out Health Impact Assessments. The best available evidence is used within the appraisal stage of HIA to determine what impacts may occur (both positive and negative), the size of the impact (if possible) and the distribution of that impact in different population groups.

It is generally assumed that the evidence for health impacts exists, and that searching and collating will provide the necessary evidence. Unfortunately this is not often the case, and the evidence of health impacts is often not available. This is because of the long causal pathway between the implementation of a project/program/policy and any potential impact on population health, and the many confounding factors that make the determination of a link difficult. Within the HIA it is important therefore to be explicit about sources of evidence and to identify missing or incomplete information.

Providing a comprehensive review of the evidence base is not simple. It needs to draw on the best available evidence – that from reviews and research papers, and including qualitative and quantitative evidence. This information must be supplemented with local and expert knowledge, policy information, and proposal specific information.

However, there are examples where the best available evidence has been documented, and in some cases summarized. These are presented below:

Transport

Food and Agriculture

Housing

Waste

Energy

Industry

Urbanization

Water

Radiation

Nutrition and health

WHAT DOES CANADA SAY ABOUT “GOOD HEALTH”?

- The federal government of Canada also recognizes that spending more on health research is only part of the solution to getting Canadians healthier
- . We can also address health issues by broadening our approach to health interventions. We've learned a lot in the past several decades about what determines health and where we should be concentrating our efforts.
- Much of the research is telling us that we need to look at the big picture of health to examine factors both inside and outside the health care system that affect our health.
- At every stage of life, health is determined by complex interactions between social and economic factors, the physical environment and individual behavior.
- These factors are referred to as 'determinants of health'. They do not exist in isolation from each other. It is the combined influence of the determinants of health that determines health status.

DETERMINANTS OF HEALTH – HEALTH CANADA

■ Key Determinants of Good Health in Canada

Income and Social Status

Social Support Networks

Education and Literacy

Employment/Working Conditions

Social Environments

Physical Environments

Personal Health Practices and Coping Skills

Healthy Child Development

Biology and Genetic Endowment

Health Services

Gender

Culture

SO WHAT ARE THE DETERMINANTS USED FOR?

The challenge we face is how to use what we know about the determinants of health to:

- focus our research agenda so we can increase our understanding of how the basic determinants of health influence collective and personal well-being
- adopt strategies that improve health for Canadians



WHO IS RESPONSIBLE FOR WHAT ROLE?

- 1. Federal agencies: Health Canada, Public Health Organization of Canada**
 - http://www.phac-aspc.gc.ca/about_apropos/index-eng.php
 - 2. Provincial agencies: Alberta Health Services**
 - <http://www.health.alberta.ca/services/alberta-health-services.html>
 - 3. Community Agencies: Aboriginal Health, Car Seat Safety**
 - <http://www.albertahealthservices.ca/facilities.asp?pid=facility&rid=1000259>
 - 4. Nonprofit Organizations:**
 - <http://culture.alberta.ca/anvsi/faq.aspx>
 - 5. Health Care Professionals: nurses, doctors**
 - <http://www.hc-sc.gc.ca/fniah-spnia/services/nurs-infirm/index-eng.php>
 - 6. Individual Consumers: everyday Albertan/Canadian people**
- 

ASSIGNMENT #1: ROLE AND RESPONSIBILITIES

RESEARCH the roles and responsibilities of those involved in health care (see previous slide)

SUMMARIZE these roles

CREATE a visual/poster/chart/brochure/presentation on these various roles and responsibilities

Requirements:

- Must cite any sources used, and pictures
- Must be in your own words and easy to understand
- Must cover all the people on the previous slide
- Must be visually appealing, contain accurate information and be comprehensive in information

Evaluation: /16

WELLNESS – DEFINITIONS RELATED TO

Physical Wellness:

Emotional Wellness:

Spiritual Wellness:

Intellectual Wellness:

Social Wellness:



WELLNESS – DEFINITIONS RELATED TO

Active Living:

Physical activity:

Physical Fitness:



WELLNESS – DEFINITIONS RELATED TO

Healthy Eating:

Psycho-social Wellness:

Quality of Life:

Personal Life Choices:



HOW TO OPTIMIZE P.H & W. -

Where do you go to find out new health information?

- List some:
 - Internet sites (be specific)
 - Stores
 - Peers

Is it reliable? YES/NO.....why? (explain)

Create a list of websites/places you could go for reliable health information:

-
-
-
-



CANADA'S FOOD GUIDE

Recommended Number of Food Guide Servings per Day

| Children | | | Teens | | Adults | | | |
|----------------|-----|---------|-------|---------|--------|---------|-------|---|
| 2-3 | 4-8 | 9-13 | 14-18 | | 19-50 | | 51+ | |
| Girls and Boys | | Females | Males | Females | Males | Females | Males | |
| 4 | 5 | 6 | 7 | 8 | 7-8 | 8-10 | 7 | 7 |
| 3 | 4 | 6 | 6 | 7 | 6-7 | 8 | 6 | 7 |
| 2 | 2 | 3-4 | 3-4 | 3-4 | 2 | 2 | 3 | 3 |
| 1 | 1 | 1-2 | 2 | 3 | 2 | 3 | 2 | 3 |

What is One Food Guide Serving?

Look at the examples below.



Fresh, frozen or canned vegetables
125 mL (½ cup)



Leafy vegetables
Cooked: 125 mL (½ cup)
Raw: 250 mL (1 cup)



Fresh, frozen or canned fruits
1 fruit or 125 mL (½ cup)



100% Juice
125 mL (½ cup)



Bread
1 slice (35g)



Bagel
½ bagel (45 g)



Flat breads
½ pita or ½ tortilla (35 g)



Cooked rice, bulgur or quinoa
125 mL (½ cup)



Cereal
Cold: 30 g
Hot: 175 mL (¾ cup)



Cooked pasta or couscous
125 mL (½ cup)



Milk or powdered milk (reconstituted)
250 mL (1 cup)



Canned milk (evaporated)
125 mL (½ cup)



Fortified soy beverage
250 mL (1 cup)



Yogurt
175 g (¾ cup)



Kefir
175 g (¾ cup)



Cheese
50 g (1 ½ oz.)



Cooked fish, shellfish, poultry, lean meat
75 g (2 ½ oz.)/125 mL (½ cup)



Cooked legumes
175 mL (¾ cup)



Tofu
150 g or 175 mL (¾ cup)



Eggs
2 eggs



Peanut or nut butters
30 mL (2 Tbsp)



Shelled nuts and seeds
60 mL (¼ cup)

Make each Food Guide Serving count...

wherever you are – at home, at school, at work or when eating out

► **Eat at least one dark green and one orange vegetable each day.**

- Go for dark green vegetables such as broccoli, romaine lettuce and spinach.
- Go for orange vegetables such as carrots, sweet potatoes and winter squash.

► **Choose vegetables and fruit prepared with little or no added fat, sugar**

- Enjoy vegetables steamed, baked or stir-fried instead of deep-fried.

► **Have vegetables and fruit more often than juice.**

► **Make at least half of your grain products whole grain each day.**

- Eat a variety of whole grains such as barley, brown rice, oats, quinoa and wild rice.
- Enjoy whole grain breads, oatmeal or whole wheat pasta.

► **Choose grain products that are lower in fat, sugar or salt.**

- Compare the Nutrition Facts table on labels to make wise choices.
- Enjoy the true taste of grain products. When adding sauces or spreads, use small amounts.

► **Drink skim, 1%, or 2% milk each day.**

- Have 500 mL (2 cups) of milk every day for adequate vitamin D.
- Drink fortified soy beverages if you do not drink milk.

► **Select lower fat milk alternatives.**

- Compare the Nutrition Facts table on yogurts or cheeses to make wise choices.

► **Have meat alternatives such as beans, lentils and tofu often.**

► **Eat at least two Food Guide Servings of fish each week.***

- Choose fish such as char, herring, mackerel, salmon, sardines and trout.

► **Select lean meat and alternatives prepared with little or no added fat or salt**

- Trim the visible fat from meats. Remove the skin on poultry.
- Use cooking methods such as roasting, baking or poaching that require little or no added fat.
- If you eat luncheon meats, sausages or prepackaged meats, choose those lower in salt (sodium) and fat.

The chart above shows how many Food Guide Servings you need from each of the four food groups every day.

Having the amount and type of food recommended and following the tips in Canada's Food Guide will help:

- Meet your needs for vitamins, minerals and other nutrients.
- Reduce your risk of obesity, type 2 diabetes, heart disease, certain types of cancer and osteoporosis.
- Contribute to your overall health and vitality.



Oils and Fats

- Include a small amount – 30 to 45 mL (2 to 3 Tbsp) – of unsaturated fat each day. This includes oil used for cooking, salad dressings, margarine and mayonnaise.
- Use vegetable oils such as canola, olive and soybean.
- Choose soft margarines that are low in saturated and trans fats.
- Limit butter, hard margarine, lard and shortening.



Enjoy a variety of foods from the four food groups.



Satisfy your thirst with water

Drink water regularly to stay hydrated. Drink water in hot weather when you are active.

* Health Canada provides advice for limiting exposure to mercury from certain types of fish. Refer to www.healthcanada.gc.ca

CANADA'S FOOD GUIDE

ice for different ages and stages...

Children
 Children have small appetites and need frequent meals and snacks. Offer a variety of nutritious meals and snacks. Restrict nutritious foods because of fat content. Offer a variety of fruits and vegetables. All... be a good role model.

Women of childbearing age

All women who could become pregnant and those who are pregnant or breastfeeding need a multivitamin containing **folic acid** every day. Pregnant women need to ensure that their multivitamin also contains **iron**. A health care professional can help you find the multivitamin that's right for you. Pregnant and breastfeeding women need more calories. Include an extra 2 to 3 Food Guide Servings each day.

Here are two examples:

- Have fruit and yogurt for a snack, or
- Have an extra slice of toast at breakfast and an extra glass of milk at supper.

Men and women over 50

The need for **vitamin D** increases after the age of 50. In addition to following *Canada's Food Guide*, everyone over the age of 50 should take a daily vitamin D supplement of 10 µg (400 IU).

How do I count Food Guide Servings in a meal?

Here is an example:

Vegetable and beef stir-fry with rice, a glass of milk and an apple for dessert

| | | |
|--|---|---|
| 250 mL (1 cup) mixed broccoli, carrot and sweet red pepper | = | 2 Vegetables and Fruit Food Guide Servings |
| 75 g (2 1/2 oz.) lean beef | = | 1 Meat and Alternatives Food Guide Serving |
| 250 mL (1 cup) brown rice | = | 2 Grain Products Food Guide Servings |
| 5 mL (1 tsp) canola oil | = | part of your Oils and Fats intake for the day |
| 250 mL (1 cup) 1% milk | = | 1 Milk and Alternatives Food Guide Serving |
| 1 apple | = | 1 Vegetables and Fruit Food Guide Serving |

Eat well and be active today and every day!

The benefits of eating well and being active include:

- Better overall health.
- Lower risk of disease.
- A healthy body weight.
- Feeling and looking better.
- More energy.
- Stronger muscles and bones.

Be active

To be active every day is a step towards better health and a healthy body weight.

It is recommended that adults accumulate at least 2 1/2 hours of moderate to vigorous physical activity each week and that children and youth accumulate at least 60 minutes per day. You don't have to do it all at once. Choose a variety of activities spread throughout the week.

Start slowly and build up.

Eat well

Another important step towards better health and a healthy body weight is to follow *Canada's Food Guide* by:

- Eating the recommended amount and type of food each day.
- Limiting foods and beverages high in calories, fat, sugar or salt (sodium) such as cakes and pastries, chocolate and candies, cookies and granola bars, doughnuts and muffins, ice cream and frozen desserts, french fries, potato chips, nachos and other salty snacks, alcohol, fruit flavoured drinks, soft drinks, sports and energy drinks, and sweetened hot or cold drinks.

Read the label

- Compare the Nutrition Facts table on food labels to choose products that contain less fat, saturated fat, trans fat, sugar and sodium.
- Keep in mind that the calories and nutrients listed are for the amount of food found at the top of the Nutrition Facts table.

Limit trans fat

When a Nutrition Facts table is not available, ask for nutrition information to choose foods lower in trans and saturated fats.

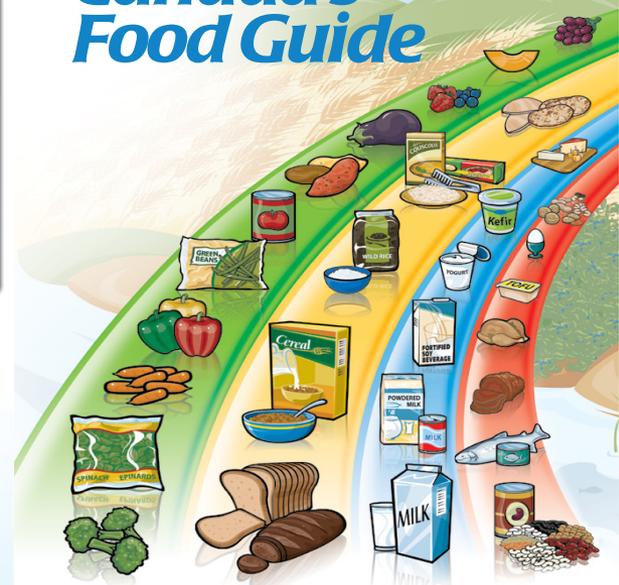
Nutrition Facts

Per 0 mL (0 g)

| Amount | % Daily Value |
|-------------------------|---------------|
| Calories 0 | |
| Fat 0 g | 0 % |
| - Saturated 0 g | 0 % |
| + Trans 0 g | |
| Cholesterol 0 mg | |
| Sodium 0 mg | 0 % |
| Carbohydrate 0 g | 0 % |
| - Fibre 0 g | 0 % |
| - Sugars 0 g | |
| Protein 0 g | |
| Vitamin A 0 % | Vitamin C 0 % |
| Calcium 0 % | Iron 0 % |

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Eating Well with Canada's Food Guide



Take a step today...

- ✓ Have breakfast every day. It may help control your hunger later in the day.
- ✓ Walk wherever you can – get off the bus early, use the stairs.
- ✓ Benefit from eating vegetables and fruit at all meals and as snacks.
- ✓ Spend less time being inactive such as watching TV or playing computer games.
- ✓ Request nutrition information about menu items when eating out to help you make healthier choices.
- ✓ Enjoy eating with family and friends!
- ✓ Take time to eat and savour every bite!

For more information, interactive tools, or additional copies visit *Canada's Food Guide on-line* at: www.healthcanada.gc.ca/foodguide

or contact:
 Publications Health Canada
 Ottawa, Ontario K1A 0K9
 E-Mail: publications@hcc-sc.gc.ca
 Tel.: 1-866-225-0709
 Fax: (613) 941-5366
 TTY: 1-800-267-1245

Également disponible en français sous le titre : Bien manger avec le Guide alimentaire canadien
 This publication can be made available on request on diskette, large print, audio-cassette and braille.

CANADA FOOD GUIDE QUESTIONS:

- Canada's first food guide, the Official Food Rules, was introduced to the public in July 1942.
- This guide acknowledged wartime food rationing, while endeavoring to prevent nutritional deficiencies and to improve the health of Canadians.
- Since 1942, the food guide has been transformed many times - it has adopted new names, new looks, and new messages, yet has never wavered from its original purpose of guiding food selection and promoting the nutritional health of Canadians.

List 6 IMPORTANT parts of the Food Guide and WHAT THEY TELL YOU:

- 1.
- 2.
- 3.
- 4.
- 5.
- 6.

ASSIGNMENT #2- MY FOOD GUIDE

Follow the link:

<http://www.hc-sc.gc.ca/fn-an/food-guide-aliment/myguide-monguide/index-eng.php>

- Create your own food guide to follow as part of your Personal Wellness Plan.
- This will be 1 part of the final unit project. Make sure you KEEP THIS as a document.

ORAL CARE – HEALTH CANADA RECOMMENDATIONS

- Oral health refers to the health of your teeth and your mouth. Maintaining good oral health includes keeping your teeth free from cavities and keeping your gums free from disease.
- Poor oral health can affect more than just your mouth; it can affect other areas of your body as well. In fact there is now research that shows the connection between poor oral health and systemic disease such as diabetes in people of all ages and respiratory diseases particularly among elderly people. Also there is new research now pointing to possible connections between oral health and other systemic conditions such as heart disease and premature, low birth weight babies.

Wow....so what can you do to improve your oral health (and essentially your overall health?)



ORAL HEALTH – WHAT CAN I DO

- Brush and floss daily. Learn more about oral hygiene practices for all ages
- Eat a healthy diet according to Canada's Food Guide
- Find out if your municipal water is fluoridated. If not, ask your municipal councilors about fluoridated water and its benefits
- Have regular visits with a dental professional. See your dental professional immediately if you notice any problems with your mouth and teeth
- Know the signs and symptoms of oral cancer
- Think about quitting smoking and/or using tobacco products (chewing)
- Know about the connections between diabetes and your oral health
- Improve your oral health by informing yourself through Health Canada's Office of the Chief Dental Officer

ASSIGNMENT # 3

Oral Health Poster

Create a poster to be put in an elementary classroom that informs them about the importance of oral health and how to maintain good oral health

Assessment:

- Must contain 5-10 facts about oral health and how to maintain oral health
- Must be free of spelling errors
- Must be visually appealing

Total points:

/12



HEALTHY SLEEP PATTERNS

How much sleep do you receive (on average) per night?

How much sleep SHOULD teens be getting per night?

WHY is it important to get enough sleep?

How does sleep affect overall health?

Research project: Assignment # 4

- Create a presentation (keynote, explain everything, etc.) about Teens & Sleeping
- This should have important information (facts, stats, etc.)
- Needs to address how many hours teens need, why it is important to get enough sleep, and how sleep affects overall health.
- Provide tips for “good” sleep habits

Sleep Hygiene: Video – watch as a group

SLEEP HYGIENE VIDEO'S

<http://www.youtube.com/watch?v=WtsSI-uyrQI>

<http://www.youtube.com/watch?v=jrLBaJDwHyw>



ASSIGNMENT # 5 – SLEEP JOURNAL

CREATE a journal for you to log your sleep

Make notes about:

- Duration
- Quality
- Before and After feelings/events/emotions.
- Feelings during the day/activities during the day that could have affected sleep

Summarize your sleep habits in a written paragraph about the level of your sleep hygiene

- RATE your sleep hygiene on a scale of 1-5 (1 being low quality, 5 being high quality)
- Generalize areas for improvement and set a sleep goal to improve your personal wellness.

DAILY PHYSICAL ACTIVITY AND EXERCISE

Go to Canada Health www.csep.ca/guidelines

Answer the following questions:

- How much physical activity do YOU need each day?
- What is a moderate-intensity activity? Give an example.
- What is a vigorous-intensity activity? Give an example.
- What benefits do teens get from 60 minutes of physical activity daily? List 5
- How can parents/caregivers help teens achieve their D.P.A requirements?

ASSIGNMENT #7: MY PERSONAL DPA PLAN

CREATE a DPA plan for yourself for ONE WEEK

- Create a plan that has activities you like to do
- Create a plan that is possible

SHOW this plan to your instructor for approval (need signature of instructor)

FOLLOW this DPA plan and keep a daily JOURNAL of how you feel during/after activities (emotionally/physically)



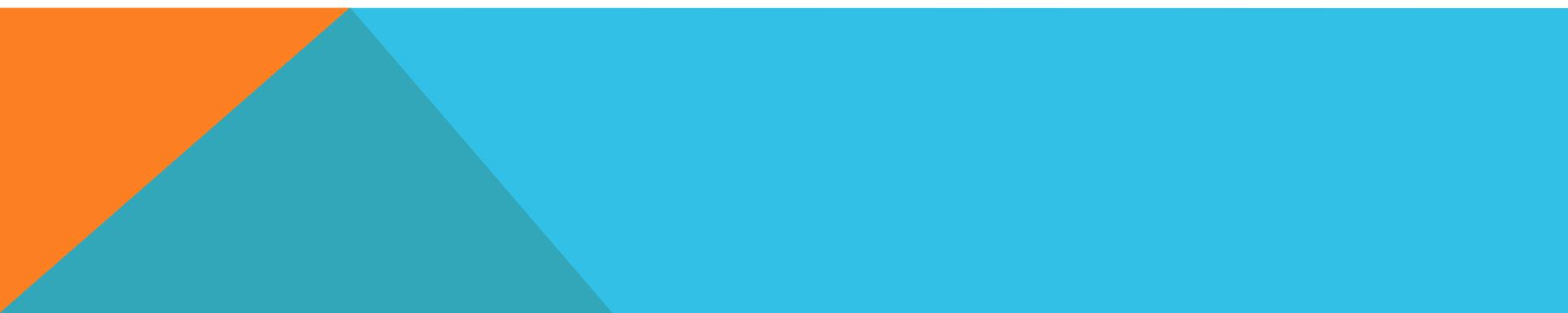
HANDWASHING TECHNIQUES

Research proper handwashing techniques

WHY do we want to wash our hands frequently?

Create a small poster that will be put in the washrooms of St. Mary's school to remind students of the importance of handwashing.

Total: /6



MUSCLES AND BONES – HUMAN ANATOMOY

You must be able to:

- Locate muscle groups of the: upper extremities, trunk, lower extremities in GENERAL terms (not latin terms...that's later!)

APP to use: Human Body

INTERNET research

TRACE your partner on the big sheets of paper.

- Use BLUE markers to label the muscles of the upper extremities
- Use RED markers to label the muscles of the trunk
- Use BLACK markers to label the muscles of the lower extremities



PRINCIPLES OF MOVEMENT

HOW MUSCLES WORK

- A voluntary muscles usually works across a joint. It is attached to both the bones by strong cords called tendons.
- When the muscles contracts, usually just one bone moves.
- For example when the biceps in the arm contracts, the radius moves but the scapula does not.

Muscles usually work in pairs or groups,

- e.g. the biceps flexes the elbow and the triceps extends it.
- This is called antagonistic muscle action. The working muscle is called the prime mover or agonist. (it's in agony!) The relaxing muscle is the antagonist. The other main pair of muscle that work together are the quadriceps and hamstrings.
- The prime mover is helped by other muscles called synergists. These contract at the same time as the prime mover. They hold the body in position so that the prime mover can work smoothly.

DEFINE THE FOLLOWING TERMS – MOVEMENT LAB

During this lab you will be finding definitions for the following terms. You must TAKE pictures of these different types of motions in the body and label them:

- **Range of Motion:**

- Active and Passive range of motion

- **Different types of movement and joint action:**

- Angular: flexion, extension, abduction and adduction
 - Circular: circumduction and rotation
 - Special to the forearm: supination and pronation
 - Special to the ankle: inversion, eversion, dorsiflexion and plantar flexion
 - Special to the shoulder: elevation, depression, protraction and retraction
- 

I HATE PHYSICAL ACTIVITY: PERSUASIVE WRITING PIECE

Write a few paragraphs (or essay if you prefer) as to WHY someone should lead a healthy and active lifestyle. Justify your response with information you have learned in this course so far.

Total /12



COMMON PREFIXES AND SUFFIXES

<http://www.translationdirectory.com/glossaries/glossary328.php>

What are common prefixes and suffixes related to anatomy, physiology and pathology?

MUST KNOW LIST:

Ab-

Ad-

-ossis

-pathy

-pro

-y

Is there any in this list that are interesting or surprising to you? Choose 5 that are relevant to you and know them!



MEDICAL SYSTEMS OF THE BODY

I spy game:

What do these systems do? Name 5 parts of your body that are involved in each one of these systems.

- Cardiovascular System
- Lymphatic and Immune System
- Respiratory System
- Digestive System
- Urinary System
- Nervous System



FINAL ASSESSMENT

All material in this ppt is testable material

Your choice of: QUIZ or Research paper on any topic we covered in this module

