

# Physical Education and Health

## Learner's Material

This learning resource was collaboratively developed and reviewed by educators from public and private schools, colleges, and/or universities. We encourage teachers and other education stakeholders to email their feedback, comments, and recommendations to the Department of Education at [action@deped.gov.ph](mailto:action@deped.gov.ph).

We value your feedback and recommendations.

**Department of Education  
Republic of the Philippines**

# TABLE OF CONTENTS

LESSON 1: A WAY TO GET FIT .....	1
LESSON 2: ENERGY SYSTEMS.....	5
LESSON 3: LET’S BE HEALTH AWARE! .....	8
LESSON 4: EAT RIGHT FOR A HEALTHY LIFE .....	12
LESSON 5: MANAGING STRESS THROUGH PHYSICAL ACTIVITY.....	17
LESSON 6: SELF-TESTING ACTIVITY FOR A HEALTHY ME! .....	21
LESSON 7: FITNESS GOALS .....	30
LESSON 8: EXERCISE FOR FITNESS .....	38
LESSON 9: EXERCISE FOR FITNESS .....	43
LESSON 10: EXERCISE FOR FITNESS .....	50
LESSON 11: EXERCISE FOR FITNESS .....	55
LESSON 12: EXERCISE FOR FITNESS .....	58
LESSON 13: VALUE OF PARTICIPATING IN PHYSICAL ACTIVITIES.....	65
LESSON 14: CAREER OPPORTUNITIES IN HEALTH AND FITNESS.....	70

## Lesson 1: A Way to Get Fit

### Activity 1: Let Me Think

*Directions:* Complete the table below by listing all physical activities you have engaged in before and activities you are engaged in at present.

When I was a kid, I used to...	Now I'm a young adult, I do...

What is physical activity? It is any movement made by the muscles of the body that requires exertion of energy such as running, swimming, dancing, etc. Exercising is considered physical activity but more structured and planned. Regular physical activity promotes a healthy lifestyle as it improves our health and helps lower risks to illnesses like cancer, hypertension, cardiovascular disease, and diabetes. It is necessary for us to engage in physical activities to enhance our level of fitness.

Many of us exercise and do physical activities at home, in school, and at the gym. Some of these include aerobic, muscle strengthening, and bone strengthening activities, all of which are good for body composition. It is important to know the nature of these physical activities for a better understanding of what it does to our body.

### ***Aerobic, Muscle Strengthening, and Bone Strengthening Activities: How Do They Work and Differ?***

#### ***Aerobic Activities***

Aerobic activities are also called “cardio” exercises. Normally, these activities increase our heart and breathing rate. These activities cause us to sweat profusely, and breathe harder. Our heart pumps blood more vigorously, causing oxygen to circulate throughout our body. This allows us to sustain our aerobic exercise for a few minutes. Such activities like jogging, running, swimming and dancing are some examples of aerobic exercises which improve our cardiorespiratory fitness. It also helps us to prevent disease like cardiovascular disease, diabetes, and osteoporosis. Most aerobic activities can be done on a daily basis. To be physically fit, it is important to engage in aerobic activities.

#### *Guidelines for Aerobic Exercise*

- **Frequency** - Always consider the number of aerobic exercise sessions per week. When doing cardio exercises, especially to lose weight, frequency is an important factor to make it more effective. Start cardio exercises for at least 3 days a week for the first few weeks, with not more than 2 days’ rest between sessions. Afterwards, we can gradually increase the frequency of exercise to 5 days a week.

- **Intensity** – To be effective, aerobic exercises should be done in moderate intensity, that is, our heart rate should be 60 to 80% of our maximum heart rate. First, determine the target heart rate by getting the maximum heart rate and the recommended heart rate range. This will then tell how hard we should exercise during our training.
- **Time** – More time spent doing aerobic exercises means more calories burned and an increase in endurance. We can at least do 20 minutes per session at first, then gradually increase it to 60 minutes.
- **Type** - Running, jogging, sprinting, swimming, and playing contact sports such as basketball are some activities that we can do to improve our heart rate. It is also important to try different exercises and activities to avoid boredom.

### ***Muscle Strengthening Activities***

Muscle strengthening activities are exercises in which groups of muscles work or hold against a force or some weight. Muscle strengthening activities help build good muscle strength. When muscles do more work, it becomes stronger. Therefore, having strong and healthy muscles enable us to perform everyday physical tasks. With strong and capable muscles, we can rearrange the furniture in our living room and carry heavy grocery bags from the market to our home.

During muscle strengthening activity, muscle contraction occurs. The repetitive contractions during exercise can cause damage to the muscle fibers. Our body repairs these muscle fibers when they get damaged. The repair happens after exercise while muscles are at rest. New muscle fibers are produced to replace or repair those that were damaged. The muscles in our body then start to grow larger and stronger. This stimulation and repair process is called *muscle hypertrophy*. It is important to note that these muscle-strengthening activities—short high intensity exercises—should be alternately scheduled in a week allowing rebuilding of muscles during rest periods. Ideally, one to two days of rest lets our muscles rest and recover.

Exercises like push-ups, sit-ups, squats, and lifting weights are some examples of muscle strengthening activities that you can do if you want to have strong and lean muscles. Remember that before you start doing these activities, be sure to do dynamic warm-up to avoid injury.

### ***Bone Strengthening Activities***

Bone growth is stimulated by physical stress brought about by physical activity. As skeletal muscles contract, they pull their attachment on bones causing physical stress. This consequently stimulates bone tissue, making it stronger and thicker. Such bone strengthening activities can increase bone density throughout our skeletal system. This is called *bone hypertrophy*.

Many forms of physical activity like running, skipping rope, and playing basketball help keep our bones fit. Bones also support groups of muscles to reduce risk of falling. It is important to understand that bone-strengthening exercises do not only focus on bone health, it also focuses on improving muscle strength, coordination, and balance.



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## Lesson 2: Energy Systems

### Activity 1: Let's Find Out

*Directions:* Can you tell what they are doing? Can you identify what these two pictures have in common?



Our body needs specific amount of energy when we do physical activities. When we exercise, a low or high amount of energy is supplied to muscles depending on the duration, intensity, and nature of the exercise. Activities like sprinting and jumping require a large amount of energy used in short a period of time. On the other hand, marathon running and long-distance swimming require low but steady amount of energy over a longer period of time. It is important for our body to get the energy it needs to effectively perform these physical activities.

The food that we eat is a source of energy. Eating before doing exercise can contribute to performance. There is a complex chemical process called *cellular respiration* in which our body takes in food and uses it to convert and produce *adenosine triphosphate* (ATP). ATP supplies energy to muscle cells for muscular contraction during physical activity. *Creatine phosphate* (CP), like ATP, is stored in muscle cells. When it is broken down, a large amount of energy is released. Three energy systems work together as we exercise. However, a specific energy system can dominate depending on the intensity and of type of activity that is being done.

### **What Are The Three Energy Systems?**

#### **Anaerobic A-Lactic (ATP-CP) Energy System**

*Anaerobic A-Lactic* or *ATP-CP* is a dominant source of muscle energy for high intensity physical activities. It provides high bursts of start up energy that lasts around ten seconds or less. ATP-CP provides immediate energy without requiring any oxygen (*anaerobic*) and does not produce lactic acid (*a-lactic*). Many athletes who participate in sports competitions require short amounts of acceleration. Athletic events like the shot put, weight lifting, and 100-meter sprint are examples of physical activities that utilize the ATP-CP energy system. However, the ATP-CP system will not supply ATP again until the muscles have rested and have been able to regenerate.

### **Anaerobic Lactic (Glycolytic) Energy System**

*Anaerobic Lactic* is also known as the glycolytic energy system, an energy system that supplies energy for medium to high intensity physical activities. These high intensity activities usually last from ten seconds to two minutes. When an athlete sprints for 400 meters, lactic acid builds up in blood and muscle cells. Normally, there is a shortness of breath, and a burning sensation in the muscles once lactic acid is produced. Same as with ATP-CP, the anaerobic lactic system does not require oxygen but is capable of supplying energy for high intensity activities. The difference between the two systems is amount of time that the system can work. Thus, if an athlete exceeds ten seconds while sprinting, the anaerobic lactic system kicks in to provide energy.

### **Aerobic Energy System**

Most of sports and activities use aerobic energy system. Aerobic energy system provides energy for low intensity physical activities that last from two minutes to a few hours. Aerobic energy system, compared to ATP-CP and glycolytic energy system, requires much longer oxygen in muscles in doing physical activities like long distance swimming running and playing sports (e.g. basketball, soccer, futsal). If a person exercises for 8 minutes, aerobic energy system will become a dominant source of that person's energy. Aerobic energy system continually produces ATP energy to muscles as long as oxygen is available to muscles in the body. Unlike anaerobic lactic system, aerobic energy system does not produce lactic acid since oxygen is available to the muscles.

Most sports and physical activities use these energy systems. Though there are times when one energy system dominates during a specific type of physical activity, it is important to understand that all energy systems are active. Each energy system changes during the activity depending on its duration and intensity. Therefore, once we engage in physical activities or sports, all three energy systems may be in use but in varying degrees.

### **Activity 2: Let's Get Energized**

*Directions:* Divide yourself into 5 groups. Think of and list down physical activities that use three energy systems. Perform these activities.

<b>Anaerobic A-Lactic System</b>	<b>Anaerobic Lactic System</b>	<b>Aerobic Energy System</b>

### **Activity 3: Let's Reflect**

*Directions:* After doing Activity 2, answer the following questions below.

1. How will you differentiate anaerobic a-lactic and anaerobic lactic system? What do they have in common? Explain.
2. How does the aerobic energy system work in our body? How does it differ from 2 anaerobic systems? Explain.



### Summary

Energy System	Intensity	Duration	Lactic Acid Production	Oxygen Requirement	Examples
<b>Anaerobic A Lactic</b>	High	Lasts 10 seconds or less	Does not produce lactic acid	Does not require oxygen	Shot put, 100-meter sprint
<b>Anaerobic Lactic</b>	Medium to High	Lasts 10 seconds to 2 minutes	Produces lactic acid	Does not require oxygen	400 to 800-meter sprint
<b>Aerobic Energy System</b>	Low	Lasts 2 minutes to a few hours	Does not produce lactic acid	Requires oxygen	3-km run, long distance swimming, playing sports (e.g. basketball, soccer, futsal)

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## Lesson 3: Let's Be Health Aware!

### Activity 1: Describe Me in My Picture

*Directions:* Describe the picture below. Can you tell what causes this person to act this way? Write your thoughts about it in the space provided.



Many of us try to live a healthy lifestyle. We do various things to become fit and to achieve our desired physique — oftentimes without first knowing and understanding the consequences. Our health becomes at risk and prone to different risks that can affect our capacity to do daily physical activity. We need to realize that there are some common health practices — particularly when dealing with stress— that need to be corrected right away, especially among the young ones. Some stress-coping measures affect or show in a person's eating or sleeping habits.

### Eating Habits, Sleep, and Stress Management: What Goes Wrong?

#### ***Eating Habits***

We can always eat the food that we want. There is nothing wrong with eating. It only goes wrong if we consume less or more than what our body needs; also when we eat unhealthy food. This can lead to being underweight, overweight, or even obese. It is alarming to see that many are suffering from malnutrition, overweight, and obesity.

Underweight people are often found to suffer from malnutrition due to lack of adequate nutrients in the body. Many of them do not get the right amount of calories to fuel their bodies thus, they tend to lack the energy to do regular tasks at home, school, and work. Their immune system also gets weak and compromised, making them prone to health risk issues such as anemia and osteoporosis.

*Anorexia (an-o-REK-see-uh) nervosa is an eating disorder wherein a person is abnormally underweight, has an intense fear of gaining, and an abnormal understanding of body weight, often due to coping with emotional problems stemming from self-worth.*

*People with anorexia use extreme efforts to prevent weight gain and keep on losing weight by restricting food intake, exercising excessively, or misusing diet aids, diuretics, and laxatives. These tend to significantly interfere with activities in their lives.*

*(<http://www.mayoclinic.org/diseases-conditions/anorexia/home/ovc-20179508>)*

Overeating is also found to be one of the leading causes of overweight and obesity. Eating too much, especially processed food and sugary drinks, coupled with a sedentary lifestyle contribute significantly to weight gain. The calories consumed, particularly from fats and sugars, have to be burned off through physical activity or exercise. Otherwise, these calories will be just be stored in the body as fat.

Overweight and obese people often encounter a lot of physical and emotional struggles in their daily lives. They often have a hard time doing simple tasks such as tying their shoelaces or walking up a short flight of stairs. They also find themselves the subject of bullying. Furthermore, they are also at risk of developing other health conditions such as cardiovascular diseases, diabetes, among others.

### ***Sleep Management***

Sleep is essential to everyone's health. Normally, we need about 6 to 8 hours of night sleep everyday to allow the body to rest and regenerate. When we wake up in the morning after a good night's sleep, we feel fresh and energetic. We become effective and productive in our daily activities. However, a lot of people, in particular teens, practice bad sleeping habits such as the following:

- 1. Staying up all night** - This is the most common bad sleeping habit of most people. In order to submit a project, a paper, or some other work at the last minute, they cram to finish it, staying up all night until they are done. Some people just spend the night reading or doing other stuff that they just do not want to postpone for another time.
- 2. Internet Addiction** - Social media is massively addictive. Many people would spend a lot of their time browsing social media sites such as Facebook and YouTube. They are awake all night to converse and play with their friends and forgo sleeping on time. This results in tiredness and unproductiveness in work, in school, and even at home.
- 3. Eating Before Sleeping** - Eating could be one of the things we do that give us comfort—but should be discouraged just before bedtime. Eating before sleeping can cause discomfort preventing us from falling asleep easily. When we eat too close to our bedtime, it means that we go to our bed while digesting. This can cause acid reflux which makes a person lose sleep. It is best to eat 4 hours before falling asleep so we can be sure that our digestive system has done its job.

### ***Stress Management***

We need to deal with the fact that stress is part of our lives. Stress happens for many reasons – environmental factors, fatigue, too much work, illness, and loneliness. It is inevitable; hence, needs to be handled properly. Handling stress seems to be tough to do but we need to learn how to cope with it the right way. If not properly dealt with, it can lead to many health concerns—difficulties in sleeping, poor immunity, hypertension, and even heart disease. One may also perform poorly in physical activities because of stress. However, while some may be able to deal with stress, others may not and resort to ineffective—or worst, unhealthy—means of dealing with stress.

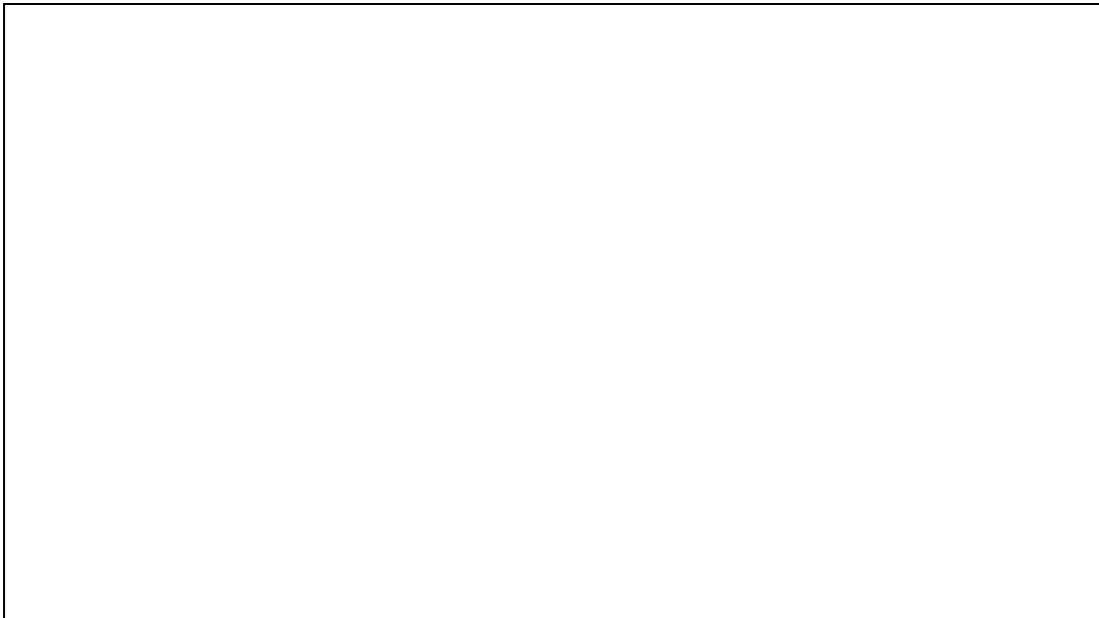
Examples of such means that can be detrimental to health are the following:

1. Smoking
2. Bad Eating Habits – Skipping meals and/or overeating
3. Excessive alcohol intake
4. Excessive sleeping
5. Procrastinating – Trying to hide and escape the problem using delaying tactics rather than facing the problem

According to the World Health Organization, in 2012, out of 56 million deaths worldwide, 38 million were due to cardiovascular diseases. Knowing this, making the decision to be aware of our health and to change to a healthier lifestyle—through balanced diet, regular physical activity, and enough sleep—would be to our advantage.

### **Activity 2: “Let’s Be Health Aware” Essay**

*Directions:* Imagine that you are writing an article for a health magazine. Your task is to write a persuasive essay about health awareness. Remember to point out the best practices on how to maintain good health and bad health habits. Your essay should be brief and easy to read.



### **Summary**

Skipping meals, overeating, too much intake of processed food, lack of sleep, staying up late, and the inability to cope with highly stressful environment are all part of having an unhealthy lifestyle. This can lead to the failure to perform daily tasks as these affect the physical and even emotional state of a person. Chronic conditions such as cancer, diabetes, cardiovascular diseases may also develop and even compromise your immune system. It is therefore a wise decision as early as now to be aware of your health, and to correct bad health practices, rather than to suffer the consequences later on.

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## Lesson 4: Eat Right for a Healthy Life

### Activity 1: 4 Pics 2 Words

*Directions:* Can you tell what these 4 pictures have in common? Answer the problem below by filling in the correct letters in the blank.



— A — — — G  
— — B — —

Eating is part of our daily routine. We eat food to increase our energy, to replenish our strength, and to power our minds to think more clearly to handle problems. In our country, it has been tradition to prepare delicious food during celebrations—which happens several times in a year. During these times, most of us would pile up our plate with every type of food we see, and will not realize until later that we have already consumed a large amount of food. This shows that we usually don't mind the amount of food that we eat. Some people choose to eat only a certain food group. Vegetarians, for example, choose to eat only fruits and vegetables. Others vary the food they eat and how they eat according to factors such as culture, location, age, and/or state of fitness or health. Each of us has preference in the type of food we chose and the way we eat. There are four types of eating we should know of and understand.

## ***Four Types of Eating That You Should Know***

### *Fueling for Performance*

Before heavy training, an athlete needs the right kind of food that can provide the proper fuel for his or her energy requirement. There should be a balance among all food groups: carbohydrates, protein, fats, minerals, vitamins, and water that will provide the body what it needs for an effective and optimum performance. Athletes usually practice this sort of structured diet for good body composition, athletic performance, and recovery. In addition, athletes need to eat a variety of food to stabilize the condition of the body. They need to eat regular meals and snacks and get enough calories to fuel the body for training and athletic events. Athletes also need to drink more fluids as compared to non-athletes. This helps them to avoid dehydration which can cause dizziness, muscle cramps, and lightheadedness.

### *Emotional Eating*

Emotional eating is the practice of consuming large amounts of food in response to emotions instead of hunger. Many people turn to food as a source of comfort, a stress reliever, or as a reward. Eating as a coping mechanism is unhealthy because the problem is not addressed. Eating makes someone feel better for a while but the emotion (or its cause) remains unaddressed. Overcoming this unhealthy habit means teaching an emotional eater healthier ways to deal with stress and to develop better eating habits. If it is not resolved, emotional eating can lead to obesity and weight gain.

### *Social Eating*

Many times in our lives, we get invited to partake of all the scrumptious food on the table during celebrations. Oftentimes, we indulge even if we are not hungry for the sake of being sociable and to not offend the host or the group. This is called Social Eating. Sometimes, peer pressure is the reason why one feels compelled to consume more calories than planned. Social eating can directly affect a person's health, leading to obesity and other health-related problems. While most of us try to maintain a good eating habit, attending social events with lots of eating can get in the way. This only makes a healthy eating habit difficult to maintain.

### *Distracted Eating*

Have you tried eating while watching your favorite show or sports team on TV? Eating while watching TV for extended periods of time poses a serious risk to your health. Many do not pay attention to their meal as they are distracted with what they are watching, thus they tend to eat more. Others spend time eating junk food, sweets and soft drinks while watching TV. This type of diet leads to overweight, obesity, and even increased risk to diseases like diabetes and hypertension. Aside from consuming too much food, it promotes an unhealthy lifestyle—leading a sedentary lifestyle rather than going out and doing physical activities.

Eating is important but we must learn to manage it properly. Too much or too little food consumed is unhealthy. It is better to maintain a balanced diet and healthy lifestyle to prevent illness. No one have control our eating habits except ourselves.





### Activity 4: My Weekly Meal Planner

*Directions:* Have you scheduled what food you should eat for this week? Your task in this activity is to make weekly meal planner by completing the chart below.

<b>Time</b>	<i>Monday</i>	<i>Tuesday</i>	<i>Wednesday</i>	<i>Thursday</i>	<i>Friday</i>	<i>Saturday</i>	<i>Sunday</i>
<b>Breakfast</b>							
<b>Lunch</b>							
<b>Snacks</b>							
<b>Dinner</b>							

### Summary

Eating is important. We need to eat for us to perform well. In this lesson, we have learned that people have different eating habits.

- Fueling for Performance – Athletes follow a structured diet for good body composition, athletic performance and recovery. They eat a balanced diet of carbohydrates, protein, fats, minerals and vitamins to be effective in their performance.
- Emotional Eating – It is habitually consuming large amount of food in response to emotions instead hunger. Food is seen as a comfort, stress relief, or reward to make them feel better.

- Social Eating - This is eating with peers just for sake of being sociable. Peer pressure is the main reason why one feels compelled to consume more calories than what it is planned.
- Distracted Eating – People who spend more time eating while watching TV is prone to being overweight, obese and contract diseases like diabetes and hypertension. Watching TV and make it as part of lifestyle is unhealthy as it makes person spend less time in doing physical activities.

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## Lesson 5: Managing Stress through Physical Activity

### Pre-Activity: What bothers you?

*Directions:* List down experiences from the previous week that made you feel uncomfortable and describe your coping technique

Places	Uncomfortable / Demanding Situation	Actions you made to feel better
Home		
School		
Community		

### ***Stress and its Characteristics***

In the daily challenges of life, individuals often encounter discomfort—circumstances and events that disturb one’s physical, mental, and emotional states. The body’s response to the discomfort it experiences is called **stress**. Stress is the body’s way of reacting to an external stimulus such as a discomfort. It activates the sympathetic nervous system, which brings about a fight or flight response wherein cortisol and adrenaline is released into the bloodstream. These hormones stimulate your heart to pump faster, making your blood pressure rise. Your muscles start to contract, your breathing quickens, and your senses become more sensitive. These changes in your body caused by stress increases your stamina and strength, makes you react quickly, and keeps you more focused.

Stress affects all—it is part of one’s life. The human body and its system are equipped to respond to stress. Most of the events that happen to you and around you contribute stress to your body.

The effects of stress differ for each individual, based on their ability to adjust to certain changes from the environment and the people around them. Some are able to cope easily, but others have hard time.

On the one hand, stress can be helpful for it can keep a person alert and set to avoid vulnerability. On the other hand, it becomes detrimental when a person is subjected to stress without relief or relaxation between situations. Stress-related tension may build up and consume the person. A negative stress reaction is referred to as **distress**. Distress triggers mental, emotional and physical problems and, even worse, certain symptoms or diseases.

## **Symptoms of Stress**

### *Emotional*

- Nervousness, gets easily upset, moody
- Overwhelming feeling and sometimes uncontrollable experience in relaxing the mind
- Low-self esteem, loneliness and the feeling of being worthless

### *Mental*

- Lack of focus
- Disturb mind setting

### *Physical*

- Weak and lesser strength, easily gets cold and infection
- Headache
- Upset stomach, including diarrhea and constipation
- Loss of appetite
- Aches, pains, tense muscles
- Sleeplessness

## **Coping with Stress through Physical Activity**

Stress is inevitable and eliminating it entirely from one's life is impossible. Changes in daily events are beyond any person's capacity. However, one's reaction to stressful changes can be managed. Regular exercise is sometimes done to cope with stress. Spending time with friends or family, sleeping, watching movies, as well as listening to music, also work. These coping techniques are said to be of help but most health professionals recommend participation and engagement in physical activity and exercise as preferred strategy.

Many of the physical symptoms of stress can be managed through physical activity. **Physical activity** is defined as any bodily movement that works your skeletal muscles and physical skills, that requires strength and energy expenditure. This includes any motion performed throughout the day. Walking, running, dancing, swimming, yoga, and gardening are a few examples of physical activity.

### **Types of Physical Activity**

1. **Aerobic** - light to moderate-intensity physical activity that requires more oxygen than sedentary behavior, and thus promotes cardiovascular fitness and other health benefits (e.g., weight bearing exercises like jumping rope, cycling, swimming, running playing football, basketball, or volleyball).
2. **Anaerobic** - high-intensity physical activity that is done in a short duration of time requiring high energy. Anaerobic activities are strength-base activities in the absence of oxygen (e.g., sprinting during running, swimming, or cycling) requires maximal performance during the brief period.
3. **Lifestyle** - physical activities which have been a part of our daily routine (e.g., walking, climbing stairs, sweeping or raking the yard), which is usually light to moderate in intensity.
4. **Physical activity play** - an intense play activity that requires substantial energy expenditure (e.g. playing tag, jumping rope).
5. **Play** - simple and self-reflected activities with flexible rules for the purpose of enjoyment.

6. **Sports** - a physical activity requiring skill and physical prowess that is governed by set of rules and regulations that is often done in a competition. There are two categories of sports: individual and team.

### ***Physical Activities Mechanism in Coping with Stress***

Keeping your body physically active can help **improve overall disposition, increase the release of endorphins and offer meditation-like qualities**. Exercise can also **reduce the fight or flight response often triggered by stress**.

### **Mood Booster**

Engaging in physical activity can improve moods and make us feel better, increasing self-confidence, thus reducing stress. Exercise can also improve our quality and ability to sleep, resulting in a fully rested body which can definitely have a positive impact on our overall disposition and cognitive function.

### **Endorphin Release**

Participating in physical activity can result in an increase in endorphin levels. Endorphins are chemicals or neurotransmitter hormones that are secreted from the brain and nervous system. It activates the body's opiate receptors thus it has analgesic properties that can make you feel good. It also gives a person the feeling of achievement and being in control.

### **Mind Stimulator**

Exercise can be a form of meditation. While involved in an engrossing physical activity, we may find that we are concentrating strictly on the physical work. We tend to forget the problems and worries you have at present. With this, our mind is somehow freed and stimulated to work and find solutions to our stress.

### **Reduction of Fight or Flight Response**

Stress, either big or small, activates our flight or fight response and in doing so, deluges our body with different hormones including cortisol, adrenaline, and noradrenaline. Over-secretion of these hormones is brought about by stress, thus must be controlled and returned to normal state. Otherwise it could interfere with body functions leading to adrenal fatigue. Physical activity or movement metabolizes the hormones triggered by stress, processing these chemicals and returning them to normal levels. Once these hormones have been metabolized, the level of homeostasis improves, regulating the internal conditions of the body, thus bringing in a state of balance and stability. In this manner, we feel calm and ready to gear up and face the world once again.

### ***Activity 1: Be a stress manager!***

#### ***Directions:***

1. With your partner, interview 15 other classmates and asks them their sources of stress, and of what they do to cope with it.
2. Make graphs, tables, and charts to help you interpret your data. Present your findings in an oral report and give recommendations for plans to manage stress through physical activity.
3. Produce your own information sheet to be given to your peers.

## **Activity 2: Checking what's on your mind.**

Directions: Complete the sentences

1. Participation in physical activity helps in managing stress by
2. Why is the release of hormones and its processes important to stress response?
3. Therefore, if I am in a stressful situation, I'll find time to \_\_\_\_\_  
\_\_\_\_\_ because \_\_\_\_\_  
\_\_\_\_\_.

### **Summary**

Engaging in physical activity and participating in sports has significant benefits for health. It is recommended to be one of the best strategies for managing stress.

Living an active life through physical activity can help in elevating your mood and activating the body parts resulting to improvement in overall disposition. The body systems functions to increase release of endorphins also known as the 'natural pain-killer'. Also, concentrating on the physical activity offer meditation-like qualities where your focus is on the movement giving you a sense of relief, free from worries and stress.

Physical activity and movement metabolizes and processes stress-generated returning it to normal level reducing the fight and flight response of a person.

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## Lesson 6: Self-testing Activity for a Healthy Me!

Keeping the body physically active enables the body systems to function properly with vigor and alertness. Staying in shape allows the individual to perform daily task efficiently and effectively resulting to better output and performance.

### **Pre-activity: Getting ready for Physical Activity**

**Directions:** Prior to any physical activity, it is just right to assess your general health through the PAR-Q & YOU questionnaire. Fill up the PAR-Q as pre-requisite to check readiness for physical activity. Please fill-up and answer the questions honestly.

Physical Activity Readiness  
Questionnaire - PAR-Q  
(revised 2002)

# PAR-Q & YOU

Regular physical activity is fun and healthy and increasingly more people are starting to become more active every day. Being more active is very safe for most people. However, some people should check with their doctor before they start becoming much more physically active.

If you are planning to become much more physically active than you are now, start by answering the seven questions in the box below. If you are between the ages of 15 and 69, the PAR-Q will tell you if you should check with your doctor before you start.

Common sense is your best guide when you answer these questions. Please read the questions carefully and answer each one honestly: check YES or NO.

YES	NO	
<input type="checkbox"/>	<input type="checkbox"/>	1. Has your doctor ever said that you have a heart condition and that you should only do physical activity recommended by a doctor?
<input type="checkbox"/>	<input type="checkbox"/>	2. Do you feel pain in your chest when you do physical activity?
<input type="checkbox"/>	<input type="checkbox"/>	3. In the past month, have you had chest pain when you were not doing physical activity?
<input type="checkbox"/>	<input type="checkbox"/>	4. Do you lose your balance because of dizziness or do you ever lose consciousness?
<input type="checkbox"/>	<input type="checkbox"/>	5. Do you have a bone or joint problem (for example, back, knee or hip) that could be made worse by a change in your physical activity?
<input type="checkbox"/>	<input type="checkbox"/>	6. Is your doctor currently prescribing drugs (for example, water pills) for your blood pressure or heart condition?
<input type="checkbox"/>	<input type="checkbox"/>	7. Do you know of any other reason why you should not do physical activity?

Source: [http://www.furman.edu/sites/live\\_well/getmoving/pages/par-q.aspx](http://www.furman.edu/sites/live_well/getmoving/pages/par-q.aspx)

### **Physical Fitness Testing**

Assessing one's health status will help the person know about one's strengths and weaknesses. Awareness of individuals' health-related fitness and its relevant interpretations will aid the person to efficiently create an action plan in observing a healthy lifestyle and selecting appropriate activities for areas that need improvement.

## **Activity 1: Self –testing Activities for Health-related fitness**

### **I. Anthropometric Measurements**

**Purpose:** To measure body composition.

**Equipment needed:** weighing scale, tape measure

**Goal:** Take body measurements.

**Preliminary:** Prepare needed materials.

**Procedure:**

1. **Height.** Stand with trunk straight. Measure the distance from the floor to the top of the forehead. Record the score in centimeters (cm).
2. **Weight.** Stand on a weighing scale free from any object for weight accuracy. Record in kilograms (kg).
3. **Waistline.** Locate your upper hipbone. Find the proper spot by placing your hands around your waist, squeezing slightly, and then moving your fingers downward until you feel the top curve of your hips. Place a tape measure around your bare stomach just above the upper hipbone. Record in centimeters (cm).
4. **Hipline.** Place tape measure in the widest part of hip in line with the pubis.
5. **Computation/s**
  - a. **BMI- Body Mass Index** - measure of body mass based on height and weight that aid in determining weight categories.

$$\text{BMI} = \frac{\text{Weight in kg}}{(\text{Height in m}) \times (\text{Height in m})}$$

- b. **Waist to Hip Ratio** - measure stored body fats percentage by the relative measurement of waist and hip

$$\text{WHR} = \frac{\text{Waist Circumference (cm)}}{\text{Hip Circumference (cm)}}$$

### **II. 3 – Minute Step Test**

**Purpose:** Test for Cardiovascular Endurance level based on how quickly your heart rate will come back down after a physical activity

**Equipment needed:** stopwatch, 12-inch bench box, a metronome

**Goal:** In a constant pace, step on and off the bench for 3 minutes straight

**Procedure:**

1. Stand close to the 12-inch bench box while partner will set the metronome in 96 beats per minute (bpm).



2. When ready to begin, start the stopwatch, step one foot at a time to the beat (up, up, down, down). When 3 minutes is up, stop immediately get your pulse rate.
3. Record the Exercise Heart Rate: \_\_\_\_\_bpm

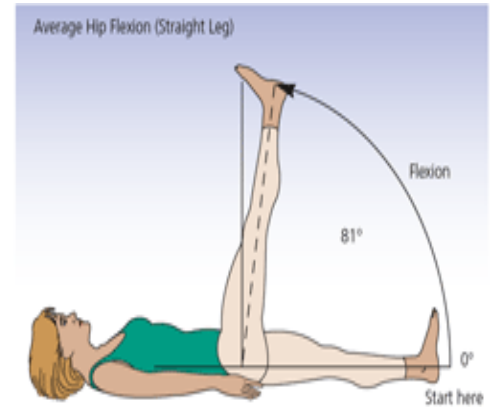
### III. Hamstring and Hip Flexor Test

**Purpose:** To test flexibility of the Hamstring and hips

**Equipment needed:** protractor

**Goal:** Keeping both legs straight, lift one leg to the maximum angle with other leg remain flat on the floor.

**Preliminary:** Illustrate angles on a poster board and paste it on the wall.



**Procedure:**

1. Lie on your back on the floor beside a wall.
2. Slowly lift one leg off the floor. Keep the other leg flat on the floor.
3. Keep both legs straight.
4. Continue to lift the leg until either leg begins to bend or the lower leg begins to lift off the floor.
5. Place a yardstick against the wall to mark the spot to where the leg was lifted. Lower the leg.
6. Using a protractor, measure the angle created by the floor and the yardstick. The greater the angle the better your score.
7. Repeat with other leg.

### IV. Zipper Test

**Purpose:** Test for the shoulder flexibility

**Equipment needed:** tape measure

**Goal:** Raise one arm across back with bent elbow reaching down fingers of the other hand

**Preliminary:** Prepare needed materials



**Procedure:**

1. In standing position, raise one arm across you back, bend the elbow and reach down as far as possible, simultaneously, bring other arm down and behind the back trying to cross fingers over those with the other hand.
2. Measure the distance of overlapped fingers in cm. If they fail to meet score as a minus or <0. Write zero if the fingertips just touched with no overlap.
3. Repeat the procedure with the other hand. Record the score.

## V. Curl – up (Dynamic)

**Purpose:** Test abdominal muscles strength and endurance

**Equipment needed:** mat, adhesive tape

**Goal:** Perform curl-up with proper pacing (3 seconds per curl)

**Preliminary:** Prepare the mat. Place two tape marks 4 ½ inches apart on the floor.



### Procedure:

1. Sit on a mat in a long sitting position. Bend your legs more than 90 degrees with feet remaining flat on the floor.
2. Lay down with arms extended at the sides, palm facing down with fingers extended touching the 1<sup>st</sup> tape mark.
3. From that position, curl your trunk up with heels in contact with the floor until your fingers reach the 2<sup>nd</sup> marker.
4. Upon reaching, lower back to the starting position. Repeat one-curl up every 3 seconds.
5. Continue the curl-ups and stop when you are unable to keep the pace. Record the number of repetitions

## VI. 90-degree Push–up (Dynamic)

**Purpose:** Test for the muscles of the upper arm strength and endurance

**Equipment needed:** mat

**Goal:** To perform a proper push–up

**Preliminary:** Prepare needed material

### Procedure:

1. From prone lying position, place the hands just outside the shoulders with elbows bent.
2. *Men:* Support the body in a push-up position from the toes with back, hip and legs align.  
*Women:* Support the body in a push–up position from the knees instead of toes, with back, hip, and legs aligned.
3. Lower the body until the upper arm is parallel to the floor or a 90 degrees angle of the bent elbow.
4. Repeat as many times as possible.

## VII. Flexed-Arm Support (Static)

**Purpose:** Test the muscular strength of the shoulder and upper arm.

**Equipment needed:** mat, stopwatch

**Goal:** Hold the push-up position not more than 35 seconds

**Procedure:**



1. Use the Push-up procedure 1 & 2 for preparatory position. From the starting position, lower the body until the upper arm is parallel to the floor and elbow flexed at 90 degrees (*see illustration above*).
2. Hold the position as long as possible.
3. Record the obtained holding position.

Measuring your fitness level is one way to find out your level of physical fitness. Below are references for interpretation.

<b>BMI Categories:</b> Underweight = <18.5 Normal weight = 18.5–24.9 Overweight = 25–29.9 Obesity = BMI of 30 or greater	<b>Waist to Hip Ratio</b>	<b>Men</b>	<b>Women</b>
	<b>Ideal</b>	0.8	0.7
	<b>Low risk</b>	<0.95	<0.8
	<b>Moderate Risk</b>	0.96 – 0.99	0.81 – 0.84
	<b>High Risk</b>	>1.0	>0.85

**Rating Scale for Dynamic Muscular Endurance**

Age16-26	Male		Female	
	Curly-ups	Push-ups	Curly-ups	Push-ups
High Performance Zone	Can do more than 35	Can do more than 29	Can do more than 25	Can do more than 17
Good fitness zone	24-34	20-28	18-24	12-16
Marginal Zone	15-23	16-19	10-17	8-11
Low Zone	14 and below	15 and below	9 and below	7 and below

**Rating Scale for Static Endurance**

Classification	Score in seconds
High- performance zone	30 and above
Good fitness zone	20 – 29
Marginal Zone	10 - 19
Low Zone	10

**Rating Scale for Flexibility**

Classification	Men		Women	
	Shoulder Flexibility (inches)	Hamstring & Hip Flexor Flexibility (degrees)	Shoulder Flexibility (inches)	Hamstring & Hip Flexor Flexibility (degrees)
High Performance	R 5+ L 4+	111 & above	R 6+ L 5+	111 & above
Good Fitness Zone	1-4 1-3	80-110	2-5 2-4	80-110
Marginal Zone	0 0	60-79	1 1	60-79
Low Zone	<0 <0	<60	<1 <1	<60

## Activity 2: Self – Assessment Card: Health – related fitness status

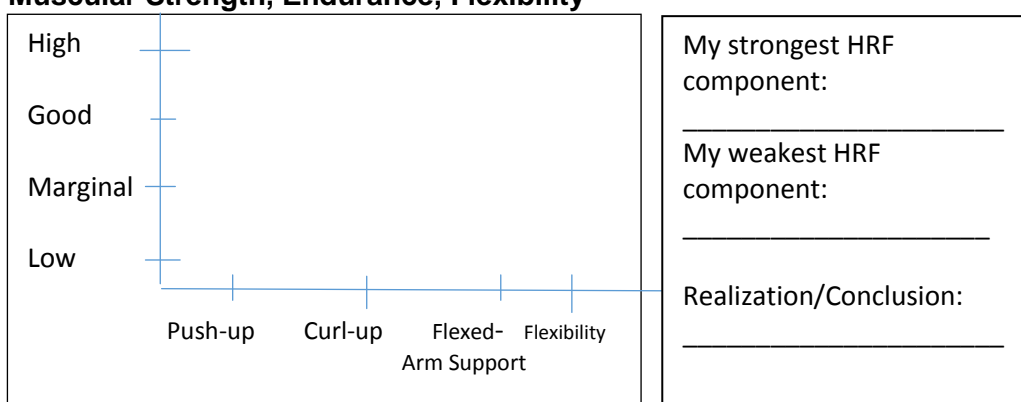
### 1. Body Composition

Test	BMI Result Interpretation	Analysis
BMI		
Waist to hip Ratio		

### 2. Cardiovascular Endurance

3- minute Step Test	Recovery PR & Interpretation	Implications

### 3. Muscular Strength, Endurance, Flexibility



### Health-related fitness components:

**Cardiovascular endurance** is the ability of the heart, lungs, and blood vessels to supply oxygen to your body tissues during sustained physical activity. This allows the body to endure physical movement for a period of time. Also, efficient delivery of oxygen to its tissues will take place giving the person a lower breathing rate and the ability to perform the task longer.

**Muscular Strength** is the maximum amount of force a muscle can exert in a single effort. Achievement of muscular strength depends on factors like gender, age, and inherited physical attributes. Having strong muscles is beneficial to everyday living. The muscles support the skeleton enabling movement to occur and the strength to support the body while standing up.

**Muscular Endurance** is the ability of the muscle to continue to perform without fatigue.

**Flexibility** is the ability to bend and move the joints through the full range of motion.

**Body Composition** is the percentages of fat, bone, water, and muscle in a human body; it is often the ratio of lean tissue to fat tissue in the body.

## **Barriers to Physical Activity**

([http://www.edu.gov.mb.ca/k12/cur/physhlth/frame\\_found\\_gr11/rm/module\\_b\\_lesson\\_4.pdf](http://www.edu.gov.mb.ca/k12/cur/physhlth/frame_found_gr11/rm/module_b_lesson_4.pdf))

Getting involved in physical activities can be attributed to personal and environmental factors. A person may experience a variety of challenges along the way. This hinders the person to be physically active, hence, referred to as barriers.

### *Personal barriers*

With the current trends in technology and development, people's lives have become convenient and easier as well as less active. They may also have reasons or own justifications of their inactivity that forms their attitude towards physical movement, letting them live a sedentary life.

Some common explanations (barriers) that people cite for resistance to exercise are:

- insufficient time to exercise
- inconvenience of exercise
- lack of self-motivation
- non-enjoyment, boredom of exercise
- lack of confidence in their ability to be physically active (low self-efficacy)
- fear of being injured or having been injured recently
- lack of self-management skills, such as the ability to set personal goals, monitor progress, or reward progress toward such goals
- lack of encouragement, support, or companionship from family and friends
- non-availability of parks, sidewalks, bicycle trails, or safe and pleasant walking paths close to home or the workplace

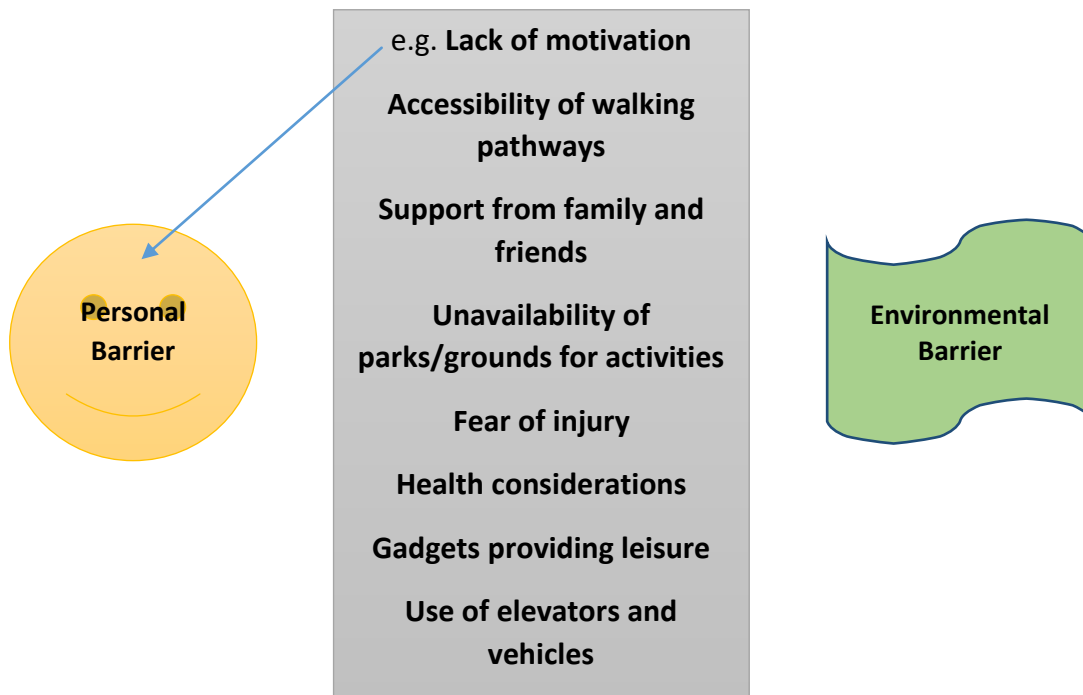
### *Environmental barriers*

Some may not notice but the space and the setting where people live greatly influence a person's participation to physical activity. The constant exposure and the daily interaction with the people and things around has a great impact on a person's preference towards bodily execution and movement.

The environment in which we live has a great influence on our level of physical activity. Many factors in our environment affect us. Obvious factors include the accessibility of walking paths, cycling trails, and recreation facilities. Factors such as traffic, availability of public transportation, crime, and pollution may also have an effect. Other environmental factors include our social environment, such as support from family and friends, and community spirit. It is possible to make changes in our environment through campaigns to support active transportation, legislation for safer communities, and the creation of new recreation.

### **Activity 3: Lead me to where I am!**

*Directions:* Listed below are examples of physical activity barriers. Draw a line connecting its type whether PERSONAL or ENVIRONMENTAL barrier.



Guide questions:

1. During the pre-activity on Par-Q & You, have you encountered any physical activity barrier? Is there any personal or environmental barrier? If yes, please list it down.
  
  
  
  
  
  
  
  
  
  
2. Cite some ways to overcome situations that hinders you to engage in physical activity.

### **Activity 4: Diet and Nutrition Assessment**

*Directions:*

1. Surf the net and open the site  
<http://www.takingcharge.csh.umn.edu/enhance-your-wellbeing/health/diet-nutrition/diet-nutrition-assessment?id=5717f623f2f95&step=0>
2. On that site, undergo steps 1-3. Print the downloaded assessment results reflecting your diet and nutrition.
3. Set at least 5 goals for the items that needs improvement.

## Summary:

Fitness level assessment determines the current health status of an individual. Assessing one's health status will help a person be informed of his or her strengths and weaknesses leading him/her to observe a healthy lifestyle and to select appropriate activities for improvement.

To maintain general fitness, develop the health-related physical activities that include cardiovascular endurance, muscular strength, muscular endurance, flexibility and body composition.

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## Lesson 7: Fitness Goals

Improving fitness is an important goal for achieving optimum health. If carefully planned, performed, monitored, and evaluated, positive health-related outcomes will be achieved and that reduces their risks to acquiring health problems.

To maximize the results of a physical fitness program there is a need to be acquainted with the Principles of Exercise and appropriate modification of the FITT - Frequency, Intensity, Type, and Time.

### The Principles of Physical Activity

**Overload Principle.** This is the most basic principle that indicates doing “more than normal” for improvement to happen. In order for the skeletal muscles to get stronger, additional load must be added and exerts greater than load what was used to.

**Principle of Progression.** It is a gradual increase in exerting effort or load that is done not too slowly, nor too rapidly. This principle aids safe and effective results.

**Principle of Specificity.** This suggests that overloading must specifically train a desired body part for it to improve. For example, cardiovascular fitness may only improve flexibility to a small degree, and so jogging and running will not be a part of the exercise program for developing flexibility. Instead, select exercises with emphasis on stretching out the muscles and joints. Use the appropriate type of exercise that directly improves your target muscles.

**Principle of Reversibility.** Development of muscles will take place if regular movement and execution is done, and if activity ceases, it will be reversed. This shows that benefit and changes achieved from overload will last only if training is continuous. The training effect is lost if the training is discontinued.

### The FITT Principle of Physical Activity

#### *Frequency*

The **frequency** of exercise refers to number of times a physical activity is done in each week. According to the American College of Sports Medicine guidelines, it is recommended to exercise 3-5 days per week and for more optimal results, exercise can be done in most days of the week with a combination of light-moderate-vigorous activity.

#### *Intensity*

The rate at which the activity is performed is called **Intensity**. It is also referred to as the magnitude of the effort required to perform an activity or exercise. It describes how easy or how hard a person has to work in a certain activity, and it varies from one person to another. The determination of intensity depends on some individual factors such as exercise experience, relative level of fitness, and needs of fitness.

The intensity level target may be determined by computing the **target heart rate (THR) range** based on the results of an exercise stress test,



considering the resting and exercise heart rate, with 60% to 80% intensity level.  
(Karvonen's Formula)

Go over your recorded fitness results from the self-testing activity. Compute for your THR following the procedure below.

**Activity 1: My Target Heart Rate**  
**Directions:** Compute your Target Heart Rate Range in 4 steps. Fill in the blanks below.

1. Get the Maximum Heart Rate.  

$$\text{MHR} = 220 - \frac{\quad}{\text{(your age)}}$$

$$\text{MHR} = \underline{\hspace{2cm}}$$
2. Determine the Heart Rate Reserve.  

$$\text{HRR} = \text{MHR} - \frac{\quad}{\text{(Resting Heart Rate)}}$$
 (\*Please refer to Self-testing activities)  

$$\text{HRR} = \underline{\hspace{2cm}}$$
3. Take 60% and 80% of the HRR
  - a.  $60\% \times \text{HRR} = \underline{\hspace{2cm}}$
  - b.  $80\% \times \text{HRR} = \underline{\hspace{2cm}}$
4. Add each HRR to Resting Heart Rate (RHR) to obtain the Target Heart Rate (THR) range.
  - a.  $60\% \text{ HRR } \underline{\hspace{1cm}} + \frac{\quad}{\text{(RHR)}} = \underline{\hspace{1cm}}$  beats per minute
  - b.  $80\% \text{ HRR } \underline{\hspace{1cm}} + \frac{\quad}{\text{(RHR)}} = \underline{\hspace{1cm}}$  beats per minute

Therefore, your target heart rate range is  $\frac{\quad}{(4.a)}$  to  $\frac{\quad}{(4.b)}$  beats per minute.

(When performing physical activities, your heart rate is within the normal range therefore you have to select moderate – vigorous activities that will make you heart pump within the THR range.)

**Type**

The **type** of activity is determined by following the principle of progression and specificity. To attain a higher level of fitness, select the type of physical activity that challenges the body to accept an increase of work and that answers your need.

**Activity 2:**

**Directions:** Identify what HRF component these physical activities belong to. Choose your answer from the word pool and write your answers on the table provided for.

Cardiovascular Fitness	Flexibility	Muscular Strength & Endurance

Walking  
Dynamic stretching  
Stretching  
Body – weight exercises

Jogging  
Swimming  
Squats  
Brisk walking

Lunges  
Yoga  
Sit – ups  
Planks

## Time

**Time** is the *duration* or the length of session of a physical activity. It is inversely related to Intensity for the more intense a work is done, the shorter time it is performed.

Here are some examples of physical activity and exercises that you may integrate in your own fitness plan. Remember that the intensity of exercise as well as the type of activity to be done will vary for each person, as it is based on the fitness level results during self-testing.

## Cardiovascular Fitness



### Aerobic Exercises to improve Cardiovascular Endurance

- walking
- jogging
- cycling/biking
- hiking
- skating
- rollerblading
- step aerobics
- cardio machines e.g. treadmill
- sports e.g. football, basketball, volleyball

<http://slideplayer.com/slide/6826115/>

<https://www.pinterest.com/pin/461196818068514274/>

## Flexibility Fitness

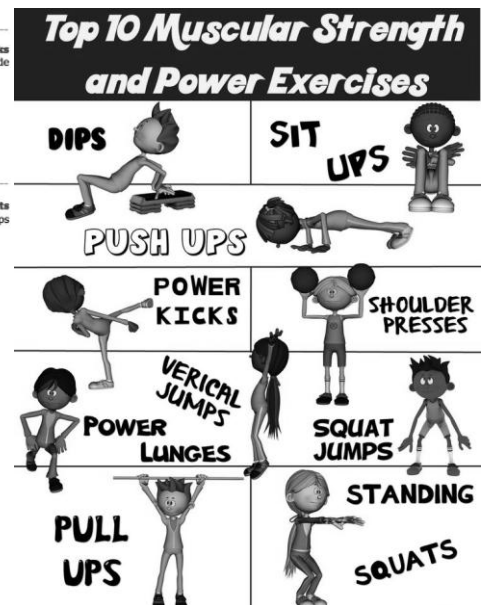


<https://www.washington.edu/wholeu/2015/02/09/week-five-dare-to-do/>

## Muscular Strength and Endurance Fitness



<http://triathlete-europe.competitor.com/2013/10/30/get-peloton-strong>  
<https://www.pinterest.com/pin/461196818068640351/>



### Activity 3: How intense are you?

Directions: Perform one activity at a time and supply the information by filling-up the table.

Describe the activity based on the following:	Walking around for 5 minutes	Brisk walking for 4 minutes	3-minute jump jacks
How are you feeling?			
How is your breathing?			
How is your sweat?			
How is your talking ability?			

Reflection:

- Which among the three (walking around, brisk walking, 3-minute jump jacks) is considered:
  - Light activity: \_\_\_\_\_  
Justification: \_\_\_\_\_
  - Moderate activity: \_\_\_\_\_  
Justification: \_\_\_\_\_
  - Vigorous Activity: \_\_\_\_\_  
Justification: \_\_\_\_\_

Moderate-intensity Physical Activity (Approximately 3-6 METs)	Vigorous-intensity Physical Activity (Approximately >6 METs)
Requires a moderate amount of effort and noticeably accelerates the heart rate.	Requires a large amount of effort and causes rapid breathing and a substantial increase in heart rate.
Examples of moderate-intensity exercise include:	Examples of vigorous-intensity exercise include:
<ul style="list-style-type: none"> <li>• Brisk walking</li> </ul>	<ul style="list-style-type: none"> <li>• Running</li> </ul>
<ul style="list-style-type: none"> <li>• Dancing</li> </ul>	<ul style="list-style-type: none"> <li>• Walking / climbing briskly up a hill</li> </ul>
<ul style="list-style-type: none"> <li>• Gardening</li> </ul>	<ul style="list-style-type: none"> <li>• Fast cycling</li> </ul>
<ul style="list-style-type: none"> <li>• Housework and domestic chores</li> </ul>	<ul style="list-style-type: none"> <li>• Aerobics</li> </ul>
<ul style="list-style-type: none"> <li>• Traditional hunting and gathering</li> </ul>	<ul style="list-style-type: none"> <li>• Fast swimming</li> </ul>
<ul style="list-style-type: none"> <li>• Active involvement in games and sports with children / walking domestic animals</li> </ul>	<ul style="list-style-type: none"> <li>• Competitive sports and games (e.g. Traditional Games, Football, Volleyball, Hockey, Basketball)</li> </ul>
<ul style="list-style-type: none"> <li>• General building tasks (e.g. roofing, thatching, painting)</li> </ul>	<ul style="list-style-type: none"> <li>• Heavy shovelling or digging ditches</li> </ul>
<ul style="list-style-type: none"> <li>• Carrying / moving moderate loads (&lt;20kg)</li> </ul>	<ul style="list-style-type: none"> <li>• Carrying / moving heavy loads (&gt;20kg)</li> </ul>

[http://www.who.int/dietphysicalactivity/physical\\_activity\\_intensity/en/](http://www.who.int/dietphysicalactivity/physical_activity_intensity/en/)

**“MET”** is another name for metabolic equivalent, a measure of exercise intensity based on oxygen consumption. More specifically, a single **MET** is defined as the amount of oxygen a person consumes (or the energy expended) per unit of body weight during 1 minute of rest. It is equal to about 3.5 milliliters (ml) of oxygen consumption per kilogram (kg) of body weight per minute, or 1 kilocalorie (kcal) per kg of body weight per hour.

Source: [www.idealife.com/fitness-library/using-mets-program-design](http://www.idealife.com/fitness-library/using-mets-program-design)

**Activity 4: My Fitness Plan**

Directions:

A. Determine your weakest component and strongest component. Refer to your results obtained during the self-testing activities. Rank them by writing 1- 4, where 1 is the weakest and thus, should be given top priority in making your fitness plan.

- \_\_\_\_\_ Cardiovascular Endurance (3-min step test)
- \_\_\_\_\_ Muscular strength and endurance of arm (push-up/flexed)
- \_\_\_\_\_ Muscular strength and endurance of abdominal (curl-up)
- \_\_\_\_\_ Flexibility of the hamstring muscles (hamstring & hip flexor test)
- \_\_\_\_\_ Flexibility of the shoulder muscles and joints (zipper test)

B. Following the fitness plan design shown below, select activities guided by the Principles of Exercise and the FITT goals.

FITT Goals	Frequency	Intensity	Type	Time
<b>Parts of the Fitness Plan</b>	(Indicate days of the week)	Light, Moderate – Vigorous	Form of exercises, selected physical activities	(Total fitness plan not less than 60 minutes)
<b>Warm – up</b>				
<b>Work-out</b>			(Prioritize the weakest component based on data in Activity 4A )  a. _____ Activity/Exercises	
			b. _____ Activity/Exercises	
			c. _____ Activity/Exercises	
			d. _____ Activity/Exercises	
			e. _____	
<b>Cool-down</b>				

### Activity 5: My Daily Fitness Record!

Directions: Fill in your data.

Schedule Week 1	Resting Heart Rate	Exercise Heart Rate	Recovery Heart Rate	Remarks
Day 1 _____				
Day 2 _____				
Day 3 _____				
Day 4 _____				
Day 5 _____				

### SUMMARY

The Principles of Training suggest that overloading is the key to muscle development and that it entails doing more than the body is used to. The benefit brought about by overloading will only last if the overloading is continuous, otherwise, the muscle development will go back to its original state.

It is important to take in consideration the FITT principle in achieving the optimum fitness development. FITT stands for frequency, intensity, time, and type. FITT sets the guidelines in your physical activity program and used as basis for your fitness routine for better results.

The more frequent an activity is done, the greater chances of fitness development. Exercise execution is also relative to Intensity.

How hard or how easy the task is accomplished defines the magnitude of work, referred to as intensity. The intensity of your activity is determined by the body's response characterized by the number of times the heart pumps measured in beats per minute. Computing the target heart rate (THR) range will give you an idea on your workable heart rate according to your capacity.

Selection of appropriate activities will help you achieve the desired results by being able to specify the target muscles for development.

Engaging in moderate to vigorous physical activity in different settings can help avoid boredom, thus making activities more exciting and interesting.

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- What is Moderate-intensity and Vigorous-intensity Physical Activity?* [http://www.who.int/dietphysicalactivity/physical\\_activity\\_intensity/en/](http://www.who.int/dietphysicalactivity/physical_activity_intensity/en/)

## Lesson 8: Exercise for Fitness

### Warm-up Activity: Rank 'Em!

*Directions:* Rank the following physical activities according to the level of effort you would have to exert to accomplish them. Rank first (1<sup>st</sup>) the physical activity that requires the most level of effort to accomplish and 10<sup>th</sup> the physical activity least requiring level of effort. Explain your rankings.

- |  |   |
|--|---|
| _____ competitive badminton for 30 minutes | _____ volleyball spiking and blocking drills for 10 minutes |
| _____ running uphill for 5 minutes         | _____ 3-on-3 basketball for 30 minutes                      |
| _____ sprinting for 20 seconds             | _____ swimming 10 laps continuously                         |
| _____ climbing 1 flight of stairs          | _____ 3k fun run in 1 hour                                  |
| _____ leisurely biking                     | _____ walking in the mall                                   |

When you engage in physical activities for health and fitness improvements, you need to monitor the effort you are giving. This is because the effort given in doing physical activities contributes to the achievement of your fitness goals. By monitoring your effort, you will be able to know if you are reaching at least a moderate intensity level and at most a vigorous one.

Remember, it is important that your body is challenged to do more than what it is used to for changes to occur. If the physical activity you do is too easy for your body, changes (if any) would be minimal. Hence, your body should be challenged. You need to sustain moderate to vigorous intensity of physical activity for your body to be challenged.

You will be able to monitor your effort through physiological indicators. Physiological indicators are those signs that are physiologic in nature or have to do with bodily processes. These include heart rate, rate of perceived exertion (RPE), and pacing. Each of these physiological indicators is important. However, depending on your fitness goal and personal preference, each indicator has its own advantages.

**Heart Rate.** Also known as pulse rate, this is the number of times a person's heart beats per minute. It indicates the effort your heart is doing based on the demands you place on your body. The more demanding your physical activity means that the heart rate is faster.



Each time your heart beats, it pumps blood into the arteries of your body. The surge of blood causes a pulse, which is what you feel by holding your fingers against an artery. The major arteries that are easy to locate and frequently used for pulse counts are the radial artery (just below the base of the thumb) and the carotid artery (just below the sides of jaw). Some people find it easier to locate the carotid artery but locating the radial artery is easier for others.



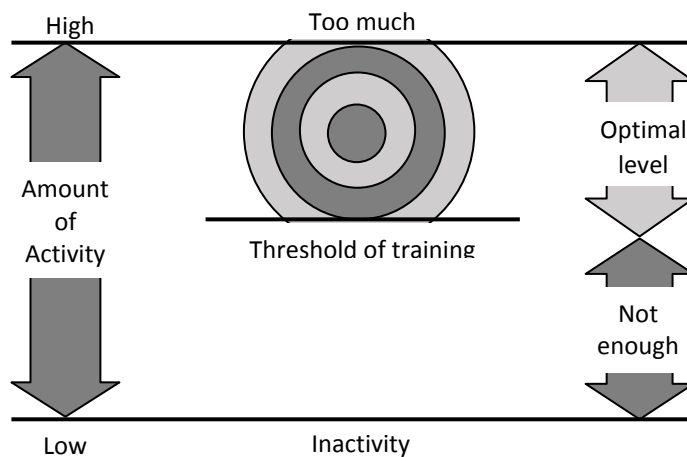
To determine your pulse rate, locate your pulse using your index and middle fingers. Press

Image taken from [http://mindily.org/tutorial/howto/lower\\_resting\\_heart\\_rate](http://mindily.org/tutorial/howto/lower_resting_heart_rate)



gently to feel the pulse. Count the number of beats in 10 seconds and multiply by 6 to get your number of beats per minute. The 15-second count is also used by multiplied by 4 to get the number of beats per minute..

The heart rate provides a good indicator of the relative challenge experienced during physical activity. Using the heart rate as a physiological indicator, maximal heart rate (max HR) is typically used. Recommendations for physical activity indicate that physical activities used as exercises should be between 60 to 85 percent of your max HR to maintain or improve cardiovascular fitness. This means that for each exerciser, getting the max HR and the heart rates equivalent to 60 to 85 percent of the max HR are important in achieving your fitness goals. Think of it as 60% heart rate is your moderate intensity and 85% heart is the limit of your vigorous intensity.



from Corbin et al (2008)

Figure 2: Physical activity target zone

Take note of the concepts of threshold of training and target zone. The threshold of training is the minimum amount of physical activity

(frequency, intensity, and time) necessary to produce benefits. The target zone, on the other hand, begins at the threshold of training and stops at the point where the physical activity becomes counterproductive.

You can think of threshold of training as American College of Sports Medicine's (ACSM) minimum recommendation of training intensity (60%) and the target zone ranging from 65 to 85 percent training intensities. Hence, you need to reach these training intensities to produce health, wellness, or fitness benefits. You can compute your target heart rate for these training intensities by following several steps.

According to Hoeger and Hoeger (2011), research indicates a more favorable prediction using the computation below than the equation  $220 - \text{age}$ . Here are the steps to get your target heart rate.

1. Estimate your maximal heart rate (max HR/MHR) according to the following formula:

$$\text{maxHR/MHR} = 207 - (0.7 \times \text{age})$$

2. Check your resting heart rate (RHR) sometime in the evening after sitting quietly for 15 to 20 minutes. You may take your pulse for 30 seconds and multiply by 2, or take it for a full minute.
3. Determine heart rate reserve (HRR) using this formula:

$$\text{HRR} = \text{MHR} - \text{RHR}$$

4. Calculate the training intensity at 30, 40, 60, and 85 percent. Multiply HRR by the respective 0.30, 0.40, 0.60, and 0.85, and then add the HRR to all four training intensities. Example:

$$60\% \text{ Training Intensity} = \text{HRR} \times 0.60 + \text{RHR}$$

### Activity 1: My Target

**Directions:** Compute your threshold of training and target zones. Identify physical activities that you could do to reach these zones.

Although counting the heart rate during exercise is quite difficult, it is still one of the best ways to accurately count exercise heart rate values. To do this, while exercising, continue moving while quickly locating the pulse, then stop and take a 10-second count. Multiply the number by 6 to convert the heart rate to beats per minute. This measurement can be used to make necessary adjustments to reach your target zone.

Heart rate monitors can also be used to get your heart rate during physical activity. These monitors, which are strapped on your chest, work along with wristwatches that register the heart rate. Since the wristwatch will show your heart rate as you move, you can adjust the level of effort accordingly. Most models of heart rate monitors show the heart rate along with calories burnt, target zone, and time or duration of exercise. However, more sophisticated models may feature other information.



**Figure 3 Heart Rate Monitor**  
[http://zenergy.v.com/blog/detail/using\\_a\\_heart\\_rate\\_monitor](http://zenergy.v.com/blog/detail/using_a_heart_rate_monitor)

### Rate of Perceived Exertion (RPE)

This is an assessment of the intensity of exercise based on how you feel. It is basically a subjective assessment of effort which ranges from 6 (very, very light) to 20 (very, very hard) with 1 point increments in between. The target zone for aerobic activity is from 12 to 16.

Ratings of Perceived Exertion (RPE)	
Rating	Description
6	Very, very light
7	
8	Very light
9	
10	Fairly light
11	
12	Somewhat hard
13	
14	Hard
15	
16	Very hard
17	
18	Very, very hard
19	
20	

Source: Data from Borg from Corbin et al (2008)

If you are engaged in physical activity, you rate your effort level based on how light or how hard you perceive it. A rating of 6 means that your effort level is “very, very light” while a rating of 18 means that your effort is more or less “very, very hard.” Think of each rating in the RPE as a reflection of your heart rate during the physical activity, that is, when multiplied by 10. This means that an RPE of 6 is about a heart rate of 60 while an RPE of 18 is about 180 beats per minute. Since an RPE of 6 means your heart rate is only at 60 beats per minute, your physical exertion is very minimal,

while an RPE of 18 means that your heart is doing 180 beats per minute, pushing yourself to the limit.

### **Activity 2: Rate it this time**

*Directions:* Look at your answers in the warm-up activity. Now knowing about RPE, rate the different physical activities according to your perceived exertion if you were to accomplish those physical activities. Explain your answers.

A practical way to know your level of effort is to try singing or talking while engaged in physical activity. If you are still able to sing during physical exertion, then the RPE is probably just between 6 - 8. However, if you cannot hold a conversation, then the level of effort is high and the RPE is probably between 14 - 17.

If you are jogging and are still able to sing, you could jog a bit faster to increase RPE. However, if you cannot talk anymore, you could lower the effort level by jogging slower or inserting brisk walks between jogs. Remember, the recommended target level of effort is from 12 to 16 (120 to 160 beats per minute) for your health to improve. So rate your physical exertion to be able to maximize the effects of your participation in physical activity.

Using the RPE also avoids the need to stop and count the heart rate during exercise. With practice, most people can recognize when they are in the target zone using RPE. It now becomes easier to make necessary adjustments in the effort exerted since you have perceived the physical exertion accordingly.

**Pace and Pacing.** These refer to the rate or speed of doing physical activities. This means that a person can take it slow when engaged in physical activities or do them quickly depending on the FITT Principle.

Pacing allows you to change the way you perform or complete an exercise or physical activity so that you can successfully see changes. It regulates your participation in physical activities through gradual and careful introduction of changes in the physical activity, whether an increase in intensity, frequency, or participation.

Depending on the fitness level of an individual, pacing may be through frequency, intensity, and time of doing physical activities. The normal frequency could be 3 to 4 times a week which can be increased or decreased depending on the changes done in intensity and time. If intensity is increased, frequency and time could be decreased, or vice versa.

You must be able to pace your participation in physical activities well so that you will benefit more and that you will not get injured. Remember to listen to your body, so pace yourself if needed.

### **Activity 3: Pace Yourself**

*Directions:* Look at your answers in Activity 3 and write them on the table below. If you were to do the different physical activities, how will you pace yourself? Complete the table below.

<b>Physical Activity</b>	<b>Frequency</b>	<b>Intensity</b>	<b>Time</b>

When you make modifications or adjustments in your exercise program, you have to take note of the principles of progression and adaptation. Increase elements in your exercise program gradually so that your body can adapt accordingly. Take serious note of the principle of overload as well. Too easy a load will not be beneficial to your body in the long run.

If you have just started having a more active lifestyle, you may want to start with physical activities of relatively moderate intensity. Performing this type of activity at about 40 percent of your max HR or an RPE of 12 (somewhat hard) for several weeks would be recommended for gradual adaptation. Time spent on physical activity may be shorter than the recommended 30 minutes. However, as fitness improves, accumulated minutes should at least account for 30 minutes a day, and the FITT principle can be increased as well. The table below shows recommended progression.

<b>Progression of Activity Frequency, Intensity, and Time Based on Fitness Level</b> (Corbin et al,2008)			
	Low Fitness	Marginal Fitness	Good Fitness
<b>Frequency</b>	3 days a week	3 to 5 days a week	3 to 6 days a week
<b>Intensity</b>			
<i>Heart rate reserve (HRR)</i>	40-50%	50-60%	60-85%
<i>Maximum heart rate (maxHR)</i>	55-65%	65-75%	75-90%
<i>Relative perceived exertion (RPE)</i>	12-13	13-14	14-16
<b>Time</b>	10-30 min	20-40 min	30-60 min

It is important that you monitor your fitness improvements since these will eventually dictate your progression. If your body has adapted to the demands you place on it, then it would be best to progress to another level until you reach your optimum level of overload. This is the principle of progression. Following this principle, the load you place on your body should occur in gradual succession rather than in major bursts for safe and effective results. The new challenge now posed on your body is how to advance to another level.

However, as you become more fit, the rate of improvement levels off. As the principle of diminishing returns indicates, once you get more and more fit, the benefit you get for each additional amount of activity may not be the same as before. When your physical activity level is high, you can expect to have lesser improvements despite additional amounts of physical activity. When this happens, the challenge is on how to maintain that level of physical activity.

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Images on how to get pulse rate retrieved from  
[http://mindly.org/tutorial/howto/lower\\_resting\\_heart\\_rate](http://mindly.org/tutorial/howto/lower_resting_heart_rate)

Image of heart rate monitor retrieved from  
[http://zenergysv.com/blog/detail/using\\_a\\_heart\\_rate\\_monitor](http://zenergysv.com/blog/detail/using_a_heart_rate_monitor)

## Lesson 9: Exercise for Fitness

As you engage in moderate to vigorous physical activity, you need to observe some personal safety precautions to avoid certain conditions related to physical activity participation. These conditions include dehydration, overexertion, hypothermia, and hyperthermia.

Each of these conditions should be taken seriously for each poses health risks to you as an exerciser. These conditions are usually associated with exercising in different types of environment, like a hot or cold environment. However, dehydration and overexertion may be experienced even when exercising in environments that do not have extreme temperatures.

Each condition will be discussed with ample safety precautions to guide you as you engage in moderate to vigorous physical activities.

### **Dehydration**

This refers to excessive loss of water from the body, usually through perspiration or sweating, urination, or evaporation.

During participation in physical activities, the body regulates its temperature depending on the intensity of the activity. More frequently during moderate to vigorous physical activities, the body perspires or sweats and you get thirsty.

**Sweating.** On a normal day, the body loses about 2.5 liters of water from the lungs and skin, from urine and feces, and from perspiration. The body must replace this through proper hydration. To offset fluid losses, it is suggested that 150 to 250ml of fluid should be taken every 15 minutes.

**Thirst.** Thirst is a sensation of dryness in the mouth and throat associated with a desire for liquids. Maintaining water balance is an important consideration during exercise. Physical activity results in increased heat production, and evaporation of sweat from the skin allows the body to dissipate this heat and maintain a normal body temperature. The amount of fluid lost as sweat varies according to factors such as the intensity and duration of activity and the air temperature or humidity.

Most of the time, an individual waits for thirst to kick in before replenishing lost water. However, it is advisable to replenish lost fluids even before feeling thirsty. This is especially important when an individual exercises in the heat or does so for an extended period of time.

### **Activity 1: Analyzing fluid replenishment advertisement**

*Directions:* Analyze the different sports-related advertisements on fluid replenishment to be shown by your teacher. Take note of the claims presented in the advertisements like replenishment information, effects of drinking the product, etc. Explain your answers.

- *What are the recommendations for fluid replacement during prolonged aerobic exercise?*

Adequate water replacement is the most important factor in preventing heat disorders. Drinking about 6 to 8 ounces of cool water every 15 to 20 minutes during exercise seems to be ideal to prevent dehydration. Cold fluids are absorbed more rapidly in the stomach.

Commercial fluid replacement solutions or sports drinks that contain 6 to 8 percent glucose seems to be optimal for fluid absorption and performance in most cases. These are recommended especially when exercise is strenuous and is carried out for more than an hour. However, water is sufficient for exercise lasting less than an hour. Palatability ensures greater fluid intake so choose a drink that suits your taste as well.

Another condition that you need to be aware of is overexertion or overtraining. This condition is actually independent of weather conditions, but you need to be aware of the signs and symptoms.

### **Overexertion or Overtraining**

This refers to the detrimental cause of excessive training.

Some individuals engage in too much physical activity. Some exercisers and athletes often push themselves too hard in their pursuit of high-level performance. Thus, they are susceptible to a variety of hyperkinetic conditions known as overload syndrome. This condition is characterized by fatigue, irritability, and sleep problems, as well as increased risks for injuries.

In an over-trained status, performance is known to decline sharply and this can cause individuals to train even harder. This dip in performance may be mistaken for dip in physical effort so the exerciser or athlete increases the effort to pull up the performance.

A useful physical indicator of overtraining is a slightly elevated morning heart rate (4 or 5 beats more than normal values). Essentially, an elevated morning heart rate reveals that the body has had to work too hard to recover from the exercise and is not in its normal resting mode.

When doing resistance training, an individual is likely overtraining and may not reap the full benefits of the program if the body is not allowed to recover completely in 2 or 3 days after maximal effort. Decrease in total number of sets or exercises, or both, is recommended.

You also need to pace your workout properly to avoid staleness. Staleness, or getting bored or uninterested, is usually a consequence of overtraining.

### **Activity 2: Identifying symptoms of overtraining**

*Directions:* Answer the questions by placing a check (✓). Share your answers with your seatmate.

- \_\_\_\_\_ 1. Has your performance decreased dramatically in the last week or two?
- \_\_\_\_\_ 2. Do you notice signs of unusual anxiety or anger?
- \_\_\_\_\_ 3. Do you feel depressed?
- \_\_\_\_\_ 4. Do you feel unusual fatigue?
- \_\_\_\_\_ 5. Are you less energetic than usual?
- \_\_\_\_\_ 6. Do you have trouble sleeping?

- \_\_\_\_\_ 7. Do your arms and/or legs feel heavy?
- \_\_\_\_\_ 8. Do you experience loss of appetite?
- \_\_\_\_\_ 9. Do you lack interest in training?

Because the weather here in the Philippines is normally hot most of the year, exercisers should be conscious about it when engaging in physical activity whether indoors or outdoors. Since indoor conditions can easily be adjusted with cooling mechanisms such as air conditioners and electric fans, outdoor conditions pose more challenges to you as an exerciser. One of the things you need to be aware of is hyperthermia.

### **Hyperthermia**

This is an alarming rise in body temperature, which is an effect of exercising in a very humid environment. It sets the stage for heat stress and even heat stroke, the potentially fatal collapse of the temperature-regulating mechanism.

In hot environments, the body is able to maintain temporary thermal balance during exercise through circulatory adjustments and evaporation of sweat. However, the body responds differently in a hot, dry environment. The body actually gains heat when the air temperature exceeds the temperature of the skin. Under these conditions, the evaporation of sweat allows the maintenance of thermal equilibrium. When humidity is also high and evaporation cannot take place, the body temperature continues to rise, and performance is severely impaired.

- *Is it safe to exercise in hot weather?*

Prolonged, vigorous exercise can be dangerous in hot and humid weather. Heat from exercise is released in the form of sweat, which cools the skin and the blood circulating near the body surface as it loses evaporates. The hotter the weather, the more water the body loses through sweat; the more humid the weather, the less efficient the sweating mechanisms is at lowering body temperature.

If you lose too much water or if your body temperature rises too high, you may suffer from heat disorder such as heat exhaustion or heat stroke. Use caution when exercising if the temperature is above 80°F or if the humidity is above 60%. To exercise safely, watch for the signals of heat disorder, regardless of the weather.

### **Activity 3: *Donaire in Cebu***

*Directions:* Analyze the case of Nonito Donaire, Jr.'s April 23, 2016 title defense fight against Zolk Bedak in Cebu. Around that time, the Philippines was experiencing one of the hottest temperatures. Explain what the two boxers needed to do to be able to give out their best in such hot temperatures.

**Heat Acclimatization.** On the first day of vigorous exercise in hot weather, one may experience near maximal heart rate, elevated skin and core temperatures, and severe fatigue. But after a few days of similar exposure, the same task can be accomplished with a reduced heart rate, made possible by improved blood distribution and increased blood volume. Skin and core temperatures are lower, since sweating begins at a lower temperature.

Highly fit individuals become acclimatized in 4 days while sedentary ones take about 8 days. The best way to get acclimatized is to work in the actual conditions (temperature and humidity) one has to endure.

<b>Tips when Exercising in the Heat/Hot Weather</b>	
<ul style="list-style-type: none"> <li>• Slow down exercise and add rest breaks to maintain prescribed target heart rate. As you become acclimatized, you can gradually increase intensity and duration.</li> <li>• Drink 2 cups of fluids 2 hours before you begin exercising and drink 4-8 ounces of fluid every 10-15 minutes during exercise (more frequently during high intensity activities).</li> <li>• Wear clothing that “breathes,” allowing air to circulate and cool the body. Wearing white or light colors will help by reflecting rather than absorbing heat. A hat can keep direct sun off your face. Do not wear rubber, plastic, or nonporous clothing.</li> <li>• Rest frequently in the shade.</li> <li>• Slow down or stop if you begin to feel uncomfortable. Watch for the signs of heat disorders. If they occur, act appropriately.</li> </ul>	

When you exercise in hot environments, you need to be aware of heat disorders.

<b>Heat Disorders</b>		
<b>Problem</b>	<b>Signs and Symptoms</b>	<b>Treatment</b>
Heat cramps – when considerable salt is lost in sweat. Take lightly salted foods and massage to relieve cramps.	History of exertion; muscle cramps, usually in the muscles used during exercise	<ul style="list-style-type: none"> <li>• Stop exercising, drink fluids, and massage or stretch cramped muscles.</li> <li>• Cool the body. Stop exercising, get out of the heat, remove excess clothing, drink cold fluids, and apply cool and/or damp towels to the body.</li> </ul>
Heat exhaustion – when heat stress exceeds the capacity of the temperature-regulating mechanism.	Fast, shallow breathing; weakness; dizziness; headache; moist or cool skin or profuse sweating; pale face; normal or slightly elevated temperature; weak pulse	<ul style="list-style-type: none"> <li>• Get immediate medical attention, and try to lower body temperature.</li> <li>• Get out of the heat, remove excess clothing, drink cold fluids, and apply cool and/or damp towels to the body or immerse in cold water, but not to induce shivering.</li> </ul>
Heat stroke – the temperature-regulating mechanism has given up	Noisy breathing; hot, flushed skin (may be dry or sweaty); red face; chills or shivering; disorientation; erratic behavior; high body temperature; no perspiration; full, rapid pulse; altered consciousness or unconsciousness; convulsions	<ul style="list-style-type: none"> <li>• Person should be placed in shock or recovery position. If conscious, person may sip water. Raise the legs.</li> <li>• Fan person and use wrapped cold packs in the armpits and groin.</li> </ul>



Cold temperatures do not pose a threat similar to that posed by hot, humid condition because of the metabolic heat generated through exercise. In the Philippines, there are only a number of places where cold temperatures can be experienced. Even so, exercisers should be aware that severe exposure to low temperatures and high winds can lead to frostbite, hypothermia, and even death.

### **Hypothermia**

Excessively low body temperature, characterized by uncontrollable shivering, loss of coordination, and mental confusion

This occurs when the body begins to lose heat faster than it can be produced. Prolonged exertion leads to progressive muscular fatigue. As exposure continues and additional body heat is lost, the cold reaches the brain. One loses judgment and the ability to reason. Speech becomes slow and slurred and control of the hands is lost.

<b>Signs, Symptoms, and Treatment of Hypothermia</b>	
<b>Signs and Symptoms</b>	<b>Treatment</b>
<p>Early signs</p> <ul style="list-style-type: none"> <li>• Shivering</li> <li>• Pale, cold skin</li> <li>• Cold environment</li> </ul> <p>As the condition worsens</p> <ul style="list-style-type: none"> <li>• No shivering, even though the person is cold</li> <li>• Increasing drowsiness</li> <li>• Irrational behavior and confusion</li> <li>• Slow, shallow breathing</li> <li>• Slow, weak pulse</li> <li>• Walking becomes clumsy and tendency of wanting to lie down and rest escalates.</li> </ul>	<ul style="list-style-type: none"> <li>• If the victim is unconscious, open airway and check for breathing.</li> <li>• If the victim is conscious, bring to shelter or keep in warm room.</li> <li>• Replace wet clothes with dry ones.</li> <li>• Give high energy foods and warm drinks.</li> <li>• Cover the head, hands, and feet because heat is lost through the extremities.</li> <li>• Do not let the victim lie down and rest since the core temperature is dropping. Without treatment, one might lose consciousness and die.</li> <li>• Transport the victim to a medical facility as quickly as possible.</li> </ul>

Constricting blood vessels (vasoconstriction) increases the stimulating capacity of the skin, but it also results in a marked reduction in the temperature of the extremities. Protective vasoconstriction often leads to discomfort in the fingers and toes. Blood is rerouted to the deeper, more vital body organs.

To relieve pain, it is necessary to warm the affected area or raise the core temperature. While shivering may cause some increase in temperature, gross muscular activity is far more effective in restoring heat to the troubled area. Shivering is the defense mechanism of the body against cold.

Core temperature is the temperature of the deep organs. The temperature of the body is normally at 37 degrees Celsius or 98.6 degrees Fahrenheit. It adjusts for enzyme activity within the muscles. Changes in core temperature can be reflected in the skin.

### **Activity 4: Sports clothing modeling**

*Directions:* Discuss and accomplish the given task for the assigned clothing to your group: basketball clothing, running clothing, sports-appropriate cold weather clothing. Identify common sports clothing specific to your group. What features are common in

the sports clothing that make them suited in Philippine weather? Assign 2-3 members of your group as sportswear models and present these types of clothing in class.

- *Is it safe to exercise in cold weather?*

If you dress warmly in layers and do not stay out in very cold temperatures for too long, exercise can be safe even in subfreezing temperatures. Take both the temperature and wind-chill factor into account when choosing clothing. Cold weather clothing provides an insulating barrier of air and can be peeled off as temperature rises and put back on as it falls. Wool can be used as well as windproof or rainproof ones.

Dress in layers so you can remove them as you warm-up and put them back on if you get cold. A substantial amount of heat loss comes from the head and neck, so keep these areas covered. In subfreezing temperatures, protect the areas of the body most susceptible to frostbite – fingers, toes, ears, nose, and cheeks – with warm socks, gloves, cap, or hood. Wear clothing that “breathes” and will absorb or drain moisture away from your body to avoid being overheated by trapped perspiration. Warm up thoroughly and drink plenty of fluids.

**Cold Acclimatization.** This refers to the metabolic adjustments done as well as the improved tissue insulation. Large body mass, short extremities and increased levels of body fat help to get acclimatized to cold weather.

### **Others Concerns:**

**Heat Rash** – also called prickly heat, is a benign condition associated with a red, raised rash accompanied by sensations of prickling and tingling during sweating. It usually occurs when the skin is continuously wet with un-evaporated sweat. It is generally localized to areas covered by clothing.

**Heat Syncope** – heat collapse, is associated with rapid physical fatigue during overexposure to heat. This results in dizziness or fainting. It is quickly relieved placing the individual in a cool environment and replacing fluids.

**Sun protection factor (SPF).** Sunscreen applied to the skin can help prevent many of the damaging effects of ultraviolet radiation. A sunscreen’s effectiveness in absorbing the sunburn-inducing radiation is expressed as the sun protection factor (SPF). An SPF of 6 indicates that an individual can be exposed to ultraviolet light 6x longer than without a sunscreen.

### **Activity 5: Safety features in school**

*Directions:* Form a group of 3-4 members and visit the specific area in your school assigned to your group (e.g. playground, gym, canteen, etc). Identify safety features in your assigned area related to exercise- and weather-related conditions as discussed in class. Examples of safety features like water fountains, wash areas like sinks and faucets, exhaust fans, etc can be identified. Once identified, make recommendations to improve the assigned area of the school.

**References:**

- Clark, M. A., Lucett, S., & Corn, R. J. (2008). *NASM Essentials of Personal Fitness Training* (3<sup>rd</sup> ed.). Philadelphia: Lippincott Williams & Wilkins.
- Corbin, C. B., Corbin, W. R., Welk, G. J., & Welk, Karen A. (2008). *Concepts of physical fitness: Active lifestyles for wellness* (14<sup>th</sup> ed.). New York: McGraw-Hill.
- Hoeger, W. W. K. & Hoeger, S. A. (2011). *Fitness & wellness* (9<sup>th</sup> ed.). Australia: Wadsworth.
- Kerwin-Nye, A. (2004). *First aid handbook: A complete guide to emergency procedures in the home, the workplace and outdoors*. Manila: WS Pacific Publications, Inc.
- Marieb, E. N. (2002). *Essentials of Human Anatomy & Physiology* (6<sup>th</sup> ed.). Singapore: Pearson Education Are Pte Ltd

## Lesson 10: Exercise for Fitness

As you participate in physical activities, whether in school or in the community, it is good practice to know your school and community's resources in case of injury or emergency. Being familiar with it makes response to injuries or emergencies more immediate and efficient, thus lessening the severity of the injury or emergency.

Resources refer to the supplies, equipment, facilities, and services that can be utilized in case of a sports- or fitness-related injury or emergency. They include both material and human resources such as safety supplies, equipment, facilities, qualified and trained emergency personnel, as well as standard protocols set for such situations. Emergency response begins with the preparation of both equipment and personnel. When these have been prepared adequately, the school and community are deemed ready for an injury or emergency.

It is important that you are able to identify these resources so that injuries or emergencies will be addressed immediately and efficiently. These resources are discussed here.

### • First Aid Kit

First aid is the immediate care given to a person who has been injured or suddenly become ill. First aid deals with self-help and proper home care, especially if medical assistance is not immediately available. The goal of first aid is to alleviate suffering, prevent added/further injury or danger, and prolong life.

The first aid kit is a set of supplies and equipment used to administer first aid. In your school and community, first aid kits should be available, visible, and readily accessible in case of injuries or emergencies. It should also be regularly checked for completeness and freshness of supplies.



Image taken from [www.emedco.com](http://www.emedco.com)

The usual supplies found in a first aid kit include the following:

- triangular bandage
- rubbing alcohol
- gloves
- iodine
- tongue depressor
- swabs
- gauze
- scissors
- wound dressings
- athletic tape
- cotton
- penlight
- adhesive bandage
- forceps

Other equipment that should be included to aid in first aid are the following:

- spine board
- blankets
- sets of splints
- short board/Kendrick's extrication device
- wheelchair
- poles

The first aid kit is usually located in strategic places in school like the clinic, gym, playground, and security stations. In the community, first aid kits should be located in the community centers like community hall or office and recreation centers. It is advisable that a sign be placed where the first aid kit and equipment are located. This can either be attached to a wall or post or suspended.

**Activity 1: Search for it!**

**Directions:** Do an ocular visit in your school gym, community hall, and recreation center. Look for emergency response equipments and supplies including first aid kits, spine board, etc. Note down if there are signage for these and if they are accessible in case of injury or emergency. Complete the checklist and write your observations.



First Aid kit sign (www.seton.ca)

	School Gym	Community Hall	Recreation Center
First aid kit			
Emergency numbers and phone			
Emergency equipment	<i>(List them here.)</i>		
Visibility			
Accessibility			
Observations			

• **Emergency Numbers and Phone/Two-way Radio**

Emergency numbers include police department, fire department, Philippine Red Cross (PRC), and other pertinent numbers. These numbers are usually compiled per area (i.e. locality, municipality, city) and written on a calling card or bookmark or even larger. In schools, emergency numbers could include the clinic, security, and other offices.

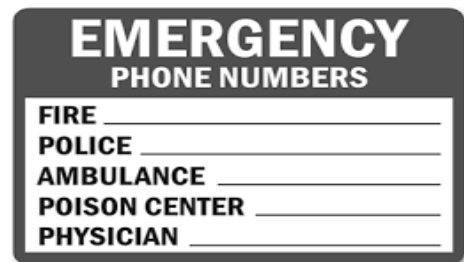


Image taken from www.smartsign.com



Emergency numbers should also be posted near phones and inside offices. It is advisable that in the gym and recreation centers, phones are visible so that school personnel or other individuals can notify pertinent offices or departments in case of injury or emergency.

## • Emergency Response Procedure/Emergency Action Plan (EAP)

For schools and the community (and in any other institution), the presence of first aid kits, emergency numbers and phones, and equipments should not be the end of their emergency response. They should set procedures on how to respond to injuries or emergencies. These procedures are standard ways of responding to emergencies.



These procedures make up what is called an Emergency Action Plan (EAP). It is a plan developed for immediate implementation whenever the need arises, providing appropriate standards of emergency care to all present. The EAP usually include the following:

1. Emergency Personnel – detailed First Aid arrangements for on-site emergencies; may consist of teachers, physicians and nurses, athletic coaches, security and maintenance personnel (for schools), or community leaders, homeowners' association president, etc (for community)
2. Emergency Communication – emergency numbers, phones/two-way radio, public announcement (PA) system
3. Emergency Equipment – first aid kit, wheelchair, spine board, stretcher, blankets, poles, etc
4. Medical Transportation – confirmation of local ambulance (c/o PRC), Basic Life Support, etc
5. Non-medical Transportation – wheelchairs, stretcher, etc
6. Emergency Contact List – clinic, local hospital, etc
7. Venue Information – transportations, identified entrance, exits, and access routes

School personnel (e.g. teachers, security and maintenance personnel) and community leaders know, understand, and follow these procedures every time an emergency happens because it is standardized. These procedures are usually laid out in writing so that personnel crucial in the emergency response are notified and that immediate attention is given.

In the community, it is advisable to form a community emergency response team which will be the emergency personnel in your EAP. It is advisable that the members of the community know who forms this emergency response team.

You may not know all the procedures of your school and community on responding to emergencies. However, what is important is you know who to notify in case an emergency happens. The most immediate personnel you need to notify in case you are in your school especially in the gym are the PE teachers or any teacher present, maintenance personnel, or security personnel.

### **Activity 2: And the procedures are...?**

*Directions:* Interview school personnel and community leaders regarding the emergency response procedures they follow. When interviewing school personnel, try to target those who you think are unlikely to experience injuries or emergencies, to know what procedures they know and follow.

In class, compare your answers with your classmates who interviewed school personnel within the same office or nature of work (e.g. librarians, Math teachers, office staff) and share with the class. For those belonging to the same community, compare your answers and present commonalities with class.

Part of the services that the school and community should offer is training their personnel and community leaders in emergency responses. This is expected since the effectiveness of emergency response greatly relies on the knowledge and skills of school personnel and community leaders in first aid and other emergency responses.

The Philippine Red Cross (PRC) is the national branch of the International Red Cross that cares for the wounded, sick, and homeless and now, providing help during and following natural disasters. PRC gives training on basic life support, cardiopulmonary resuscitation (CPR), first aid, and many more. The school and community should set a schedule with PRC volunteers who can impart the necessary knowledge, training, and certifications to equip them in times of emergency and disasters.



Red Cross volunteers during a Basic Training course (taken from <http://carmonagov.net/home/home/latest-news/303-carmona-forms-municipal-red-cross-143.html>)

Once certified, school personnel and community leaders should be able to respond to injuries and emergencies. However, certification should be renewed yearly or every two years, depending on the type of certification.

### • Entrance, Exit, and Access Routes

Adequate entry and exit points should be available in all areas. Access routes (paths of travel) going to the clinic, emergency exits, main gate, and others should also be known. Visible and strategically located signages are important so that these can easily be seen even from a distance. These should always be accessible and free from obstructions. Wide



Wheelchair ramp (Image taken from <http://stlouis.101mobility.com/wheelchair-ramps-stlouis.php>)

passageways are a must. A good estimate of the right width of the passageway is to check if a wheelchair, spine board, or stretcher can be easily transported and still have room for first aiders or rescuers to maneuver.

Ramps and elevators make access easier and these are necessary especially for structures that are higher than three storey. These also make transport quicker.

### **Activity 3: Real life injury situation**

*Directions:* Ara Galang, De La Salle University volleyball player, got injured in a match versus National University in March 7, 2015. She was grimacing in pain and crying, and was later reported has suffered serious injuries to her knees. What do you think were the emergency response procedures followed by the emergency personnel who attended to her?



### **Activity 4: Safety features in school**

*Directions:* Review your answers to Activity 5 on “Safety features in school” from the previous lesson. Based on the current lesson, analyze your answers if it reflects your school as being equipped with necessary resources in case of injury or emergency. Give special attention to entrances, exits, and access routes. Once identified, make recommendations to improve each area of the school to make it emergency-ready.

### **Activity 5: Safety features in the community**

*Directions:* Do the same activity as in Activity 3 in your community. Identify safety features that are visible in the community and those that only community leaders have access to. Make a short portfolio about your findings and make recommendations.

### **Activity 6: First Aid Certification and Basic Life Saving Course**

*Directions:* Identify local Red Cross office near your school or community. Inquire regarding necessary procedures to be able to have a first aid and basic life saving course in your school and/or community. With your teacher’s help, coordinate with the school administration and/or community leaders to have this arranged, if possible.

### **References:**

Kerwin-Nye, A. (2004). *First aid handbook: A complete guide to emergency procedures in the home, the workplace and outdoors*. Manila: WS Pacific Publications, Inc.

Image of first aid kit retrieved from <http://shop.emedco.com/search?w=first%20aid%20kit%20sign&af=cat1:workplacesafety>

Image of hanging first aid kit sign retrieved from <http://www.seton.ca/3-sided-hanging-first-aid-signs-first-aid-kit-ac0499.html>

Image of emergency sign retrieved from <http://www.smartsign.com/custom-sign/custom-emergency-and-fire-sign/sku-s-3484.aspx>

Image of wheelchair ramp retrieved from <http://stlouis.101mobility.com/wheelchair-ramps-stlouis.php>



## Lesson 11: Exercise for Fitness

### ***Warm-up Activity:***

*Directions:* Identify the different types of equipment and facilities that are usually found in a gym. How are they usually set up? Draw them and share your answers with the class.

When you engage in aerobic, muscle-, and bone-strengthening activities, you are likely to make use of different equipment and facilities. These resources help in your enjoyment and participation so you have to care of them. As a courtesy to other individuals who also make use of these equipment and facilities, you always need to observe the proper manners or etiquette inside a gym.

Depending on the venue or facility, there is a specific decorum expected from those who use them. The following are the different venues with its commonly expected etiquette.

### **Playing court or field**

A playing court or field may be found indoors or outdoors, depending on the sport. Venues and facilities are usually ready-to-use where minimal setup is needed since these are specifically catered to a certain sport (e.g. basketball, football). However, some venues need to set up some equipment first, like volleyball, tennis, badminton, table tennis, taekwondo, judo, etc.

Depending on the venue arrangements (i.e., rented or otherwise), those who utilize and set up equipment are expected to properly fix, return, or store the equipment after use. It is common manners to keep the venue clean and as orderly as possible after use. Here are some examples:

- ✓ Wipe off wet spots caused by drinks and sweat
- ✓ Throw away used or unneeded supplies and equipment like empty water bottles, athletic tapes, shuttlecock feathers in badminton, etc.

### ***Activity 1: Your Own Design***

*Directions:* Make a signage about appropriate etiquette in the court. Make sure to think about the size, color, and contents of the signage. Think of strategic locations on where you can post it, such as in school or in the community recreation center.

### **Dance areas or studios**

These are either open or enclosed spaces with full-sized mirrors on one or more sides. They usually cater to different types of dancers, which is why most have wooden or metal railings called barres. Speakers and music players are usually available for use and are set up in strategic locations (i.e., at the corners or center).

Like in playing courts and fields, depending on the venue arrangements, users of dance area or studios are expected to keep music players after use, turn off lights and ventilation when not in use, and maintain the venue orderly for the next users.

The following are other expectations when using dance areas or studios:





- ✓ Keep footwear and other belongings on the sides or designated spots (i.e. lockers, benches, tables)
- ✓ Wipe off wet spots caused by drinks and sweat on the floor.
- ✓ If it is an open area, keep music at accepted volume so as not to disturb other users.
- ✓ Know the studio schedule every time so that you will not be rushed to move out for next users.

### **Gym or weights area**

These are usually indoor facilities with different types of equipment such as machine weights, free weights, balls, exercise machines (e.g. treadmill, stationary bike, rower, stair climber), mats, etc. They are strategically positioned to allow maneuverability and easy access for all those who work out.



The different equipment are also accessible to all because the gym or weights area is accessible to everyone who works out. Hence, it is expected that you observe proper behavior during and after working out. Here are some of them:

- ✓ Avoid monopolizing use of the equipment. Share it with others by taking turns using them.
- ✓ Return equipment to its proper place.
- ✓ Do not slam or drop weights.
- ✓ Wipe off drinks and sweat off equipment and floor.
- ✓ Lower volume of music or wear earphones.
- ✓ Minimize grunting, refrain from yelling and using profanity.
- ✓ Wear appropriate clothes including footwear. Do not take them off to look at your body in the mirror.

Some gyms or weights areas have some reminders posted on strategic locations so that users will always be reminded. Read them and make sure to follow them to have a worry-free time working out.

# Gym Rules

1. No Sweat Towel, No Workout! No Exceptions!
2. Lockers are for use whilst in the gym only – any contents in occupied lockers will be emptied overnight
3. Wipe down equipment after use.
4. Suitable workout gear must be worn inside the gym – no jeans or flipflops!
5. Weights must not be dropped.
6. Weights must be replaced after use.
7. Lockers by the showers are for use whilst showering only, any contents in occupied lockers whilst not using the showers will be emptied
8. No bags are allowed on the gym floor at any time

Image taken from <https://www.fitneass.com/wp-content/uploads/2014/07/Gym-Rules-Gym-Etiquette.png>

## **Activity 2: Are There Any?**

*Directions:* Visit gyms or weights areas in your community. Look for signage on the rules of proper use and manners in the gym. Observe gym users if they follow these rules. If you were the gym manager, what actions would you take for gym users to observe proper gym etiquette? Share your answers with the class.

### **References:**

<http://dancewithmeusa.com/locations-2/dance-studio-glen-rock-nj/>

<https://www.fitneass.com/wp-content/uploads/2014/07/Gym-Rules-Gym-Etiquette.png>

## Lesson 12: Exercise for Fitness

### **Warm-up Activity: Name 'Em!**

*Directions: List as many categories of health- and fitness-related events as you can. Under these categories, name some local and national events related to it. Share your answers with the class.*

As you become more involved in physical activities, you can elevate your participation by joining events that promote health and fitness as well as address health issues like diabetes, obesity, nutrition, smoking, and many more. By joining events like these, you can learn more about these health concerns, what is being done to handle these concerns, and at the same time, you also get to increase your physical activity.

The usual objective of the organizers of these events is to raise funds for awareness about these health issues. Depending on their advocacy, events may range from fun-filled activities that can engage entire families, to more physically demanding ones. Your participation in these events not only increases your activity but also gives you an advocacy to work on. Your choice would depend on your interests and preferences. Here are some viable options for you.

- Fun runs

These are usually 1-day events that focus on running various distances (i.e., 3k, 5k, 10k, or longer). They cater to a wide variety of participants – competitive or recreational runners, and even families. Whether you are a recreational or



competitive runner, fun runs are good ways to elevate participation in physical activities since some fun runs are held in different surfaces (e.g. concrete, off-road, beach) and with different challenges posed on runners like an uphill run.

Other than the fitness benefits you would get from joining fun runs, you also get to help out certain causes. Some organizations or associations, and companies organize fun runs as one of their cause-oriented events.

Other benefits of joining fun runs are meeting new friends, enjoying the outdoors, and bringing home participant race kits. Race kits, which usually include a race bib or shirt and other items from sponsors, are good incentives for your effort and you can get more freebies and giveaways depending on the event sponsors.

You can also use your participation in fun runs as a gauge of your physical fitness by trying to beat your own time, or setting new records, or even aiming to finish among the top participants. If you do so, it is best that you prepare properly for fun runs and scout for more opportunities to race.



33rd Annual

- **Dance events, competitions, or marathons**

These events focus on dance as the main activity, whether as competition (e.g. streetdance, dancesport) or as recreation (e.g. aerobic dance marathons, Zumba™ events). These may last for hours depending on the event and variety of dances, intensity levels, and music usually used, thus, elevating participation.



Other than fitness

benefits, you can get a lot out from joining dance competitions and marathons. If events are competition-based, usually cash prizes, trophies, and freebies are the main incentives, along with bragging rights. However, if the events are recreation-type, participant kits (e.g. event shirt, sponsor freebies) are the usual takeaway. However, the enjoyment and fun of dancing are the main attraction in these types of events.



Many people are getting into exercising because of the popularity of some aerobic forms of exercises particularly Zumba™. The attractiveness of physical activities like Zumba™ comes from the lively music and instructors, colorful vibe, and relatively easy to follow dance routines. However, the most crucial effect that popular exercises like Zumba™ have is

the encouragement and support to participate in exercise, which in effect, makes people more aware of their health and fitness. That is why some groups and organizations choose Zumba™ at their event to promote awareness for their various causes. However, you can also engage in other aerobic exercises in the form of dances such social dance, streetdance, etc.

- **Sports tournaments**

These are the most common type of health- and fitness-related organized events. They mainly focus on sports in a tournament type of play where individual players and/or teams compete. These are usually organized for school teams [(e.g. University Athletic Association of the Philippines (UAAP))]. However, sports associations, cause-oriented groups, organizations, brands, and companies also hold sports tournaments for various purposes, levels, and sports.





It may not be explicit that health and fitness are the main highlights when joining such events because the nature of such events is usually competitive. Athletes and competitors treat their health and fitness seriously because of this same nature. That is why they train not only for their sports skills but also for their conditioning. Through sport tournaments, athletes and competitors are actually good role models of health and fitness.

You can join sports tournaments of varying levels of competition and different sports. During summer, local government units (LGUs) hold sports leagues especially for basketball and volleyball. Several categories are open for basketball based on age groups. For both basketball and volleyball, teams usually represent different *barangays*, *sitios*, *purok*, or subdivisions. Some LGUs also hold sports programs or sports clinics for the youth and other individuals. The Sangguniang Kabataan (SK), the youth leaders of the community, commonly organize events like these.



In school, intramurals are the common sports competitions for students. Different grade or year levels compete against each other in different sports. Games are usually played after classes where semi-finals and championship games are usually the highlights. Year levels are represented by team colors and are called by their common year level labels (i.e., green for 1<sup>st</sup> year/freshmen, yellow for 2<sup>nd</sup> year/sophomores, red for 3<sup>rd</sup> year/juniors, blue for 4<sup>th</sup> year/seniors).



You can also try out for your school's varsity teams. They represent your school in different sports competitions which usually include district level competitions. When

successful, teams move to higher level competitions that could eventually lead to Palarong Pambansa. This is organized by the Department of Education (DepEd) which is the national competition for students. Here, student-athletes from all over the Philippines compete in different sports representing their respective regions. This is held in one particular region where events are held in different venues or locations.

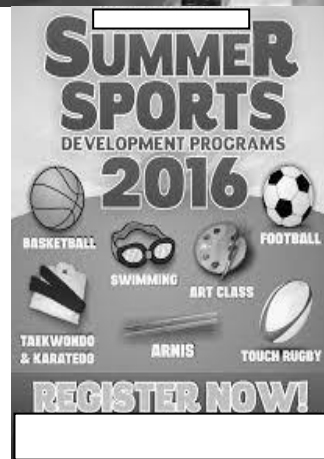
You can also join sports tournaments organized by other institutions. Sports



outlets, product brands, and companies organize sports tournaments. They usually advertise to invite participants so you might want to look for tournaments in sports that you like.

- **Summer sports clinics**

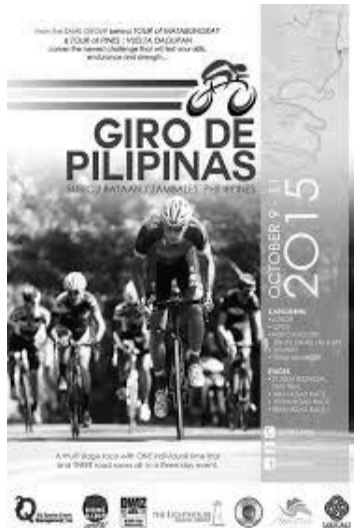
These are short-course sports programs catering to school children. Sports clinics are offered by schools and product brands when school is over and students have their summer break. The usual sports offered include basketball, taekwondo, swimming, gymnastics, football, volleyball, and others. These last for several sessions spanning days or weeks, and usually culminate with an exhibition tournament.



- **Outdoor recreation events like biking events, triathlon, marathons, football events, etc**

These are specialized events that target sports enthusiasts and athletes. These are held in specialized venues and locations, and usually have different categories for different levels of participants. Depending on the event, categories such as beginner, intermediate, and advanced are formed or opened.

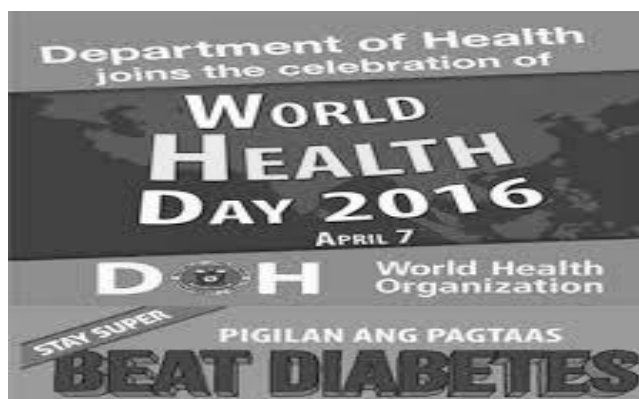
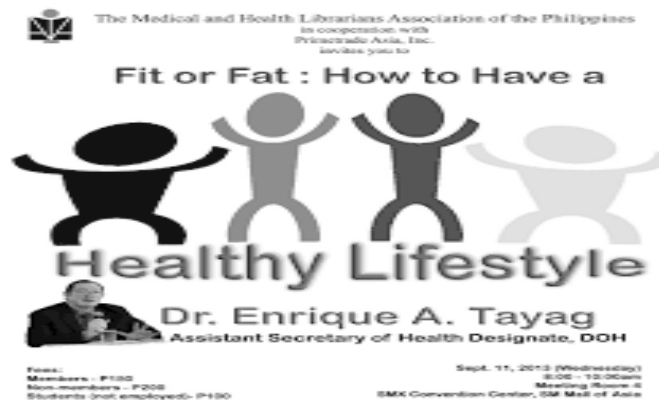




When you join such events, you get to experience recreation-level of participation to higher level of competition. You also get to experience a different atmosphere because of the ambiance in such events. Sponsors' booths and stalls are usually set up along with other related set ups.

- Talks, seminars, or conferences

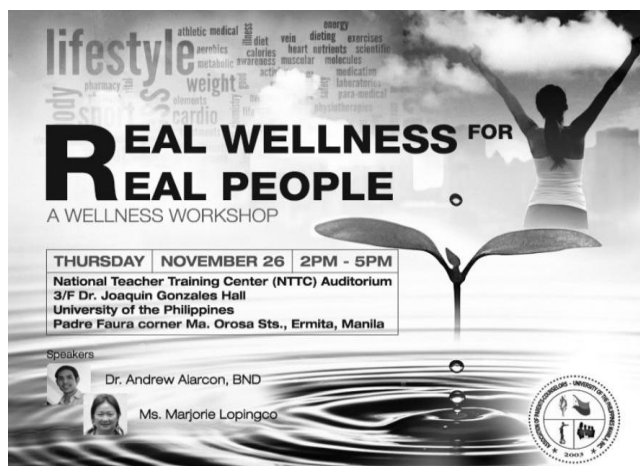
These are usually lecture-based events that cover topics discussed with an audience. Some events are held for different lengths (i.e., half-day, 1-day, 2-day, 3-day, weeklong) and some include workshops or hands on training. Some also are held with different formats like classroom-type lecture, panel discussions, parallel sessions, and the like. Credible resource persons and speakers are invited to speak so that reliable information are shared and learned.



Cause-oriented associations, product brands, companies, professional organizations, among others hold such events for various purposes, some to increase awareness, promote various causes, and to inform.



It would be beneficial for you to attend such events for you to learn more things about health and fitness, become more aware of issues and concerns regarding health and fitness, and have a clearer understanding of these things.



- **School, club, community, or company events**



These are events that are organized by schools, clubs, communities, and companies for specific purposes. These cover a wide range of activities like the ones mentioned above. Schools and companies commonly hold events to coincide with special dates and occasions. Events are usually dependent on themes and duration is also relative to the celebration.

Aside from summer sports clinics, some communities also offer recreation programs within the year to encourage an active lifestyle.

**Activity 1: What's Going On?**

*Directions:* Conduct an interview with your community leaders. Ask about the community activities they hold during the year. Find out if these types of activities were successful in the previous years.

**Activity 2: Join Now!**

*Directions:* Check out organized events that interest you and sign up for them to maintain your active lifestyle. Complete the table below and show proof of your participation. (e.g., picture during the event, race bib, event giveaways, registration form, etc).

Date	Event Name	Type of Event	Organizers	Proof of Participation

**References:**

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## Lesson 13: Value of Participating in Physical Activities






Objectives:

1. Identify the value of participating in physical activities.
2. Understand the health benefits of participating in physical activities.
3. Describe the characteristic of a responsible and initiative leader in fitness activities.

### Activity 1: Assess your PA....

*Directions:* Close your eyes and think of all the activities that you do for the whole day. List it all in the table below and tell whether it is healthy or not by putting the corresponding smile on the provided table beside the activities. An example is provided.

DAILY ACTIVITY	HEALTHY 	UNHEALTHY 
Scrubbing the floor		

In recent years, there has been a decline in physical activity among teenagers. They have lots of demands on their time, so they find it hard to be physically active. Yet physical activity keeps teenage bodies and minds fit and healthy. During adolescence, they need at least 60 minutes of activity every day.

With the rise of modern technology and proliferation of personal entertainment gadgets, peoples' life has become more sedentary. Their physical activities, whether recreational or regular, became limited. This has been most evident with teenagers nowadays. Few teenagers engage in physical activities and outdoor sports. Instead, they spend their leisure hours inside the house playing computer games or games on gadgets and watching television and movies. This sedentary lifestyle leads to poor health and limited activities.

Motivation is a great factor to influence them to an active lifestyle. They have to see and understand the reason for engaging in regular physical activity instead of playing with gadgets or watching TV.

### Activity 2: Where do I Belong?

*Directions:* In the box below is a list of different physical activities. Classify the activities on whether they are moderate or vigorous activities. Rewrite the activities on the table provided below.

walking	dancing	playing soccer	biking	swimming
playing basketball	jogging	gardening	climbing	aerobics
<b>MODERATE ACTIVITY</b>			<b>VIGOROUS ACTIVITY</b>	

Physical activity simply means movement of the body that uses up energy. Walking, gardening, sweeping and mopping, mopping the floor, climbing the stairs, playing soccer, or dancing are all good examples of being active. However, for it to be beneficial for one's body, there are various factors to be considered such as the intensity, duration, and frequency of the physical activity performed.

Here are some points to consider:

1. Physical activity done at a moderate or vigorous intensity level is good for a teenager's health.
2. Moderate physical activities generally make them move. These could include brisk walking, dancing, biking, swimming and jogging. Even helping out with some of the more active chores inside and outside your home like gardening can be good.
3. Vigorous activities increase their heart rate and make them sweat and may let them enjoy being active even more. They can be a game with lots of running – for example, playing basketball. They can also be running or jogging, or sports like soccer, tennis, swimming and football.

Being active is an important part of a teenager's growth and development, especially if done regularly. Let them realize that it is a great way to spend time with friends, meet new people, feel good, and break up long stretches of playing online games and watching movies. It is invigorating to move the entire body, even by just cheering, or running after the ball. Being active every day can help teenagers achieve the following:

- improve heart health and fitness
- develop strong muscles
- develop strong bones
- develop good posture
- maintain a healthy weight
- improve concentration and memory
- learn new skills
- increase self-confidence
- reduce stress
- make and keep friendships
- improve sleep
- develop leadership skills and initiative
- awaken a sense of responsibility

According to the World Health Organization, in 2010, physical inactivity or the lack of physical activity has been identified as the fourth leading risk factor for global mortality (6% of deaths globally). Moreover, physical inactivity is estimated to be the main cause of approximately 21–25% of breast and colon cancer cases, 27% of diabetes cases, and approximately 30% of ischemic heart disease cases. The following are the common results of physical inactivity.

- increased risk of overweight and obesity
- hypertension/high blood pressure
- anxiety
- depression
- type 2 diabetes mellitus

It is alarming to see that these conditions, which were seen before to only affect adults are now affecting teenagers due to an improper diet and the lack of physical activities. The sedentary lifestyle that most of them practice leads to a deterioration of their health as well as their bodies.

Getting enough physical activity doesn't just happen – there should be conscious effort and the decision to engage in it. Not all teenagers are keen on doing physical activities. Others need motivation and encouragement to start an active lifestyle. Sometimes teens need to explore a range of different organized and recreational activities to find one that they like and enjoy. Simple, non-competitive activities will allow them to socialize in a positive way. These can help them feel good about doing physical activities rather than just sitting down playing video games. Getting teenagers involved in lots of fun physical activities keeps them active and healthy. It's easy when you help them find activities that they enjoy – and that they can do as part of everyday family life.

Teenagers may also join groups like community youth clubs, such as scouting, which will keep them physically active while getting new knowledge or learning new skills. These groups often do lots of physical activities be it indoor or outdoor. They are good training grounds for future leaders, particularly in developing responsible young adults as they motivate them to have the initiative to do and finish tasks.

When teenagers get involved in groups like these, they may also feel a sense of achievement. They can be elected as leaders of the groups and could somehow get more involved in activities that could open doors for them to learn how to lead more efficiently. Cooperation and camaraderie will also become natural to them, building self-confidence and boosting their self-esteem.

Exposure to competition in groups such as in a basketball league could improve their leadership skills, give them a sense of responsibility, and inculcate values on fair play. With these activities, teenagers will enjoy physical activities more and will make their leisure hours more productive and competitive leading them not only to a healthy lifestyle but to become responsible individuals.

### Activity 3: P.A. Benefits

*Directions:* Below are jumbled letters/words of the different benefits you can get from getting enough physical activity and the conditions you are at risk of when they have an inactive lifestyle. Rearrange the letters to form the correct word and put them on the corresponding table where they belong.

trongs nobes	odog turesop
neyitax	thyealh ightwe
duceer serests	betisdia
bisetoy	romdpive peels
ehthlay reath	gihh dolob srespure
lopedev edarlipesh likls	presniodes

Benefits from doing physical activities	Conditions from not doing physical activities

## Summary

The term "physical activity" should not be mistaken with "exercise". Exercise, is a subcategory of physical activity that is planned, structured, repetitive, and purposeful in the sense that the improvement or maintenance of one or more components of physical fitness is the objective. Physical activity includes exercise as well as other activities which involve bodily movement and are done as part of playing, working, active transportation, house chores and recreational activities. Due to the rising technological advancement in our country, the physical activities of teenagers have become limited and are often neglected. Motivation and involvement is needed for them to be active. Once they are motivated they will surely open doors for physical activities and they will surely enjoy it.

Motivation and parental guidance is needed to encourage teenagers to engage in physical activity so that they could enhance their skills as well as improve their body conditions and health, leading to a physically fit individual. It is also important to help them manage their time and lead them to wise use of their leisure hours.

Inspire and motivate them to join youth groups that could help them enjoy the physical activities and allow them to be competitive. These healthy competitions will develop their initiative and sense of leadership and responsibility. While competing, camaraderie, patience and cooperation will also be learned. We can have not only physically active and healthy teenagers but we will also develop well-mannered teenagers who can be future responsible leaders as well.

## Lesson 14: Career Opportunities In Health And Fitness



Objectives:

1. Identify the potential career for health and fitness.
2. Realize ones potential in health and fitness career.
3. Create a fitness event for a particular health issue.

### Activity 1: Find Me!!!

*Directions:* In the box below are the ten different career opportunities in health and fitness. They are written horizontally and vertically. Find the words and write them on your activity notebook.

P	R	O	F	E	S	S	I	O	N	A	L	A	T	H	L	E	T	E
E	Q	U	I	X	U	I	N	U	U	T	T	T	H	E	M	E	A	F
I	N	G	T	P	R	E	S	R	T	H	U	H	R	A	F	I	R	I
N	T	M	N	N	V	P	I	S	R	L	O	L	O	R	R	U	N	T
S	O	A	E	S	I	F	D	B	I	E	Y	E	U	T	N	U	T	N
T	M	G	S	I	Q	I	E	L	T	T	F	T	G	O	L	N	B	E
R	Y	P	S	V	O	A	A	V	I	I	O	I	H	F	W	L	U	S
U	E	O	I	E	R	M	N	O	O	C	G	C	T	M	O	I	R	S
C	A	U	N	B	N	A	D	S	N	C	N	T	H	I	R	K	G	T
T	O	S	T	U	O	Z	O	Y	I	O	I	R	E	N	N	E	E	R
O	T	H	R	Y	W	I	U	P	S	A	K	A	R	E	P	L	R	A
R	I	O	U	L	T	N	T	O	T	C	N	I	A	U	V	Y	F	I
O	H	X	C	G	H	G	U	M	O	H	I	N	I	S	E	G	R	N
M	S	E	T	T	K	S	S	S	O	I	H	E	N	E	R	N	I	E
A	E	R	O	B	I	C	S	I	N	S	T	R	U	C	T	O	R	R
S	P	O	R	T	S	T	R	A	I	N	E	R	C	U	W	X	P	S
P	H	Y	S	I	C	A	L	T	H	E	R	A	P	I	S	T	E	Y



The health and fitness field offers many career opportunities. Individuals interested in helping others maintain their physical well-being may pursue degree and certification programs in this field of interest.

If you're interested in the physical well-being of yourself and others, you may consider an education in health and fitness. If you want to be of help to improve public nutrition standards, helping people recover their fitness after an injury, or just improving a person's overall wellness, a career in health and fitness may be right for you. Degree and certification programs are available in fields such as the following:

- nutrition
- athletic training
- physical therapy
- fitness trainers

This training can lead to careers as:

- nutritionists
- fitness trainers
- personal trainers
- aerobics instructors or coaches

In this field, one must be outgoing, in good health, organized, have good communication skills and able to motivate others. Meanwhile, other career opportunities await students inclined in health and fitness. They can pursue a career in the following fields:

- Professional athlete in basketball, football etc...
- Physical education or P.E. instructor
- Sports trainer
- Athletic coach

### **Activity 2: Pick and Match**

*Directions:* Below are images of the different careers in health and fitness. Name them and describe it in a sentence.



\_\_\_\_\_ 1.



2.

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3.

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4.

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5.

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### Activity 3: Think and Match!

*Directions:* List at least ten things that interest you. Think of the different career opportunities suited for those interests and write it on the table below. Answer the questions that follow.

INTEREST	CAREER

### Processing Questions:

1. Which among those interests takes most of your time? Why?
2. Does it fascinate you? How?
3. Do you think it will be your stepping stone for your future career? Why?

### Activity 4: Event for the Issue

*Directions:* Due to the rise of modern technology, the lifestyle of many teenagers has become sedentary increasing their risk of being overweight and obese. The activity below will improve their awareness and motivate them to change their lifestyle for the better.

1. Form four (4) groups.
2. Create a 4-minute Zumba exercise fitted for teenagers.
3. Practice the exercise and present it in class.
4. Ask the teacher if you could lead the morning exercise during flag ceremony.
5. The Zumba exercise will be graded by the teacher using to the rubrics below.

Timing	5
Coordination	5
Music	5
Attitude	5
TOTAL	20

## Summary

Oftentimes we ask other people about what their interest are because somehow we want to know what track they want to take. It is true that what interests us now will be the stepping stone for our future career. In choosing a career, it should be something that really fascinates and interest us. Though you may face challenges along the way, it would be easier for you to succeed knowing that you want what you are doing.

There are many career opportunities in health and fitness. Depending on their interest, one may pursue a career in professional athletics, nutrition, or fitness.

So for now, prepare yourself for what career you would like to take. Choose what really interests you and pursue it.