

**PHYSICAL EDUCATION** is an integral part of education programs purposely to promote the optimum development of the individual physically, socially, emotionally, and emotionally through total movement with properly selected physical activities (Andin, 2002).

**Article XIV Section 19 (1) & (2) of the 1987 Philippine Constitution mandates that:**

Section 19. (1) The State shall promote physical education and encourage sports programs, league competitions, and amateur sports, including training for international competitions, to foster self-discipline, teamwork, and excellence for the development of a healthy and alert citizenry.

(2) All educational institutions shall undertake regular sports activities throughout the country in cooperation with athletic clubs and other sectors.

*THE 1987 CONSTITUTION OF THE REPUBLIC OF THE PHILIPPINES – ARTICLE XIV | GOVPH. (2020). Official Gazette of the Republic of the Philippines. <https://www.officialgazette.gov.ph/constitutions/the-1987-constitution-of-the-republic-of-the-philippines/the-1987-constitution-of-the-republic-of-the-philippines-article-xiv/#:~:text=Section%2019>.*

## OBJECTIVES OF PHYSICAL EDUCATION

### Physical Development

Through cautiously selected activities, an individual who participates energetically will develop and maintain good health and physical fitness. The attainment of physical skills can motivate an individual who participates further in physical activities; hence growth and development will be improved.

### Social Development

Provides opportunities for the development of enviable social traits through socials in physical activities. Through active participation, students develop positive desirable traits like cooperation, sportsmanship, camaraderie, leadership, respect, and honesty.

### Mental Development

Students develop their mental capacities as they learn the principles of underlying movements. Moreover, students acquire knowledge and understanding of the rules and strategies of the games, sports, dance, and many more, and likewise enhance critical thinking skills.

### Emotional Development

Provide opportunities for self-expression and emotional mastery. People who have more positive feelings towards physical activities are said to have a more positive balance of feelings which increases and develops self-confidence, self-reliance, and self-control.

What is **FITNESS**?

- It is the ability to live a **healthy, satisfying, and useful life**. This type of life is what the philosophers call the “**good life**”.
- It also means readiness. Fitness is a condition of being suitable or appropriate to do things.

What is **WELLNESS**?

- It is a state of optimum health and well-being. It is living life to the fullest and striving to achieve one's potential

To live a good life means that the individual satisfies basic needs such as physical well-being, love, affection, security, and self-respect. Physical Education as a component of the educational system strives to facilitate or aid the development of the individual so he/she can achieve total wellness and fitness and allow him/her to live a “good life”. Therefore, the **major goal of PE is WELLNESS and FITNESS**

**Physical Fitness** is but one part of total fitness that includes mental, emotional, and social aspects of individuals' well-being. **It is basically the ability to perform one's daily tasks efficiently without undue fatigue and still have extra energy to have leisure activities and meet emergencies.**

This results from good medical and dental care, proper nutrition, adequate rest and relaxation, regular physical activity and/or exercises, and many more.

## PHYSICAL FITNESS COMPONENTS

The components of Physical Fitness are divided into two categories the health-related components (Flexibility, Endurance, Muscular Strength, Muscular Endurance and Body Composition) and the performance-related components (Agility, Balance, Coordination, Power, and Speed).

**Health-Related Fitness** is a function of body's adaptation to exercise. It could be developed and maintain through the regular and proper exercise program. There are at least five (5) components of Health-Related Fitness. They are as follows:

- A. Muscular Strength** refers to the ability of the muscle to exert maximum effort in brief duration. It may be developed through isotonic, isometric, or isokinetic contractions.

**Isotonic Contractions** are voluntary contractions in which muscles changes lengths. These contractions are of two types:

1. **Concentric Contraction** - refers to muscles that **shorten under tension**. Muscles rises to meet the resistance and becomes stable as muscle shortens.
2. **Eccentric Contraction** refers to the muscle that **lengthens under tension**. Muscles exert force due to an outside resistance. Muscle lengthens as resistance becomes greater.

The most common example of isotonic contraction is calisthenics exercise. This makes use of a body segment or the entire body weight as a form of resistance during an exercise. Some of the most traditional calisthenics exercises that are being performed to increase muscular strength are push-ups, sit-ups, and pull-ups. Another approach to develop muscular strength involving isotonic exercise is through the use of weights.

**Isometric Contractions** are another type of contractions in which the muscles are contracted against an immovable resistance. Muscle contracts **without lengthening or shortening, another term for static contraction**. The exercise provides maximum contraction of muscle; however, there is **no observed movement during the exercise**. This is **done for about 5 seconds**.

Example is ski sit and planks.

**Isokinetic Contractions** are similar to isotonic contractions but the muscles are exposed to fixed machines with variable degrees of resistance. **Muscles changes length during contractions and produce movement of a constant speed**. Through the range of movement, resistance is equal to the force applied.

Example is cycling on a stationary bike.

Two physiological benefits derived from strength training:

1. Increase muscle strength by 10-25% within 6-8 weeks; and
2. Increase muscle size or muscle hypertrophy

- B. Muscular Endurance** refers to the **ability of the muscle to endure a sub maximal effort for a prolonged period of time**. Performing a strength exercise such as push-up over a long period of time or performing the same exercise for many continuous repetitions is a demonstration of muscular endurance. **One basic requirement in achieving muscular endurance is muscular strength**. Muscle endurance is developed by employing the different strength training exercises mentioned above either for longer periods of time or an increased number of exercise repetitions.

- C. Cardiovascular Endurance** refers to the **ability of the heart, blood vessels and the lungs to adapt to physical exertion for a prolonged duration**. Usually, the heart rate is increased from the resting pulse rate to target heart rate that the individual has to sustain for a period of 20 to 60 minutes. With high levels of endurance, an individual has more energy and has the ability to sustain different types of It is also likely that coronary heart disease (CHD) activities. is prevented.

**There are important variables to consider when engaging in any cardiovascular endurance program, these are:**

1. Intensity refers to how stressful the exercise is.
2. Duration refers to how long will the exercise be performed.
3. Frequency which refers to the number of times the individual will exercise each week.
4. Mode which refers to the kind of activity, selected such as brisk walking or jogging.

#### **Physiological Benefits of Cardiovascular Training Program**

1. Decreased resting heart rate;
2. Decreased recovery time from a bout of exercise;
3. Increased blood volume and red blood cells to transport oxygen throughout the body;
4. Stronger heart muscle allows it to eject more blood (stroke volume) with each heartbeat. If this occurs, the heart can rest longer between beats;
5. Increased number of capillaries for efficient exchange of oxygen, carbon dioxide, and nutrients between blood and body cells;
6. Decreased rate of respiration;
7. Increased aerobic capacity which allows the body cells to utilize oxygen for better work efficiency; and
8. Prevent and/or reduction of the risk of developing coronary heart diseases

#### **Activities that develop cardiovascular endurance**

- |                            |                        |
|----------------------------|------------------------|
| 1. Prolonged brisk walking | 6. Continuous swimming |
| 2. Prolonged jogging       | 7. Rowing              |
| 3. Stationary bicycling    | 8. Aerobic dancing     |
| 4. Prolonged skipping rope | 9. Hiking              |
| 5. Playing basketball      | 10. Playing football   |

- D. Flexibility** is the **ability of the muscles and joints to go through a full range motion**. Flexibility **reduces the risk of injury, enhances performance and prevents muscle soreness**. It is achieved through stretching designed to lengthen or elongate soft tissue structures and thereby increase the range of motion. Flexibility is influenced by **three factors**:

1. Structure of the joints;
2. Amount of tissues surrounding the joint; and
3. Extensibility of the ligaments, tendons and muscle tissue that connects the joints.

It involves **four basic movements, namely: flexion** (bending of a body segment), **extension** (straightening a body segment), **abduction** (moving a limb away from the body), and **adduction** (moving a limb toward the body).

Body flexibility is achieved through stretching specific segments of the body. To achieve good flexibility, exercise should be performed daily. For very tight muscle-joint area, it is highly recommended that flexibility exercises be done at least twice a day.

#### **Types of Stretching (Basic Methods Used to Develop Joint Flexibility)**

1. **Ballistic Stretching** - muscle had contractions to force muscle elongation bobbing (i.e. up and down) movement quickly elongates the muscle with each repetition; the bobbing also activates the stretch reflex response (Nelson & Kokkonen, 2007). Usually this type of stretching uses in sports like gymnastics and performs in a controlled manner.

Example: Ballistic stretching-forward bending done in rapid bouncing movement

2. **Static Stretching.** This involves **slowly stretching a segment of the body to the farthest point and holding that position for at least 15-30 seconds.** This type of stretching is fairly endorsed by many physical educators and exercise psychologists because stretch is easy and pain free and the risk of injury is very minimal.

It is performed without a partner and each stretch is easy and pain-free. Once the stretcher has achieved its full range of movement and begins to feel a mild discomfort (muscle tension) in the body part being stretched, the position is held statically.

Example: Static stretching - seated hamstring stretch

3. **Dynamic stretching.** Dynamic stretching is the **use of a muscle's own force production and the body's momentum to take a joint through the full available range of motion** (Clark & Lucett, 2010a). Dynamic stretching is beneficial for any sport that involves dynamic movement, especially in sports like athletics, Football etc. that prepare the body to move better most specifically before start of an exercise or competition. Mason (2011) suggested that in performing this stretching the movement should be in a slow, controlled way, relaxed, and breath steadily to execute properly. Stranio

Example: Alternate lunges (right & left)

4. **Proprioceptive Neuromuscular Facilitation (PNF).** It involves the contract-relax approach to stretching. During the contract relax, the partner attempts to move the limb at its lengthened range of motion and isometrically resists the partner's attempt to move the limb into a deeper stretch. Then, the stretcher relaxes the limb and the partner slowly moves the segment into a new range. This type of stretching can be done active (i.e. w/o partner) or passive (i.e. w/ partner).

Example: PNF-hold-relax hamstring stretch

Fitness Benefits of Flexibility Exercise

1. Increased range of muscle joint motion;
2. Reduced muscle stiffness and increased body relaxation;
3. Improved blood circulation in specific body segment;
4. Reduced incidence of injury during a major sport event; and
5. Reduced risk of cardiovascular problems in exercise.

**E. Body Composition** refers to the **proportion of lean body mass to fat body mass.** It stresses one's relative fatness or leanness in relation to height. In recent years, body composition has gained wide acceptance in exercise science as one of the components of health-related fitness. Its inclusion was earlier opposed since supporters believe that fitness is for everyone, including the slim and overweight. In addition, being fat has some genetic predisposition that may be quite difficult to alter.

### **Somatotypes**

Somatotyping or **body typing** is a system of classifying an individual according to the shape of the body. It was developed by Sheldon during the 1940's and 1950's. He noted that the physique of the body may be categorized into three distinct types: a) Ectomorph, b) Mesomorph, and c) Endomorph

1. An **ectomorph body** type is characterized as **a lean and small body build with a greater surface area to mass ratio.** Bone size is relatively small with slender limbs and low muscle mass.

2. A **mesomorph body type has a relative predominance of muscles**. The bones are usually large and heavy with massive limbs, thus contributing to greater weight than the ectomorphic body type.
2. An **endomorph body type is characterized by a relative predominance of soft roundness and large digestive viscera**. There is a greater percentage of body fat when compared to lean body mass



Somatotypes are of special interest to fitness enthusiasts and athletes. It helps the individual understand the extent of weight reduction or weight gain he/she expects to achieve given a well-defined exercise program. Among athletes, somatotype is highly correlated to excellent sports performance depending on the type of sport event. For instance, it has been found that among track and field athletes, physical characteristics of those successful in shot hose successful in marathons. This suggests differ from those put that for one sport event, a specific body type may dictate one's superior performance over another. However, some body type is not only limited to one particular shape but can be a combination of two body types (e.g. ectomorph and mesomorph) for instance, a high jumper athlete in athletics.

**Performance Related Fitness** It refers to the quality of one's movement skill. It includes 5 general components namely:

- A. Balance** is the ability to maintain equilibrium in relation to changes in body position. Balance can be categorized into static and dynamic balance. Static Balance is the ability to maintain equilibrium in a fixed position such as standing on one foot or on a balance beam. Dynamic Balance is the ability to maintain one's equilibrium while the body is in motion. Walking on a balance beam is one example of this type of balance.
- B. Coordination** is the harmonious working relationship between the skeletal muscle and nerves in one aspect of movement. Hand-eye coordination is demonstrated in certain sport skills such as catching, passing, dribbling or volleying a ball.
- C. Agility** is the ability of an individual to quickly shift or change direction of the body from one point to another.
- D. Speed** is the ability to perform a task or move from one point to another in the shortest possible time. It is also the time spent finishing or completing a performance after the initial movement has been made. Speed is influenced by the reaction time which is the time elapsed when the "go" signal has been made by an official of the first motor response.
- E. Power** is the ability to perform one maximum effort in a short period of time. It is a product of both strength and speed as seen in many sport activities such as track and field and weightlifting.
- F. Reaction time** is the time required to initiate a movement of various body parts after reception of a stimulus