

*To the  
is a journal of Stephen*

## UNIT 1

### THE CONCEPT OF WELLNESS

The term wellness has been applied in many ways. Although there might be different views on what wellness encompasses, the National Wellness Institute--along with the help of leaders in health and wellness--shared many interpretations and models of wellness.

According to health and wellness definitions, wellness has a direct influence on overall health, which is essential for living a healthy, happy, and fulfilled life. The primary difference between health and wellness is that health is the goal and wellness is the active process of achieving it.

Knowing the distinction between the two matters for a number of reasons, including by recognizing while we cannot always choose the state of our health, we do have ~~to~~ *the* conscious choice to make active decisions towards wellness.

Through this discussion, there appears to be general agreement that:

- Wellness is a conscious, self-directed and evolving process of achieving full potential
- Wellness is multidimensional and holistic, encompassing lifestyle, mental and spiritual well-being, and the environment
- Wellness is positive and affirming

The definition of wellness long used by the National Wellness Institute is consistent with these tenets:

Wellness is an active process through which people become aware of, and make choices toward, a more successful existence.

## **Benefits of being fit and well**

Physical activity is good for your health, but it also has countless other benefits - like making your life more enjoyable.

Physical activity is first and foremost an opportunity to have fun. Use these special moments to relax, forget about work, think about something else and change your mood. Physical activity is good for your body and your mind, as well as adding years to your life and life to your years!

An active lifestyle has many benefits. Studies show that regular physical activity not only improves the quality of your daily life, but also increases your lifespan by reducing the risk of chronic illness.

**Being physically active means you:**

- Have more vitality
- Are in better shape
- Have better mental health
- Can manage stress better
- Have more self esteem

**Physical activity helps:**

- Prevent and better control some risk factors for heart disease: blood cholesterol, diabetes and hypertension
- Improve muscle and bone health (osteoporosis prevention)
- Improve sleep
- Control weight

## UNIT 2

### PHYSICAL FITNESS

#### Introduction

The value of physical exercise is held in high esteem by many families, communities and even nations. The importance of medical and economic benefits of a healthy life-style proclaimed by industries, business and social agencies cannot be undermined. Fitness is therefore placed as the pivot of an optimal health and it is considered as the integral part of physical education. It is upon this that fitness is made part of the school curriculum so that it will benefit young people and the society at large.

#### The Concept of Physical Fitness

##### *Physical Fitness :*

It is the ability of an individual to perform work effectively without unnecessary fatigue, still having energy reserve to enjoy social activities and to cope with emergencies (Akindeye, 2003). Atta, Awuni and Kpeglo (2004) also see physical fitness as the ability of the individual to have body organs healthy and functioning so as to cope with daily activities. Simply put, physical fitness is the ability of the body to function at optimal efficiency and have ample or reserve energy to meet other demands of life emergency. A physically fit person should be able to work effectively without being unnecessarily tired. Fitness as a matter of fact is relative.

##### Importance of Physical fitness :

- 1) It helps to improve your cognitive domain
- 2) It improves mood and mental health
- 3) It promotes teamwork and co-operation
- 4) It makes your bones and muscles stronger
- 5) It increases your energy level and productivity
- 6) It improves your health and life expectancy
- 7) It increase your self-esteem and confidence.

## COMPONENTS OF PHYSICAL FITNESS

<b>HEALTH RELATED COMPONENTS</b>	<b>SKILL RELATED COMPONENTS</b>
Cardiovascular endurance	Agility
Body composition	Balance
Flexibility	Coordination
Muscular endurance	Speed
Muscular strength	Power
	Reaction time

The American Alliance for Health, Physical Education, Recreation, and Dance (AAHPERD) has classified the components of physical fitness into two categories:

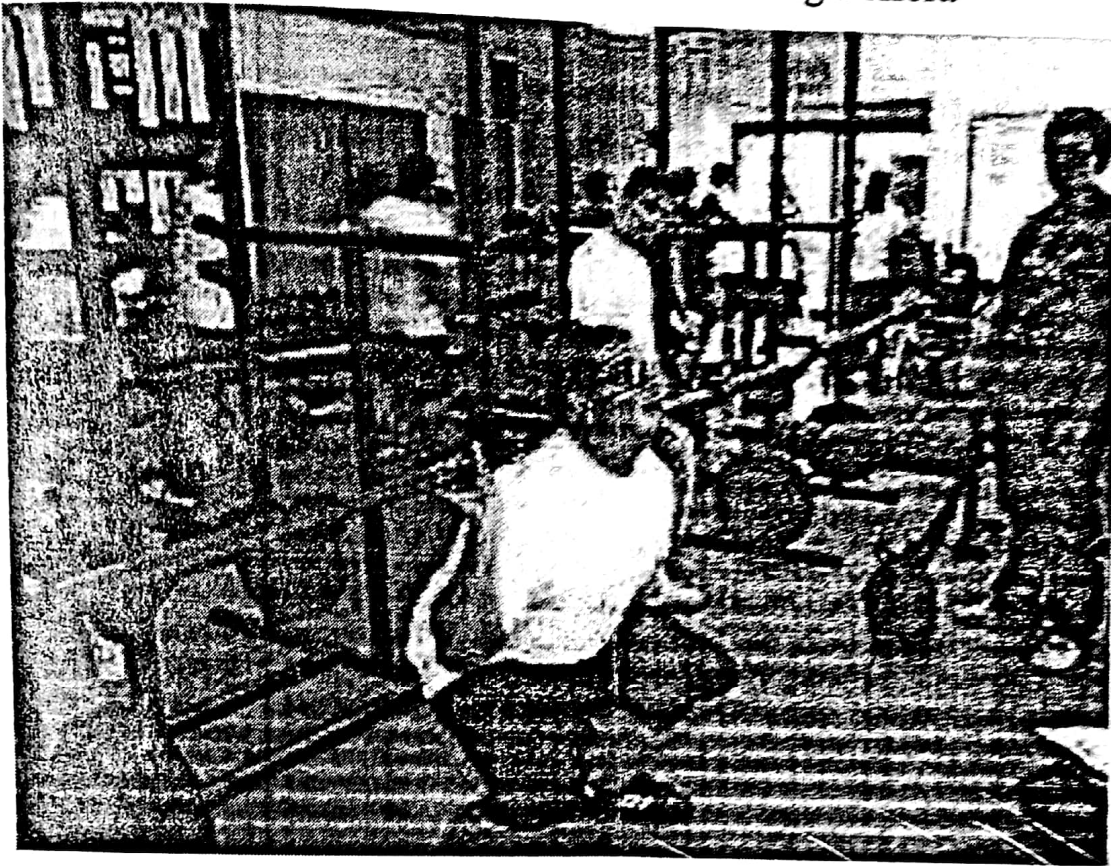
1. Health related fitness components
2. Motor skill related fitness components.

### Health-Related Physical Fitness

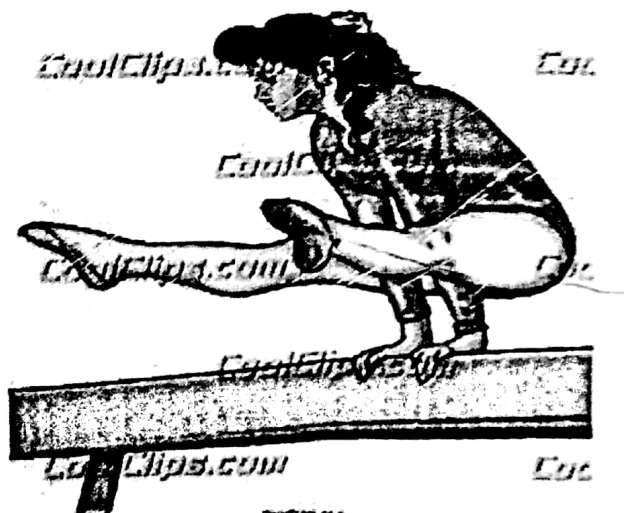
These components concern the development of qualities necessary to function efficiently and maintain a healthy lifestyle. In other words, health related components are those that enable us cope with life and prevent diseases. These components include muscular strength, muscular endurance, cardiorespiratory endurance, flexibility and body composition.

1. **Muscular strength** – It is the maximum single effort that a muscle group can make. In other words, it is the ability of a muscle or muscle group to exert

force against resistance. It is also acceptable to define muscular strength as the muscle's ability to exert maximal force in a single effort.



2. **Muscular endurance** – It is the ability of a muscle or muscle group to perform repeated movements with a sub-maximal force for extended periods of times. It can also be described as the body's ability to perform muscular contractions repeatedly over a period of time. It is closely related to muscular strength but the two terms are not exactly the same. Some forms of muscular endurance.





3. **Cardio-respiratory or cardiovascular endurance** – It is the ability to persist in physical activity requiring oxygen for physical exertion without experiencing undue fatigue. It can also be defined as the ability of the heart and the respiratory system to deliver oxygen to the working muscles to perform strenuous activities for a considerable length of time. In other words it is the efficiency with which the body delivers oxygen and nutrients needed for muscular activity and transports waste products from the cells. Below are some forms of cardiovascular endurance.



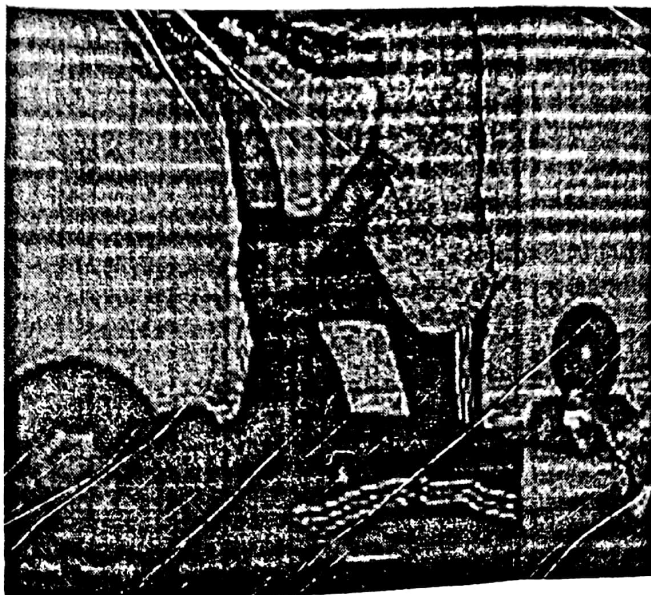
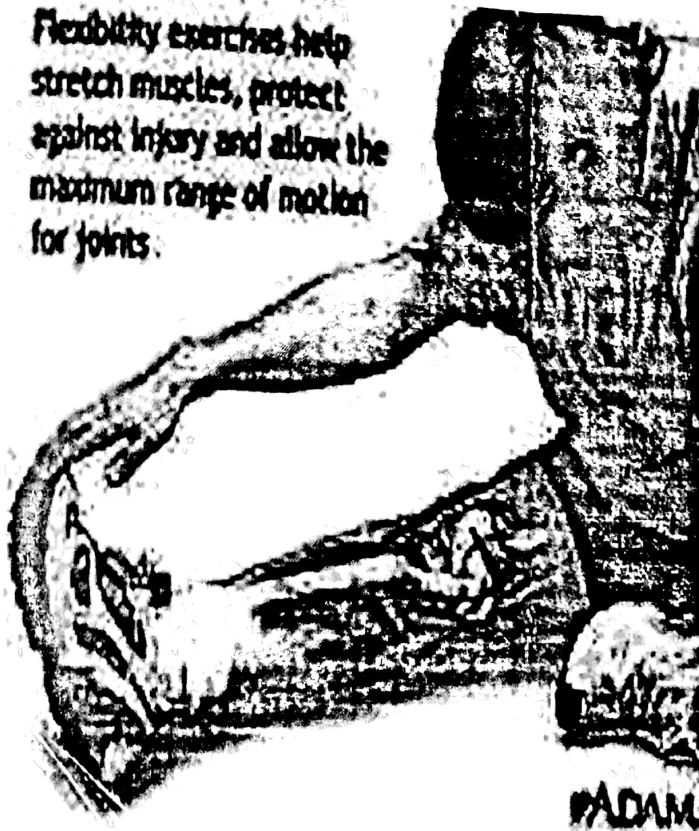


4. **Flexibility** – The ability to move the joints or any group of joints through an entire, normal range of motion.



Below are varied forms of flexibility activities

Flexibility exercises help stretch muscles, protect against injury and allow the maximum range of motion for joints.

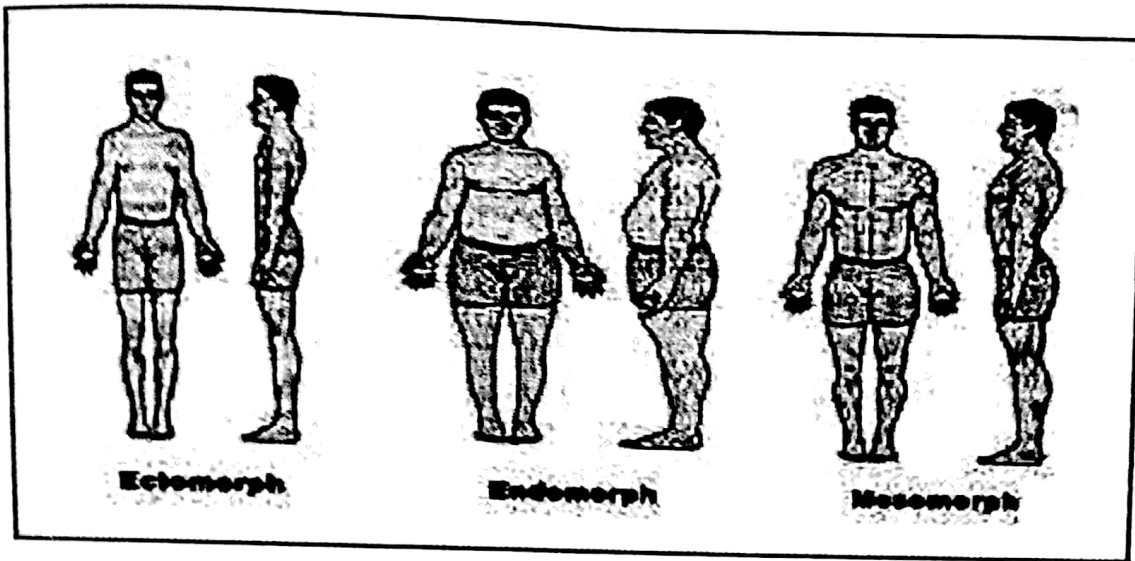




5. **Body composition** – It is the percentage of fat in the body relative to the fat-free content OR the percentage of body weight that is composed of fat to lean or fat-free tissue.

Excessive body fat detracts from the other fitness components, reduces performance, detracts from appearance, and negatively affects your health.

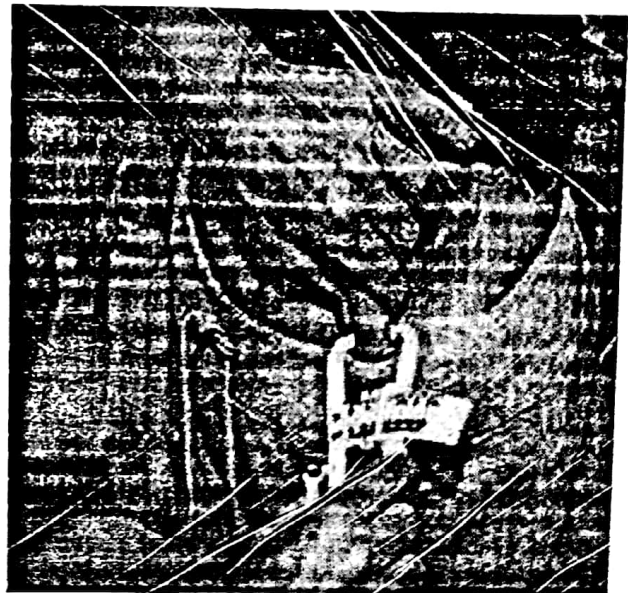
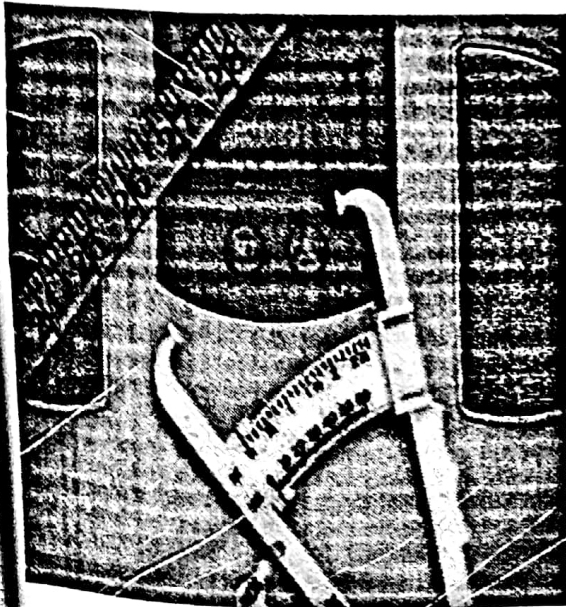
Below are the three body types.



The three body types

The caliper in measuring body composition instruments used to measure body composition

Some



### Functions of Body Fat

- ❖ Acts as insulator and helps to keep the body warm
- ❖ Acts as a shock absorber to protect nerves and other tissues from damage

- ❖ Helps in lubrication by oiling the skin to prevent unnecessary cracks thereby making the body beautiful.
- ❖ They are solvent for vitamins A,D,E and K. (fat soluble vitamins)

#### **Benefits (role/importance) of Health Related Fitness to the individual**

- ❖ Development of good body posture and appearance through flexibility exercises.
- ❖ Prevention of obesity by reducing fat level.
- ❖ Promotion of healthy habits through exercise and good diet.
- ❖ Reduction in injuries
- ❖ Management of stress
- ❖ Reduction of Cardiovascular diseases
- ❖ Improvement in recovery rate.

#### **Benefits/Importance of Health Related Fitness to the Nation.**

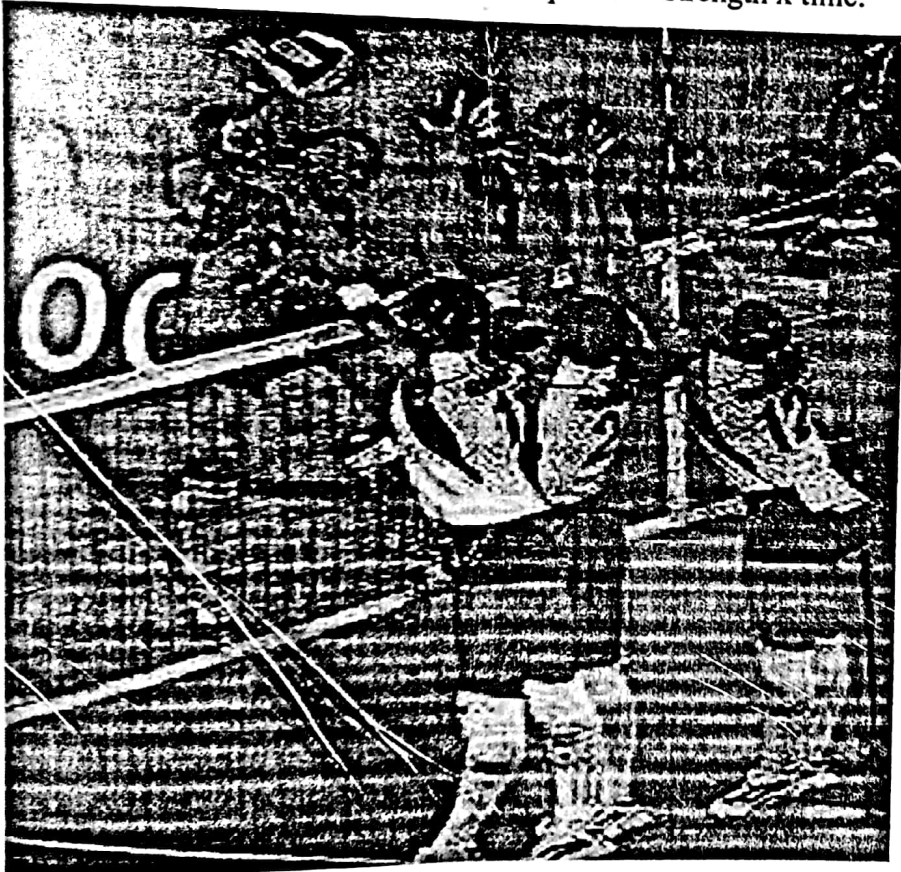
- a) Reduction in the national health budget
- b) Decrease in provision of health personnel
- c) Preventable diseases would be brought under control
- d) Increase in production in all sections of the economy
- e) Decrease in provision of facilities

#### **Motor skill or Performance-Related Physical Fitness.**

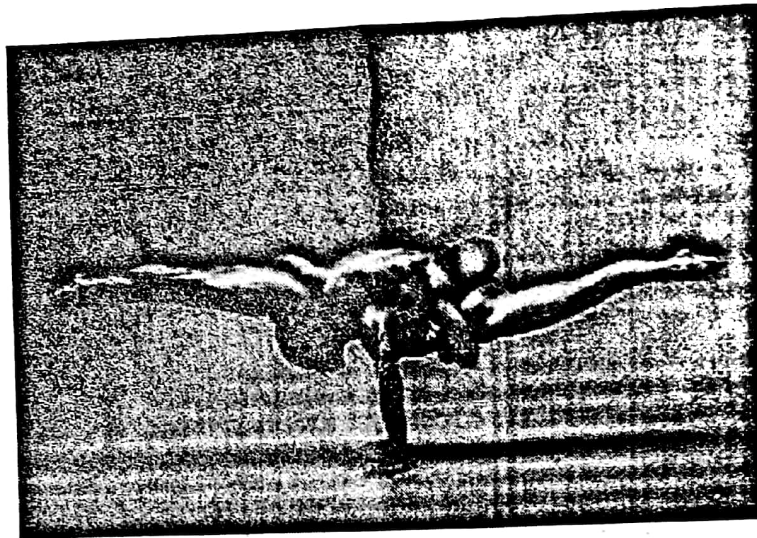
These components concern qualities that are necessary for performance of sports skills, movement skills and other physical activities. Simply put, skill related components enable us to perform skills of games and sports. These components include power, balance, agility, reaction time, coordination and speed.

#### **Motor or Performance Related Skills Components**

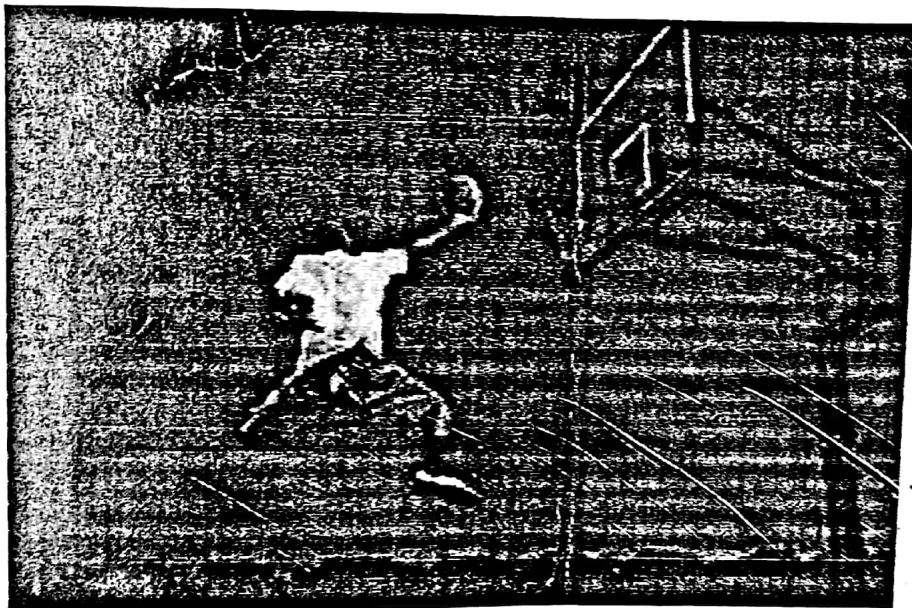
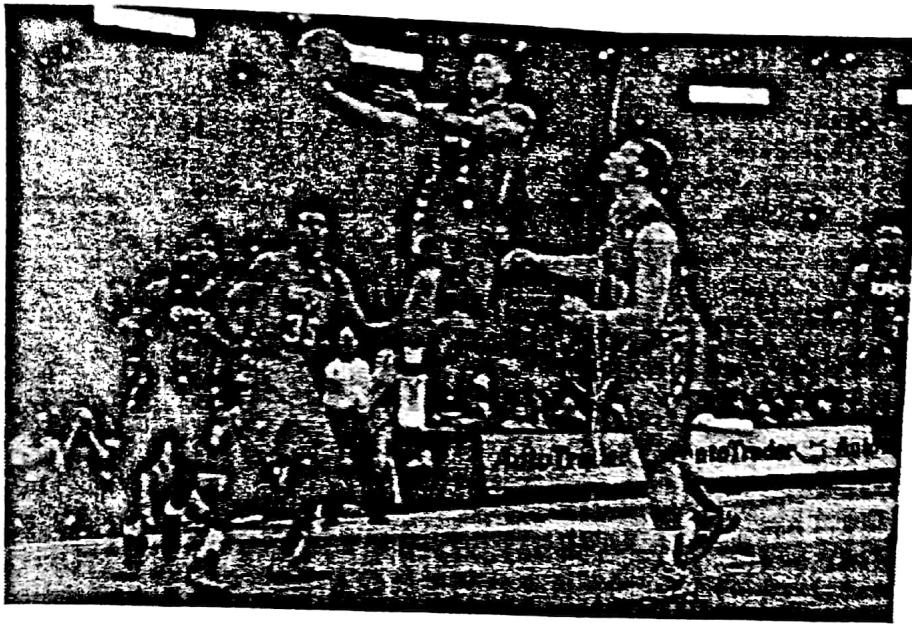
1. **Power** – The ability to generate large amounts of force rapidly. It will also be explanatory to define power as the ability to generate great amounts of force against a certain resistance in a short period of time. It is a function of both strength and speed ie  $\text{power} = \text{strength} \times \text{time}$ .



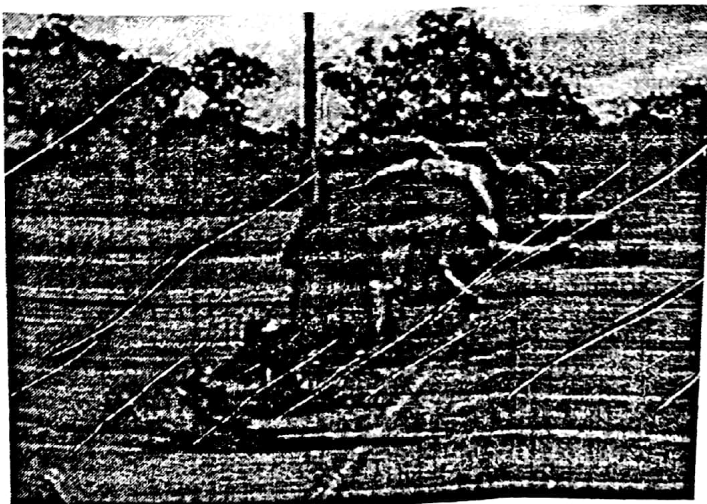
2. **Balance** – It is the ability to maintain equilibrium when moving or stationary. It is also defined as the ability to maintain some degree of equilibrium while moving or standing still.



3. **Agility** – It is the ability to change direction of movement quickly and accurately. In other words, agility is the ability to change or alter, quickly and accurately, the direction of body movement during activity. It largely depends on neuromuscular coordination and reaction time.

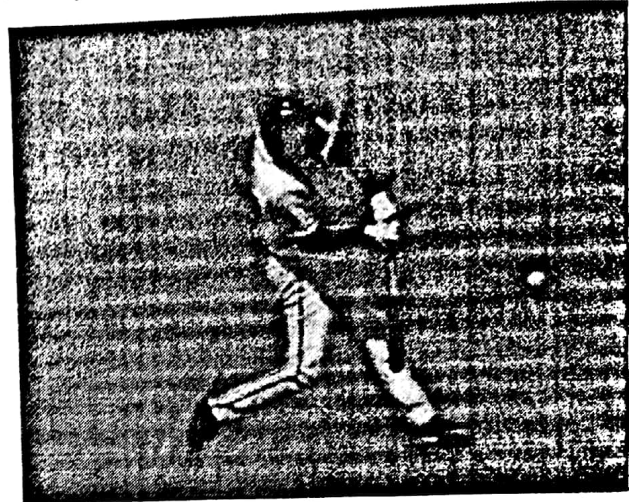


4. **Reaction time** – It is the length of time required to react to a stimulus. Better still reaction time can be defined as the time required to produce an appropriate physiological or mechanical response to external stimulus.



5. **Coordination or Neuromuscular coordination** – It is the ability to integrate the senses with motor function to produce coordinated

movement, OR is the ability to integrate the senses; visual, auditory and proprioceptive (knowing the position of your body in space) with motor function to produce smooth, accurate, and skilled movement

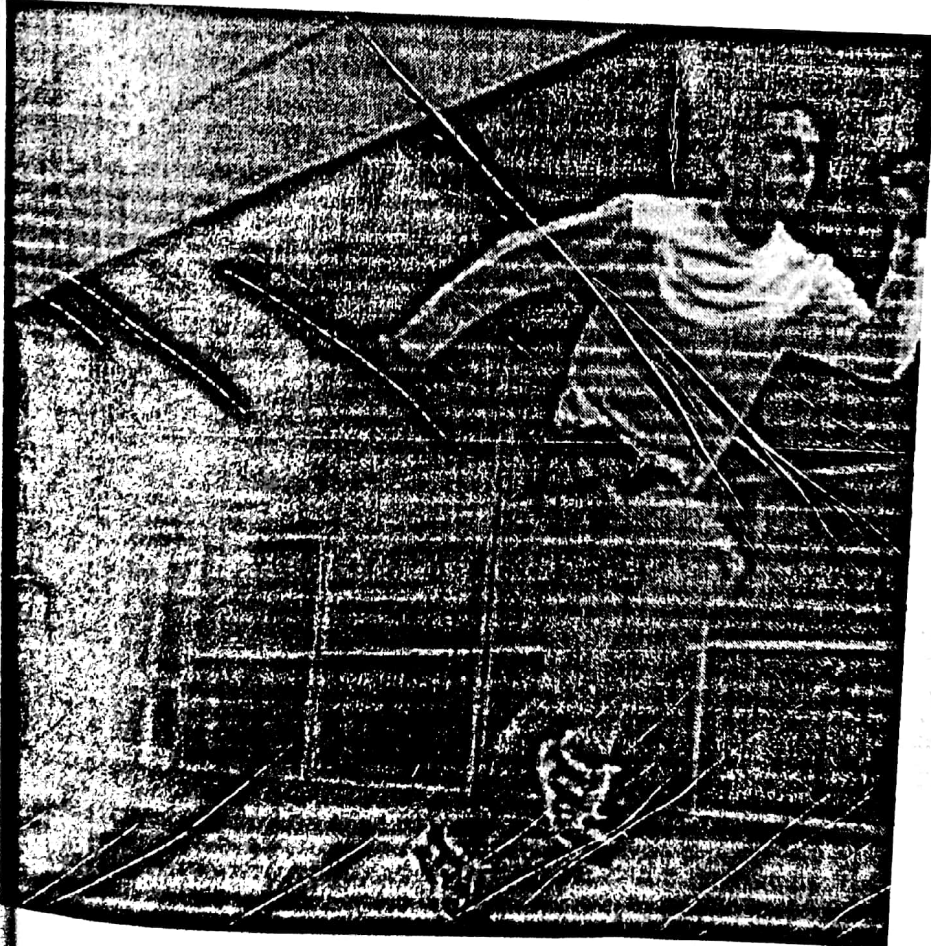


6. **Speed** – It is the ability to perform a particular movement very rapidly. It is

function of distance/time i.e.  $\text{speed} = \frac{d}{t}$

Speed is an essential fitness component in many competitive athletic situations.





## Differences between health related fitness and skill related fitness

A. Health-related fitness	B. Skill-related fitness
1. It is earned	It is learnt
2. Depends on ability	Depends on traits or inborn physical qualities
3. Develops the functions of the organs eg Muscular endurance, flexibility etc	Develop process of execution of skills eg Speed, agility etc
4. Needed by all	Needed by performers
5. It is not dependent on performance / skill related fitness	It is dependent on health-related fitness
6. Components are: muscular strength, body composition, muscular endurance, flexibility and cardiovascular endurance	Components are: speed, agility coordination, reaction time, balance and power

### Developing Physical Fitness

- ❖ Circuit training – Series of exercises about ten, performed in progressive manner
- ❖ Interval training – Series of exercises often repeated with some rest or recovery periods. They are mostly met for cardiovascular endurance
- ❖ Weight lifting – Lifting of weight in a repetitive manner
- ❖ Weight training – It is a resistance lifting exercises with consideration to the duration and intensity of the exercise being performed.
- ❖ Calisthenics – Concentric and eccentric exercises etc.

## Some Specific Ways of Developing Health-Related Fitness

### Muscular strength

- ❖ Weight training ✓
- ❖ Cycling
- ❖ Calisthenics such as pushups and step-ups
- ❖ Swimming ✓
- ❖ Mountain climbing

### Muscular endurance

- ❖ Jogging
- ❖ Running
- ❖ Swimming ✓
- ❖ Weight training etc.

### Cardiovascular endurance

- ❖ Aerobic dancing
- ❖ Cycling
- ❖ Skipping rope
- ❖ Jogging
- ❖ Running
- ❖ Swimming etc

### Flexibility

- ❖ Gymnastic
- ❖ Swimming
- ❖ Modern dancing
- ❖ Static stretching
- ❖ Karate etc

### Body composition

- ❖ Jogging
- ❖ Walking
- ❖ Running
- ❖ Skipping
- ❖ Cycling
- ❖ Aerobic exercises etc

## UNIT 3

### COMPONENTS OF WELLNESS

#### 1. Emotional Wellness

Being attentive to your own thoughts, feelings, and behaviors, whether positive or negative, and coping and accepting them accordingly.

How to emotional wellness

- ✓ Do not be afraid to seek out support if or as needed
- ✓ Provide support to others and offer an active, listening ear
- Cultivate a more optimistic attitude and avoid excessive nagging.
- ✓ Accept and forgive yourself
- ✓ Learn to forgive and let go

#### 2. Environmental Wellness

Recognizing how decisions and actions impact the environment we live in and putting the best foot forward to maintain its natural integrity.

How to achieve environmental wellness

- ✓ Bike or walk whenever possible
- ✓ Carpool or use public transportation as often as you can
- Support local vendors, including farmers' markets
- ✓ Use water wisely and conservatively

### 3. Financial Wellness

Having the ability to live within your means, including forming a healthy relationship with money and identifying effective ways to manage it.

How to achieve financial wellness

- Visit with a financial advisor ✓
- Create a self-budget, considering home bills, groceries, and fun money ✓
- Start identifying “wants” versus “needs” and make purchases accordingly
- Know and understand your credit score ✓
- Automate at least 10 percent of income to savings

### 4. Intellectual Wellness

Participating in lifelong learning and challenging the mind on an ongoing basis such as partaking in mentally-stimulating and creative activities, reasoning objectively and critically, making responsible decisions, and exploring new ideas and different points of view.

How to achieve intellectual wellness

- Try something new, including learning a language or playing an instrument
- Play brain games, including crossword puzzles. ✓
- Read books on an ongoing basis ✓
- Listen to podcasts while getting ready or on the way to work ✓
- Keep organized with schedules and reminders ✓
- Visit museums, including art and history museums
- Enroll in a course or workshop

## 5. Occupational Wellness

Obtaining personal fulfillment from the work you do and performing with honesty, enthusiasm and engagement on a regular basis.

How to achieve occupational wellness

- Attend a career fair or networking event
- Find a work-life balance, including making time for hobbies and taking a vacation
- Make professional goals to pursue
- Join professional groups in your respective field

## 6. Physical Wellness

Recognizing the need for and incorporating nourishing foods, physical activity, healthy foods, and sleep on a regular basis, along with attending regular doctor visits and minimizing risky behaviors such as drug and alcohol abuse.

How to achieve physical wellness

- Prepare a healthy meal at home at least three times a week
- Try a new fruit or vegetable once weekly
- Aim for at least 64-ounces of water on a daily basis
- Purchase a gym membership (and actually use it)
- Consult with a Registered Dietitian or personal trainer for professional guidance
- Swap out TV time for a walk or bike ride
- Commit to a smoking cessation program

- Create a healthy bedtime routine-avoid caffeine in the afternoons, sleep at least for 8 hours per day etc.
- Keep immunizations up-to-date

## **7. Social Wellness**

“Social wellness refers to the relationships we have and how we interact with others. Our relationships can offer support during difficult times. Social wellness involves building healthy, nurturing and supportive relationships as well as fostering a genuine connection with those around you.” It is one aspect of the total health equation, which is now receiving greater emphasis from the medical community.

Social wellness is important, because the positive effects of developing and maintaining healthy relationships are endless. People who are socially well enjoy huge health benefits and might even live longer.

Research has shown that:

- The health risks of isolation are comparable with smoking, high blood pressure and obesity.
- The heart and blood pressure of people who have positive relationships respond better to stress.
- A strong social network is associated with a healthier endocrine system and healthier cardiovascular functioning.
- A healthy social life can enhance the immune system's ability to fight off infectious diseases.

## How to achieve social wellness

- Join a club
- Assign days of the week to certain activities, such as Mondays allocated to movie nights and Wednesdays scheduled for runs with your best friend
- Call a long distance friend to catch up
- Try a digital detox and connect to others in real-time
- Consider attending a Meet up group with people whom you have never met

## 8. Spiritual Wellness

Finding and developing meaning in life, including finding a sense of purpose and belonging.

### How to achieve spiritual wellness

- Explore and embrace your religion and spiritual core
- Give daily gratitude
- Identify and stand to your morals
- Practice meditation and mindfulness
- Give back to others by volunteering or making a donation



# KNOWING YOUR BODY

## The Heart Rate

The heart is a muscular organ in the center of the chest. When it beats, the heart pumps blood containing oxygen and nutrients around the body and bring back waste products.

A healthy heart supplies the body with just the right amount of blood at the right rate for whatever the body is doing at that time.

For example, being frightened or surprised automatically releases adrenaline, a hormone, to make the heart rate faster. This prepares the body to use more oxygen and energy to escape or confront potential danger.

The pulse is often confused with the heart rate but refers instead to how many times per minute the arteries expand and contract in response to the pumping action of the heart.

The pulse rate is exactly equal to the heartbeat, as the contractions of the heart cause the increases in blood pressure in the arteries that lead to a noticeable pulse.

Taking the pulse is, therefore, a direct measure of heart rate.

The heart rate is one of the 'vital signs,' or the important indicators of health in the human body. It measures the number of times per minute that the heart contracts or beats.

The speed of the heartbeat varies as a result of physical activity, threats to safety, and emotional responses. "The resting heart rate refers to the heart rate when a person is relaxed."

While a normal heart rate does not guarantee that a person is free of health problems, it is a useful benchmark for identifying a range of health issues.

Heart arrhythmia, also known as irregular heartbeat or cardiac dysrhythmia, is a group of conditions where the heartbeat is irregular, too slow, or too fast.

Arrhythmias are broken down into:

- Slow heartbeat: bradycardia. *60-100 per minute*
- Fast heartbeat: tachycardia. *>100 beats per minute*
- Irregular heartbeat: flutter or fibrillation.
- Early heartbeat: premature contraction.

Most arrhythmias are not serious, but some can predispose the individual to stroke or cardiac arrest.

#### Heart Rate per age, per Minute

Age	Normal heart rate (bpm)
Up to 1 month	70 to 190
From 1 to 11 months	80 to 160
From 1 to 2 years	80 to 130
From 3 to 4 years	80 to 120
From 5 to 6 years	75 to 115
From 7 to 9 years	70 to 110
Over 10 years	60 to 100

## How to check heart rate

### Radial pulse

To check your pulse using this method, you'll be finding the radial artery (a major artery in the human forearm. It is close to the surface of the underside of the forearm; when the palm of the hand is pointing upwards, so is the radial artery).

1. Place your pointer and middle fingers on the inside of your opposite wrist just below the thumb.
2. Don't use your thumb to check your pulse, as the artery in your thumb can make it harder to count accurately.
3. Once you can feel your pulse, count how many beats you feel in 15 seconds.
4. Multiply this number by 4 to get your heart rate. For instance, 20 beats in 15 seconds equals a heart rate of 80 beats per minute (bpm).

### Carotid pulse

To check your pulse using this method, you'll be finding the carotid artery (There is one external carotid artery on the right side of the neck and one on the left side of the neck).

1. Place your pointer and middle fingers on the side of your windpipe just below the jawbone. You may need to shift your fingers until you can easily feel your heart beating.
2. Count the pulses you feel for 15 seconds.
3. Multiply this number by 4 to obtain your heart rate.

### Checking your heart rate with an assistive device

There are a number of devices that can tell you your heart rate, such as:

- at-home blood pressure machines
- digital fitness trackers
- smartphone apps
- exercise machines

The most accurate device for checking your heart rate is a wireless monitor that's strapped around your chest. It reads out to a fitness tracker worn on your wrist.

Digital fitness trackers worn on the wrist, at-home blood pressure machines, and smartphone apps are less accurate than checking your heart rate manually. However, these devices are fairly accurate and very useful when exercising.

Exercise machines may have metal hand grips to read your heart rate, but these are often very inaccurate. To check your heart rate while exercising, it's most effective to check manually or to use a digital fitness tracker.

### Blood pressure

When your heart beats, it pumps blood round your body to give it the energy and oxygen it needs. As the blood moves, it pushes against the sides of the blood vessels. The strength of this pushing is your blood pressure. If your blood pressure is too high, it puts extra strain on your arteries (and your heart) and this may lead to heart attacks and strokes.

Having high blood pressure (hypertension) is not usually something that you feel or notice. It does not tend to produce obvious signs or symptoms. The only way to know what your blood pressure is, is to have it measured.

Blood pressure is measured in 'millimeters of mercury' (mmHg) and is written as two numbers. For example, if your reading is 120/80mmHg, your blood pressure is '120 over 80'.

Every <sup>measure</sup> blood pressure reading <sup>too much alcohol</sup> consists of two numbers or levels. They are shown as one number on top of the other.

The first (or top) number is your systolic blood pressure. It is the highest level your blood pressure reaches when your heart beats.

The second (or bottom) number is your diastolic blood pressure. It is the lowest level your blood pressure reaches as your heart relaxes between beats.

### Normal Blood Pressure

Ideally, we should all have a blood pressure below 120 over 80 (120/80). This is the ideal blood pressure for people wishing to have good health. At this level, we have a much lower risk of heart disease or stroke.

If your blood pressure is optimal, this is great news. By following our healthy living advice, you will be able to keep it this way.

If your blood pressure is above 120/80mmHg, you will need to lower it.

### High Blood Pressure (hypertension)

You probably have high blood pressure (hypertension) if your blood pressure readings are consistently 140 over 90, or higher, over a number of weeks.

You may also have high blood pressure if just one of the numbers is higher than it should be over a number of weeks.

If you have high blood pressure, this higher pressure puts extra strain on your heart and blood vessels. Over time, this extra strain increases your risk of a heart attack or stroke.

High blood pressure can also cause heart and kidney disease, and is closely linked to some forms of dementia.

For most people, there may be no single cause for their high blood pressure. We do not know exactly what causes high blood pressure. We do know that your lifestyle can affect your risk of developing it. You are at a higher risk if:

- you eat too much salt;
- you don't eat enough fruit and vegetables;
- you are not active enough;
- you are overweight; or
- you drink too much alcohol.

You can help to lower your blood pressure - and your risk of stroke and heart attack - by making lifestyle changes. There are some factors that increase your risk of developing high blood pressure, which you cannot control. These include:

- **Age:** as you get older, the effects of an unhealthy lifestyle can build up and your blood pressure can increase.
- **Ethnic origin:** people from African-Caribbean and South Asian communities are at greater risk than other people of high blood pressure.
- **Family history:** you are at greater risk if other members of your family have, or have had, high blood pressure.

Some people may have high blood pressure that is linked to another medical condition, such as kidney problems. For these people treating the medical problem may lower their blood pressure back to normal.

### **Low blood pressure (hypotension)**

Low blood pressure is sometimes referred to as hypotension and typically describes blood pressures of 90/60mmHg, or below. It is not normally a cause for concern unless you start to experience symptoms after changing your posture. If you have low

blood pressure, but feel perfectly well, there will be no need for any investigation or treatment. Generally, the lower your blood pressure is, the lower your risk of developing heart problems or having a stroke.

Low blood pressure (hypotension) can affect anyone. It can occur naturally for no obvious reason; however, it can also occur as a result of taking certain medications or having another medical condition, such as diabetes. As we get older our risk of developing low blood pressure can increase.

Some people simply have a low blood pressure – perhaps because it is in their genetic make up. Other people may develop it as they get older. Our arteries become less supple as we age, which can result in a fall in blood pressure when we stand. Other causes include:

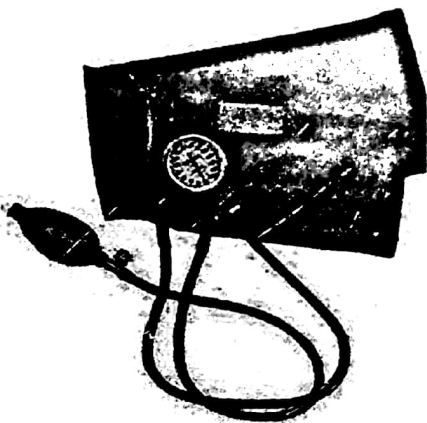
- **Blood pressure lowering drugs:** Some alpha blocker medications can trigger postural hypotension.
- **Diabetes:** Diabetes can affect the normal control of blood pressure and cause damage to the nerves supplying your blood vessels. This can lead to a fall in blood pressure upon standing up. During this kind of quick movement your blood vessels may find it hard to adjust.
- **Neurological conditions:** For example, Parkinson's disease. The drugs that are prescribed to treat Parkinson's can cause low blood pressure. Postural hypotension is the most common form seen. There are some rare nerve conditions that can affect the reflexes in our legs. A severe drop in blood pressure would occur upon standing.
- **Problems with your adrenal glands:** If your adrenal glands are damaged or malfunctioning, your body may not be producing adequate amounts of the hormone aldosterone. This can lead to excess salt loss and low blood pressure.

Most people with a blood pressure of 90/60 mmHg or lower won't experience any unusual symptoms or require any form of treatment. However a small number of people with low blood pressure may experience symptoms such as:

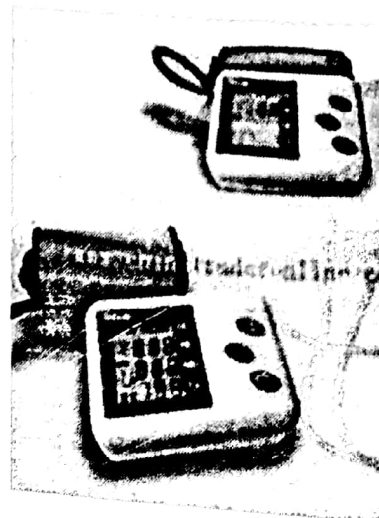
- Light-headedness / dizziness
- Nausea
- blurred vision
- general feeling of weakness
- feeling confused
- a temporary loss of consciousness (fainting)

### Checking Blood Pressure

The most reliable way of checking the blood pressure is through the use of either the manual or digital blood pressure monitor (sphygmomanometer)

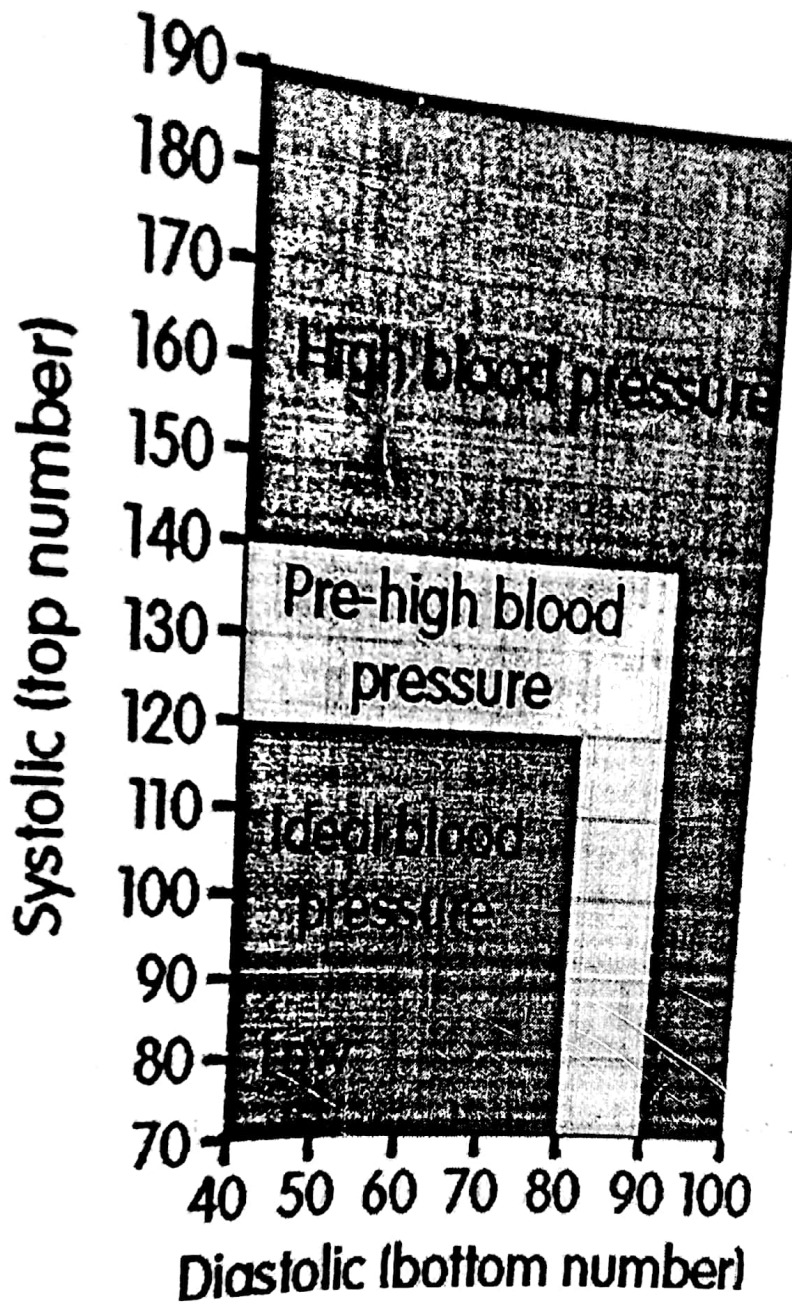


Analogue sphygmomanometer



digital sphygmomanometer





### Body Mass Index (BMI) and Body Composition

Body Mass Index, or BMI, is a key index that relates to one's height and weight. It is a person's weight in kilograms divided by the square of his/her height in meters

**WEIGHT in Kg.**

**HEIGHT in m<sup>2</sup>**

The National Institute of Health (NIH) has now defined BMI to be the deciding parameter to know if you are underweight, normal weight, overweight or obese.

Hence, knowing your BMI is a very important factor in maintaining a healthy body and an optimum fitness level. A healthy BMI can also help you keep diseases like heart problem, type 2 diabetes and hypertension at bay. A normal BMI is an indicator of being at your ideal weight. BMI is basically a quantified measure for the amount of tissue mass that is muscles, fat and bones, of an individual.

However, if you are an athlete or an overall active person, your body weight may be high not because of fat but because of muscle. Muscle is denser than fat and abundance of muscle means more weight and hence, higher BMI. But in such a situation, it is not unhealthy because it doesn't have the associated health risks which a high BMI reading carries.

The BMI categories are as follow:

Underweight =  $<18.5$

Normal weight =  $18.5-24.9$

Overweight =  $25-29.9$

Obesity = BMI of 30 or greater

### Other Ways of Detecting Body Composition

**Body-Fat Caliper:** This device measures the thickness of a fold of skin with an underlying layer of fat.

**Bioelectrical Impedance Analysis:** This method estimates body composition by monitoring the flow of an electrical current through bodily tissue.

**Anthropometric:** Translated from Greek as "measurement of man," this form of anthropology has been used to measure the physical variances in humans.

**Hydrostatic Weighting:** This technique looks at three variables when calculating body composition: the weight of the body outside of the water, the weight of the body fully submerged in water and the density of the water.

## UNIT 5

### NUTRITION

WHO defines nutrition as the intake of food, considered in relation to the body's dietary needs. Good nutrition – an adequate, well balanced diet combined with regular physical activity – is a cornerstone of good health. Poor nutrition can lead to reduced immunity, increased susceptibility to disease, impaired physical and mental development, and reduced productivity.

#### Six Basic Nutrients and Their Functions

There are six classes of essential nutrients necessary for human survival: carbohydrates, proteins, lipids, vitamins, minerals and water. The best way to get these nutrients is by following a varied, healthy diet featuring plenty of fresh vegetables and fruits, whole grains, lean proteins, nonfat dairy products and healthy fats. Dietary requirements vary with age and sex. Consult your physician or a registered dietitian about the diet that is best for you.

#### Carbohydrates

Carbohydrates are a major energy source. Along with providing fuel for physical activity, they also power the body's involuntary functions, including heartbeat, breathing and digestive processes. Food sources of carbohydrates include grains and grain products, vegetables, fruits, legumes, dairy products and sugars. Carbohydrates should supply 40 to 60 percent of the average person's caloric intake.

#### Proteins

Skin, muscle and bones depend on dietary protein for normal growth, development and maintenance. Complete proteins from animal sources contain all the amino acids your body needs for normal functioning. Plant sources only contain incomplete proteins, meaning some amino acids are missing. If you do not eat much meat, poultry, fish or other animal products, eat a variety of protein-rich plant foods such as beans, nuts and whole grains to ensure an optimal combination of amino acids.

## **Lipids**

You may think of lipids, or fats, as dietary enemies, but they are as necessary to the body's normal functioning as the other essential nutrients. Dietary fat helps the absorption of vitamins, supports cell membrane health and helps maintain the immune system. Not all fats are equal. Choose healthy unsaturated fats such as olive oil and nut oil instead of saturated fats from fatty meats.

## **Vitamins and Minerals**

Vitamins are micronutrients, meaning the body needs them in small quantities. Vitamins are organic compounds produced by living beings, while minerals are inorganic elements that originate in the earth. Vitamins and minerals support the body's biochemical processes. Each of the vitamins and minerals has a distinct function, including regulating metabolism, guarding the cells from oxidative stress and synthesizing hormones.

## **Water**

Comprising 60 percent of your body weight, water is vital for the normal functioning of all your body's systems. It helps cleanse your body of wastes and toxins, carries essential nutrients to your cells, lubricates your joints and helps maintain your body temperature. It is advisable to drink at least eight cups of water daily. If your urine output is about 6 cups per day, your urine is slightly yellowish or clear and you don't often feel thirsty, your water intake is likely adequate.

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## **Lifestyle and Wellness**

### **Exercise vs wellness:**

Exercise is a powerful tool that can help you take control of your physical and mental health. An exercise program tailored to your level of energy and ability can help you:

- Keep or improve your physical abilities
- Improve balance and lower risk of falls or broken bones
- Improve blood flow and lower risk of blood clots
- Improve self-esteem
- Improve sexual functioning
- Lower risk of anxiety and depression
- Reduce impact from side effects such as nausea and fatigue
- Lower risk of heart disease and osteoporosis
- Aid with sleep
- Help prevent or improve cognitive symptoms
- Help maintain a healthy weight

Regular exercise can improve your health and quality of life but it is important to develop an exercise program that is right for you. Your energy and fitness may be very different after treatment.

#### **Tobacco use vs Wellness:**

Smoking cigarettes can have many adverse effects on the body. Some of these can lead to life-threatening complications. In fact, smoking cigarettes affects the respiratory system, the circulatory system, the reproductive system, the skin, and the eyes, and it increases the risk of many different cancers.

Tobacco use can also expose the individual to:

#### **Lung Damage**

Smoking cigarettes affects lung health because a person breathes in not only nicotine but also a variety of additional chemicals. Cigarettes are responsible for a substantial

increase in the risk of developing lung cancer. Lung cancer deaths are linked to smoking. Smoking cigarettes also presents a greater risk of developing and dying from chronic obstructive pulmonary disorder (COPD). Cigarettes are also linked to developing emphysema and chronic bronchitis. They can also trigger or exacerbate an asthma attack.

### **Heart disease**

Smoking cigarettes can damage the heart, blood vessels, and blood cells.

The chemicals and tar in cigarettes can increase a person's risk of atherosclerosis, which is the buildup of plaque in the blood vessels. This buildup limits blood flow and can lead to dangerous blockages.

### **Fertility problems**

Smoking cigarettes can damage a female's reproductive system and make it more difficult to get pregnant. This may be because tobacco and the other chemicals in cigarettes affect hormone levels. In males, the more cigarettes a person smokes and the longer they smoke for, the higher the risk of erectile dysfunction. Smoking can also affect the quality of the sperm and therefore reduce fertility.

### **Risk of pregnancy complications**

Smoking can increase the risk of ectopic pregnancy, cause spontaneous abortion and reduce the baby's birth weight. Smoking can affect pregnancy and the developing fetus in several ways, including:

- increasing the risk of ectopic pregnancy
- reducing the baby's birth weight
- increasing the risk of preterm delivery
- damaging the fetus's lungs, brain, and central nervous system

- increasing the risk of sudden infant death syndrome
- contributing to congenital abnormalities, such as cleft lip or cleft palate to some extent

### **Risk of type 2 diabetes**

People who smoke regularly have a 30–40 % chance of higher risk of developing type 2 diabetes than those who do not. Smoking can also make it more difficult for people with diabetes to manage their condition.

### **Weakened immune system**

Smoking cigarettes can weaken a person's immune system, making them more susceptible to illness. It can also cause additional inflammation in the body.

### **Vision problems**

Smoking cigarettes can cause eye problems, including a greater risk of cataracts and age-related macular degeneration.

Other vision problems related to smoking include:

- dry eyes
- glaucoma
- diabetic retinopathy

### **Poor oral hygiene**

People who smoke have the risk of gum disease. This risk increases with the number of cigarettes a person smokes.

Symptoms of gum disease include:

- swollen and tender gums
- bleeding when brushing

- loose teeth
- sensitive teeth

Smoking tobacco can limit a person's ability to taste and smell things properly. It can also stain the teeth yellow or brown.

### Unhealthy skin and hair

Smoking tobacco can affect a person's skin and hair. A person who smokes may experience prematurely aged, wrinkled skin. They also have a higher risk of skin cancer, "especially on the lips. "Smoking can cause the hair and skin to smell of tobacco. It can also contribute to hair loss and balding.

### Risk of other cancers

In addition to the well-documented link with lung cancer, smoking cigarettes can also contribute to other forms of cancer. Cigarette smoking causes 20–30 % of pancreatic cancers and people who smoke are also three times as likely to develop bladder cancer as people who do not.

Smoking cigarettes can also double a person's risk of stomach cancer. Tobacco is especially linked to stomach cancers that occur near the esophagus.

Cigarettes can also increase the risk of:

- mouth cancer
- laryngeal cancer
- throat cancer
- esophageal cancer
- kidney cancer
- cervical cancer

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- liver cancer
- colon cancer
- acute myeloid leukemia

### **Alcohol vs Wellness**

The main psychoactive ingredient in alcoholic beverages is ethanol. Generally referred to as "alcohol," ethanol is the substance that makes you drunk. It's produced by yeasts that digest sugar in certain carb-rich foods, such as grapes — used to make wine — or grains — used to make beer. Alcohol is one of the most popular psychoactive substances in the world. It can have powerful effects on your mood and mental state. By reducing self-consciousness and shyness, alcohol may encourage people to act without inhibition. At the same time, it impairs judgment and promotes behavior people may end up regretting. Some people drink small amounts at a time, while others tend to binge drink. Binge drinking involves drinking large amounts at a time to get drunk.

The short term effects of alcohol include:

- dizziness
- lack of judgment
- loss of coordination
- memory loss
- vomiting
- headaches and hangovers
- accidental injury (to yourself or others)
- being in a road accident
- deliberately harming yourself or others

- alcohol poisoning (which can be fatal)

Some of the long term effects are:

**Brain:** Drinking too much can affect your concentration, judgment, mood and memory. It increases your risk of having a stroke and developing dementia.

**Heart:** Heavy drinking increases your blood pressure and can lead to heart damage and heart attacks.

**Liver:** Drinking 3 to 4 standard drinks a day increases your risk of developing liver cancer. Long-term heavy drinking also puts you at increased risk of liver cirrhosis (scarring) and death.

**Stomach:** Drinking even 1 to 2 standard drinks a day increases your risk of stomach and bowel cancer, as well as stomach ulcers.

**Fertility:** Regular heavy drinking reduces men's testosterone levels, sperm count and fertility. For women, drinking too much can affect their periods.

## UNIT 6

Impact on our lives  
Fitness program

### PROCEDURE FOR BEGINNING FITNESS

Starting a fitness program may be one of the best things you can do for your health. Physical activity can reduce your risk of chronic disease, improve your balance and coordination, help you lose weight — and even improve your sleep habits and self-esteem. And there's more good news. You can start a fitness program in only five steps.

#### 1. Assess your fitness level

You probably have some idea of how fit you are. But assessing and recording baseline fitness scores can give you benchmarks against which to measure your progress. To assess your aerobic and muscular fitness, flexibility, and body composition, consider recording:

- Your pulse rate before and immediately after walking 1 mile (1.6 kilometers)
- How long it takes to walk 1 mile or 400 meters, or how long it takes to run 1.5 miles (2.41 kilometers)
- How many half situps, standard pushups or modified pushups you can do at a time
- How far you can reach forward while seated on the floor with your legs in front of you
- Your waist circumference, just above your hipbones
- Your body mass index (Body composition)

#### 2. Design your fitness program

It's easy to say that you'll exercise every day. But you'll need a plan. As you design your fitness program, keep these points in mind:

- Consider your fitness goals. Are you starting a fitness program to help lose weight? Or do you have another motivation, such as preparing for a marathon? Having clear goals can help you gauge your progress and stay motivated.
- Create a balanced routine.

The Department of Health and Human Services recommends getting at least 150 minutes of moderate aerobic activity or 75 minutes of vigorous aerobic activity a week, or a combination of moderate and vigorous activity.

For example, try to get about 30 minutes of aerobic exercise on most days of the week. Also aim to incorporate strength training of all the major muscle groups into a fitness routine at least two days a week.

- **Start low and progress slowly:** If you're just beginning to exercise, start cautiously and progress slowly. If you have an injury or a medical condition, consult your doctor or an exercise therapist for help designing a fitness program that gradually improves your range of motion, strength and endurance.
- **Build activity into your daily routine:** Finding time to exercise can be a challenge. To make it easier, schedule time to exercise as you would any other appointment. Plan to watch your favorite show while walking on the treadmill, read while riding a stationary bike, or take a break to go on a walk at work.
- **Plan to include different activities:** Different activities (cross-training) can keep exercise boredom at bay. Cross-training using low-impact forms of activity, such as biking or water exercise, also reduce your chances of injuring or overusing one specific muscle or joint. Plan to alternate among activities that emphasize different parts of your body, such as walking, swimming and strength training.
- **Allow time for recovery:** Many people start exercising with frenzied zeal — working out too long or too intensely — and give up when their muscles and

joints become sore or injured. Plan time between sessions for your body to rest and recover.

- **Put it on paper:** A written plan may encourage you to stay on track.

### 3. Assemble your equipment

You'll probably start with athletic shoes. Be sure to pick shoes designed for the activity you have in mind. For example, running shoes are lighter in weight than cross-training shoes, which are more supportive.

If you're planning to invest in exercise equipment, choose something that's practical, enjoyable and easy to use. You may want to try out certain types of equipment at a fitness center before investing in your own equipment.

You might consider using fitness apps for smart devices or other activity tracking devices, such as ones that can track your distance, track calories burned or monitor your heart rate.

### 4. Get started

Now you're ready for action. As you begin your fitness program, keep these tips in mind:

- **Start slowly and build up gradually:** Give yourself plenty of time to warm up and cool down with easy walking or gentle stretching. Then speed up to a pace you can continue for five to 10 minutes without getting overly tired. As your stamina improves, gradually increase the amount of time you exercise. Work your way up to 30 to 60 minutes of exercise most days of the week.
- **Break things up if you have to:** You don't have to do all your exercise at one time, so you can weave in activity throughout your day. Shorter but more-frequent sessions have aerobic benefits, too. Exercising in short sessions a few

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times a day may fit into your schedule better than a single 30-minute session.  
Any amount of activity is better than none at all.

- **Be creative:** Maybe your workout routine includes various activities, such as walking, bicycling or rowing. But don't stop there. Take a weekend hike with your family or spend an evening ballroom dancing. Find activities you enjoy to add to your fitness routine.
- **Listen to your body:** If you feel pain, shortness of breath, dizziness or nausea, take a break. You may be pushing yourself too hard.
- **Be flexible:** If you're not feeling good, give yourself permission to take a day or two off.

### 5. Monitor your progress

Retake your personal fitness assessment six weeks after you start your program and then again every few months. You may notice that you need to increase the amount of time you exercise in order to continue improving. Or you may be pleasantly surprised to find that you're exercising just the right amount to meet your fitness goals.

If you lose motivation, set new goals or try a new activity. Exercising with a friend or taking a class at a fitness center may help, too.

Starting an exercise program is an important decision. But it doesn't have to be an overwhelming one. By planning carefully and pacing yourself, you can establish a healthy habit that lasts a lifetime