Slide 1

Nutrition, Weight Control and Exercise

Slide 2

What is…….

Diet

Nutrition

Nutrients

Slide 3

The food, which we eat, is known as 'Diet'.
The energetic food in our diet consists of various types of essential chemicals for our body termed as 'Nutrients‘
The science, which deals with nutritious diet and its importance for individual, is known as 'Nutrition.

Slide 4

What is Nutrition?

Nutrition is defined as the process of taking in food and converting it into energy and other vital nutrients required for life
Nutrition is the process of consuming, absorbing, and using nutrients needed by the body for growth, development, and maintenance of life.
Nutrition is about eating a healthy and balanced diet

Slide 5

What is Nutrients?

A nutrient is a substance required by the body for survival, growth, and reproduction
In other words, nutrients are what give us energy and allow our bodies to perform their essential functions.
Every organism on our earth needs nutrients; they are necessary for life, But humans need specific nutrients, which we get from food and water

Slide 6

Types of Nutrients

Macronutrients

Protein
Carbohydrates
Fats
Water

Micronutrients

1) Vitamins
2) Minerals

Slide 7

Slide 8

1) Protein

Protein is considered as the building block of life and is found in every cell of the body
Protein is made up of amino acids that are attached to one another in long chains
An individual need protein in diet to help body repair cells and make new ones
Protein is essential for every body system, but it’s especially crucial for the brain because it allows it to communicate with your body through your nervous system.
It’s also very important for building and maintaining our muscles.

Slide 9

2) Carbohydrates

Carbohydrates are our body’s first choice for fuel. Our bodies break them down and use them for energy
It is a main source of energy
Carbohydrates can be either “simple” or “complex“
"Simple” carbohydrates, like refined flours and sugar, are easy for the body to break down and use for energy. They give a quick burst of energy, but they don’t keep you energized for long
"Complex" carbohydrates take longer to break down because they contain fiber, so they give us energy for a longer period of time

Slide 10

3) Fat

Fat is the major storage form of energy in the body
Fats are a type of nutrient that you get from your diet
It is essential to eat some fats, though it is also harmful to eat too much
During exercise, your body uses calories from carbohydrates you have eaten. But after 20 minutes, exercise depends partially on calories from fat to keep you going

Slide 11

Slide 12

Slide 13

Saturated Fat

Saturated fat is a type of fat that is solid at room temperature
Saturated fats raise your LDL (bad) cholesterol level
High LDL cholesterol puts you at risk for heart attack, stroke, and other major health problems.
You should avoid or limit foods that are high in saturated fats.
They are found in most animal products like cheese, milk, meat and so on

Slide 14

Unsaturated fats

Monounsaturated fats
Monounsaturated fats help protect your heart by maintaining levels of “good” HDL cholesterol. They are found in Avocados, Macadamia nuts, Peanuts, Olives and Olive oil

Polyunsaturated Fats
Polyunsaturated fats are healthy fats, which are abundantly found in both plant and animal foods, such as vegetable oils, Walnuts, Flax seeds, salmon, etc.
These fats include both Omega 3 and Omega 6 fats. Omega 3.

Slide 15

Trans fats

Trans fat is a type of fat that is created when liquid oils are converted into solid fats. It makes them last longer without going bad
Trans fats are present in many processed foods such as baked food items, cookies, crackers, snack foods, deep-fried foods and other food made or fried in partially

Slide 16

4) Water

Main source in body
Made up of hydrogen and oxygen
Regulates th body temperature
Body cant store water so we need to drink water on regular intervals

Slide 17

Vitamins

Vitamins are substances that our bodies need to develop and function normally.
They are needed for normal cell function, growth, and development.
There are 13 essential vitamins.

Vitamins have been classified into two different groups:
Fat-Soluble Vitamins.
Water-Soluble Vitamins.

Slide 18

Fat-soluble vitamin
Fat-soluble vitamins are stored in the fat cells and as the name suggests, these vitamins require fat in order to be absorbed. Vitamin A, D, E and K are fat-soluble vitamins.

Water-soluble vitamin
Water-soluble vitamins are not stored in our body as its excess gets excrete through the urine. Therefore, these vitamins need to be replenished constantly. Vitamin B and C are water-soluble vitamins.

Slide 19

The best sources of fat-soluble vitamins include:

Vitamin A: Found in potato, carrots, pumpkins, spinach, beef and eggs.

Vitamin D: Found in fortified milk and other dairy products.

Vitamin E: Found in fortified cereals, leafy green vegetables, seeds, and nuts.

Vitamin K: Found in dark green leafy vegetables and in turnip or beet green.

Slide 20

Source of Water soluble vitamins

Vitamin B1 or Thiamine: Found in pork chops, ham, enriched grains and seeds.
Vitamin B2 or Riboflavin: Found in whole grains, enriched grains and dairy products.
Vitamin B3 or Niacin: Found in mushrooms, fish, poultry, and whole grains.
Vitamin B5 or Pantothenic Acid: Found in chicken, broccoli, legumes and whole grains.
Vitamin B6 or Pyridoxine: Found in fortified cereals and soy products.
Vitamin B7 or Biotin: Found in many fruits like fruits and meats.
Vitamin B9 or Folic Acid: Found in leafy vegetables.
Vitamin B12: Found in fish, poultry, meat and dairy products.
Vitamin C: Found in citrus fruits and juices, such as oranges and grapefruits.

Slide 21

Minerals

Minerals are those elements on the earth and in foods that our bodies need to develop and function normally.
Those essential for health include calcium, phosphorus, potassium, sodium, chloride, magnesium, iron, zinc, iodine, chromium, copper, fluoride, molybdenum, manganese, and selenium.

Slide 22

Dietary Goals

The diet should be composed of about 12 % protein, 30 % fat and 58 % carbohydrates.

We should broadly know that what we are eating. Healthy dietary goals for good health may be as follows:-

Slide 23

Dietary Goals

Increase carbohydrates consumption.
Reduce overall fat consumption.
Reduce saturated fat consumption to about 10 % of total energy intake.
Reduce Cholesterol consumption to about 30 milligram daily.
Reduce salt consumption by about 40 % to account for about 15 % of total energy intake.
Increase consumption of fruits and vegetables.

Slide 24

Dietary Goals

Decrease consumption of red and orange meat and Increase consumption of poultry and fish.
Decrease consumption of high fat and foods and partially substitute polyunsaturated fat for saturated fat.
Substitute skim milk for whole milk.
Decrease consumption of butter fat, eggs and other high cholesterol sources.
Decrease consumption of refined foods and processed food that are high in sugar content.

Slide 25

Basic Food groups

Fruits
Vegetables
Grains
Protein foods
Dairy products

Slide 26

Slide 27

Slide 28

Slide 29

Slide 30

Slide 31

Nutritional Requirement at different stages

Slide 32

Infants

First 4-6 months of life (period of rapid growth and development) breast milk (or infant formula) contains all the nutrients required.
Between 6-12 months-requirements for iron, protein, thiamin, niacin, vitamin B vitamin B magnesium, zinc, sodium and chloride increase.
Department of Health advice recommends exclusive breast-feeding until 6 months of age with weaning introduced at 6 months.

Toddler (1-3 Years)
Energy requirements increase (children are active and growing rapidly). Protein requirements increase slightly. Vitamins requirements increase (except vitamin D). Mineral requirements decrease for calcium, phosphorus and iron and increase for the remaining minerals (except for Zinc).

Slide 33

Early childhood (4-6 Years)
Requirements for energy, protein, all the vitamins and minerals increase except C and D and iron.

Childhood (7-10 Years)
Requirements for energy, protein, all vitamins and minerals increase except thiamin, vitamin C and A.

11-14 Years
Requirements for energy continue to increase and protein requirements increase by approximately 50%.
By the age of 11, the vitamin and mineral requirements for boys and girls start to differ.
For Boys: increased requirement for all the vitamins and minerals.
For Girls: no change in the requirement for thiamin, niacin, vitamin B, but there is an increased requirement for all the minerals. Girls have a much higher iron requirement than boys (once menstruation starts).

Slide 34

15-18 Years
For Boys: requirements for energy and protein continue to increase as do the requirements for a number of vitamins and minerals (thiamin, riboflavin, niacin, vitamins B, B, C and A, magnesium, potassium, zinc, copper, selenium and iodine). Calcium requirements remain high as skeletal development is rapid.
For Girls: requirements for energy, protein, thiamin, niacin, vitamins B, B, and C, phosphorus, magnesium, potassium, copper, selenium and iodine all increase. For Boys and Girls: They have the same requirement for vitamin B, folate, vitamin C, magnesium, sodium, potassium, chloride and copper. Girls have a higher requirement than boys for iron (due to menstrual losses) but a lower requirement for zinc and calcium.

Slide 35

19-50 Years
Requirements for energy, calcium and phosphorus are lower for both men and women than adolescents and a reduced requirement in women for magnesium, and in men for iron. The requirements for protein and most of the vitamins and minerals remain virtually unchanged in comparison to adolescents.

Pregnancy
Increased requirements for some nutrients. Women intending to become pregnant and for the first 12 weeks of pregnancy are advised to take supplements of folic acid. Additional energy and thiamin are required only during the last three months of pregnancy. Mineral requirements do not increase.

Slide 36

50+ years

1. Energy requirements decrease gradually after the age of 50 in women 60 in men as people typically become less active and the basal metabolic rate is reduced.
2. Protein requirements decrease for men but continue to increase slightly in women. The requirements for vitamins and minerals remain virtually unchanged for both men and women.
3. After the menopause, women's requirement for iron is reduced to the same level as that for men.
4. After the age of 65, there is a reduction in energy needs but vitamins and minerals requirement remain unchanged. This means that the nutrient density of the diet is even more important.

Slide 37

What is balance diet

A balanced diet is one that contains all of the essential elements that the human body needs. Carbohydrates, lipids, vitamins, minerals, proteins, fiber and water are all essential components in a well-balanced diet.
A balanced diet is important because your body’s organ and tissue need proper nutrition to work effectively. Without good nutrition, your body is more prone to disease, infection, fatigue, and good performance.

Slide 38

Factors affecting Balanced Diet :-

What you eat, what you like to eat , what you avoid eating and what you know you should eat all play a role in your diet and how you make decisions about your food choice. Some factors play a major role in selecting balanced diet are mentioned below :
1. Age :- The older you become, the less likely you are to indulge in an unhealthy diet, when you're likely to eat a diet foods high in sugar, saturated fats and artificial flavourings.
2. Culture :- The immediate and societal culture you grew in can affect the diet you eat.
3. Knowledge :- Your Knowledge about food can play a role in your diet. Your awareness of nutrients found in different foods most likely to affect your daily food choices. Unfortunately the health benefits related to fruits, vegetables , whole grains and legumes make you more likely to incorporate them into your diet while cutting down on their unhealthy alternatives such as refined grains and surgery.

Slide 39

4. Access :- Your access to certain foods will play a role in your diet. Some foods are not always available in certain parts of the country or the world , thus affecting dietary choices.
5. Disease :- disease can contribute to your dietary choices. If you have diabetes you should watch your carbohydrates intake, limit your fat intake and avoid foods such as refined grains and sugar, which can send your blood sugar level spiking.
6. Income :- People who have a lower income are more likely to eat unhealthy foods points out the British food standards agency.
7. Time :- A time – crunched schedule can lead people to make poor diet choices, sacrificing healthy foods for quick and convenient ones. A working mother who is short on time.
8. History :- If your parents always cooked you comforting but faulty meals, there’s a good chance that those are the foods that you love and are comfortable with.

Slide 40

Importance of Balanced diet :-

During athletic training, there are certain needs that must be met in order to turn the body into a high – performance machine; fuel, recovery and compositional change. All three of these are driven largely if not entirely by proper nutrition. The need for fuel comes in the form of what you eat, as your body transform the calories in food into energy you can use. Carbohydrates, protein , and fat are the three major macromolecules that provide these calories, and your body utilizes them in different ways dependent on their chemical composition and energetic breakdown.

1. Carbohydrates :-

- The base of a recreational or professional athlete's diet should be in Carbohydrates. Carbohydrates, which are broken down and stored in your muscles and liver as glycogen, are the limiting factors for proper athletic performance for most athletes, especially those in endurance and power sports like cycling, running and swimming.

Slide 41

- Carbohydrates provide almost half of your total energy needs during most bouts of intense training and competition, and produce more oxygen per unit burned than fat, your body's others primary source of fuel.
- Carbohydrates should make up the majority of your athlete diet, around 55 – 65 percent of your total calorie intake.
- By eating carbohydrates early in the day, you allow your body to properly fuel itself coming workload, and by replenishing them quickly before, during, and after exercise you keep yourself consistently fuelled and able to perform at your very best.

2. Protein :- Many Bodybuilders and lifters tour protein as the most important part of any athletic diet. This is true in some ways, but can often be done in excess in the case of most western diets. Protein helps largely with the recovery phase of training, repairing the tears and strains that naturally occur in muscles during exercise.

For most people, the amount of protein needed is around 10 – 15 % of dietary calorie intake. The total percentage is important, but more so is the quality of the protein whether it provides the full array of amino-acids, the building blocks of protein.

Slide 42

3. Fats :- Fat is the first a macromolecule to be utilized by the body for energy, as it provides about 9 calorie per gram, whereas carbohydrates and protein about 4 calorie per gram.
- Fat is the primary fuel source for low – level to moderate exercise such as walking or jogging, and is highly important for longer endurance events that are at lower intensities.
- fat is early stored in the body and is calorie – dense.
4. Vitamin and Minerals :- The reactions which the body uses to provide it with energy are controlled by chemicals which are often made up of vitamins and minerals that the body can obtain from the diet.
- Consequently foods that are high in vitamins and minerals should be targeted in a sports person's diet.
- It is usually not necessary for an unnecessary for an athlete to take in more than the government's recommended daily allowances (RDA) for vitamins and minerals.
- Generally it is vital to ensure your diet is adequate in terms of its vitamins and minerals content.

Slide 43

5. Hydration or water :- It is vital that hydration levels are always kept high.
- The body is mostly water and even small amounts of dehydration can have significant effects on performance (sporting as well as mental performance).
- High fluid level in the body helps kept to protect against overheating and also the blood to transport nutrients.
- Dehydration leads to a reduced ability to exercise in the neat and reduced mental skills, such as concentration and decision making.
- Water consumption is key to maintain optimal hydration but fluids such as quite dilute fruit juice or even weak squads drinks can help to optimise hydration.

Slide 44

Obesity and over weight

Obesity is commonly defined as having too much body mass

Overweight and obesity are defined as abnormal or excessive fat accumulation that presents a risk to health.

Obesity happens over time when you eat more calories than you use.

Slide 45

Problems of obesity?

Slide 46

Causes of obesity

Food
Activity
Environment
Genetics
Health Conditions and Medications
Stress, Emotional Factors
Poor Sleep

Slide 47

Dangers of obesity

Stroke
Heart attack
Diabetes
Cancer
Depression
Bones, ligaments, cartilage problems
Knee and back problem
Breathing issues
Low energy

Slide 48