Food Nutrition and Hygiene

UNIT:- 1

Concept of food Nutrition

Definition:-

1. Food Nutrition is the science and study of the various nutrients and substances present in the foods we consume, how they are digested and metabolized by the body, and their impact on our health and well- being. It encompasses the essential components of a balanced diet, including macronutrients (carbohydrates, proteins, and fats) , micronutrients (vitamins and minerals) , fiber, and water, and explores their roles in maintaining optimal bodily functions.

2. Food Nutrition refers to the nourishment and sustenance that food provides to the human body. It involves the process by which the body extracts nutrients from the foods we eat, such as carbohydrates for energy, proteins for tissue repair and growth, fats for insulation and energy storage, and vitamins and minerals for various biochemical processes. Proper nutrition is essential for maintaining good health and preventing diet-related diseases.

3. Food Nutrition is a critical aspect of dietary choices and dietary patterns that impact an individual's overall health and longevity. It involves not only understanding the nutritional content of different foods but also making informed decisions about what to eat to meet specific dietary needs or health goals. Good nutrition involves consuming a variety of foods in appropriate portions to ensure that the body receives the necessary nutrients for growth, maintenance, and repair while minimizing the risk of nutritional

deficiencies and chronic diseases.

Balanced diet:-

A balanced diet is a dietary plan that provides the body with all the essential nutrients it needs to function optimally. It consists of a combination of different food groups in appropriate proportions to maintain good health and well-being. A well-balanced diet typically includes:

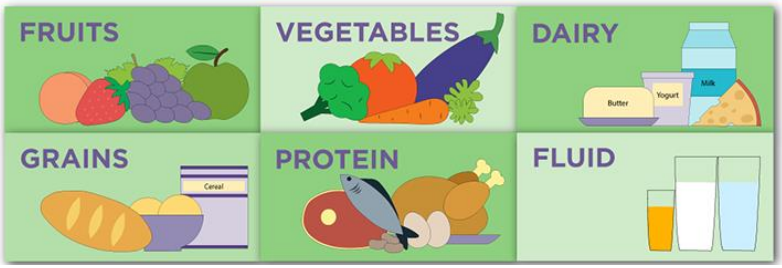
RECOMMENDED BALANCED DIET CHART FOR WOMEN

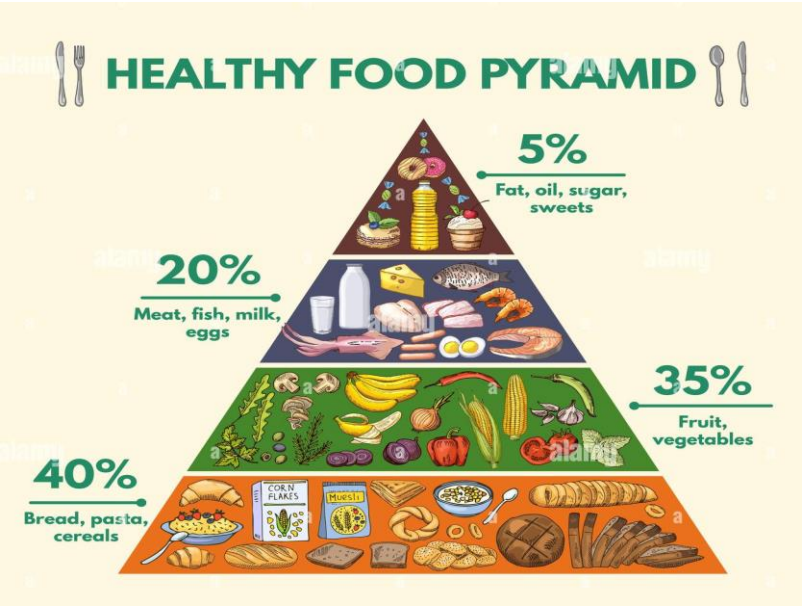
Meal	Function	Comprises of
Breakfast	Boost up the metabolism, provide satiety value	2-3 scrambled egg whites with a whole grain toast and a fruit of your choice / a bowl of fruit oats porridge with sprouts salad
Mid-morning snack	Reduce the meal gap, provide essential nutrients, prevent hunger	A fistful of dried fruit combined with nuts or seeds
Lunch	Regulate blood sugar level, helps in improving focus and activity level	A bowl of dal/chicken/fish curry with brown rice / roti and a veg salad
Mid-evening snack	Keep energy levels up, Reduce the meal gap, prevent hunger	Apple cinnamon granola bar / Nature Valley's granola bar / you can have a fistful of nuts
Dinner	Overnight growth and repair, Body's functional sustainability	A bowl of Chicken / fish / paneer with roti / chila / quinoa preparations and soup or salad with veggies

1. **"Fruits and Vegetables:"** These are rich sources of vitamins, minerals, fiber, and antioxidants. Aim to include a variety of colorful fruits and vegetables in your diet to ensure you get a wide range of nutrients.
2. **"Proteins:"** Protein is essential for the growth and repair of tissues. Sources of protein include lean meats, poultry, fish, eggs, dairy products, legumes (beans, lentils) , tofu, and nuts.
3. **"Carbohydrates:"** Carbohydrates provide energy. Opt for complex carbohydrates like whole grains (brown rice, whole wheat bread, quinoa) over refined grains (white rice, white bread) for sustained energy and better fiber content.
4. **"Healthy Fats:"** Fats are important for overall health, but choose unsaturated fats over

saturated and trans fats. Sources of healthy fats include avocados, nuts, seeds, and olive oil.

5. **"Dairy or Dairy Alternatives:"** These provide calcium for strong bones and teeth. Options include milk, yogurt, and fortified plant-based milk alternatives like almond or soy milk.
6. **"Water:"** Staying hydrated is crucial for bodily functions. Aim to drink plenty of water throughout the day.
7. **"Moderation and Portion Control:**" While the above food groups are essential, it's important to practice portion control and moderation. Eating in moderation helps maintain a healthy weight and prevents overconsumption of calories.
8. **"Limit Added Sugars and Salt:"** Excessive sugar and salt intake can lead to health issues. Try to limit sugary snacks, sugary beverages, and high- sodium processed foods.
9. **"Variety:"** A balanced diet includes a variety of foods from each food group. This helps ensure you get a wide array of nutrients and prevents dietary monotony.
10. **"Customization:"** Your specific dietary needs may vary based on factors such as age, sex, activity level, and any underlying health conditions. Consulting with a registered dietitian or healthcare professional can help you tailor your diet to meet your individual needs.





Macronutrients:-

Macronutrients are essential nutrients required by the human body in relatively large quantities to support various physiological functions and provide energy. There are three primary types of macronutrients: carbohydrates, proteins, and fats.

1. **Carbohydrates:**

- Carbohydrates are the body's primary source of energy. They are composed of carbon, hydrogen, and oxygen atoms.
- **Types of carbohydrates include:**

a. **Simple Carbohydrates:** These are also known as sugars and are found in foods like fruits, honey, and table sugar (sucrose) .

b. **Complex Carbohydrates:** Found in foods like grains, legumes, and starchy vegetables, these provide sustained energy due to their longer digestion time.

c. **Fiber:** A type of complex carbohydrate that cannot be digested by the body. It is crucial for

digestive health and regulating blood sugar levels.

2. Proteins:

- Proteins are essential for building and repairing tissues, enzymes, hormones, and supporting the immune system. They are composed of amino acids.
- **Types of proteins include:**

a. **Complete Proteins:** Found in animal products like meat, poultry, fish, and dairy, they contain all essential amino acids.

b. **Incomplete Proteins:** Common in plant-based sources like beans, nuts, and grains, they lack one or more essential amino acids.

c. **Complementary Proteins:** Combining different plant-based protein sources can provide all essential amino acids. For example, rice and beans.

3. Fats:

- Fats are vital for energy storage, cushioning organs, and absorbing fat-soluble vitamins (A, D, E, and K). They are composed of fatty acids and glycerol.
- **Types of fats include:**

a. **Saturated Fats:** Found in animal products, some tropical oils, and processed foods. Excessive consumption can raise LDL cholesterol levels and increase the risk of heart disease.

b. **Unsaturated Fats:** These include monounsa turated fats (e.g., olive oil) and polyunsaturated fats (e.g., omega-3 and omega-6 fatty acids found in fish and nuts) . They are considered heart-healthy.

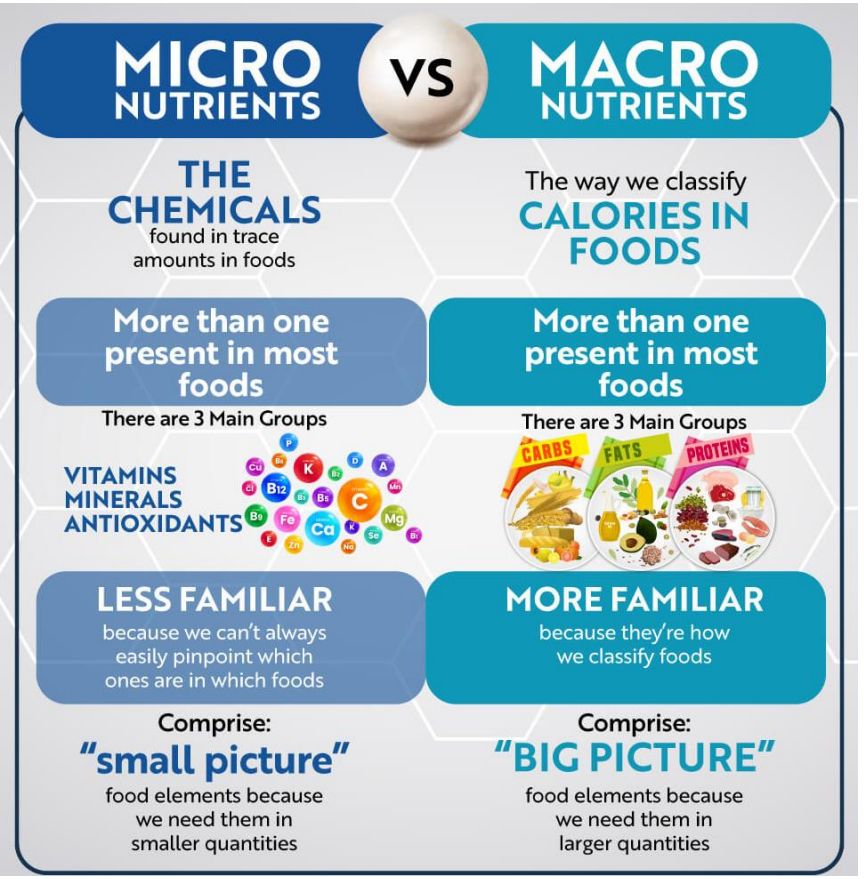
c. **Trans Fats:** Artificially created through hydrogenation, they are found in some processed and fried foods. They are detrimental to heart health and best avoided.

In addition to these three primary macronutrients, water is also considered an essential component of the diet, although it does not provide energy. Staying hydrated is crucial for overall health and bodily functions.

Micronutrients:-

Micronutrients are essential nutrients that the human body requires in relatively small quantities but play a crucial role in maintaining overall health and well-being. Unlike macronutrients (such as carbohydrates,

proteins, and fats) , which are needed in larger amounts, micronutrients are only needed in trace amounts, typically measured in milligrams (mg) or micrograms (μg) . Micronutrients include vitamins and minerals, and they are essential for various physiological functions within the body.



Here are some key categories of micronutrients:

Vitamins:-

1. **"Vitamins:"** Vitamins are organic compounds that are vital for various metabolic processes in the body. They are divided into two categories:

- **"Water-Soluble Vitamins:"** These include vitamin C and the B-complex vitamins (e.g., B1, B2, B3, B5, B6, B7, B9, B12) . They are easily dissolved in water and are not stored in the body for long periods. As a result, they need to be consumed regularly through the diet.
- **Fat-Soluble Vitamins:"** This group comprises vitamins A, D, E, and K, which are absorbed with

dietary fat and can be stored in the body's fatty tissues for longer periods.

Different vitamins play various critical roles in the body, each contributing to overall health and well-being. These essential nutrients are essential for various bodily functions. For instance, vitamin C is known for its immune-boosting properties, while vitamin D plays a vital role in calcium absorption and much more.

1. **"Vitamin C (Ascorbic Acid) :"**

- **"Immune System Support:"** Vitamin C is renowned for its immune-boosting properties. It helps the body produce white blood cells, which are crucial for fighting infections.
- **"Antioxidant Action:"** As an antioxidant, vitamin C helps protect cells from damage caused by free radicals, reducing the risk of chronic diseases.
- **"Collagen Production:"** It is essential for the synthesis of collagen, a protein vital for skin, cartilage, and bone health.
- **Wound Healing:-** Vitamin C aids in the repair and regeneration of tissues, making it essential for wound healing.

2. **"Vitamin D (Calciferol) :"**

- **"Calcium Absorption:"** Vitamin D plays a crucial role in the absorption of calcium from the Intestines, helping to maintain strong bones and teeth.
- **"Bone Health:"** It regulates calcium levels in the bloodstream, preventing conditions like Osteoporosis.
- **"Immune System Modulation:"** Vitamin D may help modulate the immune system, contributing to its role in preventing infections.
- **"Mood Regulation:"** Some research suggests a link between vitamin D and mood regulation, potentially impacting conditions like

depression.

Other important vitamins include:

3. **"Vitamin A (Retinol) :"**

- **"Vision:"** Vitamin A is essential for maintaining good vision, particularly in low-light conditions.
- "Skin Health:" It promotes healthy skin and mucous membranes.
- **"Immune Function:"** Vitamin A supports the immune system and is crucial for the health of the respiratory and gastrointestinal tracts.

4. **"Vitamin E (Tocopherol) :"**

- **"Antioxidant Protection:"** Vitamin E is a potent antioxidant that helps protect cells from oxidative damage.
- **"Skin Health:"** It can improve skin health and appearance.

5. **"Vitamin K:"**

- "Blood Clotting:" Vitamin K is essential for blood clotting, preventing excessive bleeding.
- **"Bone Health:"** It also plays a role in bone health by regulating calcium deposition in bones.

6. **"B Vitamins (B1, B2, B3, B5, B6, B7, B9, B12) :"**

- **"Energy Metabolism:"** B vitamins play a crucial role in converting food into energy.
- **"Nervous System:"** They support the nervous system and brain function.
- **"Cell Growth and Development:"** B vitamins are essential for DNA synthesis and cell division.

Minerals:-

Minerals such as calcium and magnesium play vital roles in maintaining overall health, with calcium and magnesium being especially crucial for bone health, while iron is essential for oxygen transport in the blood.

Calcium is one of the primary minerals found in bones and teeth, making it essential for maintaining their strength and density. Throughout our lives, our bodies constantly remodel bone tissue, and calcium is necessary for this process. It helps to ensure that bones remain strong and resistant to fractures. In addition to its role in bone health, calcium also plays a role in muscle contractions, nerve function, and blood clotting.

Magnesium, on the other hand, is often referred to as the "forgotten mineral" because it doesn't receive as much attention as calcium, but it is equally important.It works in tandem with calcium to support bone health. Magnesium aids in the activation of enzymes responsible for the proper utilization of calcium in bone formation. Additionally, magnesium is involved in over 300 biochemical reactions in the body, including those related to muscle function, energy production, and maintaining a healthy heart rhythm.

2. "Minerals:" Minerals are inorganic nutrients required for various bodily functions. Some important minerals include:

- **"Calcium:"** Necessary for strong bones and teeth, blood clotting, and muscle function.
- **"Iron:"** Required for oxygen transport in the blood.

- **"Magnesium:"** Important for muscle and nerve function, as well as bone health.
- **"Zinc:"** Essential for immune system function and wound healing.
- **"Selenium:"** Acts as an antioxidant and supports thyroid function.
- **"Potassium and Sodium:"** Critical for maintaining fluid balance and nerve function.

3. "Trace Elements:" These are minerals that are needed in even smaller quantities than the major minerals. Examples include iodine (essential for thyroid function) , copper (important for iron metabolism) , and chromium (involved in glucose metabolism) .

Micronutrients are obtained through a balanced diet that includes a variety of foods. Deficiencies in micronutrients can lead to various health problems. For instance, a lack of vitamin C can result in scurvy, while inadequate iron intake can lead to anemia. Conversely, excessive intake of certain micronutrients can also be harmful, which is why it's important to strike a balance in your diet.

Caloric Intake:-

Introduction:

Understanding and managing calorie intake is essential for maintaining a healthy weight and achieving an optimal energy balance. Calories are units of energy that our bodies require to function properly, and striking the right balance between calorie intake and expenditure is crucial for overall health and well- being. In this article, we will explore the significance of calorie management and provide practical tips on how to maintain a healthy weight and energy balance through mindful eating.

The Basics of Calories:

Calories are the energy currency of the human body. They are obtained from the food and beverages we

consume and are used to power various bodily functions, from basic metabolic processes to physical activity. Our bodies require a certain number of calories each day to maintain their current weight and functionality.

Caloric Needs:

Caloric needs vary from person to person and depend on factors such as age, gender, activity level, and metabolism. To maintain a healthy weight, it's essential to understand your individual caloric requirements. This can be determined through methods like basal metabolic rate (BMR) calculations or consulting with a registered dietitian.

Balancing Caloric Intake and Expenditure:

To maintain a healthy weight, the calories you consume should roughly equal the calories you expend. If you consume more calories than your body

requires, you will gain weight, while consuming fewer calories will lead to weight loss. The key is finding the right balance.

Mindful Eating:

Mindful eating involves paying attention to what, when, and how you eat. Here are some tips to help you manage your calorie intake effectively:

1. **Portion Control:** Be mindful of portion sizes to avoid overeating. Use smaller plates and serve reasonable portions.
2. **Balanced Diet:** Consume a variety of foods from all food groups to ensure you get essential nutrients without excess calories.
3. **Pay Attention to Hunger and Fullness:** Eat when you're hungry and stop when you're satisfied. Avoid eating out of boredom or stress.
4. **Limit Processed Foods:** Processed and fast foods tend to be calorie-dense and low in nutrients.

Minimize their consumption.

5. **Stay Hydrated:** Sometimes, thirst can be mistaken for hunger. Drink water regularly throughout the day.
6. **Plan Meals:** Prepare balanced meals and snacks ahead of time to avoid making unhealthy choices when hungry.
7. **Be Mindful of Liquid Calories:** Beverages like sugary sodas and excessive fruit juices can contribute to high calorie intake. Opt for water, herbal tea, or unsweetened options.
8. **Track Your Intake:** Keeping a food journal or using a calorie-tracking app can help you become more aware of your eating habits.

Portion Control:-

Proper portion sizes play a crucial role in controlling calorie intake and preventing overeating. Maintaining a balanced and healthy diet is not only about the types of foods you consume but also about the quantity. Here are some key reasons why portion control is essential for managing your calorie intake:

1. **"Caloric Awareness":** Portion control helps you become more aware of the number of calories you're consuming in a meal. When you understand the portion sizes and their associated

calories, you can make informed choices about what and how much to eat.

2. **"Weight Management":** Overeating often leads to weight gain. By sticking to appropriate portion sizes, you can better manage your weight or work towards your weight loss goals. Eating in moderation allows you to enjoy your favorite foods without the guilt.
3. **"Balanced Nutrient Intake"**: Proper portions ensure you're getting a balanced intake of essential nutrients, such as carbohydrates, protein, fats, vitamins, and minerals. This balanced approach promotes overall health and well-being.
4. **"Digestive Health":** Large portion sizes can put a strain on your digestive system, leading to discomfort and indigestion. Eating smaller, well-portioned meals can help your digestive system function more efficiently.
5. **"Blood Sugar Control":** Controlling portion sizes can help stabilize blood sugar levels, particularly for individuals with diabetes or those at risk of developing the condition. Consistent portion control can prevent dramatic spikes and crashes in blood sugar.
6. **"Mindful Eating":** Paying attention to portion sizes encourages mindful eating, which involves being fully present during meals. This mindfulness allows you to savor the flavors and textures of your food, leading to greater satisfaction with smaller portions.
7. **"Long-Term Success":** Diets that focus on portion control are often more sustainable because they don't require extreme restrictions. You can enjoy a variety of foods while maintaining a healthy weight and lifestyle.

To practice proper portion control, consider these tips:

- Use measuring cups, a food scale, or your hand (e.g., palm for protein, fist for vegetables) as a reference for portion sizes.
- Read food labels to understand serving sizes and calorie content.
- Be mindful of portion distortion at restaurants, where servings are often larger than necessary.
- Eat slowly, savor each bite, and listen to your body's hunger and fullness cues.
- Consider using smaller plates to help control portion sizes and create the illusion of a fuller plate.

Food Groups and Functions of Food

Food is essential for our survival and provides the body with the nutrients and energy it needs to function properly. There are five main food groups, each with its own unique functions and benefits. These food groups are:

1. **"Fruits and Vegetables:"**

- "**Function:**" Fruits and vegetables are rich in vitamins, minerals, and dietary fiber. They provide essential nutrients like vitamin C, potassium, and folate. Fiber helps regulate digestion and lower the risk of chronic diseases.
- **"Examples:"** Apples, oranges, broccoli, carrots, spinach, etc.

2. **"Grains:"**

- "**Function:**" Grains are a primary source of carbohydrates, which are the body's main energy source. They also provide fiber, B vitamins, and minerals like iron and magnesium.
- **"Examples:"** Rice, wheat, oats, bread, pasta, etc.

3. **"Proteins:"**

- "**Function:**" Proteins are crucial for growth, repair, and maintenance of body tissues. They are also

involved in the production of enzymes, hormones, and antibodies. Proteins provide essential amino acids that the body cannot produce on its own.

- **"Examples:"** Chicken, fish, beans, lentils, tofu, eggs, etc.

4. **"Dairy and Dairy Alternatives:"**

- "**Function:**" Dairy products are rich in calcium and vitamin D, which are essential for bone health. They also provide protein and other vitamins and minerals. Dairy alternatives like soy or almond milk can offer similar nutrients.
- **"Examples:"** Milk, cheese, yogurt, almond milk, soy milk, etc.

5. **"Fats and Oils:"**

- "**Function:**" Fats are necessary for the absorption of fat-soluble vitamins (A, D, E, and K) , energy storage, and insulation. Healthy fats, like monounsaturated and polyunsaturated fats, can help reduce the risk of heart disease.
- **"Examples:"** Olive oil, avocado, nuts, seeds, butter, etc.

Multiple choice questions with answer

1. What is the primary purpose of nutrition?

A) Weight loss
B) Fuel for the body
C) Building muscle
D) Enhancing taste

Answer: B) Fuel for the body

2. Which nutrient is the body's primary source of energy?

A) Protein
B) Carbohydrates
C) Fat
D) Vitamins

Answer: B) Carbohydrates

3. What is the recommended daily intake of water for adults?

A) 2 liters
B) 4 liters
C) 8 glasses
D) 10 liters

Answer: A) 2 liters

4. Which vitamin is primarily responsible for bone health?

A) Vitamin A
B) Vitamin C
C) Vitamin D
D) Vitamin K

Answer: C) Vitamin D

5. Which mineral is essential for maintaining healthy blood pressure?

A) Calcium
B) Iron
C) Potassium
D) Zinc

Answer: C) Potassium

6. What is the main function of dietary fiber in the body?

A) Provide energy
B) Promote healthy skin
C) Aid in digestion
D) Regulate body temperature

Answer: C) Aid in digestion

7. Which macronutrient provides the highest number of calories per gram?

A) Protein
B) Carbohydrates
C) Fat
D) Fiber

Answer: C) Fat

8. Which of the following is a complete protein source?

A) White rice
B) Beans
C) Eggs
D) Corn

Answer: C) Eggs

9. Which type of fat is considered the healthiest for the body?

A) Trans fat
B) Saturated fat
C) Monounsaturated fat
D) Polyunsaturated fat

Answer: C) Monounsaturated fat

10. What is the role of vitamins in the body?

A) Provide energy
B) Regulate metabolism
C) Build muscle
D) Aid in digestion

Answer: B) Regulate metabolism

11. Which nutrient deficiency can lead to anemia?

A) Vitamin C
B) Vitamin D
C) Iron
D) Calcium

Answer: C) Iron

12. Which food group is the primary source of carbohydrates?

A) Fruits and vegetables
B) Dairy products
C) Meat and poultry
D) Grains

Answer: D) Grains

13. What is the recommended daily intake of fruits and vegetables?

A) 1 serving
B) 3 servings
C) 5 servings
D) 10 servings

Answer: C) 5 servings

14. Which nutrient is essential for the formation of red blood cells?

A) Vitamin A
B) Vitamin B12
C) Vitamin E
D) Vitamin K

Answer: B) Vitamin B12

15. What is the main function of antioxidants in the body?

A) Promote sleep
B) Fight inflammation
C) Regulate blood sugar
D) Provide immediate energy

Answer: B) Fight inflammation

16. Which mineral is crucial for healthy teeth and bones?

A) Magnesium
B) Sodium
C) Fluoride
D) Chromium

Answer: C) Fluoride

17. Which of the following is not a water-soluble vitamin?

A) Vitamin C
B) Vitamin B6
C) Vitamin A
D) Vitamin K

Answer: C) Vitamin A

18. What is the primary role of carbohydrates in the body?

A) Building muscles
B) Providing energy
C) Regulating hormones
D) Strengthening bones

Answer: B) Providing energy

19. Which type of fat is often found in fried and processed foods and should be limited in the diet?

A) Saturated fat
B) Monounsaturated fat
C) Trans fat
D) Polyunsaturated fat

Answer: C) Trans fat

20. Which of the following is a good source of omega-3 fatty acids?

A) Olive oil
B) Salmon
C) Avocado
D) Peanut butter

Answer: B) Salmon

21. What is the recommended daily intake of calcium for adults?

A) 500 mg
B) 1000 mg
C) 2000 mg
D) 5000 mg

Answer: B) 1000 mg

22. Which nutrient deficiency can lead to the condition known as scurvy?

A) Vitamin C
B) Vitamin D
C) Vitamin K
D) Vitamin B6

Answer: A) Vitamin C

23. Which mineral is essential for proper nerve function and muscle contractions?

A) Iron
B) Magnesium
C) Potassium
D) Zinc

Answer: B) Magnesium

24. What is the main function of protein in the body?

A) Provide energy
B) Regulate blood sugar
C) Build and repair tissues
D) Enhance brain function

Answer: C) Build and repair tissues

25. Which vitamin is known as the "sunshine vitamin" because the body can produce it when exposed to sunlight?

A) Vitamin A
B) Vitamin C
C) Vitamin D
D) Vitamin E

Answer: C) Vitamin D

26. Which nutrient is a key component of DNA and RNA?

A) Protein
B) Carbohydrates
C) Nucleic acids
D) Vitamins

Answer: C) Nucleic acids

27. What is the primary role of potassium in the body?

A) Promote healthy skin
B) Regulate blood pressure
C) Provide energy
D) Aid in digestion

Answer: B) Regulate blood pressure

28. Which of the following is a source of soluble fiber?

A) Brown rice
B) Oatmeal
C) Beef
D) Olive oil

Answer: B) Oatmeal

29. Which nutrient is essential for the production of collagen, a protein that supports skin and connective tissues?

A) Vitamin C
B) Vitamin D
C) Vitamin K

D) Vitamin B12

Answer: A) Vitamin C

30. Which mineral is important for maintaining healthy fluid balance in the body?

A) Sodium

B) Calcium

C) Iron

D) Zinc

Answer: A) Sodium

31. Which of the following nutrients is needed in larger quantities in the diet?

A) Micronutrients

B) Macronutrients

C) Phytonutrients

D) Antinutrients

Answer: B) Macronutrients

32. What is the primary role of vitamin K in the body?

A) Enhance vision

B) Promote blood clotting

C) Regulate blood sugar

D) Build strong bones

Answer: B) Promote blood clotting

33. Which nutrient is essential for the production of thyroid hormones?

A) Iodine

B) Potassium

C) Calcium

D) Sodium

Answer: A) Iodine

34. What is the primary function of antioxidants in the body?

A) Regulate blood pressure
B) Promote healthy skin
C) Protect cells from oxidative damage
D) Enhance muscle growth

Answer: C) Protect cells from oxidative damage

35. Which of the following is a good source of vitamin A?

A) Oranges
B) Carrots
C) Nuts
D) Eggs

Answer: B) Carrots

36. Which nutrient is essential for the formation of blood clots and wound healing?

A) Vitamin C
B) Vitamin D
C) Vitamin K
D) Vitamin B6

Answer: C) Vitamin K

37. What is the primary role of phosphorus in the body?

A) Promote healthy hair
B) Build strong bones
C) Regulate blood sugar
D) Produce energy

Answer: D) Produce energy

38. Which nutrient is crucial for the development of a healthy nervous system in infants?

A) Folate
B) Iron
C) Vitamin B12
D) Vitamin D

Answer: D) Vitamin D

39. What is the primary role of folate (folic acid) in the body?

A) Promote healthy skin
B) Regulate blood pressure
C) Support cell division and DNA synthesis
D) Enhance digestion

Answer: C) Support cell division and DNA synthesis

40. Which nutrient is essential for the formation of red blood cells and oxygen transport in the body?

A) Vitamin C
B) Vitamin D
C) Iron
D) Calcium

Answer: C) Iron

41. What is the primary role of vitamin E in the body?

A) Enhance vision
B) Protect cell membranes from damage
C) Regulate blood sugar
D) Aid in digestion

Answer: B) Protect cell membranes from damage

42. Which of the following is a good source of dietary calcium for vegans?

A) Milk
B) Cheese
C) Tofu
D) Salmon

Answer: C) Tofu

43. Which nutrient deficiency can lead to the condition known as rickets?

A) Vitamin C
B) Vitamin D
C) Vitamin K
D) Vitamin B12

Answer: B) Vitamin D

44. What is the primary role of zinc in the body?

A) Enhance brain function
B) Support immune function
C) Regulate blood pressure
D) Provide immediate energy

Answer: B) Support immune function

45. Which of the following foods is a good source of vitamin B12 for vegetarians and vegans?

A) Beef
B) Eggs
C) Spinach
D) Fortified cereals

Answer: D) Fortified cereals

46. Which nutrient is essential for the production of ATP (adenosine triphosphate) , the body's primary energy currency?

A) Vitamin A
B) Vitamin C
C) Vitamin D
D) Vitamin B3 (Niacin)

Answer: D) Vitamin B3 (Niacin

47. What is the primary role of iodine in the body?

A) Regulate blood pressure
B) Enhance vision
C) Support thyroid function
D) Promote healthy skin

Answer: C) Support thyroid function

48. Which nutrient is essential for the formation and maintenance of healthy skin and mucous membranes?

A) Vitamin A
B) Vitamin C
C) Vitamin D
D) Vitamin B6

Answer: A) Vitamin A

49. What is the main function of dietary fats in the body?

A) Provide energy
B) Build muscle
C) Regulate blood pressure
D) Promote healthy hair

Answer: A) Provide energy

50. Which of the following is a good source of vitamin K?

A) Broccoli
B) Oranges
C) Nuts
D) Milk

Answer: A) Broccoli