

Class X - Health and Physical Education

Dietary Considerations and Food Quality

CBSE NOTES

Dietary Considerations and Food Quality - Practice Worksheet

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Practice Questions

1. Explain the importance of dietary planning and how it contributes to health and fitness.

Hint: Refer to the section on Dietary Planning and its benefits.

Solution: Dietary planning is crucial for ensuring that individuals receive adequate nutrition tailored to their age, sex, activity level, and physiological conditions. It involves developing meal plans that are enjoyable, satisfying, and healthy, while also saving energy, time, and money. Proper dietary planning helps in procuring raw materials, preparing meals, and ensuring food quality, thereby reducing wastage. It adds variety to meals and ensures that nutritional requirements are met, which is essential for maintaining health and fitness. For example, adolescents need extra nourishment due to their rapid growth and high activity levels, while elders require soft and easily digestible foods. Dietary planning also considers economic factors, preferring seasonal and local foods that are cheaper and more nutritious. Thus, it plays a pivotal role in promoting overall well-being and preventing malnutrition and illnesses.

2. Discuss the factors affecting dietary planning with examples.

Hint: Consider the various factors listed under 'Factors affecting the Planning'.

Solution: Several factors influence dietary planning, including age, gender, physical activity, physiological state, economic considerations, time and skill, region, religion, culture, food preferences, and sensory appeal. Age affects nutritional needs; for instance, infants need mother's milk, while adolescents require extra nourishment. Gender differences mean men and women have different nutrient requirements, with women needing more iron due to menstruation. Physical activity levels determine energy needs; sedentary jobs require less energy than heavy-duty tasks. Physiological states like pregnancy increase nutritional demands. Economic considerations favor affordable yet nutritious options like seasonal and local foods. Time and skill impact meal preparation, emphasizing the need for preplanning. Region, religion, and culture influence food habits, such as coastal areas consuming more fish. Food preferences and sensory appeal ensure meals are enjoyable and satisfying, enhancing adherence to dietary plans.

3. What are the dietary considerations for sportspersons? Explain the role of carbohydrates, proteins, and fats in their diet.

Hint: Refer to the section on 'Dietary considerations for sportspersons' and the roles of macronutrients.

Solution: Sportspersons require diets that support their high energy and nutritional needs due to intense physical activities. Carbohydrates are the primary energy source, with requirements ranging from 3-10g per kg body weight per day, depending on activity intensity. They replenish glycogen stores, crucial for stamina and performance. Proteins, needed in amounts of 1.2-2.0g per kg body weight, aid in muscle repair and growth, hormone production, and immune function. Fats, though metabolized slowly, are vital for long-duration events and hormone synthesis. However, excessive fat can lead to weight gain. Vitamins and minerals are essential for energy utilization and recovery, while adequate hydration prevents dehydration and maintains performance. Timing of nutrient intake is critical; for example, high-carbohydrate meals before events ensure quick energy release. Thus, a balanced diet tailored to their specific needs is vital for sportspersons' health and performance.

4. Define food quality and discuss the criteria for judging it.

Hint: Look into the 'Food Quality' section and the check points for ensuring food quality.

Solution: Food quality refers to the characteristics that determine a food item's acceptability, including its safety, nutritional value, and sensory attributes. It is judged based on microbiological load, physical parameters, and chemical composition. Physical examination considers size, shape, color, texture, and visual appeal, ensuring the food is free from dirt, cracks, or foreign materials. Microbiological safety involves the absence of harmful bacteria, molds, and pests. Chemical composition checks for adulterants and contaminants. Factors like temperature, air, moisture, and processing methods influence food quality. Preservation techniques and fortification can enhance quality. Regulatory bodies like FSSAI enforce standards to ensure food safety and quality, with marks like AGMARK and ISI indicating compliance. Thus, food quality is a comprehensive measure of a food's safety, nutritional value, and appeal.

5. What is food spoilage? Classify foods based on their shelf life and explain methods to prevent spoilage.

Hint: Refer to the sections on 'Food spoilage' and 'Food preservation'.

Solution: Food spoilage refers to the deterioration of food, making it unfit for consumption due to microbial growth, enzyme activity, or pest infestation. Foods are classified as perishable (e.g., milk, meat), semi-perishable (e.g., some vegetables), and non-perishable (e.g., grains, sugar) based on shelf life. Prevention methods include heat treatment (pasteurization), refrigeration, drying, and adding preservatives like salt, sugar, or chemicals. Radiation can also preserve food by killing microbes. Proper storage reduces spoilage by controlling temperature and moisture. For example, refrigeration slows microbial growth, while drying removes moisture needed for microbial activity. These methods extend shelf life, ensuring food remains safe and nutritious for longer periods.

6. Explain food adulteration, its adverse effects on health, and actions to combat it.

Hint: Consider the 'Food adulteration' section and its health impacts and preventive measures.

Solution: Food adulteration involves adding inferior or harmful substances to food or removing vital components, compromising its safety and quality. It can cause health issues like diarrhea, vomiting, and long-term effects such as liver damage or cancer. Vulnerable groups like children and pregnant women are at higher risk. Combating adulteration involves buying certified products (FSSAI, AGMARK), avoiding suspicious items, raising awareness, and reporting to authorities. Preserving bills aids in complaints. Regulatory bodies like FSSAI test foods and enforce standards, ensuring safe consumption. Public vigilance and adherence to safety marks are crucial in preventing adulteration and protecting health.

7. Discuss the effects of pesticides on health and suggest preventive measures.

Hint: Refer to the 'Effects of pesticides on health' and 'Some preventive measures' sections.

Solution: Pesticides, used in agriculture, can leave harmful residues in food, posing health risks like vomiting, dizziness, and chronic conditions such as cancer or neurological damage. High-risk groups include pesticide handlers and vulnerable populations like children. Preventive measures include using herbal pesticides, washing produce thoroughly, opting for organic foods, and storing pesticides safely. Reading labels and following guidelines minimize exposure. Regulatory bodies set maximum residue limits to ensure safety. Thus, cautious use and awareness are key to reducing pesticide-related health risks.

8. How does sensory appeal influence food acceptance? Provide examples.

Hint: Look into the 'Sensory appeal' and 'Related concepts' sections.

Solution: Sensory appeal, involving taste, smell, appearance, and texture, significantly influences food acceptance. Attractive, aromatic foods are more likely to be consumed. For example, crisp papad and soft bread are preferred for their texture, while ice cream and soup are expected to be chilled and hot, respectively. Taste, including sweet, salty, bitter, and sour, along with flavors like lemony, enhances enjoyment. Satisfying these sensory expectations ensures food is accepted and enjoyed, making it a critical factor in dietary planning and meal preparation.

9. What role do vitamins and minerals play in the diet of sportspersons?

Hint: Refer to the 'Vitamins and minerals' subsection under sportspersons' dietary considerations.

Solution: Vitamins and minerals are vital for sportspersons, aiding in energy utilization, muscle function, and recovery. B vitamins and magnesium are crucial for energy metabolism, while iron and calcium support oxygen transport and bone health. Antioxidants like vitamins A, E, and C prevent cell damage and boost immunity. Adequate intake ensures peak performance, reduces injury risk, and speeds up recovery. Colorful fruits, vegetables, dairy, and whole grains are rich sources, making them essential in a sportsperson's diet for maintaining health and enhancing performance.

10. Explain the importance of water and fluids in maintaining hydration for sportspersons.

Hint: Consider the 'Water and fluids' section under sportspersons' dietary needs.

Solution: Water and fluids are critical for sportspersons to maintain hydration and electrolyte balance, preventing dehydration, which can impair performance and cause heat exhaustion, muscle cramps, and fatigue. Adequate intake, ranging from 2-6 liters daily depending on activity and climate, ensures optimal body function. Beverages like coconut water and fruit juices replenish energy and electrolytes. Proper hydration supports endurance, coordination, and recovery, making it a key component of a sportsperson's diet for sustaining high performance and health.

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