

# iUHB262 – The role of nutrition in trichology

URN – K/617/5615

**Guided Learning Hours: 39**

Learning outcome	Assessment criteria	Taught content to include
LO1 Understand the structure and function of the digestive system	1.1. Describe the structures of the digestive system and their broad functions	<ul style="list-style-type: none"> <li>• Gastrointestinal tract               <ul style="list-style-type: none"> <li>- Mouth</li> <li>- Pharynx</li> <li>- Oesophagus</li> <li>- Stomach</li> <li>- Small intestine</li> <li>- Large intestine</li> <li>- Rectum</li> <li>- Anus</li> </ul> </li> <li>• Accessory structures               <ul style="list-style-type: none"> <li>- Teeth</li> <li>- Tongue</li> <li>- Salivary glands</li> <li>- Liver</li> <li>- Gall bladder</li> <li>- Pancreas</li> </ul> </li> <li>• Processes               <ul style="list-style-type: none"> <li>- Ingestion</li> <li>- Secretion</li> <li>- Mixing and propulsion</li> <li>- Digestion</li> <li>- Absorption</li> <li>- Defecation</li> </ul> </li> </ul>

<p>LO2 Understand the main food groups, their function and differences</p>	<p>2.1. Describe the major food groups and their broad functions</p>	<ul style="list-style-type: none"> <li>• Grains <ul style="list-style-type: none"> <li>- Bread</li> <li>- Pasta</li> <li>- Rice</li> <li>- Cereal</li> <li>- Potatoes</li> <li>- Provides: <ul style="list-style-type: none"> <li>▪ Carbohydrates for energy and fibre for gut motility</li> </ul> </li> </ul> </li> <li>• Fruit and vegetables <ul style="list-style-type: none"> <li>- Wide variety</li> <li>- Provides: <ul style="list-style-type: none"> <li>▪ Vitamins</li> <li>▪ Minerals and fibre for health and vitality</li> </ul> </li> </ul> </li> <li>• Dairy <ul style="list-style-type: none"> <li>- Milk</li> <li>- Cheese</li> <li>- Yoghurt</li> <li>- Provides: <ul style="list-style-type: none"> <li>▪ Protein for muscle tissue development</li> <li>▪ Calcium for strong teeth and bones</li> </ul> </li> </ul> </li> <li>• Meat and protein <ul style="list-style-type: none"> <li>- Meats</li> <li>- Fish</li> <li>- Nuts</li> <li>- Pulses</li> <li>- Eggs</li> <li>- Provides: <ul style="list-style-type: none"> <li>▪ Protein</li> <li>▪ Iron</li> <li>▪ Zinc</li> </ul> </li> </ul> </li> <li>• Fats <ul style="list-style-type: none"> <li>- Oils</li> <li>- Sweets</li> <li>- Cakes</li> <li>- Biscuits</li> <li>- Pastries</li> <li>- Provides:</li> </ul> </li> </ul>
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		<ul style="list-style-type: none"> <li>▪ Very little by way of nutrition and should be eaten sparingly</li> <li>• Calorific value of nutrients <ul style="list-style-type: none"> <li>- Definition of calorie</li> </ul> </li> <li>• Calorific values <ul style="list-style-type: none"> <li>- Carbohydrate</li> <li>- Protein</li> <li>- Fats</li> <li>- Alcohol</li> </ul> </li> </ul>
LO3 Understand the molecular composition of a human cell	3.1. Explain the role of the main constituents that make up the human cell	<ul style="list-style-type: none"> <li>• Macromolecules <ul style="list-style-type: none"> <li>- Proteins</li> <li>- Carbohydrates</li> <li>- Nucleic acids</li> <li>- Lipids</li> <li>- Water</li> </ul> </li> <li>• Other materials <ul style="list-style-type: none"> <li>- Intermediary metabolites</li> <li>- Control substances</li> <li>- Essential elements</li> <li>- Electrolytes</li> </ul> </li> <li>• Transient cell components <ul style="list-style-type: none"> <li>- Nutrients</li> <li>- Wastes</li> </ul> </li> </ul>
LO4 Understand the differences between the biological macromolecules and micromolecules	4.1. Describe the structure, functions and differences between the main biological macromolecules	<ul style="list-style-type: none"> <li>• Proteins <ul style="list-style-type: none"> <li>- Amino acids (monomers)</li> <li>- Dipeptides</li> <li>- Tripeptides</li> <li>- Polypeptides</li> <li>- Functions <ul style="list-style-type: none"> <li>▪ Structural</li> <li>▪ Regulatory</li> <li>▪ Contractile</li> <li>▪ Immunological</li> <li>▪ Transport</li> <li>▪ Catalytic</li> </ul> </li> <li>- Non-essential amino acids</li> </ul> </li> </ul>

		<ul style="list-style-type: none"> <li>▪ Manufactured by transamination</li> <li>▪ Alanine</li> <li>▪ Arginine</li> <li>▪ Aspartic acid</li> <li>▪ Cysteine</li> <li>▪ Glutamic acid</li> <li>▪ Glutamine</li> <li>▪ Glycine</li> <li>▪ Proline</li> <li>▪ Serine</li> <li>▪ Tyrosine</li> <li>▪ Asparagine</li> <li>▪ Selenocysteine</li> <li>- Essential amino acids <ul style="list-style-type: none"> <li>▪ Tryptophan</li> <li>▪ Methionine</li> <li>▪ Valine</li> <li>▪ Threonine</li> <li>▪ Phenylalanine</li> <li>▪ Leucine</li> <li>▪ Isoleucine</li> <li>▪ Lysine</li> <li>▪ Histidine</li> </ul> </li> <li>• Carbohydrates <ul style="list-style-type: none"> <li>- Polysaccharides <ul style="list-style-type: none"> <li>▪ Glycogen</li> <li>▪ Cellulose</li> </ul> </li> <li>- Disaccharides <ul style="list-style-type: none"> <li>▪ Sucrose</li> <li>▪ Lactose</li> </ul> </li> <li>- Monosaccharides <ul style="list-style-type: none"> <li>▪ Glucose</li> <li>▪ Fructose</li> <li>▪ Galactose</li> <li>▪ Deoxyribose</li> <li>▪ Ribose</li> </ul> </li> <li>- Functions <ul style="list-style-type: none"> <li>▪ Structural and energy store functions</li> </ul> </li> </ul> </li> <li>• Lipids</li> </ul>
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	<p>4.2. Describe the main micromolecules and their functions</p>	<ul style="list-style-type: none"> <li>• Vitamins <ul style="list-style-type: none"> <li>- Fat soluble <ul style="list-style-type: none"> <li>▪ A</li> <li>▪ D</li> <li>▪ E</li> <li>▪ K</li> </ul> </li> <li>- Water soluble <ul style="list-style-type: none"> <li>▪ Thiamine (B1)</li> <li>▪ Riboflavin (B2)</li> <li>▪ Niacin (B3)</li> <li>▪ Pantothenic acid (B5)</li> <li>▪ Pyridoxine (B6)</li> <li>▪ Biotin (B7)</li> <li>▪ Folic acid (B9)</li> <li>▪ Cyanocobalamin (B12)</li> <li>▪ Ascorbic acid (C)</li> </ul> </li> </ul> </li> <li>• Minerals</li> </ul>

		<ul style="list-style-type: none"> <li>- Calcium</li> <li>- Phosphorous</li> <li>- Iron</li> <li>- Iodine</li> <li>- Copper</li> <li>- Sodium</li> <li>- Potassium</li> <li>- Chlorine</li> <li>- Magnesium</li> <li>- Sulphur</li> <li>- Zinc</li> <li>- Fluorine</li> <li>- Manganese</li> <li>- Cobalt</li> <li>- Chromium</li> <li>- Selenium</li> </ul>
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<p>LO5 Understand how macromolecules and micromolecules are digested and absorbed</p>	<p>5.1. Describe how the macromolecules and micromolecules are digested and absorbed</p>	<ul style="list-style-type: none"> <li>• Carbohydrate digestion and absorption <ul style="list-style-type: none"> <li>- Mouth <ul style="list-style-type: none"> <li>▪ Salivary amylase</li> <li>▪ Polysaccharides into disaccharides</li> </ul> </li> <li>- Small intestine <ul style="list-style-type: none"> <li>▪ Pancreatic amylase</li> <li>▪ Polysaccharides to disaccharides</li> <li>▪ Disaccharides to monosaccharides</li> <li>▪ Absorbed into blood capillaries of villi</li> </ul> </li> </ul> </li> <li>• Protein digestion and absorption <ul style="list-style-type: none"> <li>- Stomach <ul style="list-style-type: none"> <li>▪ Pepsinogen into pepsin</li> <li>▪ Proteins into polypeptides</li> </ul> </li> <li>- Small intestine <ul style="list-style-type: none"> <li>▪ Chymotrypsin and trypsin</li> <li>▪ Polypeptides into tripeptides and dipeptides</li> </ul> </li> <li>- Peptidases <ul style="list-style-type: none"> <li>▪ Tripeptides and dipeptides into amino acids</li> <li>▪ Absorbed into blood capillaries of villi</li> </ul> </li> </ul> </li> <li>• Lipid digestion and absorption <ul style="list-style-type: none"> <li>- Small intestine <ul style="list-style-type: none"> <li>▪ Bile salts emulsify fats</li> </ul> </li> </ul> </li> </ul>
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<p>LO6 Understand the processes of anabolism and catabolism</p>	<p>6.1. Explain the metabolic processes of anabolism and catabolism</p>	<ul style="list-style-type: none"> <li>• Metabolism <ul style="list-style-type: none"> <li>- Provide energy by chemical oxidation of nutrients (catabolism)</li> <li>- Make new of replacement body substances (anabolism)</li> </ul> </li> <li>• Catabolism <ul style="list-style-type: none"> <li>- Breakdown of large molecules into smaller ones</li> <li>- Release of chemical energy <ul style="list-style-type: none"> <li>▪ Stored as ATP and heat</li> </ul> </li> <li>- Exergonic <ul style="list-style-type: none"> <li>▪ Producing more energy than is consumed</li> </ul> </li> </ul> </li> <li>• Anabolism <ul style="list-style-type: none"> <li>- Synthesis of large molecules from smaller ones</li> <li>- Source of energy <ul style="list-style-type: none"> <li>▪ ATP</li> </ul> </li> <li>- Endergonic <ul style="list-style-type: none"> <li>▪ Consuming more energy than is produced</li> </ul> </li> </ul> </li> <li>• Central metabolic pathways <ul style="list-style-type: none"> <li>- Glycolysis</li> <li>- Citric acid (Krebs) cycle</li> <li>- Oxidative phosphorylation</li> </ul> </li> </ul>
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LO7 Describe and be able to recognise skin and hair conditions caused as a result of nutritional deficiency	7.1. Explain skin and hair conditions caused as a result of vitamin deficiency	<ul style="list-style-type: none"> <li>• Skin and hair disorders associated with vitamin deficiency <ul style="list-style-type: none"> <li>- Vitamin A <ul style="list-style-type: none"> <li>▪ Atrophy and keratinisation of epithelium (dry skin and hair)</li> </ul> </li> <li>- Vitamin B2 (riboflavin) <ul style="list-style-type: none"> <li>▪ Dermatitis and cracking of skin</li> </ul> </li> <li>- Vitamin B3 (niacin) <ul style="list-style-type: none"> <li>▪ Pellagra, characterised by dermatitis (with diarrhoea and psychological disturbances)</li> </ul> </li> <li>- Vitamin B6 (pyridoxine) <ul style="list-style-type: none"> <li>▪ Dermatitis of eyes, nose and mouth</li> </ul> </li> </ul> </li> </ul>
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LO8 Be able to synthesise the role of nutrition in clinical trichology	8.1. Perform nutrition-based case studies on clients	<ul style="list-style-type: none"> <li>• Application of nutritional knowledge in a trichology setting that may: <ul style="list-style-type: none"> <li>- Analyse client-based nutritional data</li> <li>- Evaluate nutritional factors in relation to the health of the skin, hair and scalp</li> <li>- Apply nutritional goal setting principles</li> <li>- Incorporate reflective practice to improve skills, knowledge and clinical effectiveness</li> </ul> </li> </ul>
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<b>Assessment</b>	
Portfolio of evidence	Containing an assignment

<b>Guide to taught content</b>
The content contained within the unit specification is not prescriptive or exhaustive but is intended to provide helpful guidance to teachers and learners with the key areas that will be covered within the unit, and, relating to the kinds of evidence that should be provided for each assessment objective specific to the unit learning outcomes.

**Document History**

<b>Version</b>	<b>Issue Date</b>	<b>Changes</b>	<b>Role</b>
v1	08/08/2019	First published	Qualifications and Regulation Co-ordinator