

Unit 12: Physiological Principles for Health and Social Care

Unit code: A/601/1608

QCF level: 4

Credit value: 15

● Aim

The aim of this unit is to provide a holistic overview of the structure and functioning of the human body as appropriate for those working in health and social care.

● Unit abstract

The focus of this unit is on how the body functions as a whole rather than on detailed anatomy and physiology from a biological perspective. The emphasis is on exploring those aspects of body functioning which impact on care delivered in health and social care settings.

Learners will gain an understanding of the main structures of the body and the appropriate terminology encountered when working with health professionals. Learners need to recognise the names of key structures, their positions in the body and main functions. They will explore the purpose behind gathering routine data from individuals accessing health and social care services as well as routine variations.

● Learning outcomes

On successful completion of this unit a learner will:

- 1 Know the structure and functioning of the human body
- 2 Understand the relationship between body functioning and relevant detailed anatomy and physiology
- 3 Understand how routine data collected in health and social care informs the planning of care for individuals
- 4 Be able to relate routine variations in body structure and functioning to care received by individuals.

Unit content

1 Know the structure and functioning of the human body

Main anatomical features: gross features eg trunk, limbs, head, abdomen, pelvis; skeleton eg names of limb bones, pelvis, regions of vertebral column, bone groups, principles of joints, support, blood cell functions and calcium reservoir of bone; soft tissues eg contractility of muscle, conductivity of nervous tissue, structural function of ligaments and tendons, secretory and absorptive function of epithelial tissues; body organs eg heart, liver, kidney, lungs, position and overall functions, key terminology associated with them eg cardiac, hepatic, renal, pulmonary

Body systems: main structures and functions of eg cardiovascular, respiratory, digestive, excretory, nervous, endocrine, locomotor, integumentary, sensory, reproductive

Functioning: to maintain life (respiration, feeding, excretion); for other activities (sensory perception, movement, coordination, reproduction)

Metabolism: chemical nature of body activity, rate at which energy used; changes in metabolic rate eg during exercise, over lifespan

Growth: production of more cells eg during development, in tumours; increased size of cells eg adipose tissue in obesity; tissue turnover/replacement eg in skin, hair, nails; destruction of tissues eg from wear and tear; depletion of tissues eg from disuse, starvation; as increasing complexity (differentiation and specialisation) eg childhood and adolescent development

Interactions: eg in digestion and transport of nutrients, in proprioception (position and balance), pulmonary functioning, excretion, temperature regulation

2 Understand the relationship between body functioning and relevant detailed anatomy and physiology

Everyday activities: breathing, eating, excreting, physical activity

Detailed anatomy: selected tissues eg muscle, bone, epithelia; cellular structures as appropriate eg cell membrane, chromosomes

Detailed functioning: physiology eg gaseous exchange in lungs, absorption of nutrients, principle of filtration and selective reabsorption in kidneys, metabolic response to exercise

Regulation of internal activities: regulation of eg body temperature, heart rate, respiration rate, blood sugar, urine output

Coordination: role of endocrine system, role of the autonomic nervous system and links to the central nervous system

Homeostasis: principle of feedback loops to raise or lower relevant parameters

3 Understand how routine data collected in health and social care informs the planning of care for individuals

Measures: as relevant eg visual observation, weight/height, temperature, pulse, respiration rate, blood pressure, food intake, fluid intake, fluid output, indicator tests on urine (eg glucose, protein); recording of measures: correct units, tabulated, charts, graphs, interpretation of records

Information: as relevant to measurement taken eg heart rate, peak flow, over/under weight, hydration, diabetic stability, infection

Accuracy: sources of error, reliability, validity; concept of normal range, hypo- and hyper-values

Derived measures: as relevant eg Body Mass Index (BMI), fluid balance, nutritional health (intake against requirement eg energy balance); monitoring (regular recording) variations in measures over time

Care: monitoring course of health/disorder/disease, care planning, care routines, professionals involved, reporting data to professionals, recognising need for emergency responses

Ethical considerations: when taking measures and using data eg individual rights, dignity, privacy

4 Be able to relate routine variations in body structure and functioning to care received by individuals

Age: comparison of structural and functional changes between young adulthood, later life and old age; if appropriate, developmental change during childhood and adolescence

Effects/impact:

- *physical:* absence, loss or impaired function of tissues, organs and systems eg incontinence, ataxia; degeneration of structure eg bone in osteoporosis, cartilage in osteoarthritis, pulmonary tissue in emphysema, neural tissue in Parkinson's disease
- *psychological:* effects eg confidence, cognitive abilities, invasion of privacy (eg assistance with toileting, bathing)
- *social:* effects eg isolation due to hearing loss, loss of mobility, autonomy

Common disorders: as relevant eg diabetes, cardiovascular disease, autoimmune related, pulmonary disease, inherited, congenital, degenerative

Infections: as encountered in eg wounds, respiratory tract, urinary tract; signs and symptoms related to physiology; principles of an immunological response and factors that influence it eg age, nutritional status, immunosuppression from cancer therapy or underlying disease states

Routine care: activities of daily living; general consequences for care or treatment eg by drugs, surgery; infection control; rehabilitation; principles of palliative care

Learning outcomes and assessment criteria

Learning outcomes On successful completion of this unit a learner will:	Assessment criteria for pass The learner can:
LO1 Know the structure and functioning of the human body	1.1 outline the main anatomical features of the human body 1.2 discuss how body systems interact to ensure the body functions and grows
LO2 Understand the relationship between body functioning and relevant detailed anatomy and physiology	2.1 explain normal body responses to everyday activities 2.2 discuss how body responses are explained by cellular and tissue structure and physiology 2.3 explain how the body coordinates its internal activities
LO3 Understand how routine data collected in health and social care informs the planning of care for individuals	3.1 explain the recording and use of routine measures in health and social care 3.2 assess how routine measures provide information about body functioning 3.3 examine how information about body functioning may inform care planning for individuals
LO4 Be able to relate routine variations in body structure and functioning to care received by individuals.	4.1 explain how age may affect body structure and functioning 4.2 assess the impact of common disorders on body structure and functioning 4.3 relate the effects of common disorders and infection to the care routinely given to individuals affected by them.

Guidance

Links

This unit has links with, for example:

- *Unit 11: The Role of Public Health in Health and Social Care*
- *Unit 18: Complementary Therapies*
- *Unit 29: Health Promotion.*

This unit also has links with the National Occupational Standards in Health and Social Care. See *Annexe B* for mapping.

Essential requirements

Access to anatomical models of the skeleton, spine, torso and body organs will be needed to demonstrate the nature and proportions of body structures in relation to external features.

Employer engagement and vocational contexts

Guest speakers involved in providing care for individuals who are experiencing physiological disorders or infections would be beneficial to provide a vocational context to the delivery of the unit.