

**Level 3
Diploma in Complementary Therapies**

Unit 346 - Knowledge of Anatomy, Physiology and Pathology for Complementary Therapies

Recommended guided learning hours – 90

QCA Qualification Accreditation Number – T/501/9101

Learning Outcome	Assessment Criteria	Taught Content
<p>1. Be able to identify the organisation of the body</p>	<p>1.1 Describe, in relationship to the organisation of the body:</p> <ul style="list-style-type: none"> - Type - Location - Structure - Function - Growth - Repair - Pathologies 	<p>1.1.1 Define the terms: ▪ Atom ▪ Molecule</p> <p>1.1.2 Describe the organisation of the body To include: ▪ Chemicals ▪ Cells ▪ Tissues ▪ Organs ▪ Systems ▪ Organisms</p> <p>1.1.3 Explain (with the aid of a diagram) the structures of the cells and their function To include: Cell Membrane ▪ Nuclear Membrane ▪ Nucleus ▪ Nucleolus Cytoplasm ▪ Centrosome ▪ Golgi Apparatus ▪ Mitochondria ▪ Lysosome ▪ Endoplasmic Reticulum ▪ Ribosome ▪ Centrosome ▪ Centromere ▪ Vacuoles ▪ Centrioles ▪ Chromatids</p> <p>1.1.4 Define the following terms in relation to the cell To include: ▪ Movement ▪ Respiration ▪ Sensitivity ▪ Growth ▪ Reproduction ▪ Excretion ▪ Metabolism ▪ Anabolism ▪ Catabolism</p> <p>1.1.5 Explain the process of Mitosis To include: ▪ Prophase ▪ Metaphase ▪ Anaphase ▪ Telophase ▪ Interphase</p>

		<p>1.1.6 Explain how substances enter and leave the cell To include:</p> <ul style="list-style-type: none"> ▪ Active Transport ▪ Diffusion ▪ Dissolution ▪ Filtration ▪ Osmosis ▪ Phagocytosis ▪ Pinocytosis <p>1.1.7 Define Histology</p> <p>1.1.8 Explain the structure and function of the main types of tissue in the body To include the following, giving examples:</p> <ul style="list-style-type: none"> ◆ Epithelial tissue ▪ Simple: ▪ Squamous ▪ Cuboidal ▪ Ciliated ▪ Columnar ▪ Compound: ▪ Transitional ▪ Stratified ◆ Nervous tissue ◆ Muscular tissue ▪ Striated ▪ Non-striated ▪ Cardiac ◆ Connective tissue ▪ Areolar ▪ Adipose ▪ Cartilage (white fibrous, yellow elastic, hyaline) ▪ Bone ▪ Blood ▪ Lymph ◆ Membranes ▪ Serous ▪ Mucous ▪ Synovial <p>1.1.9 Define the following To include:</p> <ul style="list-style-type: none"> ▪ Anatomy ▪ Physiology ▪ Pathology ▪ The inflammatory response ▪ The acute condition ▪ The chronic condition ▪ The emergency condition <p>1.1.10 Define anatomical positions/ directional terms/body planes To include:</p> <p>Anatomical regional terms</p> <ul style="list-style-type: none"> ▪ Abdominal ▪ Axillary ▪ Brachial ▪ Buccal ▪ Calcaneal ▪ Carpal ▪ Celiac ▪ Cephalic ▪ Cervical ▪ Costal ▪ Cranial ▪ Crural ▪ Cubital ▪ Cutaneous ▪ Femoral ▪ Forearm ▪ Frontal ▪ Gluteal ▪ Groin ▪ Inguinal ▪ Lumbar ▪ Mammary ▪ Occipital ▪ Ophthalmic ▪ Oral ▪ Orbital ▪ Palmar ▪ Patellar ▪ Pectoral ▪ Pedal ▪ Pelvic ▪ Perineal ▪ Plantar ▪ Popliteal ▪ Sacral ▪ Tarsal ▪ Thoracic ▪ Umbilical
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		<p>Anatomical directional terms</p> <ul style="list-style-type: none"> ▪ Superior ▪ Caudal/Inferior ▪ Anterior/Ventral ▪ Posterior/Dorsal ▪ Medial ▪ Lateral ▪ Proximal ▪ Distal ▪ Superficial ▪ Deep ▪ Parietal ▪ Visceral ▪ Ipsilateral ▪ Contralateral <p>Body planes</p> <ul style="list-style-type: none"> ▪ Sagittal ▪ Coronal/Frontal ▪ Transverse
2. Be able to identify the skin, hair and nails and common pathologies	<p>2.1 Describe, in relationship to the skin, hair and nails:</p> <ul style="list-style-type: none"> - Type - Location - Structure - Function - Growth - Repair - Pathologies 	<p>2.1.1 Define integumentary system</p> <p>2.1.2 Explain (with the aid of a diagram) the position and function of the following parts of the skin To include:</p> <ul style="list-style-type: none"> ◆ Epidermis <ul style="list-style-type: none"> ▪ Stratum Corneum ▪ Stratum Lucidum ▪ Stratum Granulosum ▪ Stratum Spinosum/Malphigian layer ▪ Stratum Germinativum/Basal layer ▪ Melanocytes ◆ Dermis <ul style="list-style-type: none"> ▪ Blood supply ▪ Lymphatic supply ▪ Hair follicle ▪ Hair ▪ Sebaceous gland ▪ Sweat glands: eccrine and apocrine ▪ Sensory nerve endings (touch, heat, cold, pain) ▪ Dermal Papilla ▪ Collagen ▪ Elastin ▪ Histiocytes ▪ Mast Cells ▪ Fibroblasts ▪ Erector pili muscle ◆ Subcutaneous layer <p>2.1.3 Explain the functions of the skin To include:</p> <ul style="list-style-type: none"> ▪ Secretion ▪ Heat Regulation ▪ Absorption ▪ Protection ▪ Elimination ▪ Sensation ▪ Vitamin D formation (7-dehydro-cholesterol) ▪ Melanin Formation <p>2.1.4 Explain the growth and repair cycles of the skin To include:</p> <ul style="list-style-type: none"> ▪ Keratinisation (drying/hardening of cells) ▪ Desquamation ▪ Wound healing <p>2.1.5 Explain and recognise skin types To include:</p> <ul style="list-style-type: none"> ▪ Dry ▪ Oily ▪ Combination ▪ Mature ▪ Young

		<p>2.1.6 Explain skin diseases, disorders and conditions and when they are contraindicated to treatment</p> <ul style="list-style-type: none"> ▪ Recognition points ▪ Whether congenital, bacterial, viral, fungal or an infestation and whether the condition is contraindicated ◆ Congenital <ul style="list-style-type: none"> ▪ Eczema ▪ Psoriasis ◆ Bacterial <ul style="list-style-type: none"> ▪ Acne Vulgaris ▪ Acne Rosacea ▪ Boils ▪ Carbuncles ▪ Folliculitis ▪ Impetigo ◆ Viral <ul style="list-style-type: none"> ▪ Herpes simplex ▪ Herpes zoster ▪ Verrucae ▪ Warts ◆ Fungal <ul style="list-style-type: none"> ▪ Candida ▪ Tinea corporis ▪ Tinea Pedis ◆ Parasitical infestation <ul style="list-style-type: none"> ▪ Pediculosis – capitis, corporis, pubis ▪ Scabies ◆ Pigmentation disorders <ul style="list-style-type: none"> ▪ Albinism ▪ Chloasma ▪ Dermatosi Papulosa Nigra ▪ Ephelides ▪ Lentigo ▪ Naevae ▪ Papilloma ▪ Port wine stain ▪ Vitiligo ◆ General disorders <ul style="list-style-type: none"> ▪ Allergic reaction ▪ Blisters ▪ Broken capillaries ▪ Comedones ▪ Cyst ▪ Crow’s feet ▪ Dermatitis ▪ Dehydrated skin ▪ Keloid scars ▪ Milia ▪ Sensitive skin ▪ Striae ▪ Thin skin ▪ UV damage ▪ Urticaria ▪ Verrucae filliformis (skin tags) ▪ Xanthomas <p>2.1.7 Understand the different skin cancers and their possible causes To include:</p> <ul style="list-style-type: none"> ▪ Basal Cell Carcinoma ▪ Squamous Cell Carcinoma ▪ Malignant Melanoma <p>2.1.8 Explain the position and function of the following nail structures To include:</p> <ul style="list-style-type: none"> ▪ Free edge ▪ Hyponychium ▪ Eponychium ▪ Paronychium ▪ Lunula ▪ Mantle ▪ Cuticle ▪ Nail plate ▪ Nail bed ▪ Nail fold ▪ Matrix ▪ Nail wall
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<p>3. Be able to identify the skeletal system and common pathologies</p>	<p>3.1 Describe, in relationship to the skeletal system:</p> <ul style="list-style-type: none"> - Type - Location - Structure - Function - Growth - Repair - Pathologies 	<p>3.1.1 Define the skeletal system To include:</p> <ul style="list-style-type: none"> ▪ Axial skeleton ▪ Appendicular skeleton <p>3.1.2 Explain the functions of the skeletal system To include:</p> <ul style="list-style-type: none"> ▪ Support framework ▪ Provides attachments for muscles ▪ Forms joints to provide movement ▪ Forms erythrocytes in the bone marrow ▪ Stores calcium ▪ Protection <p>3.1.3 Explain the structure of bone tissue and where it is found in the body To include:</p> <ul style="list-style-type: none"> ▪ Compact ▪ Cancellous ▪ Long ▪ Short ▪ Flat ▪ Irregular ▪ Sesamoid ◆ Give examples of where in the body they would be found <p>3.1.4 Define the term ligament(s) and state where they are found</p> <p>3.1.5 Explain the position of the bones of the skeleton To include:</p> <ul style="list-style-type: none"> ◆ Cranium ▪ Parietal ▪ Frontal ▪ Ethmoid ▪ Sphenoid ▪ Occipital ▪ Temporal ◆ Facial ▪ Nasal ▪ Zygomatic ▪ Maxilla ▪ Lacrimal ▪ Turbinator ▪ Palatine ▪ Mandible ▪ Vomer ▪ Hyoid ◆ Vertebrae ▪ 7 Cervical ▪ 12 Thoracic ▪ 5 Lumbar ▪ 5 Sacrum ▪ 4 Coccyx ◆ Shoulder Girdle ▪ Scapula ▪ Clavicle ◆ Thoracic Cage ▪ Ribs ▪ Sternum ◆ Pelvic Girdle ▪ Innominate bones: Ischium ▪ Ilium ▪ Pubis ◆ Upper Limb ▪ Humerus ▪ Ulna ▪ Radius ▪ Carpals: Scaphoid, Lunate, Triquetral, Pisiform, Trapezium, Trapezoid, Capitate, Hamate ▪ Metacarpals ▪ Phalanges
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		<p>♦ Lower Limb</p> <ul style="list-style-type: none"> ▪ Femur ▪ Tibia ▪ Fibula ▪ Patella ▪ Tarsals: Talus, Calcaneus, Navicular, Cuneiforms (Medial, Intermediate, Lateral), Cuboid ▪ Metatarsals ▪ Phalanges <p>3.1.6 Explain different types of joints and where they occur in the body To include:</p> <ul style="list-style-type: none"> ▪ Fixed/fibrous ▪ Slightly moveable/cartilaginous ▪ Freely moveable/synovial ▪ Ball and Socket ▪ Condylod ▪ Hinge ▪ Pivot ▪ Gliding ▪ Saddle <p>3.1.7 Recognise and give possible causes of postural deformities To include:</p> <ul style="list-style-type: none"> ▪ Congenital ▪ Environmental ▪ Traumatic ▪ Kyphosis ▪ Lordosis ▪ Scoliosis <p>3.1.8 Describe the growth and repair of the skeletal system To include:</p> <ul style="list-style-type: none"> ▪ Osteoblasts ▪ Osteocytes ▪ Osteoclasts ▪ Epiphysis ▪ Diaphysis ▪ Periosteum ▪ Ossification <p>3.1.9 Explain and recognise the symptoms, causes and effects of the following diseases and disorders of the skeletal system To include:</p> <ul style="list-style-type: none"> ▪ Arthritis ▪ Ankylosing spondylitis ▪ Cancer ▪ Carpal Tunnel Syndrome ▪ Cervical spondylitis ▪ Fractures ▪ Ganglion ▪ Gout ▪ Osteo Arthritis ▪ Osteoporosis ▪ Prolapsed intervertebral (slipped) disc ▪ Rheumatoid Arthritis ▪ Stress ▪ Synovitis ▪ Tooth disorders ▪ Whiplash
<p>4. Be able to identify the muscular system and common pathologies</p>	<p>4.1 Describe, in relationship to the muscular system:</p> <ul style="list-style-type: none"> - Type - Location - Structure - Function - Growth - Repair - Pathologies 	<p>4.1.1 Define the muscular system</p> <p>4.1.2 Explain the structure and function of the different types of muscle with examples To include:</p> <ul style="list-style-type: none"> ▪ Voluntary/skeletal (striated) ▪ Involuntary/smooth (non-striated) ▪ Cardiac <p>4.1.3 Explain the following terms in relation to the muscular system To include:</p> <ul style="list-style-type: none"> ▪ Action ▪ Agonist ▪ Antagonist ▪ Attachment ▪ Belly ▪ Contractibility ▪ Elasticity ▪ Excitability ▪ Extensibility ▪ Fatigue ▪ Fascia ▪ Insertion

		<ul style="list-style-type: none"> ▪ Levers ▪ Origin ▪ Tendon ▪ Tone ▪ Tension ▪ Flexion ▪ Extension ▪ Abduction ▪ Adduction ▪ Rotation ▪ Supination ▪ Pronation ▪ Dorsiflexion ▪ Plantarflexion ▪ Eversion ▪ Inversion ▪ Circumduction ▪ Protraction ▪ Retraction ▪ Depression ▪ Elevation <p>4.1.4 Explain muscular contraction To include:</p> <ul style="list-style-type: none"> ▪ How a muscle works ▪ How it provides movement ▪ Isotonic ▪ Isometric ▪ How a muscle knows when to contract ▪ The source of energy to create a contraction ▪ Factors affecting muscle tone ▪ Different stages of contraction, i.e. tone and relaxation ▪ Over contraction, i.e. causes of muscle tension and muscle fatigue ▪ The formation of lactic acid ▪ Circulation and muscle health <p>4.1.5 Explain the position (with the aid of diagrams) and action of the following muscles:</p> <p>♦ Trunk/torso</p> <ul style="list-style-type: none"> ▪ Sternocleidomastoid ▪ Splenius Capitis ▪ Levator scapulae ▪ Trapezius ▪ Erector Spinae ▪ Supraspinatis ▪ Infraspinatis ▪ Teres Major ▪ Teres Minor ▪ Subscapularis ▪ Rhomboid Major and Minor ▪ Serratus Anterior ▪ Latissimus Dorsi ▪ Gluteus Medius ▪ Gluteus Maximus ▪ Gluteus Minimus ▪ Pectoralis Major and Minor ▪ Rectus Abdominus ▪ External Oblique ▪ Internal Oblique ▪ Transversus Abdominus ▪ Quadratus Lumborum ▪ Intercostals <p>♦ Arm/Hand</p> <ul style="list-style-type: none"> ▪ Deltoid ▪ Biceps ▪ Triceps ▪ Brachialis ▪ Coraco Brachialis ▪ Brachioradialis ▪ Pronator Teres ▪ Supinator R radii Brevis ▪ Flexor Carpi Radialis ▪ Palmaris Longus ▪ Extensor Carpi Radialis ▪ Extensor Carpi Ulnaris ▪ Flexor Carpi Ulnaris ▪ Flexor Carpi Digitorum ▪ Extensor Carpi Digitorum ▪ Extensor Pollicis Longus ▪ Flexor Pollicis Brevis ▪ Abductor Pollicis Brevis ▪ Flexor Digitorum Superficialis ▪ Muscles of Thenar Eminence ▪ Muscles of Hypothenar Eminence ▪ Palmar Aponeurosis ▪ Tendons of Extensor Digitorum ▪ Flexor Digitorum Profundus
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		<p>◆ Upper Leg/Thigh</p> <ul style="list-style-type: none"> ▪ Iliacus ▪ Psoas ▪ Quadriceps: Rectus Femoris, Vastus Lateralis, Vastus Medialis, Vastus Intermedius ▪ Hamstrings: Biceps Femoris, Semimembranosus, Semitendinosus ▪ Adductor Longus ▪ Adductor Magnus ▪ Adductor Brevis ▪ Gracilis ▪ Sartorius ▪ Piriformis ▪ Gluteus Maximus ▪ Gluteus Medius ▪ Gluteus Minimus <p>◆ Lower Leg/Foot</p> <ul style="list-style-type: none"> ▪ Gastrocnemius ▪ Soleus ▪ Peroneus Longus ▪ Peroneus Brevis ▪ Tibialis Anterior ▪ Tibialis Posterior ▪ Extensor Digitorum Longus ▪ Extensor Hallucis Longus ▪ Flexor Digitorum Longus ▪ Peroneus Tertius ▪ Digitorum Brevis ▪ Abductor Hallucis ▪ Achilles Tendon ▪ Flexor Hallucis Longus <p>◆ Face, neck and scalp</p> <ul style="list-style-type: none"> ▪ Occipitalis ▪ Frontalis ▪ Procerus nasi ▪ Nasalis ▪ Levator Labii Superioris ▪ Levator Anguli Oris ▪ Zygomaticus ▪ Orbicularis Oris ▪ Mentalis ▪ Depressor Labii Inferioris ▪ Depressor Anguli Oris ▪ Buccinator ▪ Risorius ▪ Medial and Lateral Pterygoids ▪ Masseter ▪ Temporalis ▪ Orbicularis Oculi ▪ Levator palpebrae ▪ Sternocleidomastoid ▪ Splenius capitis ▪ Trapezius ▪ Platysma <p>4.1.6 Describe the growth and repair of the muscular system (see 1.1.4 The cell)</p> <p>4.1.7 Explain the cause and effect of the following muscular conditions: To include:</p> <ul style="list-style-type: none"> ▪ Adhesions ▪ Adhesive capsulitis (frozen shoulder) ▪ Atony ▪ Atrophy ▪ Achilles tendonitis ▪ Back pain e.g. Lumbago, Rheumatism ▪ Bursitis ▪ Cramp ▪ Deltoid bursitis ▪ Fibromyalgia ▪ Housemaid's knee ▪ Lateral epicondylitis (tennis elbow) ▪ Medial epicondylitis (golfer's elbow) ▪ Microtrauma ▪ Muscle Fatigue ▪ Myositis ▪ Overuse ▪ Repetitive Strain Injury/syndrome ▪ Rupture ▪ Shin splints ▪ Spasm ▪ Spasticity ▪ Sprain ▪ Strain ▪ Stress ▪ Tendonitis
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<p>5. Be able to identify the nervous system and common pathologies</p>	<p>5.1 Describe, in relationship to the nervous system:</p> <ul style="list-style-type: none"> - Type - Location - Structure - Function - Growth - Repair - Pathologies 	<p>5.1.1 Define the nervous system</p> <p>5.1.2 Explain the structure and functions of the following parts of the nervous system: To include:</p> <ul style="list-style-type: none"> ▪ Neurone ▪ Motor Neurone ▪ Sensory Neurone ▪ Mixed Nerve ▪ Dendrite ▪ Axon ▪ Synapse ▪ Neurilemma ▪ Nodes of Ranvier ▪ White Matter ▪ Grey Matter ▪ Myelin Sheath ▪ End Feet/Axon Terminals ▪ Ganglia ▪ Reflex Arc <p>5.1.3 Explain the structure and functions of the Central Nervous System (CNS), the Peripheral and the Autonomic Nervous System (ANS) To include:</p> <ul style="list-style-type: none"> ◆ Central Nervous System ▪ Brain ▪ Spinal Cord ◆ Peripheral Nervous System ▪ 12 pairs of cranial nerves ▪ 31 pairs of spinal nerves ▪ 8 cervical ▪ 12 thoracic ▪ 5 lumbar ▪ 5 sacral ▪ 1 coccygeal ▪ Brachial plexus ▪ Lumbar plexus ▪ Sacral plexus ◆ Autonomic Nervous System ▪ Sympathetic ▪ Parasympathetic <p>5.1.4 Explain the effect of stress on the nervous system</p> <ul style="list-style-type: none"> ▪ Demonstrate the way in which stress affects the fear, fight, flight syndrome ▪ Describe the way in which various parts of the sympathetic and parasympathetic nervous systems can be affected by stress and possible diseases and disorders caused by stress <p>5.1.5 Briefly explain the structure and function of the brain and spinal cord To include:</p> <ul style="list-style-type: none"> ◆ Brain ▪ Meninges – Pia, Arachnoid and Dura mater ▪ Cerebrospinal Fluid ▪ Cerebrum ▪ Cerebellum ▪ Pons varolii ▪ Medulla Oblongata ▪ Hypothalamus ▪ Thalamus ▪ Brain Stem
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		<p>♦ Spinal cord</p> <ul style="list-style-type: none"> ▪ White Matter ▪ Grey Matter ▪ Dura, Arachnoid and Pia Mater ▪ Cerebrospinal Fluid <p>5.1.6 Explain how a nerve impulse is created To include:</p> <ul style="list-style-type: none"> ▪ Changes in temperature, pressure and chemicals ▪ Neurotransmitters ▪ Potassium and sodium ions <p>5.1.7 Describe the growth and repair of the nervous system (see 1.1.4 The cell)</p> <p>5.1.8 Explain the causes and effects of diseases and disorders of the nervous system To include:</p> <ul style="list-style-type: none"> ▪ Alcohol abuse ▪ Bell's palsy ▪ Cancer ▪ Cerebral Palsy ▪ Depression – clinical, bipolar affective disorder, seasonal affective disorder (SAD), post-natal ▪ Drug abuse ▪ Epilepsy ▪ Headache ▪ Migraine ▪ Motor Neurone Disease ▪ Multiple Sclerosis ▪ Myalgic Encephalomyelitis (ME) ▪ Neuralgia ▪ Neuritis ▪ Parkinson's Disease ▪ Sciatica ▪ Stress ▪ Stroke ▪ Transient ischaemic attack (TIA)
<p>6. Be able to identify the endocrine system and common pathologies</p>	<p>6.1 Describe, in relationship to the endocrine system:</p> <ul style="list-style-type: none"> - Type - Location - Structure - Function - Growth - Repair - Pathologies 	<p>6.1.1 Define the endocrine system</p> <p>6.1.2 Explain (with the aid of a diagram) the position of the main Endocrine glands, hormones secreted and the result of hypo and hyper secretion of each To include the following:</p> <p>♦ Pituitary</p> <p><i>Posterior Lobe</i></p> <ul style="list-style-type: none"> ▪ Oxytocin ▪ Antidiuretic hormone (ADH or vasopressin) <p><i>Anterior lobe</i></p> <ul style="list-style-type: none"> ▪ Prolactin ▪ Human growth Hormone (HGH) ▪ Thyroid Stimulating Hormone (TSH) ▪ Adrenocorticotrophin Hormone (ACTH)

		<ul style="list-style-type: none"> ▪ Luteinising Hormone (LH) ▪ Follicle Stimulating Hormone (FSH) ▪ Interstitial cell stimulating Hormone (ICH) ▪ Melanin Stimulating Hormone (MSH) ◆ Thyroid gland ▪ Thyroxin ▪ Triiodothyronine ▪ Calcitonin ◆ Parathyroids ▪ Parathormone ◆ Thymus ▪ Thymosin ◆ Pineal ▪ Melatonin ◆ Pancreas - Islets of Langerhans ▪ Insulin ▪ Glucagon ◆ Adrenal medulla ▪ Adrenalin (Epinephrine) ▪ Noradrenalin ◆ Adrenal cortex ▪ Mineralocorticoids - Aldosterone ▪ Glucocorticoids – Cortisone, Cortisol ▪ Sex hormones – Androgens, Progesterone/oestrogen ◆ Ovaries ▪ Oestrogen ▪ Progesterone ◆ Testes ▪ Testosterone <p>6.1.3 Explain the effects of hormones on the body</p> <ul style="list-style-type: none"> ▪ To include knowledge of the effects of specific hormones on the body at puberty, pregnancy, menopause and during the menstrual cycle
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<p>7. Be able to identify the respiratory system and common pathologies</p>	<p>7.1 Describe, in relationship to the respiratory system:</p> <ul style="list-style-type: none"> - Type - Location - Structure - Function - Growth - Repair - Pathologies 	<p>7.1.1 Define the respiratory system</p> <p>7.1.2 Explain the structure of the respiratory system and the function of each organ To include:</p> <ul style="list-style-type: none"> ▪ Nose ▪ Nasal cavity ▪ Mouth ▪ Pharynx ▪ Larynx ▪ Trachea ▪ Bronchi ▪ Bronchioles ▪ Alveoli ▪ Lungs (including lobes) ▪ Ribs ▪ Pleura (visceral, parietal, pleural cavity) ▪ Diaphragm ▪ Intercostal muscles <p>7.1.3 Explain external respiration, i.e. the process and mechanism of breathing/ventilation To include:</p> <ul style="list-style-type: none"> ▪ Inhalation and the organs involved ▪ Expiration and the organs involved ▪ Process of diffusion in the alveoli

		<p>7.1.4 Explain internal respiration</p> <ul style="list-style-type: none"> ▪ Describe the way in which the transport and exchange of gases takes place between the cells and the circulatory system <p>7.1.5 Explain the chemical control of the respiration</p> <p>To include: ▪ Position, function and role of the chemo-receptors</p> <p>7.1.6 Explain nervous control of respiration</p> <p>To include:</p> <ul style="list-style-type: none"> ▪ Role of the brain, i.e. the pons varolii and medulla oblongata in the process of respiration <p>7.1.7 Explain the process of pulmonary circulation and the structures involved</p> <p>To include:</p> <ul style="list-style-type: none"> ▪ The Heart ▪ Pulmonary artery ▪ Pulmonary vein ▪ Lungs ▪ Pulmonary alveoli ▪ Process of gaseous exchange <p>7.1.8 Define modified respiratory movements</p> <p>To include:</p> <ul style="list-style-type: none"> ▪ Crying ▪ Coughing ▪ Hiccoughs ▪ Laughing ▪ Sighing ▪ Sneezing ▪ Talking ▪ Yawning <p>7.1.9 Explain the interrelationship of the respiratory system with other systems of the body</p> <p>To include: ▪ Circulatory system ▪ Nervous system ▪ Muscular system</p> <p>7.1.10 Describe the growth and repair of the respiratory system (see 1.1.4 The cell)</p> <p>7.1.11 Explain the causes and effects of diseases and disorders of the respiratory system</p> <p>To include:</p> <ul style="list-style-type: none"> ▪ Asthma ▪ Bronchitis ▪ Cancer ▪ Common cold ▪ Cough ▪ Emphysema ▪ Hay fever ▪ Influenza ▪ Laryngitis ▪ Pleurisy ▪ Pharyngitis ▪ Pneumonia ▪ Pulmonary Embolism ▪ Rhinitis ▪ Sinusitis ▪ Smoking ▪ Stress ▪ Tonsillitis ▪ Tuberculosis (TB)
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<p>8. Be able to identify the cardiovascular system and common pathologies</p>	<p>8.1 Describe, in relationship to the cardiovascular system:</p> <ul style="list-style-type: none"> - Type - Location - Structure - Function - Growth - Repair - Pathologies 	<p>8.1.1 Define the cardiovascular system</p> <p>8.1.2 Explain the function and composition of blood and its components To include:</p> <ul style="list-style-type: none"> ▪ Erythrocytes ▪ Leucocytes ▪ Thrombocytes (Platelets) ▪ Plasma and plasma proteins ▪ Transportation ▪ Protection ▪ Regulation of temperature <p>8.1.3 Describe the vessels in which it is carried and their characteristics To include:</p> <ul style="list-style-type: none"> ▪ Arteries ▪ Arterioles ▪ Veins ▪ Venules ▪ Capillaries <p>8.1.4 Explain the position of the main arteries and veins of the body To include:</p> <ul style="list-style-type: none"> ◆ Main arteries of the head and neck ▪ Innominate ▪ Common Carotid ▪ Internal Carotid ▪ External Carotid ▪ Facial ▪ Occipital ▪ Superficial Temporal ◆ Main veins of the head and neck ▪ Posterior External Jugular ▪ Occipital ▪ Superficial Temporal ▪ Maxillary ▪ Anterior Facial ▪ Common Facial ▪ Internal Jugular ▪ External Jugular ◆ Main arteries of the body ▪ Coronary Artery ▪ Ascending Aorta ▪ Descending Aorta ▪ Left Common Carotid ▪ Left Subclavian ▪ Right Common Carotid ▪ Right Subclavian ▪ Intercostal ▪ Pulmonary ▪ Right Hepatic ▪ Splenic ▪ Renal ▪ Superior Mesenteric ▪ Right Iliac ▪ Inferior Mesenteric ▪ Left Iliac ▪ Vertebral ▪ Axillary ▪ Brachial ▪ Right Ulnar ▪ Left Ulnar ▪ Right Radial ▪ Left Radial ▪ Right Deep Palmar Arch ▪ Left Deep Palmar Arch ▪ Right Superficial Palmar Arch ▪ Left Superficial Palmar Arch ▪ External Iliac ▪ Left Femoral ▪ Right Femoral ▪ Left Popliteal ▪ Right Popliteal ▪ Left Anterior Tibial ▪ Right Anterior Tibial ▪ Left Posterior Tibial ▪ Right Posterior Tibial ▪ Plantar Arch ▪ Digital arteries ◆ Main veins of the body ▪ Inferior Vena Cava ▪ Pulmonary ▪ Right Hepatic ▪ Hepatic Portal ▪ Splenic ▪ Right Renal ▪ Right Iliac ▪ Left Iliac ▪ Right Axillary ▪ Left Axillary ▪ Right Brachial ▪ Left Brachial ▪ Right Basilic ▪ Left Basilic ▪ Right Cephalic
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		<ul style="list-style-type: none"> ▪ Left Cephalic ▪ Right Subclavian ▪ Left Subclavian ▪ Long Saphenous ▪ Left Short Saphenous ▪ Right Short Saphenous ▪ Dorsal Venous Arch ▪ Left Femoral ▪ Right Femoral ▪ Left Popliteal ▪ Right Popliteal ▪ Right Posterior Tibial ▪ Left Posterior Tibial ▪ Right Anterior Tibial ▪ Left Anterior Tibial <p>8.1.5 Explain the structure and function of the heart, the vessels entering and leaving the heart and the cardiac cycle</p> <p>To include:</p> <ul style="list-style-type: none"> ▪ Superior Vena Cava ▪ Inferior Vena Cava ▪ Right Atrium ▪ Tricuspid Valve ▪ Right Ventricle ▪ Pulmonary Valve ▪ Pulmonary Artery ▪ Septum ▪ Pulmonary Veins ▪ Left Atrium ▪ Mitral (Bicuspid) Valve ▪ Left Ventricle ▪ Aorta ▪ Aortic Arch ▪ Endocardium ▪ Myocardium ▪ Pericardium <p>8.1.6 Explain the pulmonary circulation</p> <p>To include:</p> <ul style="list-style-type: none"> ▪ Way in which the blood circulates from the heart to the lungs and back to the heart ▪ Vessels in which the blood is carried ▪ Whether the blood is oxygenated or deoxygenated ▪ Process of gaseous exchange <p>8.1.7 Explain the systemic circulation</p> <ul style="list-style-type: none"> ▪ Describe the structure and function of the systemic circulation ▪ Describe the coronary circulation <p>8.1.8 Explain blood pressure and pulse rate and how they are measured</p> <p>To include:</p> <ul style="list-style-type: none"> ▪ Factors which produce, maintain and affect blood pressure and pulse rate ▪ Systolic ▪ Diastolic ▪ Way in which blood pressure is measured ▪ Sphygmomanometer <p>8.1.9 Explain the conditions of high and low blood pressure</p> <p>To include:</p> <ul style="list-style-type: none"> ▪ Causes and effects of hypo and hyper tension ▪ Way in which blood pressure can be influenced by complementary therapies
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		<p>8.1.10 Describe the process of blood clotting/coagulation To include: ▪ Thrombocytes ▪ Thromboplastin ▪ Prothrombin ▪ Calcium ▪ Thrombin ▪ Fibrinogen ▪ Fibrin</p> <p>8.1.1 Describe the growth and repair of the cardiovascular system (see 1.1.4 The cell)</p> <p>8.1.12 Describe the effects of exercise on the cardiovascular system</p> <p>8.1.13 Explain the diseases and disorders of the circulatory system To include the cause and effects of the following: ▪ Anaemia ▪ Angina ▪ Aneurysm ▪ Arteriosclerosis ▪ Atherosclerosis/Atheroma ▪ Cancer ▪ Coronary thrombosis ▪ Deep Vein Thrombosis (DVT) ▪ Haemophilia ▪ Haematoma ▪ Haemorrhoids ▪ HIV/AIDS ▪ High cholesterol ▪ High blood pressure (hypertension) ▪ Leukaemia ▪ Low blood pressure (hypotension) ▪ Hepatitis A, B & C ▪ Phlebitis ▪ Septicaemia ▪ Stress ▪ Thrombus ▪ Varicose veins</p>
<p>9. Be able to identify the lymphatic system and common pathologies</p>	<p>9.1 Describe, in relationship to the lymphatic system:</p> <ul style="list-style-type: none"> - Type - Location - Structure - Function - Growth - Repair - Pathologies 	<p>9.1.1 Define the lymphatic system</p> <p>9.1.2 Explain the composition and functions of lymph To include: ▪ Leucocytes ▪ Lymphocytes ▪ Waste products</p> <p>9.1.3 Explain the structure and function of the lymphatic system To include: ▪ Lymphatic capillaries ▪ Lymphatic vessels ▪ Lymphatic nodes ▪ Lymphatic ducts ▪ Immune response ▪ Protection ▪ Transportation</p> <p>9.1.4 Describe the structure and function of lymphatic tissue and the areas in which it can be found in the body To include: ▪ Spleen ▪ Thymus ▪ Tonsils and adenoids ▪ Peyer's Patches ▪ Appendix</p>

		<p>9.1.5 Explain the position of the lymph nodes of the body and the way in which lymph is moved around the body To include:</p> <ul style="list-style-type: none"> ▪ Superficial and deep cervical ▪ Submandibular ▪ Thoracic duct ▪ Cisterna chyli ▪ Right lymphatic duct ▪ Axillary ▪ Mammary ▪ Supratrochlear ▪ Inguinal ▪ Popliteal ▪ Anterior auricular ▪ Posterior auricular ▪ Occipital <p>9.1.6 Explain the interrelationship between the Circulatory/ Lymphatic systems and the Muscular, Digestive and Immune systems To include:</p> <ul style="list-style-type: none"> ▪ Way in which blood becomes tissue fluid ▪ Way in which excess tissue fluid is picked up by the lymphatic capillaries ▪ Route which the lymph takes before it returns to the Circulatory System <p>9.1.7 Describe the growth and repair of the Lymphatic System (see 1.1.4 The cell)</p> <p>9.1.8 Explain the diseases and disorders of the Lymphatic System To include:</p> <ul style="list-style-type: none"> ▪ Allergies ▪ Cancer ▪ Cellulite ▪ Infectious mononucleosis (glandular fever) ▪ Lymphadenitis ▪ Lymphoedema ▪ Oedema/ Water retention
<p>10. Be able to identify the digestive system and common pathologies</p>	<p>10.1 Describe, in relationship to the digestive system:</p> <ul style="list-style-type: none"> - Type - Location - Structure - Function - Growth - Repair - Pathologies 	<p>10.1.1 Define the digestive system</p> <p>10.1.2 Explain the structure and function of the organs and accessory organs of the digestive system To include:</p> <ul style="list-style-type: none"> ▪ Mouth ▪ Tongue ▪ Teeth ▪ Pharynx ▪ Salivary Glands ▪ Epiglottis ▪ Alimentary Canal ▪ Oesophagus ▪ Stomach ▪ Pancreas ▪ Liver ▪ Gall bladder ▪ Small intestine (Duodenum, Jejunum, Ileum) ▪ Appendix ▪ Ileo-caecal Valve ▪ Large Intestine ▪ Rectum ▪ Anus ▪ Accessory organs <p>10.1.3 Explain the function of digestion To include:</p> <ul style="list-style-type: none"> ▪ Peristalsis ▪ Ingestion ▪ Digestion ▪ Absorption ▪ Defecation

		<p>10.1.4 Explain the process by which food stuffs are broken down as they pass through the alimentary canal during the digestive process To include:</p> <ul style="list-style-type: none"> ▪ Action of Rennin, hydrochloric acid and pepsin in the stomach ▪ Action of pancreatic juice, i.e. trypsin and trypsinogen, lipase, amylase on peptones, fats and polysaccharides ▪ Action of bile on fat ▪ Action of intestinal juice – maltase, sucrase, lactase on disaccharides <p>10.1.5 Explain the process of absorption of nutrients To include:</p> <ul style="list-style-type: none"> ▪ Process of absorption of nutrients by the villi and lacteals contained in the small intestine <p>10.1.6 Explain the function of the following and where in the digestive system they occur</p> <ul style="list-style-type: none"> ▪ Enzymes ▪ Proteins ▪ Peptones ▪ Polypeptides ▪ Amino acids ▪ Carbohydrates ▪ Monosaccharides ▪ Disaccharides ▪ Polysaccharides ▪ Fats ▪ Fatty acids ▪ Glycerol <p>10.1.7 Explain the interrelationship of the Digestive system with other systems of the body To include:</p> <ul style="list-style-type: none"> ▪ Circulatory ▪ Endocrine ▪ Lymphatic ▪ Muscular ▪ Nervous <p>10.1.8 Describe the growth and repair of the Digestive system (see 1.1.4 The cell)</p> <p>10.1.9 Explain the causes and symptoms of the following diseases and disorders of the Digestive system To include:</p> <ul style="list-style-type: none"> ▪ Anorexia Nervosa ▪ Appendicitis ▪ Bulimia Nervosa ▪ Cancer ▪ Cirrhosis of the liver ▪ Constipation ▪ Coeliac's disease ▪ Diarrhoea ▪ Flatulence ▪ Gall stones ▪ Gingivitis ▪ Heartburn ▪ Reflux oesophagitis ▪ Hernia – Abdominal, Hiatus ▪ Hiccoughs ▪ Indigestion (Dyspepsia) ▪ Irritable bowel syndrome (IBS) ▪ Jaundice ▪ Nausea ▪ Obesity ▪ Stress ▪ Ulcer – Aphthous (mouth), Duodenal, Gastric, Peptic
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<p>11. Be able to identify the urinary system and common pathologies</p>	<p>11.1 Describe, in relationship to the urinary system:</p> <ul style="list-style-type: none"> - Type - Location - Structure - Function - Growth - Repair - Pathologies 	<p>11.1.1 Define the Urinary system</p> <p>11.1.2 Explain the structure and function of the Urinary system to include:</p> <ul style="list-style-type: none"> ▪ Kidney (cortex and medulla) ▪ Renal pelvis ▪ Ureter ▪ Bladder ▪ Urethra ▪ Filtration ▪ Regulation of blood pressure <p>11.1.3 Explain the process and function of filtration To include:</p> <ul style="list-style-type: none"> ▪ Functions of the Bowman's capsule ▪ Filtration ▪ Re-absorption ▪ Secretion/ Micturition ▪ Electrolyte balance <p>11.1.4 Explain the composition of urine</p> <ul style="list-style-type: none"> ▪ 2% urea ▪ 96% water ▪ 2% other substances, e.g. ammonia, sodium, potassium, phosphates, chlorides, sulphates, and excess vitamins ▪ Colour is formed from bilirubin (bile pigment) <p>11.1.5 Explain urine production To include:</p> <ul style="list-style-type: none"> ▪ Cold and hot weather ▪ Activity and inactivity ▪ Stress ▪ Water consumption <p>11.1.6 Define Osmosis in relation to the Urinary system To include:</p> <ul style="list-style-type: none"> ▪ Antidiuretic Hormone (ADH)/Vasopressin <p>11.1.6 Explain the interrelationship of the Urinary system with other body systems To include:</p> <ul style="list-style-type: none"> ▪ Circulatory system ▪ Endocrine system ▪ Skeletal system ▪ The Skin <p>11.1.7 Describe the growth and repair of the urinary system (see 1.1.4 The cell)</p> <p>11.1.8 Explain the causes and effects of the disorders and diseases of the Urinary system</p> <ul style="list-style-type: none"> ▪ Cancer ▪ Cystitis ▪ Diabetes Insipidus ▪ Glomerulonephritis
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		<ul style="list-style-type: none"> ▪ Kidney stones ▪ Nephritis (Bright's disease) ▪ Pyelonephritis/Glomerulonephritis ▪ Urinary tract infections ▪ Urethritis
12. Be able to identify the reproductive system and common pathologies	12.1 Describe, in relationship to the reproductive system: <ul style="list-style-type: none"> - Type - Location - Structure - Function - Growth - Repair - Pathologies 	12.1.1 Define the Reproductive system(s) <p>12.1.2 Explain the structure and function of the organs of the male Reproductive system To include:</p> <ul style="list-style-type: none"> ▪ Testes ▪ Vas deferens ▪ Epididymus ▪ Prostate gland ▪ Scrotum ▪ Penis ▪ Sperm ▪ Effects of puberty <p>12.1.3 Explain the structure and function of the organs of the female Reproductive system and hormonal cycles To include:</p> <ul style="list-style-type: none"> ▪ Vulva ▪ Labia ▪ Vagina ▪ Cervix ▪ Uterus ▪ Fallopian tubes ▪ Ovaries ▪ Ovum Puberty <i>Menstrual cycle</i> <ul style="list-style-type: none"> ◆ Three phases ▪ Menstrual ▪ Proliferative ▪ Secretory ▪ Formation of the Graafian Follicle ▪ Formation of the Corpus Luteum <i>Pregnancy</i> <ul style="list-style-type: none"> ▪ Fertilisation ▪ Post-fertilisation ▪ Cell division ▪ Embryo formation ▪ Foetal development ▪ Parturition ▪ Lactation <i>Menopause</i> <ul style="list-style-type: none"> ▪ Cessation of menses ▪ Vasodilation – sweating, hot flushes ▪ Palpitations ▪ Sleep disturbances ▪ Bone loss ▪ Thinning of skin and hair ▪ Atrophy of reproductive organs ▪ Mood swings ▪ Hormone Replacement Therapy (HRT) <p>12.1.4 Explain the structure and function of the breast and breast disorders To include:</p> <ul style="list-style-type: none"> ▪ Fatty tissue ▪ Ducts ▪ Nipple ▪ Areola ▪ Lobules ▪ Breast pain ▪ Cysts ▪ Galactorrhea ▪ Fibroadenomas ▪ Mastitis

		<p>12.1.5 Explain factors causing infertility To include:</p> <ul style="list-style-type: none"> ▪ Female infertility - Endocrine disorders ▪ Obstructions ▪ Malnutrition/low body weight ▪ Endometriosis ▪ Anatomical abnormalities ▪ Male infertility – Endocrine disorders ▪ Obstructions ▪ Sexual dysfunction ▪ Vasectomy ▪ Drugs/medication ▪ Low sperm count <p>12.1.6 Describe the growth and repair of the Reproductive system (See 1.1.4 The cell)</p> <p>12.1.7 Explain the causes and effects of the diseases and disorders of the Reproductive system To include:</p> <ul style="list-style-type: none"> ▪ Cancer ▪ Chlamydia ▪ Ectopic pregnancy ▪ Endometriosis ▪ Fibroids ▪ Hysterectomy ▪ Menstrual disorders - Amenorrhoea, Dysmenorrhoea, Menorrhagia ▪ Pre-menstrual syndrome ▪ Polycystic ovarian syndrome ▪ Prostatitis ▪ Menopause ▪ Stress ▪ Vulvovaginal Candidiasis (Thrush)
<p>Assessment Unit 34- Knowledge of Anatomy, Physiology and Pathology for Complementary Therapies</p>	<p>This unit will be assessed by an externally set multiple choice question paper.</p>	<p>See www.itecworld.co.uk for test specification and sample questions</p>