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Extended Diploma in Sports Massage

Learning Outcomes

Learning Outcomes of the Qualification's Unit:

- Unit: iUSP149 Sports Massage

Purpose of this document:

This document outlines the learning outcomes for each unit within the Extended Diploma in Sports Massage. It provides learners, tutor, and assessors with a clear understanding of the knowledge, skills, and competencies to be achieved upon successful completion of the qualification.

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Unit – iUSP149 Sports Massage

LO1 Knowing the roles and function of the energy systems in relation to physical activity and exercise

Explain the energy systems used during exercise

Adenosine triphosphate (ATP – break down and resynthesis, energy equation); Energy systems (Phosphocreatine system, anaerobic lactic acid system, aerobic system); Creatine phosphate system (high intensity activity of 6 – 10 seconds), e.g. 100 metre sprints, throwing, explosive events; Anaerobic lactic acid system (moderate to high intensity activity of up to 90 seconds), e.g. 400 metre sprints; Aerobic system (low to moderate intensity of above 90 seconds), e.g. long-distance events.

Explain the by-products of different systems

By-products including - Phosphocreatine system (adenosine diphosphate, phosphate, creatine, all by-products re-used); Anaerobic lactic acid system hydrogen ions (acid) lactate; Aerobic system (metabolic water, carbon dioxide); Associated significance of by-products in muscle fatigue (limitation of mechanical and biochemical muscle contraction processes, lactate threshold, onset of blood lactate accumulation (OBLA).

LO2 Knowing the structure and function of the muscular system

Explain the characteristics of the types of muscle tissue

Skeletal, Smooth, Cardiac.

Explain the principles of muscle contraction

Gross muscle structure - Tendon (attach muscle to bone); Epimysium; Perimysium; Endomysium; Fascicle; Cellular structure; Muscle fibres; Myofibrils; Myofilaments (actin, myosin); Sarcolemma; Sarcomere; Sliding filament theory (myosin and actin, cross bridges, shortening of sarcomere); Process (attachment of myosin to

actin, power stroke, detachment, ATP and energy transfer); Troponin; Tropomyosin; Calcium; Sarcoplasmic reticulum; Neurotransmitters; Synapse; Resting potential; Action potential; All or none law.

Different skeletal muscle fibre types and their characteristics - Slow twitch oxidative type 1 (Red in colour, Low intensity, Long duration/endurance, High in mitochondria, High in myoglobin, Slow contraction speed, Resistant to fatigue); Fast twitch or intermediate type 2a (Pink or white in colour, Intermediate contraction speed and rate of fatigue, Adapt characteristics to training to become more like type 1 or type 2b fibres), Fast twitch type 2b (White in colour, High intensity, Short duration, Low in mitochondria, Low in myoglobin, Fast contraction speed, Fast to fatigue).

Explain the locations, origins and insertions of skeletal muscles

Muscles of the back and neck - Erector spinae; Scalenes; Trapezius; Latissimus dorsi; Teres major; Sternocleidomastoid; Levator scapulae; Splenius capitis; Coracobrachialis; Rhomboids major and minor; Serratus anterior; Deltoid; Rotator cuff muscles (Infraspinatus, Supraspinatus, Teres minor, Subscapularis).

Muscles of the arm, wrist and hand – Biceps; Triceps; Supinator; Pronator teres; Brachialis; Brachioradialis; Anconeus; Flexor carpi radialis; Flexor carpi ulnaris; Extensor carpi radialis brevis; Extensor carpi radialis longus; Extensor carpi ulnaris; Flexor carpi radialis; Flexor digitorum; Extensor digitorum; Palmaris longus.

Muscles of the hip, leg, ankle and foot - Gluteus maximus; Gluteus medius; Gluteus minimus; Iliacus; Psoas major; Iliopsoas; Piriformis; Tensor fascia latae; Iliotibial tract; Sartorius; Gracilis; Quadriceps (Rectus femoris, Vastus lateralis, Vastus intermedius, Vastus medialis); Adductors (Brevis, Longus, Magnus); Hamstrings (Biceps femoris, Semitendinosus, Semimembranosus); Popliteus; Pectineus; Tibialis anterior; Tibialis posterior; Peroneus longus; Peroneus brevis; Gastrocnemius; Soleus; Achilles tendon; Flexor digitorum longus; Extensor digitorum longus.

Muscles of respiration and abdominals - Pectoralis major; Pectoralis minor; Intercostal; Rectus abdominus; Internal obliques; External obliques; Quadratus lumborum; Transversus abdominus.

Describe the types of muscle actions: Motive and resistive forces

Concentric, Eccentric, Isometric contractions.

LO3 Knowing the responses of the nervous system to sport and exercise

Explain the effects of stress on muscles during sport

'Fear, Fight and Flight' - Adrenal cortex and medulla stimulated to secrete adrenaline; Increase blood to the muscles; Liver stimulates secretion of glucose for anaerobic energy production; Salivary glands vasoconstrict; Pupils dilate; Digestive system slows down preventing energy wastage; 'Butterflies'.

Explain the changes to the nervous system that occur during sport and exercise

Change in motor units (stimulation dependant on number of motor units contracting); 'Fear, Fight and Flight'; Hypothalamus stimulates the sympathetic nervous system and the endocrine system (adrenaline); Cardiorespiratory system speeds up; Blood is diverted to the muscles; Digestive system slows down preventing energy wastage; Liver secretes glucose for anaerobic energy production; Salivary glands vasoconstrict; Pupils dilate; 'Butterflies'.

LO4 Knowing the anatomy & physiology of the major joints in the body

Describe in detail joint structures

Synovial joints; Cartilage – articular (hyaline); Ligaments; Synovial membrane; Bursa.

Explain the anatomy and physiology of major joints of the body

Atlanto-occipital; Atlanto-axial; Glenohumeral; Sternoclavicular / acromioclavicular; Elbow; Wrist; Hand; Hip; Sacroiliac; Knee; Ankle; Foot.

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LO5 Knowing the effects of anatomy, physiology and pathology on human function

Explain the possible stresses and strains put on the spine and other joints in sporting activities

Inflexibility; Lifting techniques; Postural techniques; Stress; Environment; Injury.

Explain the possible causes and effects of the following diseases and disorders and their effect on specific sports

Osteoarthritis; Rheumatoid arthritis; 'Shin splints'; Stress fractures; Facet joint pain; Carpal tunnel syndrome; Rotator cuff injuries; Chondromalacia patellae; Calcaneal bursitis; Periostitis; Concussion; Cramp; Stitch; Chronic muscle fatigue; Sprain; Strain; Lateral epicondylitis; Medial epicondylitis; Adhesive capsulitis; Dislocation; Fractures; Ruptured muscles; Jogger's nipple; Torn cartilage; Fibrositis; Fibrosis; Impingement; Muscle soreness; Atony; Atrophy; Fasciitis; Myositis; Tendinitis; Spasm; Soft tissue injuries; Exercise induced asthma; Diabetes; Hay fever; Hyperventilation; Osteoporosis; Low back pain; Heartburn; Irritable bowel syndrome; Haemorrhoids; Hernias; Amenorrhoea; Heat stroke; Heat exhaustion; Kidney stones; Dehydration; Torticollis; Myalgia; Myotonia; Black toe nails; Runner's knee; Plantar fasciitis; Osgood Schlatter; Compartment syndrome.

Explain the possible damage to the skin as a result of sporting activities on different types of surfaces, with regard to clothing, shoes, exposure to the sun, wind and other elements

Blisters; Grazes; Sores; Open wounds e.g. lacerations; Puncture wounds; Abrasions; Gravel burns; Sun burns; Wind burns; Bruising; Surfaces including – Grass, Gravel, Astroturf, Stone, Wood.

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LO6 Knowing the principles of injury prevention and management

Explain the principles of injury prevention and management

Intrinsic/personal – Age, Sex, Somatotype, Biomechanics; Fitness - Muscle balance, Physical symmetry, Joint integrity, Motor skills, Psychological factors; Extrinsic/environmental - Organisation and management, Type of sport, Training errors, Environment, Equipment.

Explain the preventative and rehabilitative training to reinforce massage treatments

Passive; Active; Resistive forms of exercise and the frequency and duration of each; Intensity; Use of free weights and/or resistive bands where appropriate; Importance of warm up/cool down.

Explain the effects and benefits of stretching

Mental relaxation; Muscular relaxation; Increased flexibility; Improved posture; Prevention of lower back pain; Improved fitness; Relief of muscle soreness; Relief of cramp; Improved motor skills; Prevention of injury.

Explain the use of stretching massage movements

Connective tissue massage (CTM); After injury; Muscle reflexes preventing stretching overload.

Explain the techniques of thermotherapy and cryotherapy (ICER) and the rationale for choice

Define thermotherapy to include the use of - Heat pad; Hot compress for pain relief; Increased elasticity of collagen fibres. Define cryotherapy to include the use of - Ice for relief of pain; Constriction of blood vessels; Reduction of swelling; Reduction of metabolism; Reasons for contrast bathing; The benefits of self-treatment.

Explain and demonstrate heat sensitivity tests

The use of alternating hot and cold test tubes on the appropriate part of the body.

LO7 Knowing the principles of training and components of fitness

Explain the components of fitness

Cardiovascular; Muscular; Flexibility; Skills related fitness.

Explain the principles of training

FITT principles; Specificity; Overload; Reversibility; Adaptability; Individuality; Recovery time.

Explain the principles of over training

Definition of overtraining; Persistent muscle soreness; Loss of co-ordination; Prolonged fatigue; Dizziness; Performance inconsistency; Elevated resting heart rate; Tightness in the chest; Heat stress.

LO8 Knowing the principles of soft tissue dysfunction

Explain the stages of the healing process and the possible treatments available
Acute/inflammatory phase; Repair phase; Remodelling phase.

Explain the signs and symptoms of inflammation

Increased temperature; Redness; Swelling; Pain; Loss of function.

Describe scar tissue and adhesions

Define scar tissue; Define adhesions.

LO9 Being able to carry out assessment for sports massage

Explain and demonstrate methods of consultation

Private comfortable area; Positive body language; Positioning of the client (no barriers between themselves and client); Good communication skills (asking open and/or closed questions where appropriate); Trust; Professionalism, confidence and enthusiasm; Confidentiality; Any contra-indications to treatment; Client profile; Importance of planning a treatment programme bearing in mind the clients religious, moral and social beliefs; Determining the nature and extent of the client's

needs; Agreement to the course of action; Ascertain the client's consent to the treatment (where the client is not in a position themselves ascertain from the appropriate companion's agreement to the treatment); Explanation of any possible side effects to the treatment; Explanation how the programme will be evaluated and the review process; Where applicable clarify with the client information, which may be available to other, e.g. relevant health care workers; Obtain the client's signature (or that of the companion); Physical examination (Head; Shoulders; Back; Pelvis; Legs; Feet; Body alignment/posture; Range of motion/joint function; Comparison of strength of the muscles on each side of the body; Muscle definition; Active, passive and resisted movement; Palpation).

Explain and demonstrate how to record information and store in a safe place and secure manner

Any contra-indications; Area treated; Type of injury; Treatment given; Any reactions; Any exercises given; Home care treatment.

Explain and recognise contra-indications to sports massage with reasons why and when to refer to other health professionals

Pregnancy; Cardiovascular conditions (Thrombosis, Phlebitis, Hypertension, Hypotension, Heart conditions); Haemophilia; Any condition already being treated by a GP or another health professional, e.g. physiotherapist, osteopath, chiropractor or coach; Medical oedema; Osteoporosis; Arthritis; Nervous/psychotic conditions; Epilepsy; Recent operations; Diabetes; Asthma; Any dysfunction of the nervous system (e.g. Multiple sclerosis, Parkinson's disease, Motor neurone disease); Bell's palsy; Trapped/pinched nerve (e.g. sciatica); Inflamed nerve; Cancer; Postural deformities; Spastic conditions; Kidney infections; Whiplash; Slipped disc; Undiagnosed pain; When taking prescribed medication; Acute rheumatism.

Explain and recognise contra-indications that restrict treatment

Fever; Contagious or infectious diseases; Under the influence of recreational drugs or alcohol; Diarrhoea and vomiting; Skin diseases; Undiagnosed lumps and bumps; Localised swelling; Inflammation; Varicose veins; Pregnancy (abdomen); Cuts; Bruises; Abrasions; Scar tissues (2 years for major operation and 6 months for a small scar); Sunburn; Hormonal implants; Abdomen (first few days of menstruation

depending how the client feels); Haematoma; Hernia; Recent fractures (minimum 3 months); Cervical spondylitis; Gastric ulcers; After a heavy meal.

Explain and demonstrate the skills of palpation and physical examination compared with pre-massage states

Passive, active and restricted movement; Range of movement; Degree of swelling; Variations in tissue temperature; Muscle tone and bulk; Adhesions; Previous injury to the area; Fatty nodules.

LO10 Demonstrate professional practice in sports massage

Explain and ensure appropriate client care, client modesty and the correct use of towels at all times

Checking consultation and contra-indications; Explaining the treatment to the client; Helping the client onto the couch/seat protecting the client's modesty at all times; Ensure that all parts of the client are covered except the area being massaged; Cleanse the feet with a medi-wipe or similar; Wash own hands; Keep ensuring that the client is comfortable; Remove the massage medium at the end of the treatment if appropriate; Help the client off the couch/seat protecting their modesty at all times.

Explain and demonstrate correct hygiene procedures

The most efficient form of sterilisation - In the sports clinic, In situ at a sports event; The best form of waste removal (particularly when contaminated) - In the sports clinic, In situ at a sports event; Reasons for good personal hygiene - Wash own hands, Wipe the client's feet, Use clean towels for each client, Put couch roll on top of towels, Wear clean white professional work wear, Socks/tights and full flat shoes, Remove all jewellery (except wedding band) from self and client, No nail enamel, Clean short nails, Hair tied back off collar and face.

Explain and demonstrate the ability to ensure client is in a suitable position of comfort and support for different techniques

Use appropriate supports e.g. under the ankles, chest, forehead, knees, head, or wherever a support is appropriate for the sports massage applied to different parts of the body and range of conditions.

Explain and demonstrate the application and removal of the medium if required, appropriately and professionally

Ensure the massage medium is removed at the end of the treatment if required; Do not let the client walk around in bare feet; Ensure all surfaces are lined with couch roll; Wipe couch and trolley with surgical spirit or similar at the end of each day.

LO11 Know the effects and benefits of sports massage

Explain the effects of massage on muscle and other soft tissue

Speeds up healing of damaged tissues and muscles; Increases fitness capabilities; Increases performance potential; Prevents future injury; Helps clear out waste and toxins; Breaks up adhesions; Enables faster healing; Improves flexibility; Enables peak performance to be achieved more rapidly.

Explain the reasons for selecting the appropriate type of massage movement according to the client's conditions and needs

Effleurage; Petrissage; Frictions; Tapotement; Vibrations; Specific sports massage techniques.

Explain specific sports massage techniques

Treatment of injury; Pre-event; During/Between event; Post event; Corrective; Preventative; Conditioning massages.

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LO12 Being able to demonstrate massage techniques

Demonstrate the classical massage movements where appropriate

Effleurage; Petrissage; Frictions; Tapotement; Vibrations; Specific sports massage techniques; Movements should be performed correctly and on areas appropriate for the injury and the client's needs.

Explain and demonstrate sports massage techniques according to the client's condition and needs

Manual lymphatic drainage; Neuro-muscular technique (NMT); Muscle energy technique (MET); Soft tissue release (STR); Connective tissue massage (CTM); Proprioceptive neuromuscular facilitation (PNF).

Explain and demonstrate how common sports injuries can be treated after medical approval

Shin splints; Iliotibial band release (Runner's knee); Muscle fatigue; Lateral epicondylitis; Medial epicondylitis; Soft tissue injuries; Sprains; Rotator cuff injuries; Strains; Muscle soreness; Cramp; Myositis; Spasm; Stitch; Fibrositis; Fibrosis; Atony; Atrophy; Hyperventilation; Low back pain; Carpal tunnel syndrome; Calcaneal bursitis; Chondromalacia patellae; Adhesive capsulitis; Torticollis; Tendinitis of any muscle including – Achilles, Flexor, Biceps, Supraspinatus, Subscapularis, Tibialis anterior; Superficial skin wounds including – Blisters, Grazes, Sores, Open wounds (e.g. lacerations), Puncture wound, Abrasions, Gravel burns, Sun burn, Wind burn.

LO13 Being able to carry out post massage treatment protocols

Explain and provide feedback and reassurance to the client

At the end of each treatment the client's feelings and any skin or other reactions should be recorded; The following areas should be monitored - Outcomes achieved, Effectiveness of the treatment, Any change of demands, Whether the treatment met the needs of the client, Longer term needs of the client; Encourage clients to express their feelings/requirement during the treatment; Note client's reactions and make appropriate adjustments.

Explain and advise on the use, application and benefits of self-treatment Thermotherapy; Cryotherapy; Rehabilitative training.

Case Studies / Portfolio of evidence containing:

15 treatment evidence 5 clients must be treated 3 times each.

They should include: Consultation including thorough medical history and general lifestyle; Client profile (to include any current issues in their life); Rationale for the choice of treatment; Details of how the therapist conducted the treatment; Details of how the client felt during and after the treatment; Details of home care advice given; The following should also be documented for treatments 2 and 3 - The consultation should be checked and any changes noted, Rationale for the choice of treatment, Details of how the therapist conducted the treatment, Details of how the client felt during and after the treatment, Details of home care advice given, An overall conclusion of the case should be recorded, Reflective practice after each treatment, Signed by client.

Treatments should be evidenced through the consultation form.