



Level 1 Award in Assistant Gym Instructor

603/7190/0

Manual



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Unit 1 How the Body Works

Aim:

Develop basic knowledge and understanding of how the human body works.

Learning Outcomes

Upon successful completion of this unit learners will be able to:

- Know the structure and function of the skeletal system
- Know the structure and function of the muscular system
- Outline a balanced approach to nutrition and the types of fuels used to provide energy
- Know the structure and function of the cardio-respiratory system

Section 1: Know the structure and function of the skeletal system

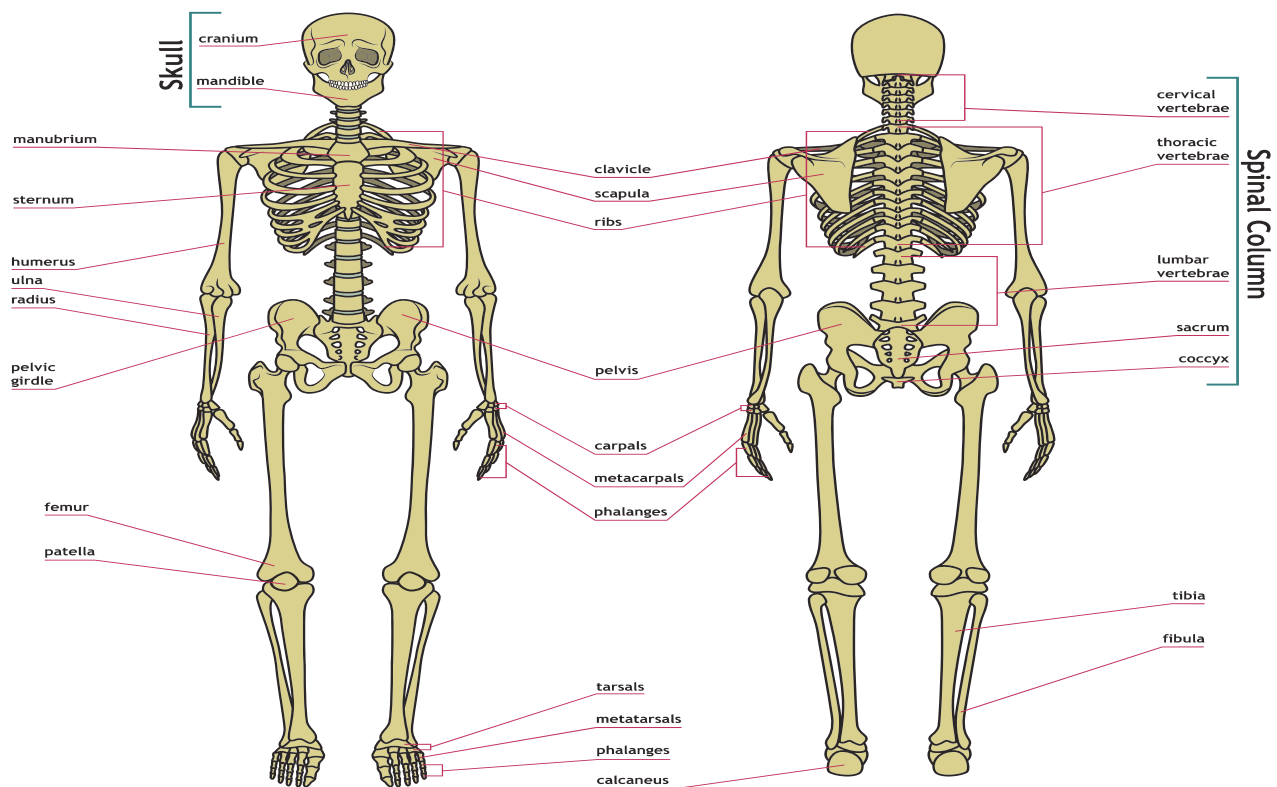
Identify the Main Bones in the Human Body

The skeletal system provides us with a framework and structure with which to move, protect and support the internal systems. There are 206 bones in an adult body connected by a series of joints.

The skeleton is split into two basic structures.

Axial skeleton: Bones that form the main frame and axis. The skull, spine, and ribs.

Appendicular skeleton: Bones that attaches to the main frame. Upper and lower limbs, shoulder, and pelvic girdles.



Functions of the Skeleton

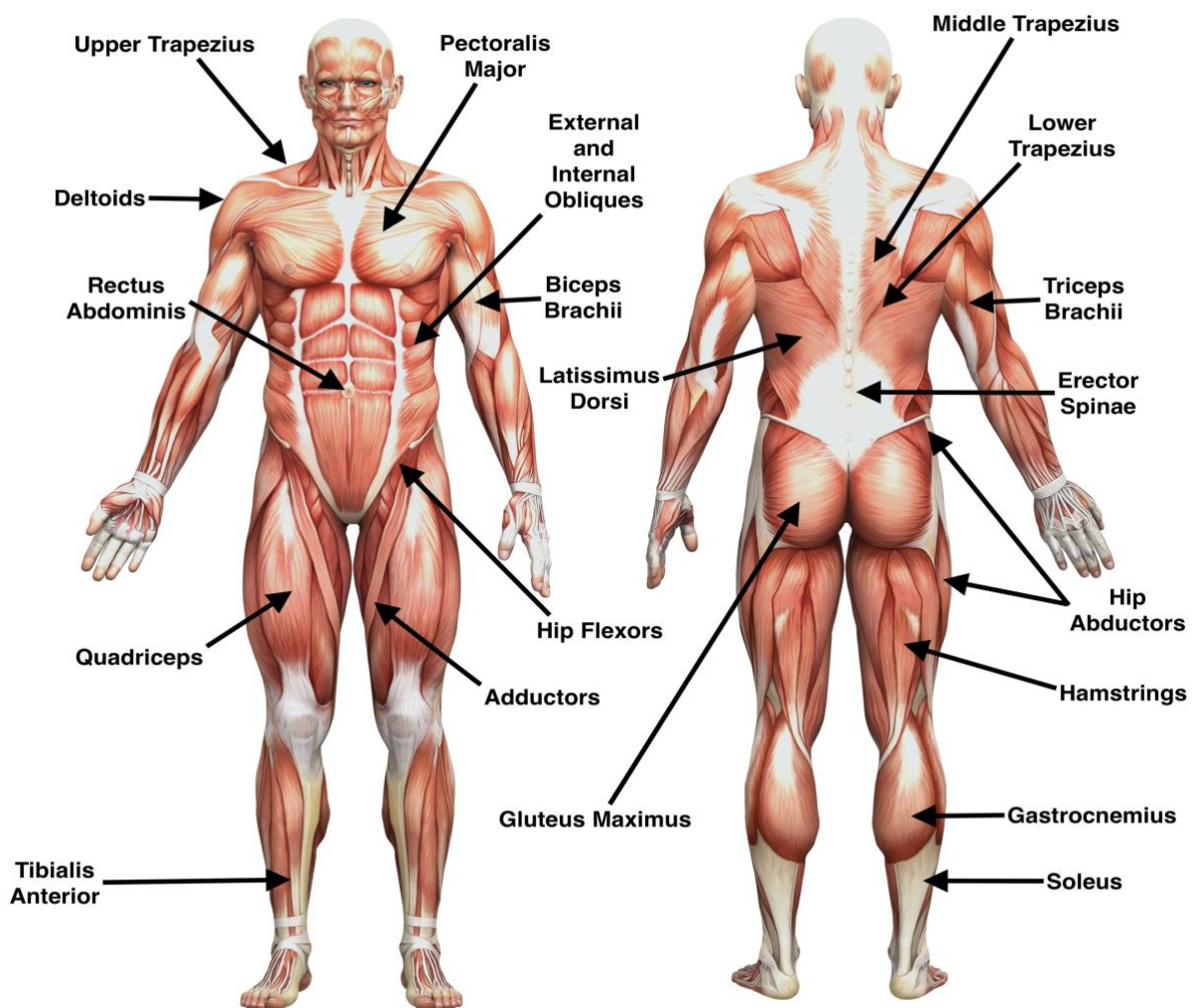
Shape	The Skeletal System gives the body its shape.
Protection	The skeletal System protects vital internal organs.
Attachment	Muscles, Ligaments and Tendons have attachments to create stability and movement.
Movement	Muscles pull on bones to create movement.
Production	Some bones produce white and red blood cells.
Storage	Bones store minerals such as calcium and phosphorus supporting growth.

Section 2: Know the structure and function of the muscular system

The Muscular System

To achieve human movement, we are reliant on muscle tissue pulling on bone to produce motion at a moveable joint. The movements possible at each joint are dependent on the design of that joint, the origin and insertion point of the muscles and the angle at which the fibres cross the joints.

When muscles contract and shorten they pull on bones to create an action or movement. Efficient movement is dependent on the coordinated activity of whole groups of muscles and involves a variety of muscle actions.



Section 3: Structure and Function of Cardio-Respiratory System

The cardiovascular system also referred to as the circulatory system consists of the heart, blood vessels and blood transported around the body delivering essential nutrients.

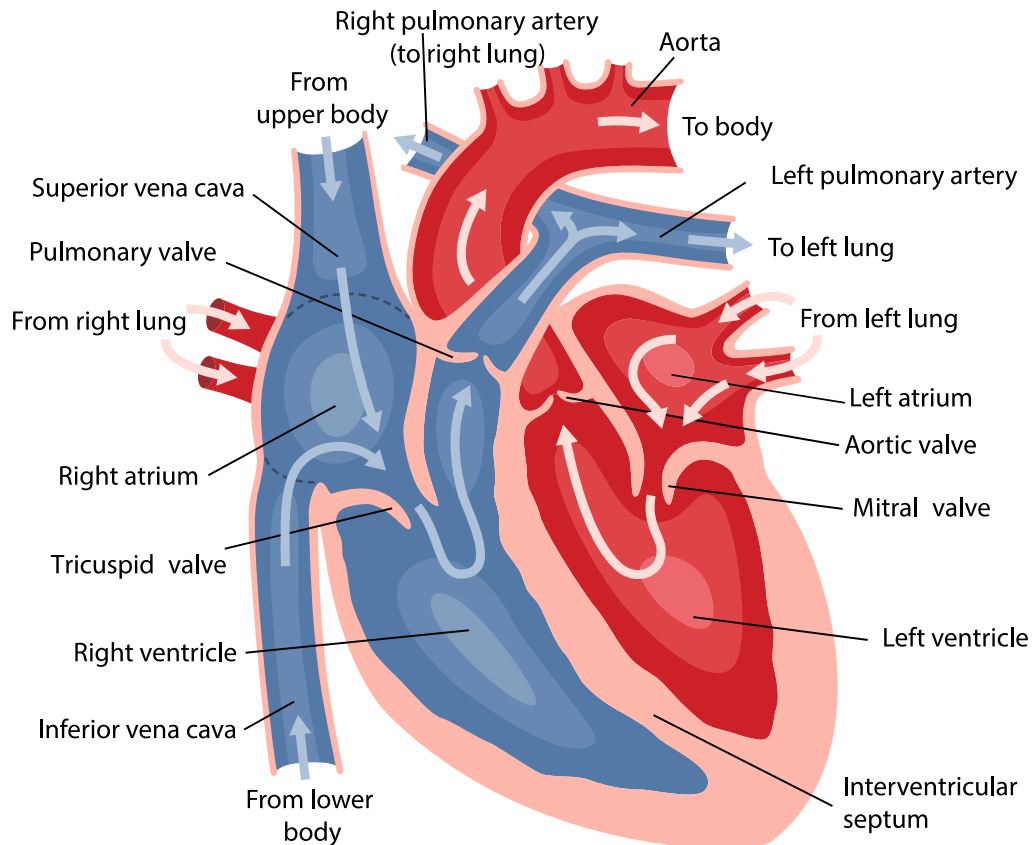
The heart is a muscular pump, roughly the size of a man's clenched fist, which pushes blood into the tissues. Located behind and to the left of the sternum, it has 4 chambers: 2 atria and 2 ventricles and is predominantly made of cardiac muscle (myocardium).

The right-hand side of the heart receives blood from the upper and lower body via veins.

The left ventricle then ejects the blood and O_2 via the aorta, to the tissues of the body (system circulation).

Arteries carry blood away from the heart and veins always carry blood to the heart (see below diagram)

Circulation of blood through the heart

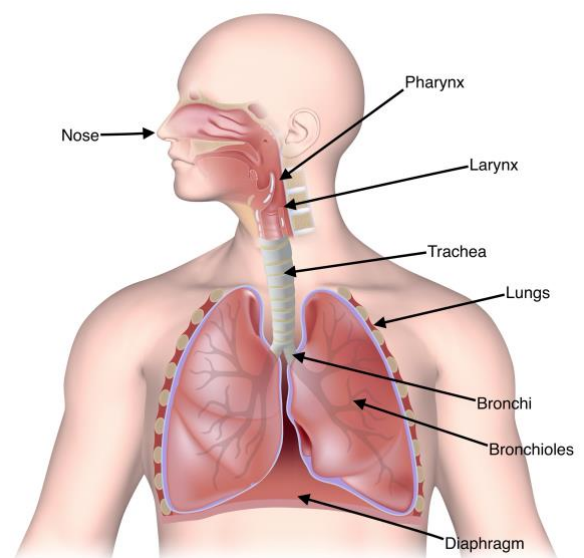
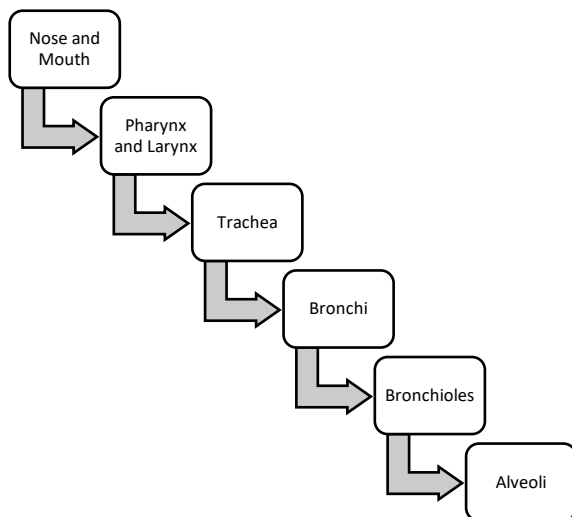


Mechanics of Breathing

The lungs are two structures that are in the chest cavity and protected by the ribs. A large muscle at the bottom of the ribcage separates them from other structures. The function of the lungs is gaseous exchange. This is the process of receiving oxygen and delivering it through the working muscles whilst removing waste products.

The two main phases of the breathing cycle are:

- Inspiration drawing air into the lungs.
- Expiration expelling air from the lungs.



Section 4. Balanced Approach to Nutrition

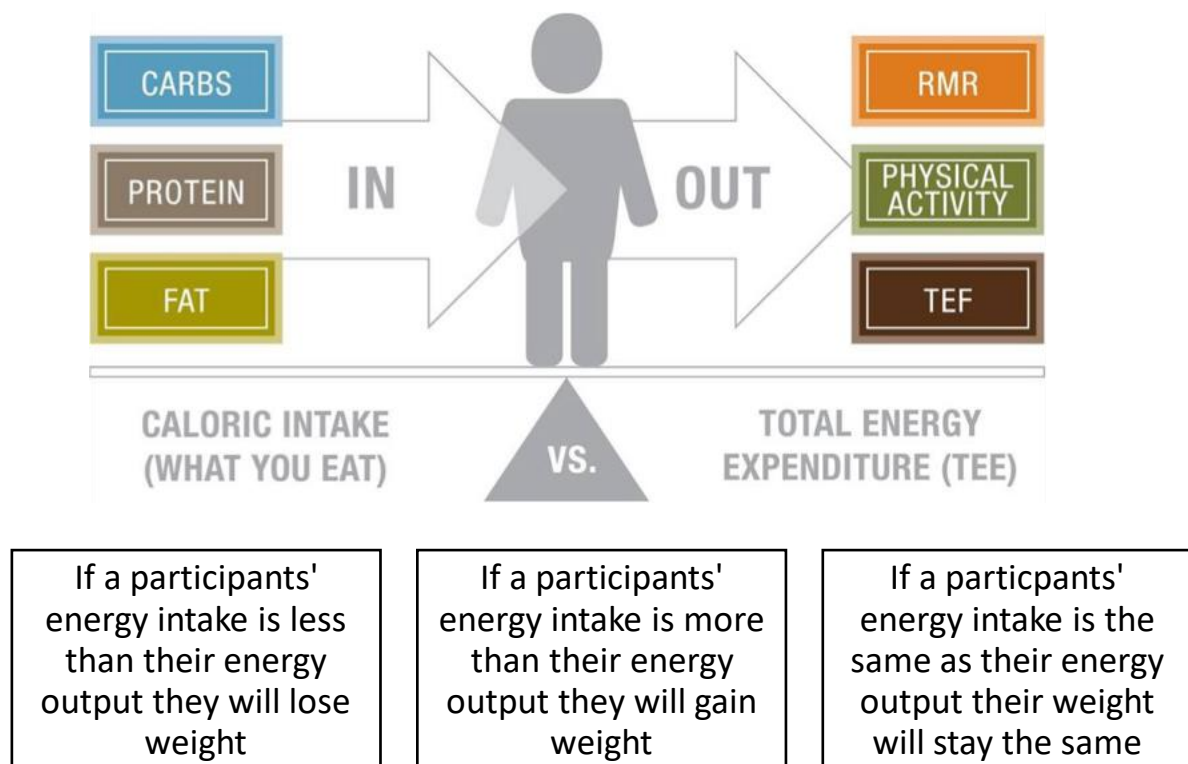
Benefits of Leading a Healthier Lifestyle

There are many benefits to leading a healthier lifestyle and including a healthy balanced diet, regular exercise activity as listed below.

- Reduced risk of illness or disease
- Better quality of life
- Weight loss
- Weight management strategies in the future
- Reduced pain in joints and back

Diet

One of the keys to tackling obesity is to reduce energy intake and ensure energy expenditure is greater.



Macro and Micronutrients

A well-rounded balanced diet contains a mixture of all nutrient groups. Nutrients are found in food that the body is able to use for repair and growth.

Protein

Protein is essential for growth, repair, and maintenance of good health. Per 1 gram protein provides 4 calories of energy. The recommended intake of protein for sedentary adults is 0.75 per kilogram of bodyweight, this is known to increase up to 1.5 – 1.8g particularly for high level strength and endurance athletes. Different food sources contain different amounts of proteins and different combinations of amino acids (the building blocks of proteins) so it is important to eat a variety of good sources. Protein from animal sources (e.g. meat, fish, eggs and dairy products) contain the full range of essential amino acids needed by the body. However, vegans and vegetarians can get all the amino acids they need by combining different plant sources of protein, e.g. pulses and cereals.

Carbohydrate

The primary role of carbohydrate is to provide fuel for energy (4 calories per 1 gram). There are 3 sources of carbohydrate simple sugars, complex starches, fibre

Carbohydrate is also protein sparing. The body's tissues require a constant supply of fuel in the form of glucose from dietary carbohydrate. If glucose is not present from a diet low in carbohydrate energy can also be synthesised from protein. A greater percentage of dietary protein is used to provide glucose which will result in less protein being available for growth and repair of tissue.

Fat

Fat provides the highest amount of energy at 9 calories per 1 gram consumed. Its main functions are to provide insulation, protect internal organs, absorb and utilise fat soluble vitamins A, D, E & K and the formation of some cell elements. The macronutrient is broken down into 3 categories of saturated fat, monounsaturated fat and polyunsaturated fat.

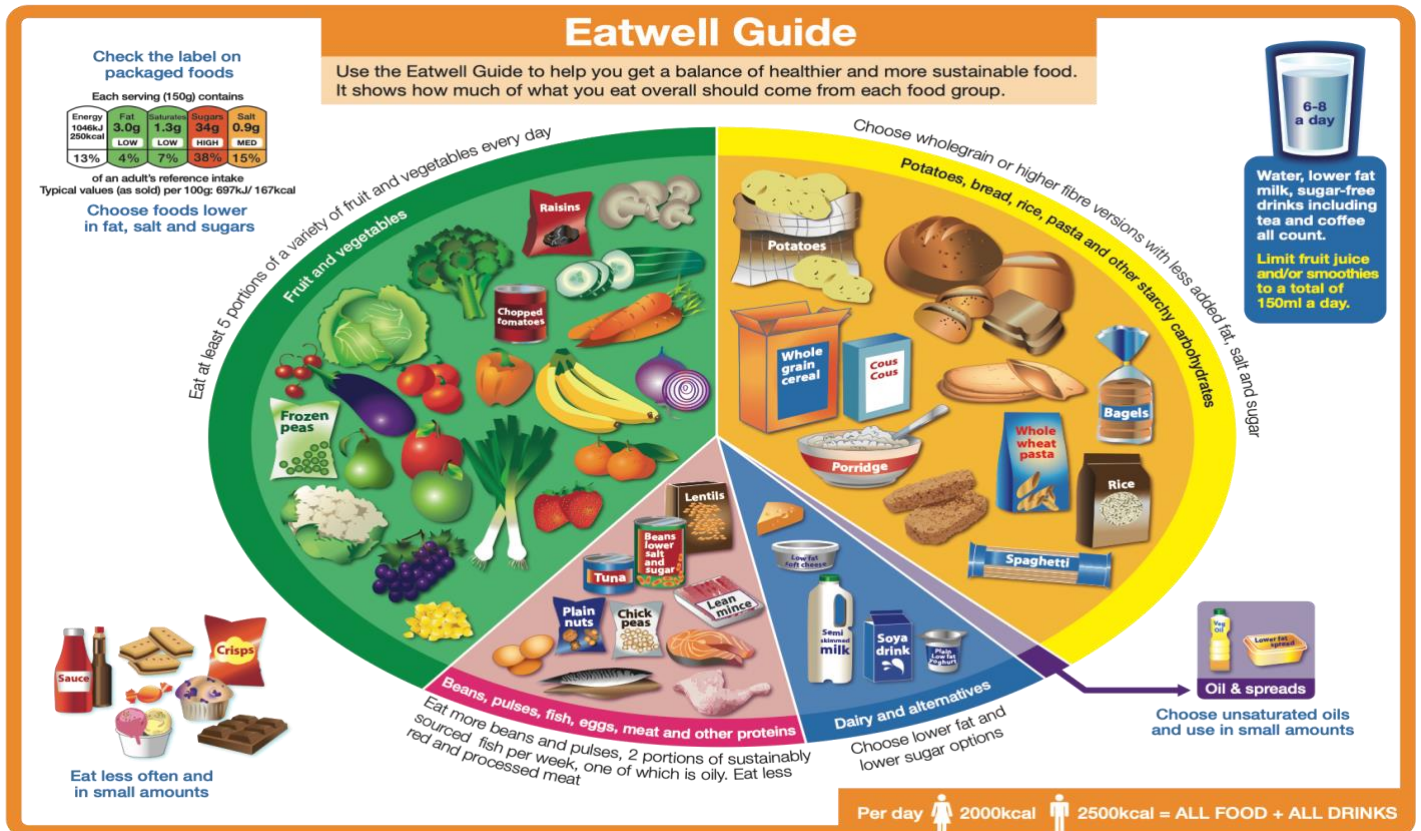
Vitamins and Minerals

Vitamins and minerals are nutrients that the body needs to function and stay healthy. A diet plentiful in fruit and vegetables will be full of vitamin and minerals.

- Vitamin A helps your body's natural defence against illness and infection (the immune system) work properly
- Vitamin B helps keep the nervous system healthy
- Vitamin C helps protect cells in the body and maintain healthy skin assists in the body's natural defence against illness and infection (the immune system)
- Vitamin D helps to regulate levels of calcium and phosphate in the body. Nutrients that are needed to keep healthy bones teeth and muscles healthy. Lack of Vitamin D can lead to bone deformities and issues.
- Vitamin E helps keep healthy skin, eyes and assists in the body's natural defence against illness and infection (the immune system)
- Vitamin K helps the body with blood clotting, and helps wounds heal properly.

Eatwell Guide

The UK's guide to healthy eating was updated in 2015 from the Eatwell plate to the Eatwell guide following recommendations from the Scientific Advisory Committee on Nutrition. The Eatwell guide provides people with a visual guide of the ratios of different foods and drink that can contribute towards a healthy balanced energy intake.



Recommended daily allowances (RDA)

Eat at least 5 portions of a variety of fruit and vegetables every day. 80 – 100g = 1 portion.

Base meals on higher fibre starchy foods like potatoes, bread, rice, or pasta which are a good source of energy and the main source of a range of nutrients within the diet.

Have some dairy or dairy alternatives (such as soya drinks) which are important for strong bones and teeth. Choose lower fat options whenever you can.

Take on adequate protein through beans, pulses, fish, eggs, meats a minimum of 1 portion per day.

Choose unsaturated oils and spreads and eat them in small amounts. These types of fats can reduce cholesterol levels and provide essential fatty acids the body needs.

Drink plenty of fluids (6 – 8 glasses of water every day).

Fuels for physical activity

Carbohydrate is also protein sparing. The body's tissues require a constant supply of fuel in the form of glucose from dietary carbohydrate. If glucose is not present from a diet low in carbohydrate energy can also be synthesised from protein. A greater percentage of dietary protein is used to provide glucose which will result in less protein being available for growth and repair of tissue.

Hydration

Hydration is the process of replacing water in the body. The human body requires hydration for life, optimal health and any performance requirements. Water accounts for approximately two thirds of the weight of a healthy body and the amount required will be dependent on a number of factors.

- Physical Activity
- Body Temperature
- Respiration
- Humidity
- Environmental temperature

To prevent dehydration and stay adequately hydrated it is important to replace the water that is lost through bodily processes. Water helps the body with various important functions such as:

- Maintenance of blood plasma and tissue fluid
- Passage of substances in and out of cells
- Enables life sustaining reactions in the body to occur
- Transport and filtration of waste products for excretion

The first sign of dehydration is being thirsty, headaches, lightheaded, lack of energy and dark coloured urine. Recommended water intake is 6 – 8 glasses a day or as a minimum 1.2 litres per day and should increase in proportion to physical activity.

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Unit 2: Planning a Physical Activity Session

Aim:

Develop knowledge and understanding of how to plan a physical activity session.

Learning Outcomes

Upon successful completion of this unit learners will be able to:

- Understand the principles of fitness
- Understand the effects physical activity has on health
- Know and understand health and safety considerations when planning sessions and the risks that would need to be considered
- Plan an activity session

Section 1 Principles of Fitness

Health and Skill Related Fitness

Physical fitness is a state of wellbeing that provides optimal performance (Robergs and Roberts 1997). Being physically fit is described as an individual's ability to perform exercise requiring different components of fitness, which are spilt into health related and skill related components.

Health Related	Skill Related
Cardiovascular Fitness: The ability of the body to take in, transport and utilise oxygen during exercise. The greater the ability the fitter a person will be.	Speed: Is quickness and pace of movements. This can be developed but limited to genetics and dominance of muscle fibre type.
Muscular Endurance: The ability of the muscles to generate low levels of force for an extended period of time.	Power: The ability to exert maximal force as quickly as possible i.e. explosive vert Jump. Note: not to be confused with strength which is the maximal amount of force a muscle can exert on against a weighted object.
Muscular Strength: The ability of the muscles to exert maximal force against a weighted object.	Reaction Time: The ability to respond quickly to a stimulus is reaction time. i.e. a starters pistol in a race.
Flexibility: Is the range of movement a person has at a joint or series of joints.	Co-ordination: The ability to link or move two or more body parts under control smoothly and efficiently to achieve a desired outcome.
Body Composition: Is the proportion of the body that is fat and fat free mass.	Balance: The ability to keep centre of mass over the base of support. To stay upright or in control of movement.
	Agility: The ability to rapidly change direction or position of the body.

Exercise is structured activity that requires physical effort with the aim of sustaining or improving physical fitness (Ekkekakis and Lind,2006). This can include wide varieties of activities that can be manipulated to achieve specific outcomes related to fitness goals or improve specific components of fitness described as frequency intensity time and type (FIIT).

F	•Frequency of training. How often an individual will train.
I	•Intensity of training. How hard the individual will work.
T	•Time or duration of training. How long individual sessions will last.
T	•Type of training. Specific training modality used to acheive desired outcome and goal.

Section 2 Effects of Physical Activity on Health

The Benefits of Exercise

There are huge benefits to leading a healthy lifestyle and taking part in physical activity. It will help in prevention, reduction or in some cases cessation of chronic illness and diseases.

Other health benefits to exercise but not limited to:

• Weight management.	• Reduced risk of heart disease.
• Reduced risk of cancers.	• Regulation of blood sugar, insulin, and blood pressure.
• Regulation of hormones.	• Improved mental health.
• Improved bone density.	• Improved strength of muscles.
• Reduced risk of falls.	• Increased life expectancy.

Section 3 Health and Safety

Considerations when Planning Physical Activity Sessions

Potential Hazards in a Fitness Environment

There are many potential hazards in a fitness environment which could relate to facilities, equipment, lifting and manual handling, aggressive behaviour, or cleanliness. Other emergency situations could include accidental injuries, sudden illness or medical emergencies or large scale emergencies such as a fire.

Area of fitness facility	Hazards	
Facilities	Loose wiring	Broken Window
Equipment	Faulty stepper	Loose dumbbell
Normal Operating Procedures	Lack of cleaning	Chemical cupboard left unlocked and open
Customers	Injury	Aggressive behaviour
Security	Broken Security camera	Emergency exit not working
Cleanliness	Dirty changing rooms	Dirty gym equipment

Accidental Injuries	Sudden Illness or medical emergencies	Large scale emergencies
Cuts and bleeding	Heart attack	Fire
Fractures	Angina attack	Bomb threat
Back Injuries	Asthma attack	Chemical spillage
Falls	Fainting	Gas Leak
Strains and sprains	Hyper or hypoglycaemia	Missing child

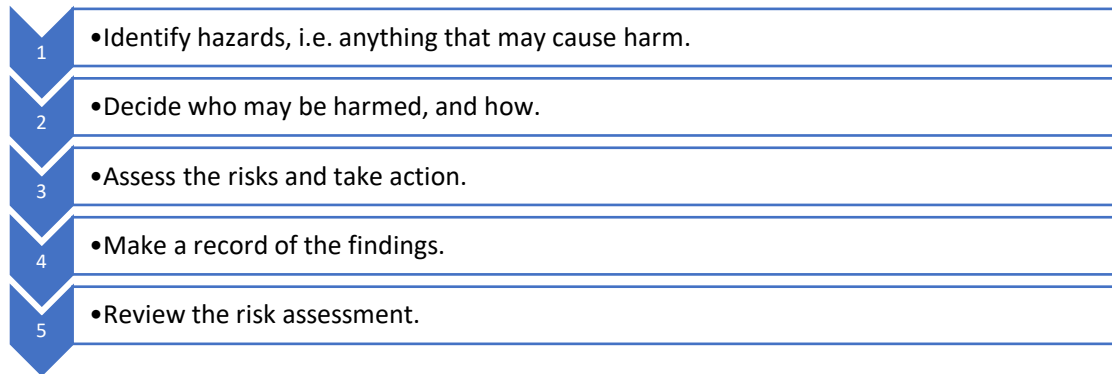
It is important to deal with these situations in a calm manner in order to not create panic amongst the customers and other employees.

Safety procedures for disabled people and older adults depend on the needs of the individual and the extent of their vulnerability fitness facilities will have procedures in place to ensure these special populations are planned for in an emergency.

Risk Assessment

A risk assessment is an examination of anything that could potentially cause harm to people in the workplace. It takes place so that any necessary precautions can be put in place or extra work needs doing to prevent any harm.

HSE provides five simple steps for assessing managing and minimising risk.



Controlling risk in a fitness environment can be managed through a series of questions in each area of the facility. Is there an option that presents less risk? Can access to the hazard or risk be limited? Can exposure to the hazard or risk be reduced? Would personal protective equipment be useful? Are there welfare facilities in the event of an accident? All of which could help to reduce any potential risks.

In order to maintain safety of children, preparation for emergencies can manage and minimise risk e.g., rehearsing emergency procedures and using age-appropriate tasks to explain what to do in an emergency.

It is also important to remain calm and positive, as this will influence the children's behaviour. Encourage them to be dependent on an adult, explain what is happening and provide direct, short, and truthful answers to any questions they ask. It is essential that appropriate staff-to-child ratios are also considered.

Safe and Effective Practices

Within a fitness facility, risk of injury or accident is higher than the average workplace. It is vital that health and safety procedures are carried out every day ensuring the safest environment possible for staff and customers.

It will be necessary for gym instructors to carry out maintenance checks throughout the gym and report any broken or damaged items to ensure that the gym is safe and in working order to maintain customer satisfaction.

Health Screening

It is important to collect information to assess the suitability of the participant for the physical activity session to understand any risk that exercise could pose to the participant and act accordingly.

Two simple tasks should be carried out prior to the participant starting any physical activity session.

- Informed consent to participate – The participant must understand that participation is entirely voluntary and be given opportunities to ask questions which must be answered and recorded. It is mandatory that informed consent is obtained and recorded prior to any fitness training commencing.
- Physical Activity Readiness Questionnaire (PAR-Q) Contains a series of simple questions that clarify if exercise is appropriate or if a referral to a medical professional clearance is obtained.

Section 4 Planning a Physical Activity Session

The Aim of a Physical Activity Session

To be able to plan a gym session the instructor must first understand the aim of the session. What does the instructor want the participant(s) to achieve from the session?

Is the session full body? Is the session muscular fitness based or cardiovascular fitness based? Once the instructor is able to understand the aims, they are then able to go ahead and plan the session.

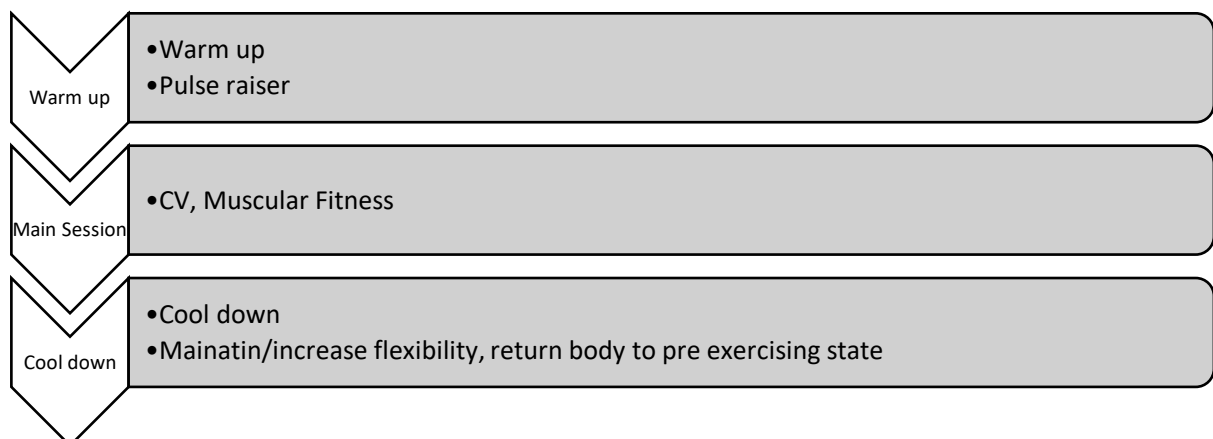
A physical activity session has a number of different components to it which need planning carefully to meet the needs of the participant(s) and ensure that all health and safety requirements are met.

Time	How Long will the session last for?
Location	Where will the gym session take place?
Equipment	Does the location have appropriate equipment for the session planned?
Special Considerations	Do the participant(s) have any special requirements or needs? Do any of the exercises need modifying to meet their needs?
Health and Safety	Have you carried out health and safety checks of the venue? Do you understand all health and safety procedures at the venue? Have you carried out a check of the equipment that you will be using?

Session Structure

A well planned and thought out gym session should contain:

- A suitable warm up to prepare the body for the session related to the contents of the session
- Main session – cardiovascular, resistance training
- Cool down to make improvements in flexibility and return the body to pre exercising state



Cardiovascular Fitness

Long Slow Duration / Continuous Training

This style of training involves working for sustained periods of time at the same consistent manageable pace. This must be manageable for the participant and is best suited to deconditioned and beginner recreational participants. As a beginner this part of the session should last between ten and twenty minutes.

Benefits	Limitations
Good for severely deconditioning participants and beginners and reduces the risk posed to this population through Injury of higher intensities this may be a walk rather than a run or jog.	Can prove repetitive and boring.
Improves aerobic capacity.	Takes far longer than other styles of cardiovascular training such as interval training.

Cardiovascular Machines

EXERCISE	COACHING POINTS	MUSCLES WORKED	OPTIONS TO MODIFY
TREADMILL	Maintain position in centre of belt Upright posture with relaxed shoulders Comfortable leg stride using heel to toe action Comfortable arm swing	Lower Body	Use of incline to reduce pressure on ankle, knees and hip joints
ROWING MACHINE	Sit upright, chest lifted, back straight as possible Overhand Grip, wrists stay in line with forearms Sequence of Legs - Arms - Arms Legs	Whole Body	Varying intensities and durations
CROSS TRAINER	Maintain upright relaxed posture looking straight ahead Keep hips, knees and ankles relaxed	Whole Body	Lower body only Varying intensities and durations
BIKE	Set seat to participants hip height Sit upright, looking forward Hips knees and ankles in line Soft knees Plantar flexion dorsi flexion during pedalling action	Lower Body	Recumbent bike to support back Varying intensities and durations

Muscular Fitness

An Important aspect of resistance training programming is planning sessions that are specific to the participant(s) goals, current fitness levels and training experience. This information will be taken at the time the PAR-Q is completed which clears them for exercise.

At a basic beginner level, a full body upper lower rotation is a good starting point which is one upper body exercise followed by one lower body exercise until the entire body has been covered.

Example:

Exercise	Upper / Lower	Body Part
Goblet Squat	Lower	Quads
DB Shoulder Press	Upper	Shoulders
DB Romanian Deadlift	Lower	Hamstrings, Glutes
DB Single Arm Row	Upper	Back
DB Lunges	Lower	Quads, Hamstrings, Glutes
DB Chest Press	Upper	Chest

See Appendix 1 page 13 for exercise descriptions.

Cool Down

The purpose of a cool down is to gradually return the body to pre-exercise state. The cool down is an opportunity to work on or maintain flexibility and make some advances in this area through stretching.

After training it is necessary for a pulse lowering activity as the heart rate is elevated, blood vessels dilated, and body temperature raised. This will lower the pulse gradually, avoid blood pooling and help remove any waste products. A short 3 – 5 minute low intensity cardiovascular activity followed by some stretching of both muscles worked and normally tight areas will be beneficial to the participant.

Stretching

At the start of a session, we use ballistic and isometric type movements are used to warm the body up. At the end of an exercise session a static stretching method is used to help reduce tension, increase range of motion, and provides an opportunity to work on tight areas of the body.

Static Maintenance Stretch

Static maintenance stretches are short stretches held for 10-15 seconds at the end of its normal range of motion used to maintain current flexibility.

Static Stretching Library

Examples but not limited to:

Muscle Stretched: Hamstrings



- Kneeling position, neutral spine.
- Step one foot forward with heel on the ground and toes elevated.
- Bend forward from the hip in a hinge motion. Press hips, glutes, and pelvis backwards.
- Hands on Hips, reaching forwards or on a piece of kit to aid balance

Muscle Stretched: Gluteal



- Start in a push up position and drop one knee onto the floor in the middle close to hands with knee in flexion.
- Relax torso over the top.
- Sit into outer hip.
- Keep back leg long.

Muscle Stretched: Adductors



- Take a kneeling position and hands on the floor.
- Step one leg to the side and place foot on floor.
- Push hips and pelvis backwards to intensify stretch.

Muscle Stretched: Quadriceps



- Stand upright.
- Raise one heel towards glutes and hold ankle with hand on same side.
- Knee of stretched leg points to the floor and remains close to opposite leg.
- Maintain upright posture.
- Hold onto object for balance if necessary.

Muscle Stretched: Hip Flexor



- Kneeling with one leg forward in a lunge position.
- Tilt pelvis forward and squeeze glute on that side to stretch hip flexor.
- Hands on hips or object for balance.

Muscle Stretched: Erector Spinae – Cat Stretch



- Take all fours position. Hands underneath shoulders knees underneath hips.
- Round back to the ceiling pulling abdominals towards spine arching the back.
- Keep shoulders away from ears

Muscle Stretched: Latissimus Dorsi



- Take all fours position. Hands underneath shoulders knees underneath hips.
- Reach one arm forward past head and place hand on floor in line with opposite shoulder
- Point thumb towards ceiling. Lower shoulder towards floor and push hips away in opposite direction to intensify stretch.

Muscle Stretched: Pectoral



- Standing with arms raised level with shoulders, elbows bent and hands facing forwards, fingers towards ceiling.
- Contract upper back and draw shoulder blades back and down.
- Keep neck long and shoulders away from ears.

Muscle Stretched: Trapezius and Rhomboids



- Stand upright with hands in front of body, level with shoulders.
- Link fingers and round upper back, pull shoulder blades apart.

Resistance Training Exercise Library

Examples but not limited to the contents of this table. Resistance Machine (RM) Free Weight (FW) Body Weight (BW)

Area of The Body	Exercise	RM / FW / BW	Main Muscles Worked	Coaching Points
LEGS	Squat	BW/FW	Quadriceps, Hamstrings, Gluteus, Adductors, Abductors	<ul style="list-style-type: none"> • Position bar on the upper back • Feet-hip width apart • Abdominals braced and take a deep breath • Initiate squat taking hips into flexion and bending knees • Lower under control until knees parallel or below hips • Distribute weight between heels and ball of foot 70/30 • Drive feet into the floor to lift upwards through legs
	Deadlift	FW	Hamstrings, Gluteus, Quadriceps, Erector Spinae	<ul style="list-style-type: none"> • Feet hip-width apart with toes under bar and close to shins • Squat down to the bar maintain neutral spine looking forward • Abdominals braced • Grasp the bar just outside knees alternate grip optional • Drive feet into the floor as hard as possible keeping chest lifted straighten up to standing position
	Lunges	BW/FW	Quadriceps, Hamstrings, Gluteus	<ul style="list-style-type: none"> • Feet Hip-width apart • Abdominals braced with neutral spine • Stride one leg forward and lower body under control creating right angles at both knees • Heel of back leg lifts to allow the lunge action • Keep knee of front leg in line with toes • Keep torso upright • Push floor away to drive through legs lift upwards and return to start position
	Split Squat	BW/FW	Quadriceps, Hamstrings, Gluteus	<ul style="list-style-type: none"> • Start feet hip width apart • Abdominals braced with neutral spine • Take a step forward into a split stance • lower body under control creating right angles at both knees • Heel of back leg lifts to allow the lunge action • Keep knee of front leg in line with toes • Keep torso upright • Push floor away to drive through legs lift upwards and return to start position of split stance

	Leg Press	RM	Quadriceps, Hamstrings, Gluteus	<ul style="list-style-type: none"> • Sit with back rested on pad • Feet on platform hip width apart • Knees at 90° or less dependent on machine • Grasp handles at both sides pulling your body into machine • Push platform away extending knees and hips • Keep soft knees soft at top • Return to start position
	Leg Extension	RM	Quadriceps	<ul style="list-style-type: none"> • Sit in machine so back is supported and knee is aligned with pivot point • Adjust shin pad and position just above the ankle • Grip handles and pull body into machine • Extend knees raise toes towards ceiling fully extending the knees without locking out • Lower under control to start position
	Hamstring Curl	RM	Hamstrings	<ul style="list-style-type: none"> • Sit in machine so back is supported and knee is aligned with pivot point • Have the pad positioned on or just above you achilles tendon with your toes pointing upwards • Flex your knee to 90° pulling the weight under control • Return load to start position under control
	Seated Abductor	RM	Abductors, Gluteus	<ul style="list-style-type: none"> • Sit on machine, back in touch with pad, heels on foot bars, knees outside pad • Bring legs together • Press pads away, open legs as far as is comfortable and return under control
	Seated Adductor	RM	Adductors, Gluteus	<ul style="list-style-type: none"> • Sit on machine, back in touch with pad, heels on foot bars, knees resting on inside of the pads • Adjust lever so that legs are as far apart as comfortable • Squeeze legs together, adducting hip • Return under control
UPPER BODY ANTERIOR	Shoulder Press	RM/FW	Deltoids, Triceps, Upper Trapezius	<ul style="list-style-type: none"> • If shoulder press machine adjust seat so that handles are at shoulder height • If dumbbells position them at height of the ears • Neutral spine, abdominals braced • Wrists aligned with elbow, Press weight upwards, soft elbows at the top and Lower under control
	Lat Raise	FW	Medial deltoid	<ul style="list-style-type: none"> • Stand feet hip width apart, with dumbbells in hands resting by your side • Keep neutral spine, abdominals braced • Raise dumbbells to shoulder height keeping dumbbells parallel to the floor • Elbows slightly flexed throughout and lower under control

Front Raise	FW	Anterior Deltoid	<ul style="list-style-type: none"> Stand feet hip width apart, with dumbbells in hand resting on front of the thighs Keep neutral spine, abdominals braced Raise dumbbells to shoulder height keeping dumbbells parallel to the floor Elbows slightly flexed throughout Lower under control
Upright Row	FW	Anterior Deltoids, Upper Trapezius, Biceps Brachii	<ul style="list-style-type: none"> Stand feet hip width apart, barbell in hands with overhand grip narrow grip, resting on front of the thighs Keep neutral spine, abdominals braced Keep the bar close to the body Drive elbows upwards until bar is level with lower chest Keep hands lower than elbows at all times and Lower under control
Chest Press	RM	Pectorals, Triceps	<ul style="list-style-type: none"> Sit on machine with head and upper body supported and feet firmly on floor Keep neutral spine, abdominals braced Grasp handles of machine with overhand grip Push handles away if machine, keep elbows soft and return to start position
Bench Press	RM/FW	Pectorals, Triceps	<ul style="list-style-type: none"> Lie on bench, with head and upper body supported and feet firmly on floor Keep neutral spine, abdominals braced Grasp barbell shoulder width or slightly further apart Bend elbows to lower bar under control to fist width away from chest and press back out
Press Ups	BW	Pectorals, Triceps	<ul style="list-style-type: none"> Prone position with arms extended and feet in contact with floor Head, shoulders, hips, knees and ankles aligned Keep neutral spine, abdominals braced Flex and bend the elbows to lower chest towards the floor Extend elbows to return to start position Variety of positions can be used dependant on participant
Pec Flyes	RM/FW	Pectorals	<ul style="list-style-type: none"> Lie on bench or machine, with head and upper body supported and feet firmly on floor Keep neutral spine, abdominals braced Hold dumbbells or handles in extended position over the chest palms facing, soft elbows Lower dumbbells or handles to the side until parallel to the floor Return to start position
Bicep Curl	RM/FW	Biceps Brachii	<ul style="list-style-type: none"> Stand feet hip width apart, barbell in hands with overhand grip hands shoulder width apart, resting on front of the thighs

				<ul style="list-style-type: none"> • Keep neutral spine, abdominals braced • Keep elbows tucked into side of the body • Curl the bar towards the chest under control • Slight pause at the top and lower the bar under control to start position
	Lat Pull Down	RM	Latissimus Dorsi, Upper Trapezius, Biceps Brachii	<ul style="list-style-type: none"> • Whilst standing grip the bar just wider than shoulder width apart or as wide as is comfortable • Lower body into seated position, securing thighs under pad • Lean slightly back • Retract shoulder blades back and down • Keep neutral spine, abdominals braced • Pull the bar down under control toward sternum driving your chest towards the ceiling • Return to start position under control
UPPER BODY POSTERIOR	Seated Row	RM	Latissimus Dorsi, Upper Trapezius, Posterior Deltoid Biceps Brachii	<ul style="list-style-type: none"> • Sit upright fixing feet into position • Keep neutral spine, abdominals braced • Grip bar and pull cable towards you • Retract shoulder blades back and down • Pull handles towards you keeping elbows close to the body and wrists firm and straight, return to start position
	Single Arm Row	FW	Latissimus Dorsi, Upper & Lower Trapezius, Posterior Deltoid Biceps Brachii	<ul style="list-style-type: none"> • Place the knee and same side hand on the bench with hand underneath shoulder and knee underneath hip • Place free standing foot into comfortable position creating a stable base • Keep hips straight, neutral spine abdominals braced • Hold dumbbell in free hand with arm long • Row dumbbell towards pocket keeping elbow close to the body and avoid any twisting of the hips or torso • Lower under control to start position •
	Prone Fly	FW	Posterior Deltoid, Middle Trapezius, Rhomboids	<ul style="list-style-type: none"> • Stand feet hip width apart, with dumbbells in hand resting on front of the thighs • Keep abdominals braced and neutral spine • Hinge at hips to 45° angle, dumbbells aligned under shoulders, elbows slightly flexed palms facing inwards • Raise dumbbells to the side level with shoulders keep elbows soft. Lower under control
	Bent Row	FW	Latissimus Dorsi, Upper & Lower Trapezius, Posterior Deltoids, Biceps	<ul style="list-style-type: none"> • Stand feet hip width apart, overhand grip with barbell in hand resting on front of the thighs • Keep abdominals braced and neutral spine • Hinge at hips to 45° angle, barbell close to body, elbows slightly flexed

			Brachii, Hamstrings, Gluteus	<ul style="list-style-type: none"> • Raise barbell to chest driving elbows behind torso • Lower under control
	Pull Up	RM/FW	Latissimus Dorsi, Upper & Lower Trapezius, Posterior Deltoid Biceps Brachii	<ul style="list-style-type: none"> • Grip bar with overhand / pronated grip • Abdominals braced • Arms extended in hanging position, shoulder blades retracted back and down • Pull body towards bar driving elbows behind body, squeeze shoulder blades • Lower body under control to start position
	Chin Up	RM/FW	Latissimus Dorsi, Upper & Lower Trapezius, Posterior Deltoid Biceps Brachii	<ul style="list-style-type: none"> • Grip bar with underhand / supinated grip • Abdominals braced • Arms extended in hanging position, shoulder blades retracted back and down • Pull body towards bar driving elbows behind body, squeeze shoulder blades • Lower body under control to start position
	Tricep Pushdown	RM	Triceps	<ul style="list-style-type: none"> • Stand facing cable with feet hip width apart • Neutral spine abdominals braced • Take overhand grip over bar and tuck elbows into side of the body • Press bar down to thighs extending elbows keeping soft elbows • Return to start position
	Tricep Kickback	FW	Triceps	<ul style="list-style-type: none"> • Place the knee and same side hand on the bench with hand underneath shoulder and knee underneath hip • Place free standing foot into comfortable position creating a stable base • Keep hips straight, neutral spine abdominals engaged • Raise dumbbell towards armpit and hold in position • Extend elbow, pause in extended position and return to start position
TRUNK	Wood chop	RM/FW	External Obliques, Internal Obliques	<ul style="list-style-type: none"> • Standing position with feet hip width apart • Hold single resistance band or cable in both hands • Extend arms out in front • Rotate trunk whilst resisting rotation at the pelvis
	Abdominal Crunch	BW	Rectus Abdominus, Transverse Abdominus, Obliques	<ul style="list-style-type: none"> • Supine lying position, feet in contact with floor • Keep tennis balls width between chin and chest to maintain head in neutral alignment • Drive lower back into floor • Lift shoulders off floor creating spinal flexion until able to squeeze abdominals creating intra-abdominal pressure

	Back Extension	BW	Erector spinae	<ul style="list-style-type: none"> • Prone lying position on floor • Feet in contact with floor • Hands by side of the ears • Abdominals braced • Raise shoulders and chest under control keeping feet on floor and head in neutral alignment • Lower under control to start position
	Plank	BW	Serratus Anterior, Transverse Abdominis, Multifidus, Gluteus	<ul style="list-style-type: none"> • Prone position on elbows • feet in contact with floor • Keep a straight back (neutral spine) • Contract and squeeze abdominals glutes to increase intra-abdominal pressure
	Mountain Climbers	BW	Pectorals, Deltoids, Triceps, Serratus Anterior, Transverse Abdominis, Multifidus, Gluteus	<ul style="list-style-type: none"> • Prone push up position feet in contact with floor • Keep a straight back (neutral spine) • Contract abdominals and glutes increasing intra-abdominal pressure • Take knee to elbow and return to start position alternating sides
	Glute Bridges	BW/FW/RM	Erector Spinae, Transverse Abdominus, Pelvic Floor, Gluteus	<ul style="list-style-type: none"> • Supine lying position • Drive hips into extended position as high as possible • Squeeze abdominals and glutes to increase intra-abdominal pressure and return to start position
	Birddog	BW	Erector Spinae, Transverse Abdominus, Pelvic Floor, Hamstrings, Gluteus.	<ul style="list-style-type: none"> • Start on all fours in a box position • Hands in line with shoulders • Knees underneath hips • Knees hip width apart • Squeeze abdominals and gluteus to increase intra-abdominal pressure • Extend opposite arm opposite leg simultaneously keeping hips straight • Pause in the extended position for 1 to 2 seconds and return to start position

Notes:



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