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PHYSICAL TRAINING INSTRUCTORS MANUAL

Exercise No 21: Back Extension on floor (opposite leg with opposite arm)	
Illustration	
	
Objective	To simultaneously lift the opposite arm and opposite leg 20-30cm from the ground by activating the erector spinae muscles
Primary muscles	Spinal erectors (erector spinae) and lower back muscles
Starting Position/ Command	Lie on your stomach, arms extended to the front, position ready.
Exercise Description	Lie on your front in neutral with your arms straight and extending forward and the tip of your nose on the floor. Keep your pelvis in neutral and your legs extending along the floor. Draw your abdominals in and engage your pelvic floor muscles to maintain neutral and prevent the lower back from curving inward too much. Slowly raise your left leg and right arm off the floor. Lengthen through the arm and leg as you lift. Keep your right shoulder stable and not hunched toward your head. Alternate right arm and left leg with left arm and right leg.
PTI Pointers	<p>Keep the pelvis firmly pressed against the floor.</p> <p>Avoid rotating, twisting or hyper extending the lumbar spine any time during the exercise.</p> <p>Work slowly, and keep tension in the erector spinae.</p> <p>Keep the head and neck in a neutral position.</p>

Weight training (poles)

Exercise No 22: Dead Lift			
Illustration			
			
			
Objective	To lift the pole by activating the back muscles in order to straighten the torso to an upright position		
Primary muscles	Lower back, trapezius, gluteus, quadriceps		
Starting Command	Position/	Pole dead lift, position ready.	

PHYSICAL TRAINING INSTRUCTORS MANUAL

<p>Exercise Description</p>	<p>Stand facing the pole with your feet slightly spread. Keep your back motionless and a little arched. Flex your knees until your thighs are almost parallel to the floor. Take an overhead grip on the pole, with your hands slightly more than shoulder width apart. Inhale, contract your abdominal and low back muscles, and lift the pole by straightening your legs (contracting your abdominals and keeping your back straight), raising it in front of your shins. When the pole reaches your knees, extend your torso so you are standing erect with your arms straight down at your sides, exhaling as you complete the movement. Hold this straightened position for 2 seconds, and then return the pole to the floor, making sure you do not hyperextend or arch your back.</p>
<p>PTI Pointers</p>	<p>Keep the hands and arms as relaxed as possible, and concentrate on pulling the back muscles. Keep the head and neck in a neutral position. Keep the knees soft. Make sure your back is never rounded throughout the movement. In any movement, whenever you use heavy weight, you must 'block'. Stick out your chest by taking a deep breath and filling your lungs with air like a balloon. In this way, you will stiffen your rib cage and prevent your upper torso from bending forward. Contract all the abdominal muscles to increase intra-abdominal pressure so your shoulders are pulled back when you are in the top position of the movement. Finally, contract the lower back muscles to arch your lower back and extend the bottom of the spine. These 3 simultaneous actions are called blocking. Their function is 2 avoid rounding the back (or flexing the spine) which may cause a slipped disk if you work with heavy weight.</p>

PHYSICAL TRAINING INSTRUCTORS MANUAL

Exercise No 23: Bent Over Row	
Illustration	
	
Objective	To lift the pole by pulling the shoulder blades in towards the spine.
Primary muscles	Latissimus dorsi, teres major, posterior deltoids, arm flexors, biceps, brachialis, brachioradialis
Starting Position/ Command	Pole bent over row, position ready.
Exercise Description	Stand with your knees slightly flexed. Bend your torso at an angle of about 45 degrees, keeping your back straight. Take an overhand grip on the pole with your hands more than shoulder width apart and your arms dangling straight down from your shoulders. Inhale, contract your abdominals isometrically, and pull the pole straight up until it touches your chest. Return to starting position – exhale.
PTI Pointers	<p>Make sure your back is never rounded throughout the movement.</p> <p>Concentrate on pulling the shoulder blades in towards the spine and down towards the lower back.</p> <p>Don't turtle.</p> <p>Don't swing the pole.</p> <p>Do not twist the torso.</p> <p>Keep the neck straight to keep the cervical vertebrae in a neutral position.</p>

PHYSICAL TRAINING INSTRUCTORS MANUAL

Informal exercises to develop back muscular strength and endurance

Body weight training exercises

Exercise No 24: Pull-ups	
Illustration	
	
Objective	To lift the body with the arms and the back.
Primary muscles	Latissimus dorsi, teres major, biceps, brachialis, trapezius, rhomboids, pectorals.
Exercise Description	<p>Extend your arms and take an underhand grip on the bar with your hands more than shoulder width apart.</p> <p>Inhale, and stick your chest out to pull yourself upward until your chin is at the level of the bar.</p> <p>Exhale as you complete the movement.</p>
PTI Pointers	<p>Don't hunch forwards. Keep the head up.</p> <p>Focus on the motion of the scapula, which should be back and down.</p> <p>Advanced exercise.</p>

Weight training (poles)

None

Weight training (poles and rope)

None

PHYSICAL TRAINING INSTRUCTORS MANUAL

Formal exercises to develop abdominal muscular strength and endurance

Body weight training exercises

Exercise No 25: Scissors	
Illustration	
	
	
Objective	To cross the legs over each other in a lying position.
Primary muscles	Iliopsoas, rectus femoris and transverse oblique.
Starting Position/ Command	Lie on your back, arms at the sides, position ready.
Exercise Description	Lie on the back with arms straight next to the sides. Lift straight legs 10cm from the ground. Open straight legs to the side and then close them and place the left leg over the right. Open the legs again then close them and place right leg over the left.
PTI Pointers	Work slowly and keep tension in the abdominals. Concentrate on pulling the belly button to the floor and keeping the rib cage down. Keep the head and neck in a neutral position.

PHYSICAL TRAINING INSTRUCTORS MANUAL

Exercise No 26: Alt. Jack Knives	
Illustration	
	
Objective	Lift alt. arm and alt. leg to touch each other.
Primary muscles	Rectus abdominis, Rectus femoris, internal obliques.
Starting Position/ Command	Lie on your back, arms extended, position ready.
Exercise Description	Lie on your back, arms extended lift opposite arm and opposite leg towards each other. Return to start position.
PTI Pointers	Advanced abdominal exercise. Do not rotate or flex the neck. Keep the transverse abdominis activated. Keep the leg straight. The axis of rotation is the hip.

PHYSICAL TRAINING INSTRUCTORS MANUAL

Exercise No 27: Jacknives

Illustration



Objective	Lift torso and straight legs towards each other.
Primary muscles	Rectus abdominis, Rectus femoris, internal obliques.
Starting Position/ Command	Lie on your back, arms extended, position ready.
Exercise Description	Lie on your back, arms extended lift torso and straight legs towards each other with arms held alongside the torso. Return to start position.
PTI Pointers	Advanced abdominal exercise. Do not rotate or flex the neck. Keep the transverse abdominis activated. Keep the leg straight. The axis of rotation is the hip.

PHYSICAL TRAINING INSTRUCTORS MANUAL

Exercise No 28: Hip Flexors

Illustration



Objective	To lift both bent legs by flexing the hip.
Primary muscles	Iliopsoas, rectus femoris.
Starting Position/ Command	Lie on your back, arms next to the side, position ready.
Exercise Description	Lie on your back with straight legs and arms next to the side. Flex the hip and lift both legs of the floor to a 90-degree bend knee position so that the upper leg is perpendicular to the torso. Return to starting position.
PTI Pointers	Keep the lower pressed firmly against the floor. Keep the shoulder blades down and together throughout the exercise. Keep the head and neck in a neutral position throughout the exercise.

PHYSICAL TRAINING INSTRUCTORS MANUAL

Exercise No 29: Sit-ups	
Illustration	
	
	
Objective	To lift the shoulder of the ground and lift the torso to the knee.
Primary muscles	Rectus abdominis, obliques and hip flexors
Starting Position/ Command	Sit-up, position, ready!
Exercise Description	Lie on the back with legs bent and feet on the floor. Place hands alongside the ears. Inhale and curl the torso off the floor until the elbow touch the knees, exhale as the movement is completed. Return to the starting position without resting the torso on the floor.
PTI Pointers	For more balance allow another learner to hold the feet. Extend arms forward to make the exercise easier. Perform the exercise on a decline to make it easier and on an incline to increase the intensity.

PHYSICAL TRAINING INSTRUCTORS MANUAL

Exercise No 30: Crunches	
Illustration	
	
	
Objective	To shorten the torso moving the pubis closer to the breastbone by deliberately contracting the abdominals.
Primary muscles	Rectus abdominis.
Starting Position/ Command	Crunch position ready.
Exercise Description	Lie on the back with legs bent and feet on the floor. Place hands alongside the ears. Inhale and curl the torso off the floor (approximately 30cm off the floor), exhale as the movement is completed. Return to the starting position without resting the torso on the floor.
PTI Pointers	For more balance allow another learner to hold the feet. Extend arms forward to make the exercise easier. Perform the exercise on a decline to make it easier and on an incline to increase the intensity.