

SUPPLEMENTARY FILE

Land-Based Exercises Protocol for Patients with Knee Osteoarthritis

Warm-up (10 min)



Description: treadmill, stationary bicycle, or walking.

Performed in a comfortable cardiorespiratory intensity aiming the joints mobility.

Cool-down (10 min)



Description: Quadriceps stretching.

Active stretching performed with maximum tolerable range of motion.

Set: 1 x 30 seconds



Description: Gastrocnemius stretching.

Active stretching performed with maximum tolerable range of motion.

Set: 1 x 30 seconds



Description: Hamstrings stretching.

Active stretching performed with maximum tolerable range of motion.

Set: 1 x 30 seconds

SUPPLEMENTARY FILE

Exercise Protocol - Phase 1

A



B



Name: Bridge

Type: isometric

Position A: lie down on the mat, knees pointing to the ceiling, knees aligned with hips.

Position B: raise your hips up toward the ceiling and hold for 15 up to 30 s.

Sets: 3 x 15-30 seconds



Name: Straight Leg Raise (SLR) – hip flexion

Type: Isotonic

Position A: lie down, one leg bent and another straight, pull up your foot.

Position B: raise your leg straight up until it is aligned with the other thigh, then slowly lower it down.

Sets: 3

Repetitions: 12



Name: SLR – hip abduction

Type: Isotonic

Position A: side lying position, bend the knee in contact with the floor and straight the other leg.

Position B: raise your leg straight up, kneecap pointing forward, pulling up your foot.

Sets: 3

Repetitions: 12



Name: SLR – hip adduction

Type: Isotonic

Position A: side lying position, leg in contact with the floor straight and the other leg bent.

Position B: raise your leg straight up, kneecap pointing forward, pulling up your foot.

Sets: 3

Repetitions: 12



Name: SLR – hip extension

Type: Isotonic

Position A: prone position, both legs straight touching the floor.

Position B: raise one leg up at a time, keeping the totally knee straight.

Sets: 3

Repetitions: 12

SUPPLEMENTARY FILE

A



B



Name: Abdominal curls (crunch)

Type: Isotonic

Position A: lie down on the mat, place your hands behind your head, bend your knees and keep them aligned with hips.

Position B: as you exhale, slowly lift your chest up; as you inhale, slowly lower your chest down. Avoid bringing your chin to your chest.

Sets: 3

Repetitions: 12



Name: Standing calf raises

Type: Isotonic

Position A: Standing on both legs, hands on the wall for balance (if needed).

Position B: rise up on toes then slowly lower down.

Sets: 3

Repetitions: 12

Exercise Protocol - Phase 2

A



B



Name: Plank

Type: Isometric

Position A: lying on your belly (prone position).

Position B: lift your entire body up with elbow and feet supports. Hold for 15 up to 30 seconds.

Sets: 3 x 15-30 seconds



Name: Bridge with one leg

Type: Isometric

Position A: lie down on the mat, knees pointing to the ceiling, knees aligned with hips.

Position B: raise your hips up toward the ceiling then carefully take one leg off the floor. Hold for 15 up to 30 s.

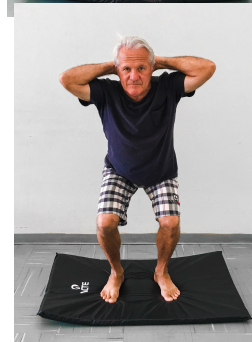
Sets: 3 x 15-30 seconds

SUPPLEMENTARY FILE

A



B

**Name: Clam shell****Type: Isotonic****Position A:** side lying position, elastic band around your thighs, knees bent.**Position B:** move your knee away, squeezing your buttocks then slowly return. Repeat with the other side/leg.**Sets: 3****Repetitions: 12****Name: Abdominal curls with lifted legs****Type: Isotonic****Position A:** lie down on the mat, place your hands behind your head, bend your knees and keep them aligned with hips. Lift both legs up.**Position B:** as you exhale, slowly lift your chest up; as you inhale, slowly lower your chest down. Avoid bringing your chin to your chest.**Sets: 3****Repetitions: 12****Name: Trunk extension****Type: Isometric****Position A:** lying on your belly (prone position).**Position B:** move your chest away from the floor. Look at the ground. Hold for 30 seconds at least.**Repetitions: 3 x 30 seconds****Name: Wall squat****Type: Isometric contraction****Position A:** stand with your trunk to a wall, feet aligned with knees and hips, and away from the wall.**Position B:** slide down and keep your trunk towards the wall. Hold for 30 seconds up to one minute.**Repetitions: 3****Name: Partial squat****Type: isotonic contraction****Position A:** standing on both legs.**Position B:** slowly bend your knees and stand up again. Maintain your knees over your feet.**Repetitions: 3**

SUPPLEMENTARY FILE

A



B



Name: Standing hip abduction.

Type: static balance

Position A: standing on both legs with an elastic band around both legs.

Position B: lift one leg out, maintain the kneecap pointing forward, and hold for 30 seconds or more.

Repetitions: 3 (each leg)



Name: Standing on one leg

Type: static balance on stable surface

Position A: standing on both legs, eyes opened.

Position B: standing on one leg, knee slightly bent, lift the other leg off the floor and maintain the position up to 1 minute.

Repetitions: 2 (each leg)



Name: Standing on one leg

Type: static balance on unstable surface (trampoline, foam etc)

Position A: standing on both legs, eyes opened.

Position B: standing on one leg, remove another leg from ground and maintain the position.

Repetitions: 2 (each leg)



Name: Step-up

Type: isotonic contraction

Position A: on leg onto a step.

Position B: step up onto the next step, use the wall for balance if needed.

Step back down carefully to the position A.

Sets: 2 (each leg)

Repetitions: 12