

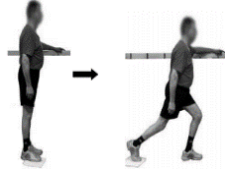



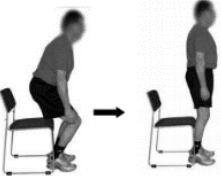






NEuroMuscular Exercise training program for patients with knee or hip osteoarthritis

EXERCISE		SET	WK	REP	SET	WK	REP	SET	WK	REP	SET	WK	REP	SET	WK	REP	SET	WK	REP
WARM UP	10 mins		1			2			3			4			5			6	
	The warm-up period consists of ergometer cycling for 10 minutes. The work load is set individually, and can be increased during the 10 minutes, aiming at reaching a perceived exertion of "somewhat hard."																		
CORE STABILITY/POSTURAL FUNCTION	Pelvic Tilt		1			2			3			4			5			6	
	 <p>Level 1: Pelvic-lift with flexed knees and short lever arm, putting load on both legs. Level 2: Pelvic-lift with semi-flexed knees and long lever arm, putting load on both legs. Level 3: Pelvic-lift as above, alternately putting load on the affected and non-affected legs.</p>																		
	Sit Ups		1			2			3			4			5			6	
	 <p>Level 1: Sit-ups with flexed knees, both legs on ball, arms along the sides (short lever arm) Level 2: Sit-ups with flexed knees, both legs on ball, arms crossed over chest (medium lever arm) Level 3: Sit-ups with flexed knees, both legs on ball, hands behind neck (long lever arm).</p>																		
POSTURAL ORIENTATION	Slide-exercise forward-backward		1			2			3			4			5			6	
	 <p>Level 1: Standing, weight-bearing on one leg, other leg on sliding surface. Slide backwards – forwards with "sliding leg", while flexing – extending the knee of the weight-bearing leg and keeping an appropriate position of the joints in relation to each other Level 2: as above, standing on uneven surface (e.g., foam pillow or thick mattress). Level 3: Forward lunge: Standing position, take a large step forward and then return. Hand support for balance if needed</p>																		
	Slide-exercise sideways		1			2			3			4			5			6	
 <p>Level 1: Standing, weight-bearing on one leg, other leg on sliding surface. Slide sideways with "sliding leg", while flexing – extending the knee of the weight-bearing leg and keeping an appropriate position of the joints in relation to each other. Level 2: as above, standing on uneven surface Level 3: Standing position, take a large step sideways and then return. Hand support for balance if needed.</p>																			

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LOWER EXTREMITY MUSCLE STRENGTH	Hip Abductors		1		2		3		4		5		6	
	Hip Adductors		1		2		3		4		5		6	
		<p>Level 1: Standing on one leg, rubber band other leg. Pull rubber band out (<i>hip abductors</i>) and in (<i>hip adductors</i>). Make sure there is tension in the rubber band also in resting position. Focus is on the hip abductors of the standing leg, keeping an appropriate position of the joints in the lower extremity in relation to each other and in relation to the trunk, i.e., without lateral displacement of the hip-pelvis region</p> <p>Level 2: As above, rubber band with increasing resistance</p> <p>Level 3: As above, standing on uneven surface (e.g., foam pillow or thick mattress).</p>												
	Knee Flexors		1		2		3		4		5		6	
	Knee Extensors		1		2		3		4		5		6	
FUNCTIONAL EXERCISES		<p>Level 1: Sitting position. Rubber band around one foot. Pull rubber band forward (knee extensors) and backwards (knee flexors). Make sure there is tension in the rubber band also in resting position.</p> <p>Level 2: As above, rubber band with increasing resistance</p> <p>Level 3: As above, rubber band with increasing resistance.</p>												
	Chair Stands		1		2		3		4		5		6	
		<p>Level 1: Start in a seated position, feet parallel, putting load on both legs, slight hand support for balance</p> <p>Level 2: Start in a seated position, feet parallel, putting load on both legs, without hand support</p> <p>Level 3: Start in a seated position, one foot in front of the other, with or without slight hand support for balance</p>												
	Stair climbing		1		2		3		4		5		6	
	<p>Level 1: Step-up (concentric muscle activation) and step-down (eccentric muscle activation) on low step-board, with or without slight hand support for balance</p> <p>Level 2: Step-up and step-down on medium high step-board, with or without bar bells.</p> <p>Level 3: Step-up and step-down on high step-board, with or without bar bells</p>													

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10 mins		1	2	3	4	5	6	
COOL DOWN							<p>The cooling down part consists of walking exercises forward and backwards, about 10 meters in each direction, in front of mirror (Figure 15), mobility exercises for the lower extremities (Figure 16) and stretching exercises for the lower extremity muscles for a total of about 10 minutes.</p>	