

Physical Therapy for arthritis

Aims of physiotherapy



- To evaluate the patient
- Educate the patient and his family
- Relieve pain.
- Strengthen muscles.
- Mobilize joints.
- To prevent deformity.
- To correct deformity.
- Improve coordination.
- To maintain optimum function & performance in all ADL
- Train position sense to reduce postural stress.
- Increase joint stability.
- Promote independence.



Examination and assessment



Frequent re-assessment is necessary, because the disease is rarely static.

- **Range of Motion:** Goniometric measurement of passive ROM is indicated at all affected joints following a gross ROM assessment.
- **Strength:** manual muscle tests
- **Joint Stability:** The Ligamentous laxity of any affected joint should be fully investigated.
- **Functional Assessment:** Functional assessments may include ADL, work, and leisure activities.



Treatment

Pain control

- a. Thermal agents:** can be used by various methods as hot packs, paraffin wax baths, and infrared.
 - a) It aims to reduce pain and relax the muscles.
 - b) Heat is recommended during disease remissions and chronic and not for acutely inflamed joints.
 - c) It is used for arthritis to prepare joints for exercises
- b. Cryotherapy:**
 - a) Cooling the muscle and skin to temperature low enough to affect conduction velocity of a nerve is most effective in reducing muscle spasm and in relieving pain.
 - b) The most effective method is the application of ice towels or packs which are changed frequently.
- c. Electrical stimulation:** (TENS, interferential).



External force control is accomplished by

a. Reduction of the patient's weight through diet and exercise regimes.

b. **Using assistive devices such as orthotics or ambulatory devices**

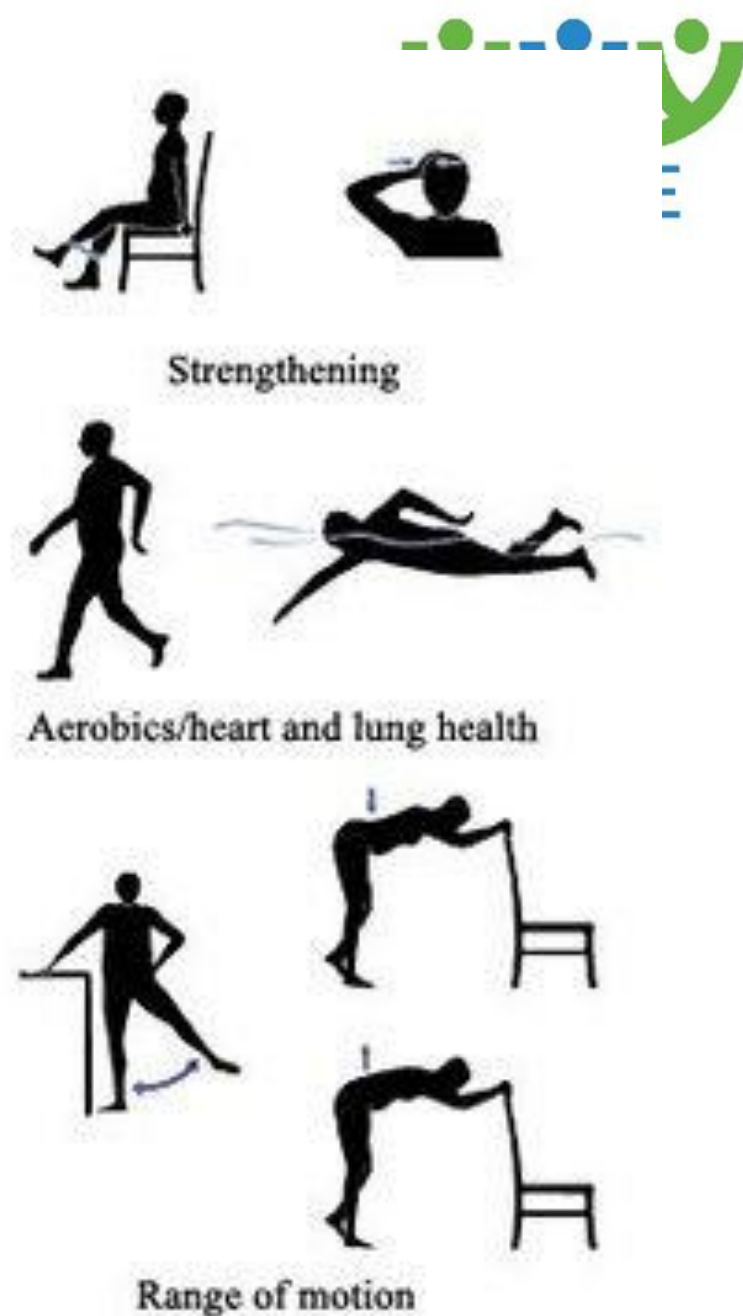
(a cane, crutches, or a walker) may be needed to reduce the weight-bearing load on the joint.



3. Arthritis Exercises

There are mainly three kinds:

- **Range-of-motion:** To maintain normal joint movement and relieve stiffness. These make the joints flexible.
- **Strengthening exercises:** To increase the strength of muscles that support the joints affected by arthritis.
- **Aerobic or endurance exercises:** They improve cardiovascular fitness, control weight and improve overall body function.



Arthritis Exercises Plan

- Explain exercise to the patient.
- Apply heat to sore joints before you begin exercising.
- Begin exercising with stretching, flexibility and range of motion exercises.
- start strengthening exercises slowly with small light weights or resistance band.
- Increase the difficulty of your exercise routine slowly.
- apply cold packs to sore joints and muscles after arthritis exercises.

The repetition of exercise

- **Range-of-motion: Either daily or every alternate day.**
- **Strengthening exercises: Every alternate day.**
- **Endurance exercises: For 20 to 30 minutes three times a week.**

Maintenance and restoration of joint range and patient mobility

a) Maintenance of ROM

Patients are encouraged to put their joints through ROM daily:

- Active movement is preferred
- Active assisted movement may be necessary.
- Passive movement is not indicated.

b) Restoration of ROM

- Repeated active movements into the limited range are encouraged and should be performed several times daily.
- Passive stretching for soft tissue limitations by using the force of gravity.
- Hydrotherapy
- Maintain the gained ROM with voluntary control.
- Splints can be used to gain ROM.

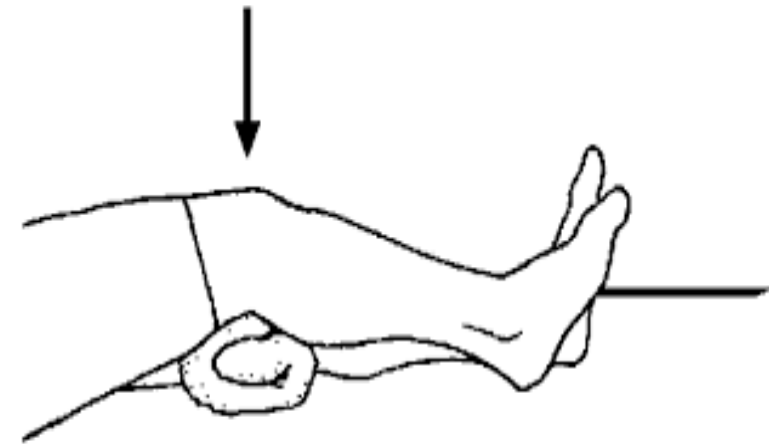
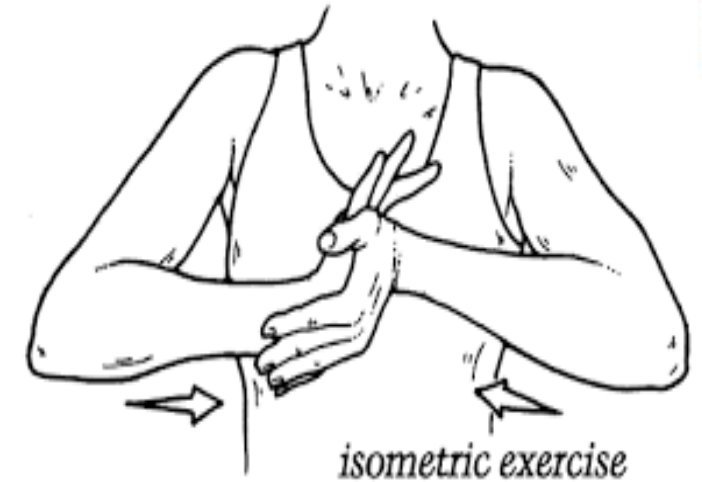
c) Mobility of the patient and gait training

- **Reeducation of walking** may be required. Walking aids may be chosen according to the state of upper limb joints. Sticks and elbow crutches with modifications can be used.
- **Independent ambulation** is recommended.



Strengthening exercises

- **Isometric exercises** are those in which you are strengthening your muscles by contracting them and not moving them through their normal range which might be painful if you have arthritis. An example of this is simply contracting your leg muscles, without moving your joints.
- Isometric exercises are often the best type of exercise to begin with in a strengthening program, particularly in patients who can not tolerate repetitive joint motion.
- A problem with isometric exercises is that they tend to raise the blood pressure more than others.



Isotonic exercises are those in which you contract your muscle throughout the full range of motion, again using constant weight or resistance, such as performing a biceps curl while holding a dumbbell.

- When beginning resistance training, it is good to start with just a single set of up to 15 repetitions, done 2 days a week. It should incorporate exercises that target major muscle groups such as quadriceps, hamstrings, and gluteal muscles.

Some examples of exercises specifically for the legs good for those with arthritis of the knee and or hips



- **Quad sets**: while in a seated position, with legs fully extended in front of you, make a muscle with your thighs trying to push the back of your knee down towards the floor. Hold for 10 seconds, relax and then repeat.



- **Wall slide:** place your back up against the wall with your hips and knees bent to a 90 degree angle as if you were sitting in a chair. Hold this position for 10 seconds, then come up and relax. Repeat.



- **Isotonic Quad exercise:** sitting in a chair with your feet planted flat on the floor, raise your right leg straight out in front of you. Relax and bring back to the floor. Repeat on the left. As you are able to you can add ankle weights to increase resistance



- **Isometric Hamstrings** while lying on the floor place heels on surface such as a couch or an exercise ball. Press down using the backs of your thighs and hold contraction for 10 seconds. Relax and then repeat.



- **Isotonic Hamstrings lying** on your belly with a pillow under your abdomen to support your back, bend your knee and bring your foot back towards your buttock. Bring back down to the floor repeat on the other side



- **Isometric Glutes Lying down on a flat** surface back flat on the floor, bend your knees so that your feet are flat on the floor. Raise your buttocks up off the ground contracting your butt muscles together. Hold for 10 seconds then relax.



Calf muscles Strengthening Using a wall or chair for balance, go up on your toes using your calf muscles hold yourself. Contract for 10 seconds, relax and repeat.



Aerobic exercise

- Aerobic exercise strives to improve **cardiovascular function** through activities that will increase your heart rate.
- Traditionally, this can be achieved via activities such as walking, jogging, biking, swimming and rowing, when these are done for an appropriate amount of time.

Thank You