Arthritis and Physical Therapy

How to manage your disease with exercise

Osteoarthritis (OA)

- OA is the most common form of arthritis and is usually caused by the deterioration of a joint.
- Weight-bearing joints are affected, with the knee and hip being the most common joints involved.
- Estimated that 27 million Americans have some form of OA.
- 1 in 2 people in the U.S. may develop knee OA by age 85.
- 1 in 4 may develop hip OA in their lifetime.
- Until age 50, women and men are affected equally by OA; after age 50, women are affected more than men.
- In their lifetime, 21% of overweight and 31% of obese adults are diagnosed with arthritis.
- OA is the most common cause of disability in the U.S.

OA

- OA occurs when the cartilage, which coats the bones in the joints, breaks down. This causes increased friction and pain.
- The cause of OA is unknown.
- Factors that can increase your risk for OA include:
  - Age
  - Genetics
  - Past injury
  - Occupation
  - Sports
  - Obesity

The best way to prevent or slow the onset of OA is to choose a healthy lifestyle, avoid obesity, and participate in regular exercise.

OA, How does it feel?

- Stiffness in joint, especially in the morning, which eases in less than 30 minutes.
- Stiffness in joint after sitting or lying down for long periods of time.
- Pain during activity that is relieved by rest.
- Cracking, creaking, crunching or other type of joint noise.
- Pain when you press on the joint.
- Increased bone growth around the joint that you may be able to feel.

Rheumatoid Arthritis (RA)

- RA is a chronic inflammatory disease that affects approximately 1% of the U. S. population.
- RA often results in pain and inflammation in joints on both sides of the body, and can become disabling due to its effect on the immune system.
- RA is classified as an autoimmune disease-a condition where the body's immune system attacks its own tissues.
- The cause is unknown. Some theories state that the cause may be related to a combination of genetics and environmental or hormonal factors.
- Women are 3x more likely to develop RA.
- RA may begin at any age, but most research suggests it begins in midlife.

RA, How does it feel?

- Stiff joints that feel worse in the morning.
- Painful and swollen joints on both sides of the body.
- Bouts of fatigue and general discomfort.
- Fever.
- Loss of joint function.
- Redness, warmth, and tenderness in the joint areas.

RA

The cause of RA is unknown. There is currently no sure way to predict or prevent the onset of RA. Early detection of the signs and symptoms will help with management of RA.

Exercise for arthritis: Considerations for RA

- Speak with your Dr. or your physical therapist to find appropriate exercise for you.
- Ideally, your exercise program would include aerobic exercise, strengthening exercise and stretching exercise.
- If a particular joint is actively inflamed, give that joint a rest, but continue to exercise.
- High intensity exercise,such as jogging or running, may be OK, even beneficial, to “kick it up a notch.”
- One researcher suggests that high intensity exercise at least twice a week can lead to improved daily function and mood. This researcher’s findings suggest that high intensity exercise did not speed up the rate of joint damage. But, in fact for the minority of patients who did experience rapid progression of damage, the culprit was more aggressive disease activity.

RA-exercise considerations

- If you have no damage to weight bearing joints, there would be no reason you couldn’t participate in high intensity exercises , such as aerobics or jogging. If you have damage in the lower extremities, then no jogging or hard aerobics.
- If it’s in the upper extremities, exercise that involves these joints, such as boxing and heavy weight lifting, could be a problem.
- Listen to your joints. If you are taking a spinning class and it hurts when standing on the pedals, sit, but keep pedaling.

(Arthritis Foundation, Lissa Poirot)

Some considerations for OA

OA interferes with work and activities of daily living.

It also undermines the ability of patients to pursue the levels of physical activity recommended for weight loss, cardiovascular health diabetes control and other health goals due to pain.

Per the Chronic OA Management Initiative (COAMI), OA should be considered a chronic disease, and should be managed more from a proactive point of view, somewhat like pre-diabetes. Instead of waiting for joints to deteriorate to the point of needing a replacement, the health care system should be more coordinated and proactive in assisting patients with managing their disease.

Exercising With OA

Exercise is considered the most effective non-drug treatment for reducing pain and improving movement in osteoarthritis.

Range of motion/flexibility: Range-of-motion exercises include gentle stretching and movements that take joints through their full span. Doing these exercises regularly – ideally every day – can help maintain and even improve the flexibility in your joints.

Aerobic/endurance: These exercises strengthen your heart and make your lungs more efficient. This conditioning has the added benefit of **reducing fatigue**, so you have more stamina throughout the day. Aerobic exercise also helps **control your weight** by increasing the amount of calories your body uses. Furthermore, this type of exercise can help you sleep better and improve your mood.

Strengthening: Strengthening exercises help maintain and improve your muscle strength. Strong muscles can support and protect joints that are affected by arthritis.

Physical Therapy (PT) and Arthritis

PT can develop an individualized program for flexibility, strength,coordination, balance and aerobic exercise.

- Teach you proper posture and body mechanics for common daily activities to relieve pain and improve function.
- Show you how to properly use assistive devices such as walkers and canes.
- Recommend different treatment options, such as braces and splints to support joints, shoe inserts to relieve stress on the lower extremities, and hot and cold therapy to ease joint pain and stiffness.
- Suggest modifications to your environment, such as ergonomic chairs or a cushioned mat in your kitchen, to relieve pain and improve function.

PT can consist of modalities to control pain (hot and cold packs, electric stimulation, ultrasound),exercise and manual therapy techniques aimed at improving joint mobility and soft tissue mobility. One study showed that patients who received both exercise and manual therapy vs just exercise showed better improvements with pain, stiffness, motion and function compared to those with exercise only. the improvements with the manual therapy group were still better 29 weeks later when rechecked.

Working Out Through Pain

Exercise is crucial if you have arthritis. But knowing just how much activity to do when you're hurting can be tricky. After all, research has shown that moderate activity can help prevent the progression of arthritis and improve overall function. But while mild muscle soreness after a workout is normal, sharp pain during or immediately after can signal injury. **And sometimes simply the fear of pain can keep you from wanting to do any kind of exercise at all. Here's how to determine when it's OK to work through exercise pain – and when it's not.**

If you have mild to moderate pain in a specific joint area before you work out: Some mild pain or discomfort is typical when you first start to move, but after a few minutes you'll usually start to feel better. Our joints and muscles get nutrition through movement. Once you start to move around a little you'll improve the lubrication and circulation around that joint. Start with some gentle, active range of motion movements and if that feels OK, progress to some low-impact activity like walking.

If you have moderate to severe pain in a specific joint area before you work out: Focus on a different area for a day or two. If your knees hurt, decrease the intensity. If the pain becomes worse, then stop the lower body moves and work your upper body instead. Continuing to put pressure on a joint when it's especially sore could contribute to joint damage, so it's best to ease up for a while.

Working Out Through Pain

If you have moderate to severe joint pain during exercise: Stop immediately. Most people with arthritis can work through mild pain safely. But if you're experiencing a lot of pain while you exercise, even if you're not doing a particularly joint-taxing workout, it may be a sign that you have inflammation in the joint, or even joint damage that requires treatment.

If you consistently have joint pain (not muscle pain) after exercise: Switch to a workout that puts less pressure on your joints. "If you need an elaborate brace or have to pop ibuprofen constantly, it's a pretty good sign that your activity is too hard on your joints," says rheumatologist James O'Dell, MD, president of the American College of Rheumatology Research and Education Foundation, in Atlanta. Swimming, water aerobics and biking are all good options for people with joint pain.

If you occasionally have moderate to severe joint pain the day after you work out: Cut back on the intensity of your workout. "If you're really sore the next day, you probably were exercising too hard or too long," says Dr. O'Dell. He suggests taking a day off, then doing a shorter, less strenuous workout. If your pain still doesn't let up, switch to a less intense form of exercise, such as trading your elliptical workout for water aerobics.

The Two-Hour Pain Rule

If you have more joint pain two hours after exercising than before you started, you've overdone it. Ease up at your next workout.

Posture

Getting your body in alignment and learning how to keep it there is one of the most important things you can do for yourself to control pain.

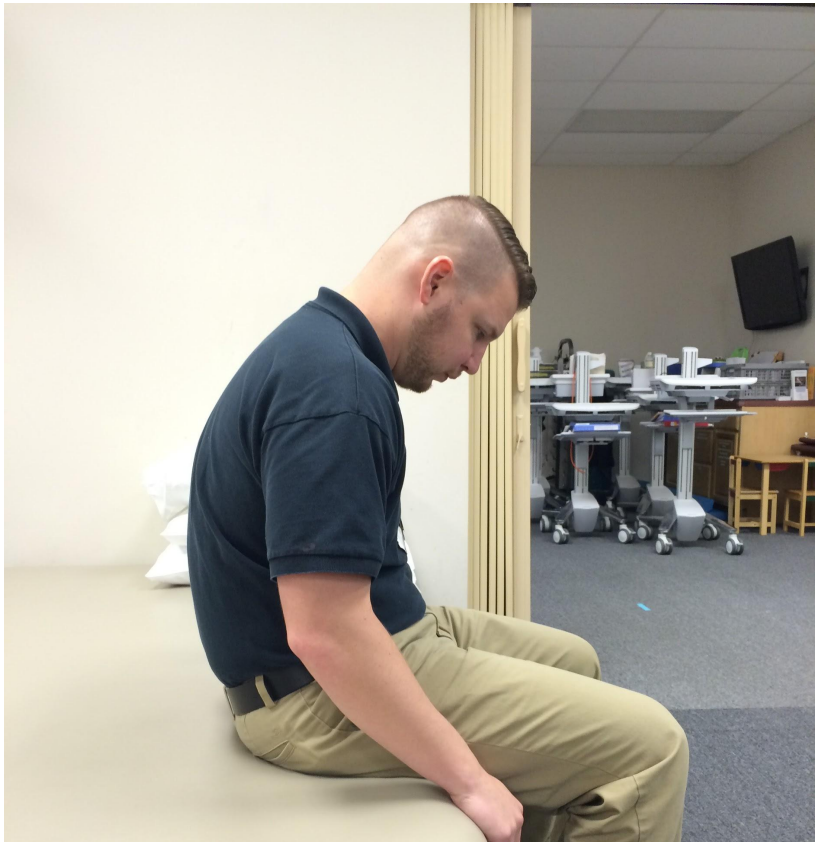
Chest Lift Postural Correction: not an exercise, but a way of being.

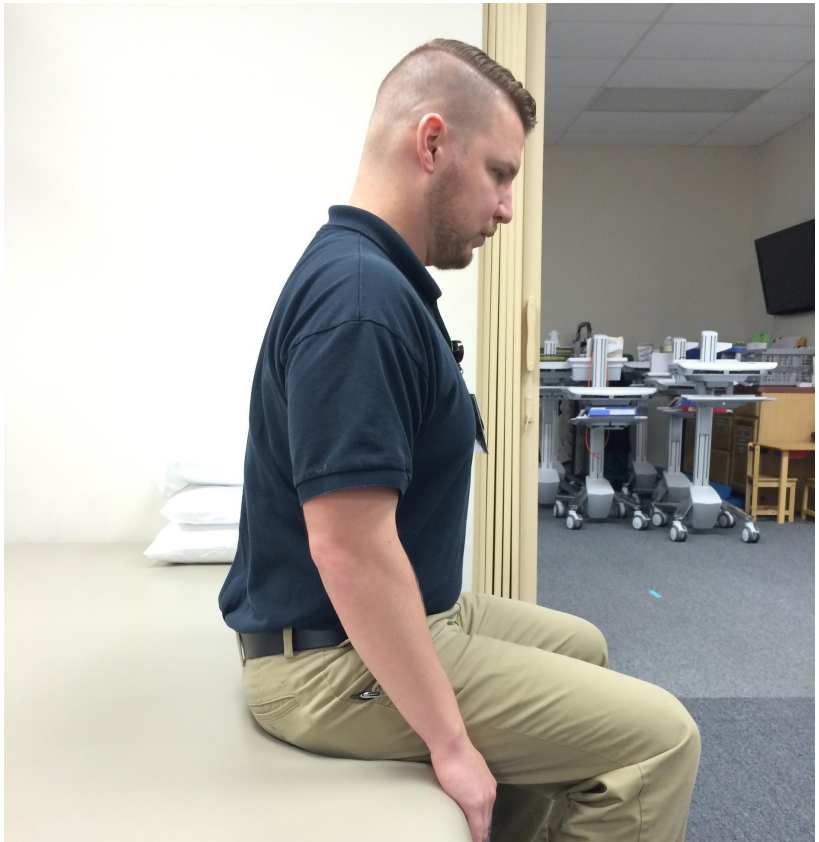
1: Lift your sternum (breast bone) gently up and out.

2: Do not overcorrect. Signs you are overdoing include backward arching of your low back or tilting back of your head and neck. YOur neck should not feel strained.

3: Correct only as far as is comfortable and painfree. It is OK to feel different muscles working and stretching.

Chest Lift Posture





Posture

Use supportive cushioning. Experiment with various supports such as a rolled towel to support the lumbar spine, lumbar roll or cushions, or a “tush cush” type of cushion for relief for the low back or tailbone.

Use good ergonomics. Use the correct size and shape chair for you, and ergonomically correct work stations at home, work and in your car. Check out the ergonomics guide from teh National Institutes of Health at http://cap.mil/Documents/CAP_Ergo_Guide.pdf for specific guidelines.

Abdominal Bracing: 1: Find a comfortable position for your low back. This position will vary depending on your existing type of posture and the health of your spine. 2: Activate your core muscle, the Transverse Abdominus. Try pulling your abdominals in like you are trying to zip up a tight pair of jeans. Or, make the “shh” sound.

Movement retraining for knee OA

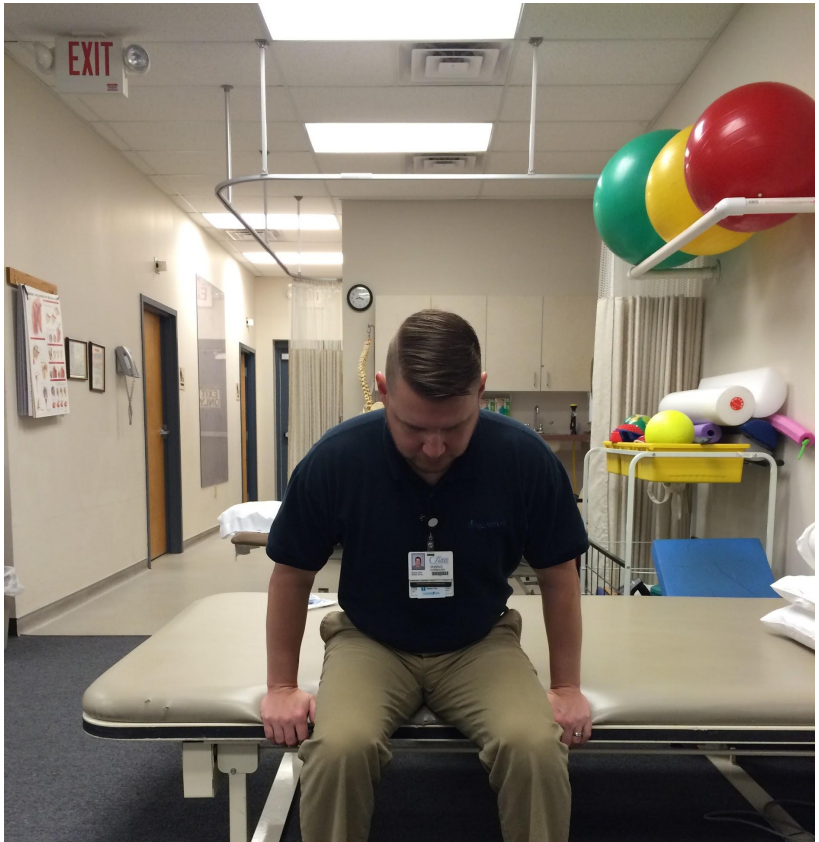
This approach is being studied in people with medial, or inner, compartment OA, which is 10 times more common than other forms of knee OA. The medial knee compartment bears a much higher load than the lateral [outside] compartment. **The inside knee compartment experiences loading [or force] that's two to three times higher than the outside.**

With movement retraining, the pressure on the medial compartment lessened by 20 percent as compared to a knee brace, which reduced pressure by 10 to 15 percent, and foot orthotics, which reduced pressure by 5 to 10 percent.

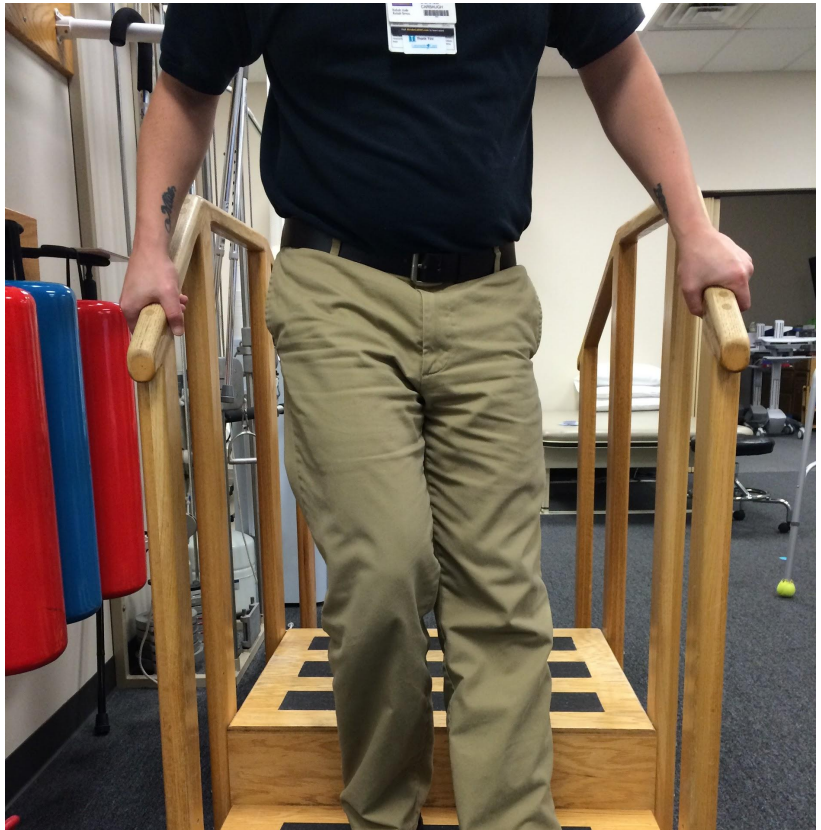
For now, patients can get movement retraining by working with a physical therapist, says Dr. Dragoo: "The physical therapist can help them to walk symmetrically and to spend equal time on both legs, making sure that the trunk is over the legs and not swaying side to side. When you limp, you lose efficiency and that can make knee pain worse."

What's most important is to practice the new movement, says Dr. Dragoo: "Once the physical therapist teaches you how to walk differently, you have to be committed to watching the way you walk."

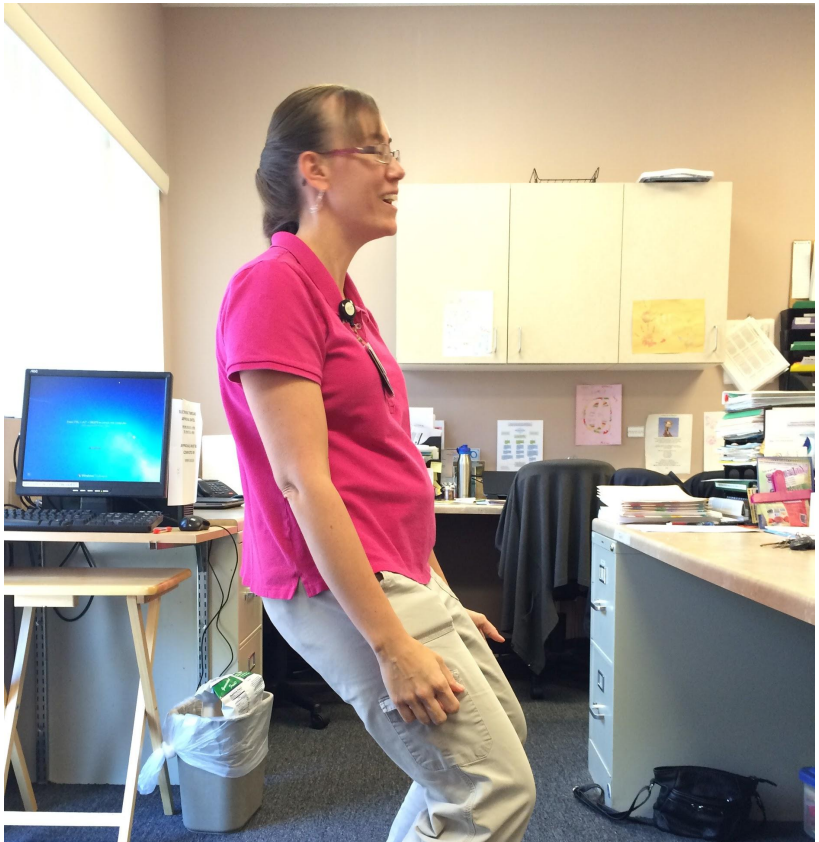
Proper knee position for sit to stand transfer



Proper knee position for descending steps



Proper hip and knee position for a squat



Proper knee position for a squat

Arthritis wrap up: Food for thought

Arthritis and weather: People with arthritis often claim they can predict the weather, based on their joint pain level, and with good reason. Studies show a variety of weather factors can increase pain, especially changes. Watch for any changes in

- Barometric pressure (especially falling)
- Temperature (especially lowering)

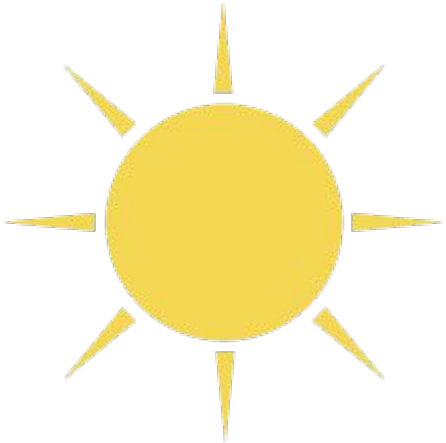
A study from Tufts University in 2007 found that every 10-degree drop in temperature corresponded with an incremental increase in arthritis pain. In addition, relatively low barometric pressure, low temperatures and precipitation can increase pain. Researchers aren't sure why this happens. They suspect certain atmospheric conditions increase swelling in the joint capsule.

Source: The Arthritis Index is based on a proprietary forecast by the meteorologists at www.AccuWeather.com.

Arthritis and Weather

Current Arthritis Index

Predicted joint pain level, based on your local weather



OA Around the World

One kinesiology group suggests that OA is less prevalent in underdeveloped countries: less furniture, sit on the ground with legs crossed which puts hips and knees through larger, more complete range of motion.

Possibly less OA with certain religious activities: ie: Muslims kneeling and praying 5 x day. The position puts hips and knees through greater range of motion.

Countries that produce olive oil also consume more olive oil.

OA, in general, is on the rise world wide

Arthritis: Final Thought

“**You don’t stop moving because you get old. You get old because you stop moving!”** (Variation of George Bernard Shaw quote)

Arthritis: Resources

The Arthritis Foundation

http://www.arthritis.org

American Physical Therapy Association

http://www.apta.org/Arthritis

Centers for Disease Control and Prevention

http://www.cdc.gov/arthritis/interventions.htm

United States Bone and Joint Initiative

http://www.usbji.org