

strengthening the muscles, unless a person is in an extremely weakened condition.

2) **Strength exercise:** a resistance type exercise (such as the MedX machines). These exercises strengthen the muscles around the joints and pull the joints snugly together the way they should fit. A snug fit seems to be a major key to pain relief. Even when arthritic damage is visible on an X-ray, exercise will frequently reduce and sometimes eliminate pain. According to Dr. Henry Lodge, a nationally known gerontologist and best selling author of *Younger Next Year*, "I have patients come to me all the time who have been told by their doctor that they have to have a knee replacement. I have them do the leg extension and leg curl machines and 60% of the time they never have the knee replacement."

The American College of Rheumatology recommends regular exercise, including cardiovascular and strengthening exercises. Both forms of exercise have been shown to significantly improve patient quality of life and reduce pain. According to Arthur Grayzel, MD, consultant to the Arthritis Foundation, "a strengthening program is now totally established as part of the rehabilitation of a person with arthritis. Regardless of age, the results demonstrate that a person is never too old to become stronger."

How do you get started?

You should begin by setting an appointment in our fitness center with a trainer who will show you how the MedX equipment meets your needs. Our trainers will guide you on how to carefully begin adding exercise to your weekly schedule and they will make sure you start at a very easy level. Everyone responds to exercise differently. Please let our trainers know if you have any problem during the movement. One person may find a particular exercise to be very helpful and pain free and another person with similar symptoms may find the same exercise causes pain. If there is joint

pain while doing the exercise or on the next day, the weight and the range of motion should be reduced. If joint pain persists, the exercise may have to be eliminated and another exercise substituted in its place.

According to the Arthritis Foundation, "Symptoms of arthritis come and go. Exercises that seem easy one day may be too hard the next." Let the trainers know and they can adjust the weight or the number of exercises for that day. There should be no sharp pain during or after exercise.

Research has shown that lack of movement in the joints will generally make the pain and deterioration worse. Your goal is to develop a program of exercise that is as close to pain free as possible and does not result in additional pain the next day.

Strengthening exercises on the MedX equipment at Mike Arteaga's Health & Fitness Centers offer the arthritis sufferer an organized and supervised program that will strengthen the muscles that surround the painful joints. Muscular support improves the integrity of the joint and often helps to alleviate the pain.

Consistency is the most important ingredient in a successful arthritis program! The body can only become stronger if the right kind of exercise is performed on a regular basis. The Arthritis Foundation points out that *recreational activities should be added to therapeutic exercise programs but do not replace it!* To succeed, you need to "make time" in your schedule two times a week since you will never "find the time." What's more important than your health?

What about glucosamine?

According to an article in *Physician and Sports Medicine Magazine*, "Glucosamine and chondroitin occur naturally in cartilage. In vitro, occurring in laboratory tests, glucosamine has been found to stimulate cartilage growth and oral glucosamine has shown in animal studies to

decrease inflammation and arthritis symptoms." The medical letter concluded, "Glucosamine appears to be safe and may be effective for treating osteoarthritis." This information is explained in the book, *The Arthritis Cure* written by Dr. Jason Theodosakis. The book *also* endorses regular exercise as part of an arthritis pain control program. With your doctor's approval glucosamine supplements should be taken during a minimum 12 week period before deciding whether they are helpful.

Can damaged cartilage heal?

A recent study in Melbourne, Australia by leading author, Dr. Flavia M. Cicuttini, found that weight-bearing exercise was linked to increased fibular (knee) cartilage volume and reduced cartilage defects. This study clearly shows that knee cartilage can actually grow with regular exercise. In many cases cartilage tears are stitched back in place rather than removed, since they now know that cartilage will heal.

According to an article in *Prevention Magazine* titled "Your Battle Plan for Beating Arthritis" by Harris H. McIlwain, MD, a Board Certified Rheumatologist, "*In many cases if only one part of the treatment could be accomplished, we would want it to be the exercise. We are often told by patients that it is the exercise that makes the difference. They tell us when they exercise they improve, and when they don't exercise regularly, their arthritis worsens.*"

Why are Mike Arteaga's Health & Fitness Centers different?

We strive to be a health resource for our members with the goal of helping to preserve their health and create a lifelong exercise habit.

— Mike Arteaga

Owner, founder, health and fitness consultant for over 35 years

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Arthritis

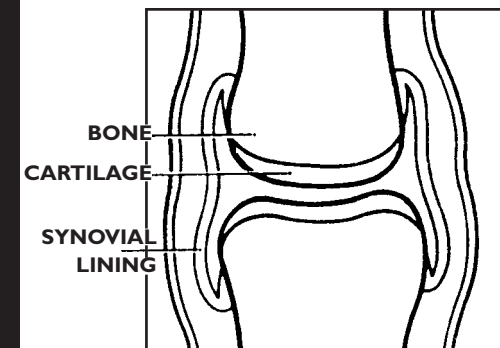


Fig. 1a A healthy joint

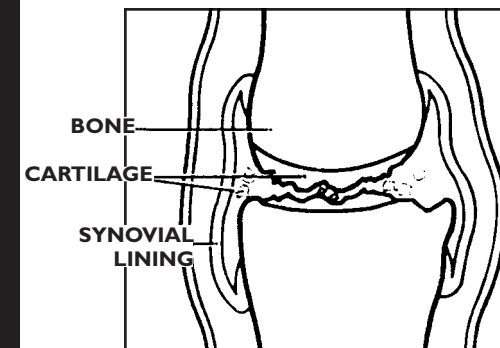


Fig. 1b Joint with advanced Osteoarthritis

The word arthritis literally means "joint inflammation." It refers to more than 100 different diseases and affects approximately 37 million people.

But there is hope!

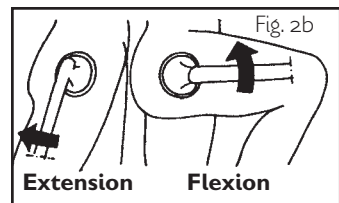
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The two most common forms of arthritis are **OSTEOARTHRITIS** and **RHEUMATOID** arthritis.

OSTEOARTHRITIS (OA), otherwise known as degenerative joint disease, is also called the “everybody disease” since almost everyone, as they age, will have some traces of it. OA involves the deterioration of the cartilage and other joint tissues. It often occurs in only one or two joints and doesn’t spread further. It is most common in the joints of the fingers, hips, knees and spine. OA can result from poor joint alignment, a major injury, a succession of small injuries from everyday activities or may result from a combination of factors. Inactivity is a major risk factor for OA since it causes a decline in muscle strength, allows laxity in the joints and increases the chance of joint injury.

A joint is any point in the body where two bones meet. Cartilage covers the ends of the bones where they make contact with each other. Cartilage is tough, elastic tissue that provides a smooth, slippery surface between the bones; it reduces friction and keeps the bones from



rubbing against one another as they move. It also acts as a shock absorber. Under ideal conditions, the bones meet and the cartilage ends glide against one another with nearly friction free motions.

Generally, the cartilage lining on the end of one bone is convex in shape (ball-like or round in shape) and matches perfectly with a concave shape (socket type shape, figure #2a) on the other bone. Most of our joints are some variation of this ball and socket arrangement. Our joints, like the ball joints in the suspension system of our car, are designed to function best and last the longest when

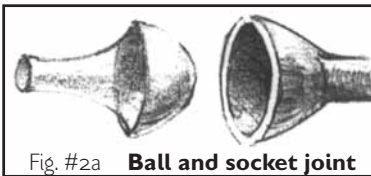
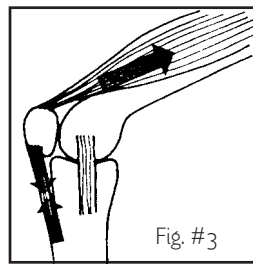


Fig. #2a **Ball and socket joint**

they fit tightly together. When they loosen, they wear much more quickly. In the body the muscles cross the joints, pulling them together to maintain a tight fit (figure #3). In addition to holding the joints together, the muscles reinforce the joints, and also act as shock absorbers for the joints.



Thigh muscles pulling the knee together

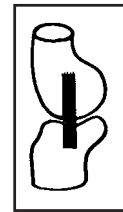


Fig. 4a



Fig. 4b

The ligaments are also part of the primary support system crossing the joints and holding them together (figure #4a). In a lifetime of activity and with the possible occurrence of injuries, the ligaments stretch. As a result, they don’t keep the joints as tight as they should be (figure #4b). Only surgery can re-tighten the ligaments. Generally, surgery is not considered for ligament repair unless there is a complete rupture or serious tear. Therefore, strengthening the muscles provides increased joint support and compensates for over-stretched ligaments.

Strengthening the muscles around a joint provides the best “knee brace” known, far superior to any externally worn brace. When the muscles are strong, they maintain a constant tension across the joint.

The cartilage surfaces of a joint are lubricated with synovial fluid, the body’s natural lubricant. An example of these smooth cartilage surfaces is clearly seen when eating a chicken leg. As you pull the leg bones apart, the shiny smooth white surfaces on the ends of the bones are the cartilage. With OA these shiny surfaces become rough and worn (figure #1b on the cover). In some cases the cartilage wears through completely, and the bones begin to rub and grind against one another, causing pain. As you age, we often reduce our activity level and lose the muscle strength needed to support our joints.

Decreased activity also causes us to lose calcium from our bones, which reduces bone density and contributes to the deterioration of the cartilage.

According to John Bland, Professor of Medicine and Rheumatology at the University of Vermont College of Medicine, “*We’ve studied this disease for 50 years now and we’re getting fairly good at it. One of the things we’ve learned is that with specific exercise focused on the arthritic area, people can tolerate more osteoarthritis pain than if they remain immobile. The cartilage and bones are in enough trouble with arthritis; immobilization may result in even more severely damaged bones and cartilage.*”

Overweight people are far more likely to develop osteoarthritic knees. Extra pounds put additional stress on the joints increasing the risk of cartilage damage. *The average person loses 15 pounds of muscle and gains 45 pounds of fat between the ages of 25 and 55!* It is no wonder arthritis is so common! Excess body weight combined with weak muscles causes abnormal wear on the knees and other joints.

“Muscles help act as a shock absorber to dampen the stress placed on joints,” says Ronenn Roubenoff, MD, Assistant Professor at the Tufts USDA Human Research Center on Aging. “The idea is to be as active as possible,” says Richard Kyle, MD, Chief of the Orthopedic Department and a staff physician for the arthritis care program at Metropolitan-Mount Sinai Medical center in Minneapolis. Kyle recommends preventative measures such as range of motion, strength, and endurance exercises as an essential part of each day for arthritis patients. “Muscle strength in most cases translates into joint protection,” he says.

Muscular joint support is under our control! Research has now proven that the muscles can be strengthened at any age. In a Tufts University study with a group of *85 to 99 year old nursing home patients, most doubled their strength in 10 weeks.* Increased muscle strength helps

re-establish the snug fit in our joints. *It is this “snug fit” that seems to be the key to reducing arthritic joint pain.* “Body systems, including the joints, work better when they are used than when they are not used,” says James Fries, MD and Associate Director of the Stanford Arthritis Center. “An exercise regimen is critical for osteoarthritis patients,” said Dr. Marc Hochberg, head of the division of Rheumatology and Clinical Immunology at the University of Maryland, Baltimore. “The stronger the muscles and tissue are around your joints, the better they will be able to support and protect the joints, even those that are weak and damaged from arthritis.”

RHEUMATOID ARTHRITIS (RA) is the second most common arthritis. It is an autoimmune disease involving chronic inflammation. The body’s immune system attacks its own tissue, particularly in the joints. Inflammation begins in the synovial membrane (the tissue around the joint that helps keep the joint lubricated) and spreads to the other structures in the joint as well as other parts of your body. It causes pain, stiffness, warmth, redness and swelling in the joints, and its origin is yet unknown. According to the Arthritis Foundation, “exercising regularly is extremely important when you have rheumatoid arthritis. Exercise helps keep your joints flexible; strengthens the muscles that help you keep your joints stable.”

What kind of exercise should you do for arthritis?

There are two entirely different types of exercise, each serving a different purpose. As stated by the Arthritis Foundation, both types should be incorporated into an arthritis pain management program:

1) **Cardiovascular exercise:** a rhythmic ongoing type of exercise, such as walking on a treadmill or riding a stationary bicycle. It mildly stimulates, stretches, and moves the joints. This type of exercise improves endurance and helps burn calories, but generally does very little for