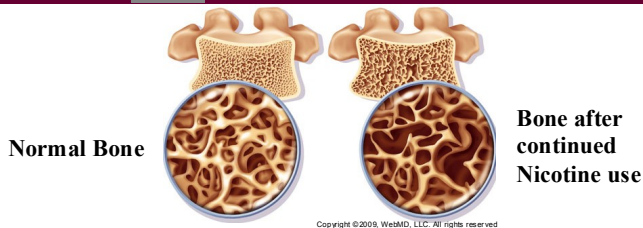


Stretch

A Patient Education Newsletter

Negative Effects of Smoking on Bones

By Ron Salazar, PT



There is extensive public awareness of the hazardous effects of smoking on our health. Long-term smoking can lead to conditions, such as respiratory problems, heart disease, and lung cancer, to name a few. In terms of healing and rehabilitation, did you know that smoking can also adversely affect the musculoskeletal system- bones, joints, ligaments, tendons, and muscles? There are numerous studies that give evidence that nicotine and smoking have negative effects on healing of these tissues. The healing process takes longer and the risk of complications is increased.

In terms of bone healing, fractures in smokers take longer to heal and may not heal as completely as they do for non-smokers. Nicotine decreases the function and growth of osteoblasts, the cells responsible for bone formation. This prevents optimal, proper bone healing. There also may be decreased bone mineralization which results in weaker bone. One of the most notable effects of smoking on healing bone is that there is a higher chance of malunion or non-union. This means that the fractured bone may not

heal completely. In turn this may lead to further bone pain complicating the rehab process.

Studies also show that smoking also affects healing tissue by affecting blood cells and circulation. Nicotine causes the arteries to constrict and also decreases the function of the red blood cells which carry oxygen. With decreased oxygen going to the healing tissue, this delays tissue healing and repair. White blood cells are also affected by nicotine. Their function is to “eat” dead tissue and bacteria in the area. Inhibition of white blood cell function, therefore, contributes to increased risk of infection.

Other studies show that smoking and nicotine may delay the healing process of ligament structures. One study in particular suggests that in smokers, the cells that provide the “glue” for ligament tissue support develop slower and decrease in density. The study goes on to suggest that this may delay restoration of the stability of the healing ligament.

In conclusion, smoking can have adverse effects on the healing of fractured bone, soft tissue, and surgical wounds. The healing process can take longer. Malunion or non-union of bone may occur. Risk of infection is increased. To maximize rehab success, individuals who are smokers must seriously consider quitting smoking not only for good general health but also for optimal healing and recovery.

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Biomechanical Throwing Analysis

If you experience shoulder or elbow pain during throwing, we can help. We offer a computer analysis of your throwing form and movement in order to provide a frame-by-frame breakdown of technique. The *Dartfish* Analysis System assists us in profiling an athlete's peak performance. With the utilization of dual video cameras, we capture multiple views in order to evaluate your strength, range of motion, and flexibility.

Cost of Program: \$75 for evaluation and \$60 per week (3 visits) for a one-on-one mechanics training. Included is a CD copy of your video and a weekly program designed to correct deficiencies. Insurance billing is available for injured players with a prescription from a referring physician.



Scar Wars

By: Tiffany Patterson MOTR/L, CHT

“They just removed the stitches! You want me to do what?”

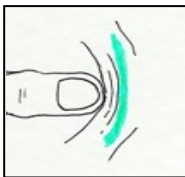
It may seem scary, but it is true, your therapist will ask you to begin a regimen of therapy for your scar to ensure the optimal outcome shortly after your sutures and staples are removed. So, what is a scar? Scars are areas of fibrous tissue (fibrosis) that replace normal skin after injury. A scar results from the biological process of wound repair in the skin and other tissues of the body. Scar tissue is made up of collagen, the same protein it is replacing, but it lays down in a thicker more pronounced manner than normal tissue. Scarring is a natural part of the healing process.

An immature scar forms immediately after a wound heals. During this period, it may be painful, itchy or sensitive as nerve endings within the tissue heal. Depending on the size and depth of the wound, scar tissue will cease production 3-18 months following wound healing. When scar tissue is no longer produced, the scar is considered mature.

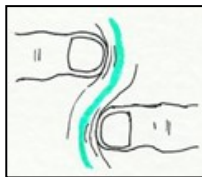
While the degree of scar formation varies from person to person, there are some distinguishing characteristics. Scars can become hard and non-pliable. Bands of fiber can be seen or felt on or below the surface of the skin. The skin can tighten or shorten and if it crosses a joint, a contracture may form. Without good mobilization, the tissue layers can stick together, restricting the movement of the fascia layers, which can, consequently, affect movement of nearby joints and underlying or even distant structures. Once your wound has fully healed, it can be manipulated, even if it is painful at first. Gradually, with manipulation, the area will become less sensitive and more flexible.

What should you be doing at home?

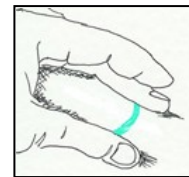
Scarring responds well to several therapy methods. Exercise and range of motion (ROM) activities can effectively free underlying tendons that have been caught up in scar tissue. Massage in multidirectional patterns (sideways, s-shaped, and skin rolling) can help realign the collagen fibers. Other methods can include compression sleeves or gloves, as well as scar pads to provide pressure. Silicone, found in creams, gels or sheeting, can inhibit collagen growth. Some of these products can be found in your local pharmacy or drug store. Lastly, don't let the scar become dry. A scar's growth is stimulated by a dry surface; moisturize often to reduce scar production.



Sideways



S-Shaped



Skin Rolling

Your therapist will help you decide which method or methods will work best for you!

Home Exercise Programs

By: Andy Godek, DPT, MA, ATC

Your First Step on the Road to Recovery

You may have thought you were done with homework when you finished high school or college, but you will see it again when you come in for your therapy initial evaluation! Your JOI therapist will provide you with a home exercise program (HEP) to help expand upon the care that you will be receiving while at one of our nine rehabilitation centers. Often after injury, our muscles will shut down in response to swelling in the area or trauma to a specific body part.

This may result in decreased strength, increased stiffness, decreased motion, increased pain, or decreased coordination. Your individual home exercise program will focus on the goals set during your initial evaluation and may contain stretches to improve flexibility, range of motion exercises, balance activities or strengthening tasks. Remember, our ultimate goal in therapy is to reverse negative changes and put you back on the road to full recovery.

Your HEP will allow you to keep working while at home and then consistently advance your exercises while attending your sessions with your therapist. One of the many roles of your therapist is to provide skilled advancement of your therapeutic exercises to work towards your rehabilitation goals. Your therapist may change the exercises that you are asked to complete at home and may provide you with pictures and lists of exercises for you to take with you and consult as needed. Our therapists will never be angry if you ask for more to do at home but we often limit you to learning a few exercises at a time so you understand and perform them with proper form. Remember, when you come in for your next visit that we can tell when you are completing your homework!

Low Back Pain and Poor Posture

By: Barbara Short, DPT

Back pain is the leading cause of disability in Americans between the ages of 20-64. More than 26 million Americans experience frequent back pain at least one time in their life. There are many factors that cause back pain such as poor posture, poor body mechanics, nutrition, and everyday stress. The focus here will be poor posture.

Many of us have poor posture while performing activities such as sitting, walking, standing, and performing tasks that require bending forward and lifting. The abnormal stress placed on these structures can lead to abnormal changes such as degeneration of discs and joints, lengthening or shortening of ligaments and muscles, and wear and tear of cartilage. These changes may then lead to low back pain. Research suggests that many spine problems are preventable. It begins with good posture by maintaining a "neutral spine." A neutral spine has natural curves that form an S-shape. The cervical and lumbar regions have a slight concave or lordotic curve, and the thoracic and sacral regions have a convex or kyphotic curve.

Proper alignment in standing: "Wall test" - stand with your back against the wall with heels a few inches forward. Remember to draw in your lower abdominal muscles. Then, push away from the wall and try to maintain the following:

- Feet shoulder width apart and legs straight without locking the knees.
- Maintain a small hollow in low back without too much arch or leaning back with prolonged standing. The "tail" is slightly tucked down.
- Lift the breastbone. This will cause the shoulder blades to move down in back.
- Make your chin level. Relax your jaw and neck muscles.

Proper alignment in sitting:

- Feet on the floor with knees and hips at 90 degrees.
- Maintain small hollow in low back.
- Lumbar roll is recommended to support low back with prolonged sitting.
- Lift breastbone. This will cause the shoulder blades to move down in back.

Good posture while driving:

- Seat vertical and head to rest against head rest with chin level.
- Knees should be bent to reach pedals and at the same height or higher than hips.
- Hands on wheels with elbows slightly bent and relaxed.

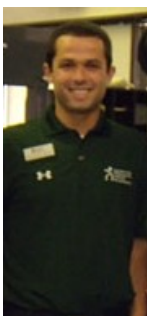
Good posture while sleeping:

- While on back, place 1-2 pillows under the knees and adjust pillow under the neck to support the natural curves of the spine. The neck should not be hyperextended or flexed too far forward.
- While lying on side, place a pillow between the knees to keep the spine neutral. Also, adjust the pillow under the head to keep the neck from being too far up or too far down from its neutral position.

Although bad postural habits are hard to change, with diligent practice and perseverance it can be achieved. This would minimize future episodes of low back pain.



Featured Clinician



Christian D. Prado, DPT/MOTR/L

Master's Degree in Occupational Therapy (University of St. Augustine)

Doctoral Degree in Physical Therapy (University of St. Augustine)

Christian works as both an occupational and physical therapist at our Orange Park location. He received his Doctoral Degree in Physical Therapy April, 2011. He joins 13 other clinicians who have earned their Doctor of Physical Therapy degree. He enjoys sports, orthopaedic rehabilitation and manual therapy, as well as in the treatment of the hand, elbow, and shoulder.



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3 Point Meadows

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8 Mandarin

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9 Orange Park

1845 Town Center Blvd Suite 410 Fleming Island, FL 32003

Tips for Golf Injury Prevention

Are you a golfer? Here are some great tips provided by Kristen Wright, MED, ATC

STRETCHING Low back strains are the #1 injury golfers sustain. A few simple stretches given by your JOI clinician with your golf club can help prevent injuries from taking you off the course.

FORM When putting your ball on the tee or retrieving your ball after sinking a putt always make sure to bend at the knees and not the waist. This will avoid undue stress on your low back.

MECHANICS The biomechanics of your golf swing play a very important role in injury prevention. The lead shoulder endures more stretching and strain, particularly in an unsound golf swing, than any other area. At JOI we use a program called Dartfish to break down your golf swing and help you make modifications to your swing to prevent injury. The extent of modifications required to help prevent injury will likely be minor.



STRENGTHENING Strength training for the shoulder helps you swing your arms faster and hit the ball farther by generating more club head speed.

THE CORE Strengthening should also include the hips, gluteals, abdominals and back...not just the arms and legs. This will help prevent those pesky low back injuries, as well as help you swing.

WARM UP Be sure to warm up before any round of golf. A good warm up should include golf specific stretching and light, easy swings working your way up to full speed swings. If you warm up properly, you will have less of a chance of injuring your muscles and a much better chance of hitting longer and straighter shots.

PAIN Listen to your body! Some mild soreness after a round of golf is OK. However, any persistent soreness or sharp pains need to be addressed by a rehab professional.

PREVENTING GOLFERS ELBOW Golfers Elbow is pain on the inside, or medial, aspect of the elbow. It is caused by repeated use of the forearm muscles. To help prevent and/or ease the symptoms make sure to stretch your forearm muscles. (To stretch the forearm muscles extend your arm out in front of you and with the opposite hand pull your wrist back and down. Hold each stretch for 20-30sec and repeat.)

Community Events



Along with your help, we have recently raised over \$400 through our change collections at our front desks! This was enough to provide lunch to over 400 recipients at the Sulzbacher Center on May 5th. This is the second lunch we have been able to sponsor. We plan to continue to collect money to offer meals to those in need. Please continue to donate your loose change in the designated bins at our front desks!