



Back to Life

SPRING 2007

What YOU
need to know
about the new
**Artificial
Disc**

How your GYM
can help manage
your back pain

Get back
on the slopes!
SKI EXERCISES
to protect your
knees & back

What's causing your
**Back & Neck
& Pain**

**BACK TO
GOLF**

If you've been told
NOT to play golf,
there may be new
hope for you!

What's causing your Back & Neck & Pain

Back or neck pain is a discomfort that many have to cope with daily. Sometimes degenerative disc disease and a bad back may be something passed down through heredity. But most back and neck pain can be caused by muscle strain. How can you interrupt the back strain cycle? The first step is understanding what makes your back tick, crack and spasm.

Muscle strain causes 80% of back and neck pain, according to physicians at Carle Spine Institute, a spine center based in Urbana, Illinois. “How often do you strain a thigh muscle?” asks Dr. Victoria Johnson a specialist in nonsurgical spine care at Carle Spine Institute. “The biomechanics of the spine and the forces placed upon it during daily activities such as bending, twisting, or lifting predispose the short intersegmental muscles of the back to strain, often resulting in painful muscle spasms.”

Knowing your body's limits when it comes to lifting heavy objects is the key to avoid muscle strain, adds Dr. Zeeshan Ahmad a specialist in nonsurgical spine, “People often take their backs for granted and don't actively strengthen or work on their core stabilization as they age. We assume that we are always going to be able to lift what we were able to when we were twenty. However, our backs tell us that is not true, and injuries can occur.”

Strain your back enough times, and you're at risk for herniating a disc. Discs lie in between the vertebrae in the neck and back and resemble jelly donuts. Aging causes the discs to become less flexible and more brittle. A fall or heavy strain can cause the disc to rupture. When this happens

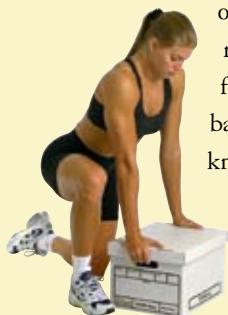
the nucleus breaks through the wall of the disc and places pressure on the nerves that branch out from the spinal cord. Other times pain can come from spondylolisthesis and spondylolysis (joint instability in the lower back) or in some older patients, stenosis, where a narrowing of the spinal canal crimps the spinal nerves. Those problems can require spine surgery.

Still, there are a lot of things you can do to fix your back. Consider this publication an owners manual for your spine.



HOW TO LIFT WITHOUT HURTING YOUR BACK

When lifting, maneuver the object close to your body, so that you can use the power of your legs to lift the object off the ground. This removes pressure from your lower back. Start with one knee on the floor, and use the strength of your arms to raise the object up onto your mid-thigh.



Next, use the power of your legs to stand up. An alternate method is to bend both knees in a squatting position, grasp the object with fingers underneath, keep your back erect and stand up. In both examples, you are using your leg muscles, not your back, to generate the lifting force.



Have you ever heard of someone straining a thigh muscle while lifting? Probably not. That's because the muscles in the legs are longer, stronger, in better shape and resistant to strain. The muscles and ligaments in the back are shorter, prone to muscle spasm and not designed to take on the weight of lifting a heavy object.

Going for a long drive?

Remember that sitting for a long time is hard on the back.

Driving for a long period of time can put strain on the back. The vibration of the road can be like a jackhammer to your back. Dr. Victoria Johnson at Carle Spine Institute offers these tips:

1. Remove your wallet from your back pocket. It can place unnecessary strain on your sciatic nerve.
2. Try to stop every two hours if only to walk around the car and stretch a little.
3. Try rolling up a towel and place it behind your lower back for support.
4. When you arrive, the worst thing to do is immediately heave luggage out of the trunk. That can place unnecessary strain on your lower back and the sciatic nerve. Instead, move around a little first. Save the luggage for later.

Traveling by plane?



Placing your feet on a briefcase or suitcase under the seat in front of you can help your back. Placing a pillow behind your lower back can also provide lumbar support. Then try to break up long periods in that seat with several walks to the bathroom and back. In the aisle, stretch a little. Remember, movement is like WD-40 lubricant for the spine.

WHAT SYMPTOMS MEAN

Many back problems can improve on their own or with nonsurgical treatment. The key is to understand what various symptoms mean and which are emergencies that require immediate attention from a spine specialist.

NECK PAIN - Pain in the neck can be caused by traumatic injury, like whiplash from a car accident, or more simply from muscle or ligament strain.

LOW BACK PAIN - Pain exclusively in the low back can be from muscle strain. While pain spasms can be excruciating, you probably do not need surgery. The best treatment for this pain is usually customized therapy with a spine therapist. Cases of low back pain that persist are different. This is called "axial low back pain." These cases are more difficult to treat and need to be seen by a spine specialist.

BELOW THE KNEE - When pain radiates below the knee, it is important to see a spine specialist within 48 hours so that the pain does not become permanent.

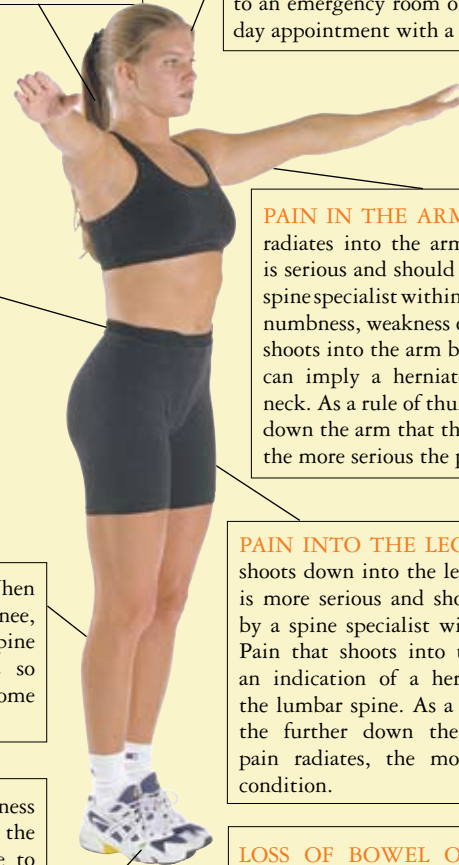
FOOT DROP - If pain, weakness or numbness extends into the foot so that you are unable to lift it, see a spine specialist within 24 hours. If not treated immediately, it can lead to permanent weakness in the leg.

FEVER, DROWSINESS, SEVERE HEADACHE, NAUSEA OR VOMITING, SENSITIVITY TO LIGHT? Go to an emergency room or make a same-day appointment with a spine doctor.

PAIN IN THE ARM - When pain radiates into the arm, the problem is serious and should be treated by a spine specialist within 48 hours. Pain, numbness, weakness or tingling that shoots into the arm below the elbow can imply a herniated disc in the neck. As a rule of thumb, the further down the arm that the pain radiates, the more serious the problem.

PAIN INTO THE LEG - When pain shoots down into the leg, the problem is more serious and should be treated by a spine specialist within 48 hours. Pain that shoots into the leg can be an indication of a herniated disc in the lumbar spine. As a rule of thumb, the further down the leg that the pain radiates, the more serious the condition.

LOSS OF BOWEL OR BLADDER CONTROL - Go to an emergency room or make a same-day appointment with a spine doctor. If not seen immediately, the person may lose control over bowel and bladder permanently.



SLEEP MORE SOUNDLY...

Avoid sleeping on your stomach because this arches your back and puts pressure on the spine. Rather lie on your back and tuck a small pillow underneath your knees. This position allows the spine to unload. If sleeping on your back is not comfortable, try sleeping on your side with a pillow placed in between your knees. Sleeping on your stomach doesn't have to be avoided as long as you place a soft, flat pillow underneath your stomach to eliminate some of the arch that can place stress on your back.

It's also important to sleep on a mattress with optimal back support. A good mattress should compliment your body shape. However, when in doubt go with what feels most comfortable to you.

What YOU need to know about the Artificial

Just as artificial hips and knees forever changed how degenerative knee and hip joints were repaired, the new artificial discs on the market promise to restore mobility to degenerative discs. But there is a lot you need to know about the pros and cons.

Disc

Each year in the United States, more than 200,000 spinal fusion surgeries are performed to relieve excruciating pain caused by damaged discs in the low back and neck areas. Perhaps the most anticipated advance in spine surgery over the past 20 years is the arrival of the artificial disc. Patients researching regional centers that are qualified to implant artificial discs are learning that there is great variation among spine surgeons in the type of discs used, and IF the doctor recommends any artificial disc surgery for a particular diagnosis.

Why Artificial Disc is big news

The first brand of disc to receive formal approval by the Food and Drug Administration (FDA) was the Charite disc on October 26, 2004. The Charite disc was used in Europe in low back surgeries for about 10 years prior to being introduced in the United States.

Following the Charite disc to market is a variety of alternatives,

THE PROS...

During a fusion procedure, the damaged disc is typically replaced with bone from a patient's hip or from a bone bank, and locked in place with metal plates and screws. Fusion surgery locks two vertebrae in place, putting additional stress on discs above and below the fusion site, which restricts movement and can cause other discs to herniate.

An artificial disc replacement, however, is designed to duplicate the function level of a normal, healthy disc and retain motion in the spine. Some experts estimate that over the next 10 years, more than half of patients who would otherwise receive a fusion will receive an artificial disc instead. Educated consumers nationwide are expected to migrate to regional spine centers for access to this latest technological advance in spine care.

Key benefits:

1. Retains movement of the vertebrae by replicating the function of a healthy disc.
2. May prevent discs above and below from herniating in the future.

THE CONS...

Most artificial disc designs have plates that attach to the vertebrae and a rotational component that fits between these fixation plates. These components are typically designed to withstand stress and rotational forces over long periods of time. Still, like any man-made material, they can be affected by wear and tear, and damage from excessive loads.

Key risks:

1. The man-made disc might wear out over 10 years and need replacement.
2. The load placed on the metal disc from the trunk (especially from overweight people) can accelerate wear and damage to the disc. The load placed on neck discs, however, is viewed to be less.
3. Revision surgery to replace the damaged artificial disc in the lumbar area is viewed by most surgeons as complex. Revision surgery on artificial discs in the neck is less complex.
4. Risks of complications from surgeons who either have little training or experience in artificial disc.

LOTS OF OPTIONS

Shown left is the ProDisc artificial disc. But dozens of models will be entering the market by various manufacturers — each with their OWN pros and cons. Ask your surgeon why he recommends his specific disc.



LUMBAR VS. NECK: A BIG DIFFERENCE...

Because of the weight of the body and the rotational stress that the trunk places on discs in the lumbar (low back) area, more stress is placed on artificial discs in the lumbar area vs. the cervical (neck) area, which only supports the weight of the head, explains Dr. James Harms, a fellowship-trained spine

surgeon at Carle Spine Institute. “I favor artificial disc for cervical use currently, because the benefits overall outweigh risks short-term and long-term. Secondly, the neck area is more accessible in surgery than the front of the lumbar spine. So even if a revision surgery were required, it would be

easier to do on the neck than lumbar area. All of this underscores how important it is for the patient to be well informed. You need to ask how proficient is the surgeon at artificial disc surgery. How many have they done? Are they fellowship-trained?”

some specifically designed for use only in the cervical (neck) area. Synthes has a disc on the market. FDA approval is likely to follow for the Prestige artificial disc, manufactured by Medtronic, for use in the neck.

FDA approval typically comes after extensive clinical studies that compare a group of patients who requested an artificial disc, with a control group of patients with similar problems who received



The artificial disc is projected to have a dramatic impact on the field of spine, just as the introduction of the artificial joint had for those with damaged knee or hip joints. Before the introduction of the artificial knee or artificial hip, these joints were fused. Fusion of a knee or hip today would be unthinkable, thanks to artificial knees and hips.

Finally, this new technology is being brought to the field of spine.

heavy load, like when we lift objects.

In the U.S., recent studies report that 56% of Americans are overweight, and 25% are obese, which only puts more stress on aging discs. Also some unfortunate people have a family history of degenerative disc disease, which increases their risk of developing it.

In any event, expectations of aging baby boomers — those born between 1946 and 1964 now in their fifties and sixties — are for an active rather than sedentary retirement.

All of these trends are creating tremendous demand for a technological advance that promises to restore motion to damaged and aging backs and necks.

How do artificial discs differ?

A common aspect of all artificial discs is that they are designed to retain the natural movement in the spine by duplicating the shock-absorbing and rotational function of the discs Mother Nature gave us at birth.

Most artificial disc designs have plates that attach to the vertebrae and a rotational component that fits between these fixation plates. These components are typically designed to withstand stress and rotational forces over long periods of time. Still, like any man-made material, they can be affected by wear and tear.

Current considerations include tiny shavings that may be produced by the component pieces as they wear on each other after implantation. Other considerations relate to a surgeon's perception of how easy a particular disc is to implant in the spine — as well as how easy it is to REMOVE. Some discs, for example, have characteristics that enable them to be easily tapped into place which then lock them in place.

The problem is if that disc needs to be taken out, it's extremely difficult.

Consequently, manufacturers of artificial discs aim to design discs that are not only resistant to wearing out, but also easy to install and remove if revision surgery is needed. Doing all the above has proven to be a tall order.



Says Dr. James Harms, a spine surgeon at Carle Spine Institute: "The patient needs to be well informed about not only the pros and cons of the artificial disc, the various brands in use, which are approved by the FDA and which are part of a clinical study. Next, the patient needs to research which physicians have experience with implanting the artificial disc. The patient really needs to be well informed which can take an investment of time by both the patient and the spine surgeon. Unfortunately, sometimes either the patient or the surgeon can be overly enthusiastic, and that can be a problem."

traditional fusion surgery. Medtronic's study, for example, included about 500 patients, of which about half received the new artificial disc and half had traditional fusion surgery.

In some studies, the percent of patients needing a second surgery was higher with traditional fusion than with artificial disc, implying that the new disc may have lower complications than fusion surgery.

Huge demand predicted for the disc

The arrival of the artificial disc is tremendous news because of the widespread incidence of degenerative disc disease. A natural by-product of aging occurs through the loss of resiliency in spinal discs and a greater tendency to herniate, especially when placed under a





Dr. Charles Wright, a neuro-spine surgeon, consults with a back pain patient at Carle Spine Institute.

Who is qualified to do surgery?

Surgeons typically attend special courses conducted by the specific manufacturers of the various discs. The training is specific to the brand of artificial disc, because installation procedures and the instruments used vary slightly from disc to disc.

The dollars and cents of new technology

Not surprisingly, some health insurance companies are choosing to sit on the sidelines by refusing to pay for any artificial disc surgery, just like they refuse to pay for new drugs. Many health care providers see this only as just another tactic for an insurance company to save expenses by restricting access to new advances for as long as they can.

Interestingly, however, some employers and workers compensation carriers in several states are endorsing artificial disc surgery and more than willing to pay for it. Why? Because historically fusion surgery has had such abysmal return to work rates among those who injure their backs on the job. From the employer's perspective, those patients who have had fusion surgery are a lost cause. In their mind, artificial disc surgery is the best bet for getting the person back to the workplace.

IF YOU NEED SPINE SURGERY

there is new minimally invasive technology that can shorten the incision and recovery time — BUT you will have to shop around

Next to artificial disc surgery, the most beneficial advance in the area of spine surgery over the last five years is new instrumentation that enables some spine surgeons to remove herniated discs, and even install metal instrumentation like screws, through tiny inch-long incisions.

This advance — called “minimally invasive spine surgery” — is quickly replacing traditional spine surgery that requires a two to three-inch long incision in the back.

According to Dr. James Harms, of Carle Spine Institute, minimally invasive spine surgery requires extensive training and experience to master use of the tools, but there is tremendous benefit for the patient.



New minimally invasive tools include a narrow tube that has a micro video device and cutting blade, enabling the surgeon to visualize the area being treated. Right, a Sextant device enables the surgeon to implant fixation screws in the spine through two small half-inch incisions instead a three-inch long incision.

“The incision is shorter, which means you aren’t cutting through as much muscle and tissue to get access to the damaged area of the spine,” explains Dr. Harms.

Getting trained in the skill

“Surgeons have to take time out of their practice to learn how to do minimally invasive spine surgery,” explains Dr. Harms. Some surgeons don’t see the benefit to them personally, so they are less inclined to learn the skill. “Some older surgeons at the tail end of their careers may not see the value in having to learn a new skill, especially when it makes a surgery harder for them than if they merely cut a three-inch incision to expose the spine. Of course it’s easier for the surgeon, but it makes for a more painful recovery, that will take weeks instead of days had they worked through smaller incisions.”

Secondly, adds Dr. Harms, some health insurance companies don’t provide any higher income for using the new tools and



technique that benefit patient recovery. “I suppose the pessimistic surgeon may take the approach of, if the pay is the same, why bother,” he says. “So you are

left with the surgeons who see the obvious benefit for their patients, and will invest the time and expense of new technology to provide a faster and easier recovery. It’s largely the responsibility of the patient to ask the doctor if minimally invasive surgery is an option, and if that doctor is trained in the skill.”



HOW YOUR GYM

CAN HELP YOUR BACK PAIN

What does your gym have to do with relieving your pain from a sore neck or back? A lot. Research in sports medicine and spine care indicates that movement is the KEY to pulling out of the disability spiral.

EXERCISE VS. PILLS

Years ago, the prescription for back pain was bed rest. That's voodoo now. Research has shown that too much inactivity causes muscles to atrophy, and ultimately makes any movement a cause for future strain and pain. It's a disability spiral: the less you do, the less you CAN do.

Ironically, the reverse is just as true. The more you encourage movement, even with just a 20 minute walk, you increase blood circulation, and stretch muscles and tendons. With time, by increasing activity levels, the mind begins to shift from a focus on what you CAN'T do, to what you CAN do, explains Dr. Zeeshan Ahmad, M.D., who specializes in nonsurgical spine care at Carle Spine Institute.



“Exercise and movement actually help tissues in the back become stronger, more supportive of the back and resistant to additional injury,” he explains. “Activity acts as a lubricant to the back muscles and joints. It's as necessary to recovery as oil is to the hinge in a squeaky door.”

Taking drugs to mask pain is a band-aid approach, and over time can have disastrous effects on internal organs. The best long-term solution to back or neck pain involves making the muscles, ligaments, tendons and joints stronger, more flexible and resistant to injury. Having access to a gym is the first step to a lifestyle change from one of disability,



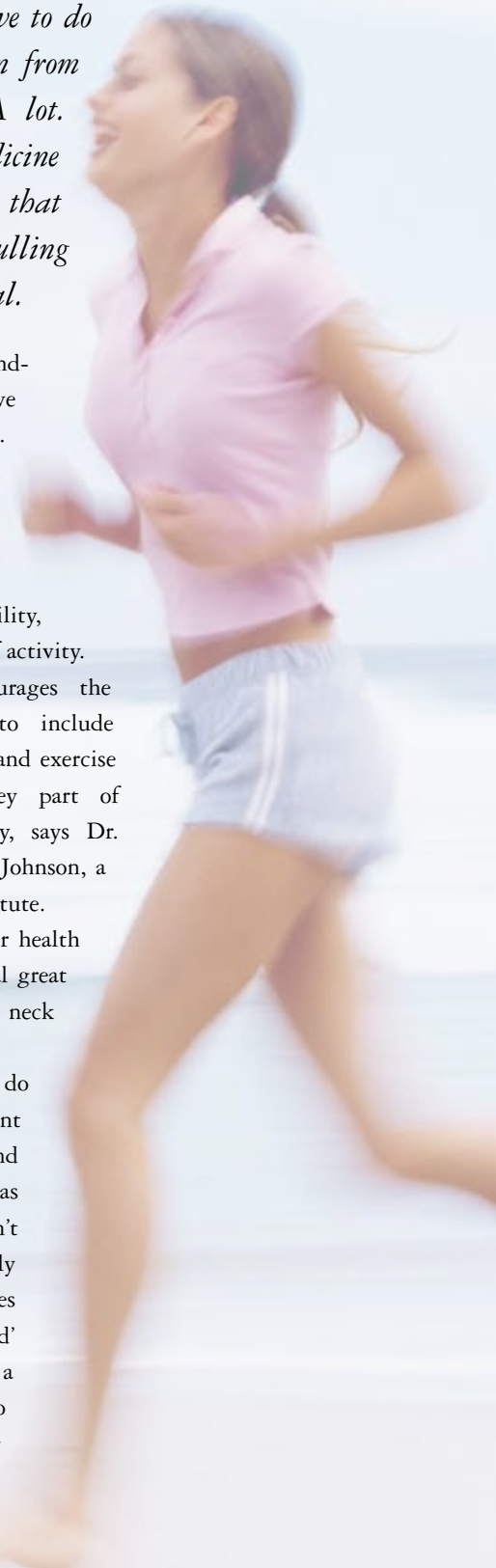
to one of activity.

It encourages the person to include activity and exercise as a key part of their day, says Dr. Victoria Johnson, a

nonsurgical spine physician at Carle Spine Institute.

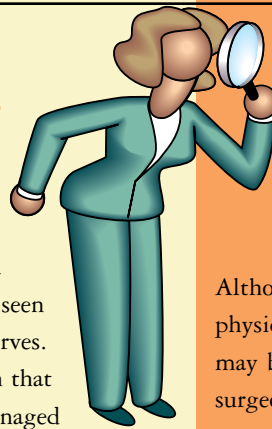
“The second benefit of going to a gym or health club is that these facilities now include several great therapeutic options for that inevitable back or neck pain flare-up,” notes Dr. Johnson.

“Most manually-trained spine therapists do not focus their time during a therapy appointment on hot packs or modalities, such as ultrasound or electrical stimulus. Modalities are viewed as palliative in that they feel good, but they don't cure anything long term. Exercise is the only thing that changes the physiology of the muscles and tendons. But you can get those 'feel-good' items at a gym in the form of a jacuzzi or a massage. So the gym is an ideal complement to the spine center, and it's why we encourage our patients to transition to a gym to maintain that active lifestyle.”



HOW TO FIND A Spine specialist

If your back problem hasn't gotten better in a week of home remedies, you probably need to see a spine specialist. But where to start? It depends on your symptoms: Emergency symptoms like loss of control of bowel or bladder, or weakness/numbness into a leg or arm needs to be seen by a spine surgeon within 48 hours to avoid permanent paralysis of these nerves. Thankfully, most symptoms relate to soreness in the back, spasms, or a pain that may radiate into an upper leg or upper arm. For these symptoms, many managed care companies like physical medicine physicians because of their experience with soft tissue injury and their understanding of therapy regimens. Here's some guidelines for those with back or neck pain:



4 WHAT QUALIFICATIONS SHOULD YOU LOOK FOR IN A SURGEON?

Although you may think a younger physician a few years out of training may be at a disadvantage compared to a surgeon who has been practicing for 25 years, this is not necessarily the case. The age of a surgeon is not as important as their level of training.

A fellowship-trained physician, which is the highest level of training offered, is a physician who has invested an additional year in area of specialization. Board certification is another indication that a physician has met competency standards in a certain specialty.

Highly skilled surgeons are continually expanding their knowledge base, becoming competent in the most innovate and effective surgical techniques available. These surgeons are frequently involved in research studies to further advance their specialty.

When choosing a surgeon, it is important to determine their level of training, board certification and how knowledgeable they are on the latest surgical options, including minimally invasive techniques.



Most specialists post their CVs (the medical term for resume) on their Internet sites for patients to review. Dr. James Harms is a fellowship-trained spine surgeon at Carle Spine Institute.

1 IS THE SURGEON 100% SPECIALIZED IN SPINE?

Today's medical field has evolved into very narrow specialty niches. Fact of life: "practice makes perfect." This is especially true when it comes to searching for a spine surgeon. By specializing 100% spine, the physician will perform a higher volume of spine surgeries, and will become far more proficient than a neurosurgeon who splits his time between head and spine, or an orthopedic surgeon who splits his time between hip, knee, foot, shoulder and spine problems.

2 HOW TO FIND A NONSURGICAL SPECIALIST?

Across the nation, the best spine centers use physical medicine physicians for nonsurgical management of back and neck problems. These specialists understand soft tissue injury and how special injections can relieve pain symptoms long enough for specialized therapy to work. The internet is also a great resource. The best specialists will place a variety of complementary services under one roof for the convenience of the patient.

Centers of excellence can have therapists who specialize in a particular niche as well as an internal diagnostic center with X-ray, MRI and treatment suites so the patients have all they need at one particular center.

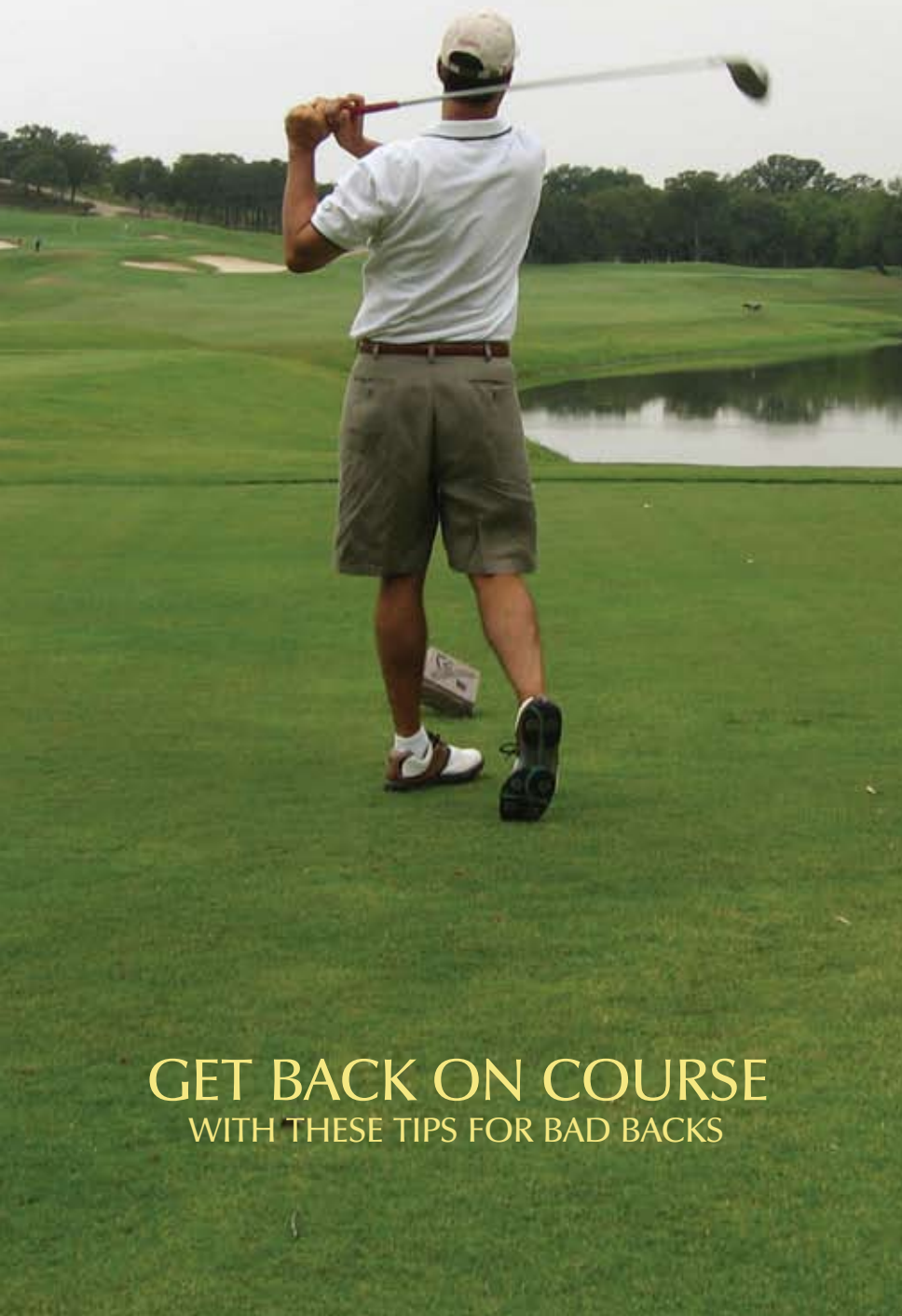
Beware of internet sites that look useful but are actually steorage devices for physicians. Physicians pay these sites to list them as "preferred providers." The only impartial sites are those related to specialty boards like the American Medical Association such as the American Academy of Orthopedic Surgeons (AAOS) or the American Association of Neurological Surgeons (AANS).

3 HOW MANY SURGERIES DONE ANNUALLY?

Next, you need to find out the volume of surgeries performed in a year. Obviously a surgeon who performs 200 back surgeries a year would be more knowledgeable than one who performs ten. This is especially true in complex fields like heart surgery and spine surgery, where complication rates can be high, and consequences of poor surgical technique can be fatal or devastating to function. Ideally, a spine surgeon who performs more than 150 surgeries a year has enough volume to imply proficiency.



BACK TO GOLF



GET BACK ON COURSE
WITH THESE TIPS FOR BAD BACKS

If you've been told NOT to play golf, there may be new hope for you!

Unfortunately, there is no shortage of well-intentioned doctors who will prescribe a passive approach to back pain: Stay in bed, don't go to work, quit playing golf, etc.

In fact, according to James Harms, a board-certified, fellowship-trained spine surgeon at Carle Spine Institute, the reality is that one of the keys to recovery from back pain is movement. "Too many times we'll see patients get referred to us, and they've been living on a prescription for pills, and they've been told to give up their favorite sport," says Dr. Harms. "So they give up that activity, and now their weight goes up, which puts more strain on their back. It's a vicious cycle. The only way out to break the disability cycle is to get the person moving

"Life isn't a dress rehearsal for something else," says Dr. Harms. "We're in the business of giving people hope to get back to their favorite past time, not a prescription for the couch."

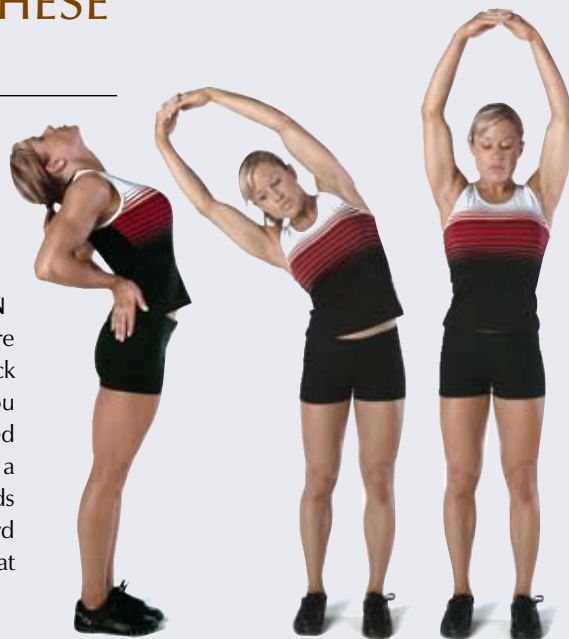
again, usually with a favorite activity, and get them focused on something besides their pain. We'll start with walking, which is easy on the back. In some cases, they can get back to golf, if they take it easy, and use some of the tips we provide."

As a start, Dr. Harms recommends playing only nine holes at a time. "Riding in the cart is NOT particularly good for the back," says Dr. Harms. "Let your friend drive the cart with the sticks, while you try to walk a little. Play every other hole to start with until you feel comfortable with an entire nine, then work up to 18."

SLOW PLAY? PERFECT TIME FOR THESE GOLF STRETCHES



STANDING EXTENSION
Right: Extension is a core exercise for many back problems, provided you have not been diagnosed with lumbar stenosis or a spondylolithesis. Hands on hips, lean backward hold for 5 seconds. Repeat 10 times slowly.



STANDING STRETCH

Above: With hands outstretched above your head, lean first to the right, hold for 3 seconds, then stretch to the left. Repeat several times.

Dr. Johnson, a nonsurgical specialist at Carle Spine Institute, recommends these stretches for the golf course

ROTATION

Above: Put a golf club across your back and rotate your trunk in both directions.



STANDING PIRIFORMIS

Right: Lean against a tree for support. Then raise your knee up, and across your body. Hold for 5 seconds and repeat with other leg.

NECK STRETCH

Right: Start with eyes straight ahead, slowly turn your head to the left, hold for 5 second, then return to starting position. Repeat to the right side, hold for 5 seconds and return to starting position. Do exercise 20 times, alternating sides.



1

GET LOOSE. Do NOT jump start your swing on the first tee, and do not try to hack a long iron out of the rough on the first hole. Start some stretches before you leave home, and then leave about 20 minutes to warm up on the range.

2

STRETCH BETWEEN HOLES. Slow play is a great time to do the stretches shown above. Fred Couples who has played pro golf for years with a bad back frequently does the standing piriformis stretch while leaning against a tree.

3

ADAPT. Most putters can get the ball out of the hole and into your hand without having to bend over. You can also lengthen short irons to lessen the amount you bend at the waist. Others use a long “belly putter” to lessen back strain when putting.

4

GET A LESSON. The old “reverse C” finish position from the 1970s strains the back. Most pros today teach a finish position where the back is straight at the finish. Good form is easy on the spine.



BACK TO THE SLOPES

Skiing or snowboarding is a great way to enjoy some fresh mountain air. For people with back or neck pain, skiing can be a contact sport with risk of injury. Ask your spine doctor if your particular problem is okay to take to the green or blue slopes this winter. The next step before you go, is to prep your body for the demands of your mountain. The stronger your legs and knees, the more fun you'll have by staying upright — rather than on your back!



WHAT TO KNOW... BEFORE YOU GO

Dr. Johnson, a nonsurgical physician at Carle Spine Institute, offers these tips to those patients wanting to get back to skiing this winter.

WALL SLIDE:

This is a pro skier favorite for strengthening key leg muscles. Position your back flat against a solid wall. Slowly slide your back down until your thighs are horizontal. Hold for 2 minutes.



SLALOM JUMPS:

Below: This is a great exercise to simulate skiing bumps and turns, as well as building stamina. Place a rolled up towel on the ground. With feet closely together, jump from one side to the other.



CHAIR DEEP KNEE BENDS:

Right: Using two chairs for support, slowly lower your body on one knee, then raise up. Repeat with other knee. If you are heavy, or if your knees are weak, use both legs rather than just one.



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