



## Back Exercises

PART II of 'No More Back Pain'

# Bad Exercises and Bad Diving Practices

Part III of 'No More Back Pain'

by Dr. Jolie Bookspan

The Diving Doc that Harvard University calls "The St. Jude of the Joints" shows you how to save your back from common bad practices

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This is part II of "No More Back Pain." [Part I](#) explained how the majority of back pain comes from bad standing, sitting, lifting, and carrying habits. The relentless pull of bad mechanical use of your body during normal activities will eventually strain, tear, degenerate, and injure you in the same way that parts in your car that are rubbing, tilting, or not seating properly will cause early wear and tear. This is true even for pain from arthritis, curvatures, and bad discs. These conditions are worsened, even created by tight weak muscles and bad body mechanics. This is true no matter how many "back exercises" you do. That is why it's so important to learn the concepts of good body mechanics, presented in Part I and not just "do exercises." Doing back exercises a few times a week but not understanding the concepts, and keeping old, bad postures and habits that hurt in your back in the first place is like eating blocks of butter and ice cream morning, noon, and night, then doing your "exercises." You are not balancing the harm.

### **Strengthening And Stretching Is Crucial But Not The Whole Answer**

Tight, weak muscles are easily strained and fatigued during motions that in-shape muscles easily support. What most back exercise programs miss is that strengthening and stretching is crucial but not the whole answer.

Strengthening muscles through the usual back exercises will not automatically "give" you good

posture or make you bend and lift properly. Strong muscles will not automatically "support" your body and joints, and will not magically prevent back pain. Plenty of muscular people have terrible posture and lifting habits, and the back pain that comes with it. Instead, you need to consciously learn to apply good body mechanics. If you used your muscles properly all the time to support your own body weight and the weight of your tanks and gear, you wouldn't need to "do exercises" at the end of the day for your tired, sore, stiff back. Conventional back exercises follow, then some innovative exercises that are surprisingly effective to retrain you for real muscle use, posture, and back pain relief.

## Healthy Exercises

Many people get panicky when they feel their muscles working hard; they aren't used to it. Or they think something is wrong if they are sore the next day. Just the opposite. Your tight, weak muscles desperately need action. A vicious cycle develops of being so deconditioned, tight, and stiff so that you are uncomfortable with movement. Worse, you are so stiff that you are uncomfortable with proper posture.

Obviously you don't want to do things that send pain or numbness down your leg. There are many exercises commonly done in gyms and fitness centers that are terrible for your back. Part III next month will cover bad exercises, bad stretches, and common daily things that divers do that harm their backs. That doesn't mean you shouldn't work your muscles hard. Without exercise, back muscles weaken and tighten. For health, you want to develop a stronger and more active body and lifestyle with exercise.

How do you specifically strengthen back muscles? You must contract them against a load. That does not mean "tighten" them, an outdated concept. Tight muscles are part of the problem. Most people will stretch their back but never exercise it by actually using (contracting) the muscles. Here are a few (of many) good back exercises:

### Upper Back Extension (also good for your neck)

This exercise to contract your back muscles is common in most back strengthening and pain reduction programs. Lie facedown; hands at your sides and off the floor. Gently lift your upper body an inch from the floor. This is called back extension. Don't force. Don't tilt your head back, just keep your head in line with your body. If it is easy try a bit higher, without forcing. Then lower to the floor. If it's too much try it again but lower, remembering not to force. Start with one or two lifts. Feel your back muscles working, but nothing should "pinch" or grind. See how you feel the next day. Gradually lift more and move your arms from your sides to overhead. Increase to at least ten every day.

**Lower Back Extension.** There are several ways to contract the muscles of your low back to work them:

- Lie face down, chin on hands. Lift one leg gently off the floor, knee straight. Hold and lower. Try a few. Switch legs. To progress, lift both legs together, smoothly, without yanking. This exercise works your back, hip, behind, and the back of your thighs.



- Another easy one is to lie on your back, both knees bent with feet on the floor. Lift your hips gently, hold ten seconds, then lower. Work up to at least ten repetitions. To progress, do this with one ankle crossed over the opposite knee, or hold one foot off the floor. This works your back, abs, and legs.
- Kneel on all fours on a soft mat. Tuck your hips under as if you were starting a crunch, to take the arch out of your back. You will feel your abs working. Do not tighten or "suck in." Just use your muscles to move your back into good posture, like using any other muscles. Raise one leg until it is straight behind you. Don't let your back arch, do the work with your hip and legs. As you progress, lift your opposite arm in front of you at the same time you lift one leg. Hold and repeat. This is a very mild exercise and you can soon progress to exercises that better simulate using your muscles in daily life against gravity to keep good posture. Following are a few.

### **Surprising But Important Back Exercises**

The exercises above are mainstays of physical therapy programs for the back. But remember that strengthening will not automatically change your posture, and these exercises don't teach you how to move in real life. You need exercises that specifically retrain you how to hold good posture without arching or slumping no matter what load you put on them. Moving your muscles in a way that is like your real life is called "functional" exercise:

- Holding a proper push-up position is surprisingly effective for your back and posture. How is this functional? It teaches you how to hold your body straight without arching or hunching, even against a high load. This simulates tanks and gear pulling on you while you carry them and uses a lot of back and abdominal posture muscle stabilization to counter it.

Assume a push-up position. Tuck your hips under you, as if starting a crunch to take the arch out of your back, but without curling forward. When you do this, you will immediately feel your weight come off your back, and a big exercise for your abs. Prevent your back from dipping into an arch or your behind from hiking upward. That is the same bad posture while standing up that presses your weight onto your low back and makes it hurt in the first place. Keep your elbows slightly bent. If your arms are so weak that you lock out the elbows, strengthen them, but don't use that as an excuse to hurt your elbow joints next.

- Another functional exercise strengthens your entire torso and retrain you to keep your posture from slouching to the side during activities: When holding your straight, hip-tucked pushup position above, lift one arm and turn your body so you are standing on one arm and the side of your feet. Hold your posture straight and strong. Don't let your hips sag. As you improve, try dipping your hip toward the floor and raising again to straight posture. Increase the length and number of repetitions. Do both sides. As you strengthen further and improve your balance through this exercise (also important for preventing injuries) begin to lift your upper leg from the floor too.

- Do Back Exercises Standing Up. You need to exercise your back the way you use it in real life-- isometrically and standing up so that you retrain how to stabilize against gravity and loads. Tie the middle of a long rubber tube around a doorknob, post, railing, friend, or other device at around shoulder height. Hold both ends in front of you and stand far enough back to create a good pull. Pull both your arms straight down to your sides without leaning back or arching. Hold. Repeat. If you consciously hold proper posture while doing this, you strengthen and retrain all your torso-stabilizing muscles. Now with both arms still straight, lift both arms up overhead without arching your back or leaning back, to retrain how to carry loads with good posture. Repeat. Keep breathing.

The whole idea is to retrain you to use good postural mechanics during motion. Turn to the side and use the same concepts to customize your own exercises to strengthen your back to hold strong and steady during movements you commonly do.

Abdominal Exercises. A common, but unproductive mind-set is to exercise your abdominal muscle separately from the rest of your body. The exercises above will use your abs effectively in conjunction with your back muscles in just the way you need for real life. The October issue of Alert Diver featured abdominal muscles and how to use them for your real life. Next month Part III will detail ab exercises to avoid.

### **Fix Your Own Pain**

Most back and neck pain comes from daily bad sitting, standing, and bending postures, holding muscles tightly, and not enough of the right exercise. The average person does so many things every day to damage their back and neck, it's only amazing they don't hurt more.

Take a look at Part III for the surprising ways you may be sabotaging your back with bad diving and exercise habits, and what to do instead to keep your life pain free.

Chinese politician Sun Yet-Sen said, "To understand is hard. Once one understand, action is easy." Good muscle support for your joints comes not only from strengthening and stretching but reeducating your body for proper use, not by stopping your activities and "resting it" or "doing exercises." You'll burn calories when you move properly and get great exercise without going to a gym. You'll be straighter and taller. You'll be a better diver. Have an active life to help your back.

Scuba-doc wants you to be happy and healthy. For more information see the fun, new edition of Health & Fitness in Plain English. Thirty-one chapters on all aspects of Exercise, Nutrition, and Health with step-by step solutions to make your life fun and healthy, including two chapters on neck and back pain.



# Part III of Back Pain

## Bad Exercises and Bad Diving Practices

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The Diving Doc that Harvard University calls "The St. Jude of the Joints" shows you how to save your back from common bad practices

This is Part III of "No More Back Pain." Part II covered important exercises to strengthen while you retrain posture and habits for standing and moving in real life. This article covers exercises that are common but harmful.

### Myths

- To help back pain, you should pull knees to chest, especially first thing in the morning.
- Crunches to strengthen your abs are important for back pain prevention.
- If you strengthen your core, you will cure back pain.
- You must rest for back pain.
- Back pain is usually from lifting something the wrong way one day.
- Once you have back pain, you'll always have back pain.
- "I don't need to know about back pain prevention because I do yoga (tennis, karate, swimming...)"

### Facts

People do an astonishing number of things every day to strain, weaken, and pressure their backs. They may do "back exercises," but not be aware that strong muscles will not automatically give you good posture, make you bend and lift properly, or magically prevent back pain. People stand, bend, and lift badly every day, then compound the problem with inactivity for most of the time, bad exercises the rest of the time, and holding their muscles tightly. They wonder why they still get pain even though they "do their exercises." Many wind up in back surgery, or long term or recurring pain, not understanding why their physical therapy or exercise program "didn't work."

### Exercises That Harm

If you understand the concepts of how backs hurt you can easily tell on your own if you are moving in healthy ways, if an exercise will help or harm, or if you're doing a good exercise in bad way. You're not helping yourself if all you do is a "list" of exercises. Worse, many people are given a list of things to never do again. This list is often favorite activities that made their lives worthwhile and fun, that they greatly need for exercise, or that may have nothing to do with their back pain.

Most people spend their lives doing most activities in a posture that rounds their backs like a

turtle. They sit, stand, walk, and exercise round-shouldered and round-backed. This shortens muscles in your chest and shoulders in front, and overstretches and weakens your back. Like squeezing a water balloon in front, when you round forward it squeezes the front of your discs between the back bones (vertebrae) above and below the disc. Chronically slouching forward and lifting things with your back rounded will push the disc out, little by little. Walking hard without using your muscles for shock absorption squashes the discs all the more. When a disc pushes out (herniates) it can press on nearby nerves, sending pain down the back of your leg (or arm if the disc is in your neck). Tight muscles from this bad posture can also press on the same nerves mimicking this kind of pain, often called sciatica. A degenerating disc is not a disease, but a simple, mechanical injury that can heal, if you just stop grinding it up and pushing it out of place with terrible habits.

Now think of all the exercises, from crunches, to toe touches, to dead lifting, to everything you do seated rounding forward. Instead of keeping good posture, people ride stationary and regular bicycles with head forward and back rounded. They sit on exercise, weight, and rowing machines with their back rounded. They stretch their legs by rounding their back. They sit on hard boat benches wearing heavy tanks with backs rounded, banging over the waves - Bam!-Bam!-Bam!-Bam! Then after exercising and diving they bend over at the waist to pick up their gear bag.

Hamstring Stretches. It's commonly accepted that tight hamstrings can contribute to back pain. The irony is that many hamstring stretches are done in ways that round and strain the back and squash discs. Leaning over at the waist for toe touches does stretch your back and hamstrings, and may feel good, but it is terrible for your back. This is true even for yoga stretches where you bend over at the waist without supporting on your hands. You know never to bend over like that to pick something up. It doesn't magically become good for you just by calling it a stretch or a time-honored exercise. The weight of your upper body smashing down on your discs is the same as lifting a package like that. Although it often feels good on tight muscles, it's tough on your back in the long run. This does not mean that stretching or yoga is bad, but that some of the many poses, just like some of the many products in a health food store, are not as healthy as they could be and there are other things to use instead. Many yoga instructors who understand this teach their classes with other poses instead of unsupported forward bending.

A safer hamstring stretch is to lie on your back and hold one leg in the air, keeping shoulders, head, and hip flat on the floor and back straight. Keep your other leg straight and flat against the floor too. Many people can't because the front of their hip is too tight. They need to stretch.

Since tight hips can also contribute to back pain you can do a variety of hip stretches from this position.

- While still lying on your back with one leg overhead, tilt it across your body as if trying to touch your opposite hand. Then up and out to the floor on the other side.
- Bend your knee and experiment with bringing it over both sides again.
- Bend both knees and cross one ankle over the opposite knee. Pull both bent legs toward your



body and feel the stretch in the back of your hip and thigh.

- Lie on your side and bring your upper leg in back of you without arching your back. You should feel a stretch in the front of your hip.

Experiment with gentle leg and hip stretches while lying down. Remember to do both sides. In this way you can stretch your legs, hips, and back without loading your discs.

**Deadlifting.** You already know you should not lean over from the waist or hips to lift anything. Yet you probably do this hundreds of times every day - making the bed, lifting laundry, looking in the refrigerator, petting the dog, lifting children and packages, picking things up ... all day every day. You're straining your back and missing a built-in opportunity to exercise your legs and burn calories if you would only lift properly. Worse, you lift heavy tanks and gear bags wrong, then maybe go to a gym to do straight legged dead-lifting. People claim it works the back and leg muscles. That is true but at the price of slowly (or quickly) harming your discs and other structures. This is another example of something that may "work" in one way but still have other undesirable effects. Like smoking to lose weight, it will "work" but is unhealthy for other reasons. Learn to think critically and understand that often several factors go into evaluating overall worth of an exercise.

### **Bad Neck Stretches**

Forced neck stretches like pulling chin to chest, and shoulder stands including the yoga positions of The Plow and The Frog force discs outward, increasing risk of herniation over time. Forced head turning and rotation by manipulation practitioners is documented to sometimes result in stroke, even death from tearing neck blood vessels.

### **Why Not Crunches?**

Many people are taught that you need to work your abs to help your back. A recent survey in San Diego looked at which ab exercises produced the most ab muscle activation. From the results they listed these exercises as the best ab exercises. What they missed is that an exercise can work a muscle well but still promote bad posture and not be good for the rest of you, and not work your muscles the way you need for real life. Simply strengthening a muscle will not transfer the posture skills you need for proper use in sports and recreation, or for back pain control. Crunches don't train you how to use your abs the rest of the day. Crunches promote poor posture, even when done properly. Crunches make a person, who likely spends much of their day already hunched over a work area, practice that hunched posture which may be mechanically promoting the back and neck pain they think they are working their abs to prevent.

Worse, many people are taught that in order to use their abs they must "tighten them." You can't breathe or move properly with tight muscles, and tight muscles are part of the problem in many pain syndromes. Using your abs does not mean "sucking them in," "tightening them," or "pressing your navel to your spine." It just means using them to move your spine away from an arched posture, the same way you use your arm muscles to move your arm. Abs connect from your ribs to your hips on the front and sides. When they contract, they pull your ribs closer to



your hips. But most people only exercise their abs by hunching forward for ab exercises. Then they stand and work with slack abs allowing their ribs to lift up, hips to drop down, and their back to arch. The book "The Ab Revolution" explaining all this is available on amazon.com.

When you don't use your abdominal muscles while standing up, allowing your low back to sway backward or to the sides, it exaggerates the normal inward curve. This relates to the next problem, "lordosis."

## **Lordosis**

Many people with back pain are told they have a "condition" called lordosis. They get the impression this is something built-in, genetic, or unavoidable, or something that "just happens" to them like being the target of a sniper. That is tragic. It's just bad posture. Technically the word "lordosis" originally meant the normal inward curve of the low back. It has commonly come to mean too much inward curve, allowing the back to sway. This allows the weight of your upper body to rest on your low back bones and structures instead of your trunk muscles. Too much arching can cause wear-and-tear on soft tissues and discs, and irritate the joints, called facets, where each vertebra attaches to the one above and below it. It creates all kinds of back pain, but is just a bad posture habit. Try this:

- Stand up and arch your back so that your behind sticks out and you let your upper body weight rest lean backward and down. You may feel familiar pressure.

- Straighten your posture by pulling your hips and upper body in, as if starting a crunch. Not enough to curl you forward, but to pull you to straight, tall, proper posture with only a small natural inward curve to the lower back. The pain should be instantly gone.

Remember to use this technique all the time during all your activities and with everything you carry. When you pick up a load, don't arch back to "balance it" With tanks on your back, don't arch or hunch forward. When you dive, don't let your weight belt pull you into an arch. Use your muscles to keep good posture. It's more exercise and it's good for you.

Lordosis is usually completely controllable. But if you habitually stand with your back arched, your back may tighten to the point where you can't straighten it. All the ab exercises in the world won't help you control your posture because you're stuck in the "booty-out" posture. You just need to stretch and retrain your posture.

What exercises do people do with this arched (lordotic) posture? You'll see it in an astonishing number fitness videos, books, and classes. The video star may say to "keep neutral spine" but if you look at them, they have arched backs with their behinds thrust out in dozens of exercises from leg lifts to lifting weights, to using stretchy bands. See Part I of this article in the January issue for more on how to lift things with good back mechanics.

A common back exercise where arching is a problem is leg lifts to the back. From a hands-and-knees position, the exercise is to lift one leg in back until level with your body, then lower. The way most people do this is to arch their back. Same with the standing back leg lift, very common in exercise classes. Try both these exercises in front of a mirror.



- First, let your back arch and lift your leg slowly. You'll find it is easy to lift your leg. You may even feel the old familiar pressure in your low back.
- Now tuck your hips and upper body just a bit, as if starting a crunch, not curling forward but enough to make your back straight.
- Lift your leg again without letting your back arch. You will feel you need to use far more low back and upper leg muscle to do this. It is a more effective exercise that does not mash your low back in the process.

### **Why Not A Pillow Under The Knees?**

Many people are told that to alleviate back pain they must sleep with a pillow under their knees. The rationale is that lying on their back with legs straight will make their back arch too much and create a "lordosis" (see above) that pressures the back. A pillow under the knees takes the arch out so they believe that solves the problem. The irony is that is exactly what perpetuates the problem. When the front of your hip is so tight that you can't stand and lie down flat without your back being pulled into too much arch, you need to stretch your hip to stop that problem, not keep your hip bent, allowing it to remain tight and perpetuate the problem. Remember that you need to stand up straight too - if you can't lie flat with only a normal low back curve and your legs straight, you can't stand up properly either. Are you too stiff to lie flat without a pillow under your head too? You need to stretch your shoulders and chest so they don't hunch forward so much. No wonder so many people have so much pain.

### **Impact**

People are told to give up all impact activities once they have back pain. These are often activities that they need for exercise, fun, and stronger better backs. Instead of learning how to move with shock absorption they dutifully give up activities, then walk around with such poor shock absorption that just walking is higher impact than if they ran or even boxed with good mechanics. Use your leg and truck muscles to walk softly and decelerate with each step, not just stomp and clomp, particularly when descending stairs and boat ladders with gear.

### **Getting In and Out Of Chairs, Boat Seats**

Do you flop down in your chair - WHUMP! - jolting your spine? Start using leg muscles to decelerate. It's a free squatting exercise for all the many times a day you get into and out of your chair. Can you get out of your chair without needing your arms? Work on leg strength and balance.

### **Don't Walk Toe-In or Toe-Out**

This bad foot and leg posture usually results from being too tight on one side and too weak on the other side to counter it. If it doesn't feel normal to walk straight, you need to fix that, not allow it.

### **Fix Your Own Pain**

Moving and lifting properly does not mean never to bend forward, arch back, or run around. You need good range of motion and frequent movement and activity for a healthy back. Check your

posture and movement habits to see if you chronically hold a round-shouldered posture or habitually let your back slump into an arch under your body weight and the weight of your tanks and gear. Don't let bad postural mechanics grind your back structures down to where it will be harder to fix later.

Yes, some of this information is different from what you may have heard. The old stuff wasn't working as well as it could and new strategies were needed. This innovative information is now well used and established. Count how many times you bend wrong every day - it will be many dozens of times. Then count the calories you'd burn by bending with your legs instead and how much you'd save your back. Done properly it is good for your knees too. You can strengthen during normal daily activities, become more active than before, and fix your own back pain.

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Book link here.....

<http://scuba-doc.com/DMbkstr.htm>

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