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Williams flexion exercises printable

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Lifting with poor technique can cause back pain.



Image Credit: Wavebreakmedia/iStock/Getty Images Back pain is very common. In fact, according to a study published in 2014 by "BMC Musculoskeletal Disorders," 80% of people will have back pain in their lifetime. The goods news is, there are many effective treatments for back pain that don't require surgery or medications. Williams flexion exercises are one type of treatment for back pain. These exercises focus on a bending movement in your lower back. Williams flexion exercises are made up of seven movements: pelvic tilt, single knee to chest, double knee to chest, partial sit-up, hamstring stretch, hip flexor stretch and squat. Some back conditions can be aggravated by this movement. See your doctor for an accurate diagnosis of the cause of your back pain before attempting flexion exercises. Pelvic tilts can be performed on any firm surface.



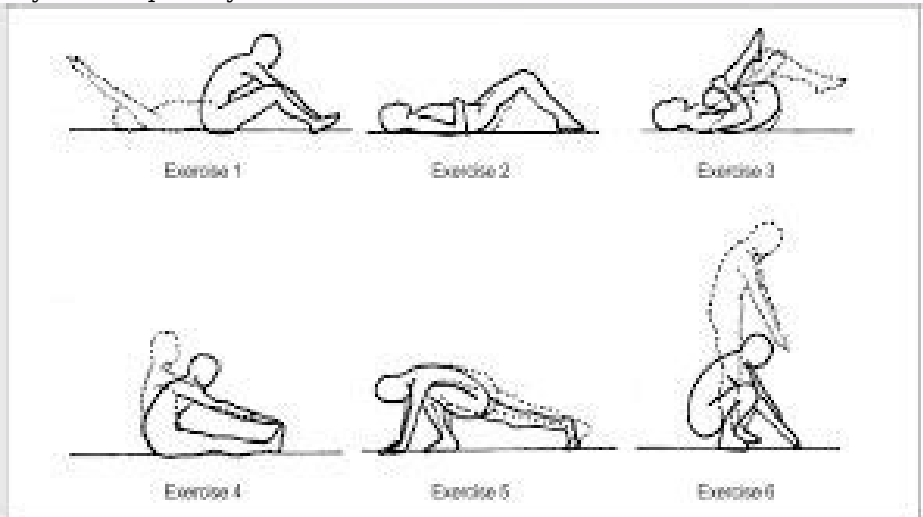
Image Credit: jacoblund/iStock/Getty Images Pelvic tilt exercises strengthen muscles that support your low back. Lie on your back on a firm surface. Bend your knees and rest your feet flat on the floor. Relax your arms next to your sides. Press your lower back into the ground as if you are pulling your bellybutton back toward your spine. The muscles in the lower half of your abdomen should be tight. Do not hold your breath. Hold the pelvic tilt for 5 to 10 seconds, then relax. Repeat up to 15 times. Single and double knee to chest stretches can be performed without changing your starting position. Image Credit: ninikas/iStock/Getty Images The hip flexor muscles are located at the front of your hips. These muscles are low back. Lie on your back on a firm surface. Bend one leg and bring your knee in toward your chest. Reach around your knee with both hands and gently pull your knee in closer to your body. Hold this position for 5 to 10 seconds, then relax. Repeat this stretch up to 15 times on each leg. Perform the double knee to chest stretch by bringing both knees toward your chest at the same time. Gently pull them in closer using your arms. Hold for 5 to 10 seconds, then relax. Repeat up to 15 times. Partial sit-ups are sometimes called crunches.



Image Credit: blanaru/iStock/Getty Images Partial sit-ups strengthen the upper and lower abdominal muscles at the same time. First, perform a pelvic tilt. Place your hands behind your head to support your neck. Keeping your pelvis tilted, tighten your upper abdominal muscles and lift your shoulder blades up off the ground. Do not pull on your neck- your arms are only there to support the weight of your head. Hold this position for 5 seconds, then relax. Repeat up to 15 times. Stretch one leg at a time if it is too difficult to sit with both legs straight out in front of you. Image Credit: mheim3011/iStock/Getty Images The hamstring stretch improves flexibility of the muscles along the back of your thighs. Sit with both legs out in front of you. Keep your knees straight and toes pointed toward the ceiling. Reach forward toward your toes with both hands until you feel a stretch along the back of your legs. Hold this position for 5 seconds and repeat up to 10 times. Stretch next to a firm surface if you have difficulty balancing during the hip flexor stretch. Image Credit: ninikas/iStock/Getty Images The hip flexor muscles are located at the front of your hips. These muscles are often tight, particularly if you sit a lot during the day. To stretch your right hip flexors, step your left foot out approximately two feet in front of you. Keep your right knee straight and bend your left knee. Bend forward over your left knee until your left armpit is resting on your knee. Place your hands on the ground in front of you to help maintain your balance. Hold this position for 5 seconds and repeat up to 10 times. Switch legs to stretch your left hip flexors. Limit your squat depth if you have pain in your knees.



Image Credit: g-stockstudio/iStock/Getty Images The squat exercise strengthens muscles in your hips. Perform this exercise near a sturdy surface if you have difficulty with your balance. Stand with your feet shoulder-width apart. Looking straight ahead, squat down as far as you can while keeping your feet flat on the floor. Hold your arms out in front of you to improve your balance.



Hold this position for 5 seconds, then stand back up. Repeat up to 10 times. By Prodyut Das Williams flexion exercises focus on placing the lumbar spine in a flexed position to reduce excessive lumbar lordotic stresses. Exercises are designed to (1) strengthen the abdominal, gluteal, and quadriceps muscles, and (2) stretch the erector spinae, hamstring, and tensor fasciae latae muscles and iliofemoral ligament. INTRODUCTION Williams flexion exercises — also called Williams lumbar flexion exercises, Lumbar flexion exercises or simply Williams exercises — are a set or system of related physical exercises intended to enhance lumbar flexion, avoid lumbar extension, and strengthen the abdominal and gluteal musculature in an effort to manage low back pain non-surgically. The system was first devised in 1937 by Dr. Paul C. Williams (1900-1978), then a Dallas orthopedic surgeon. RATIONALE Williams believed that the basic cause of all pain is the stress induced on the inter-vertebral disc by poor posture. He theorized that the lordotic lumbar spine placed inordinate strain on the posterior elements of the inter-vertebral disc and caused its premature dysfunction. He was concerned about the lack of flexion in daily activities in the accumulation of extension forces that hurt the disc. GOALS OF WILLIAMS FLEXION EXERCISES The goals of these exercises are to open the intravertebral foramina and stretch the back extensors, hip flexors, and facets; to strengthen the abdominal and gluteal muscles; and to mobilize the lumbosacral junctions. CORE EXERCISES Williams believed that the back pain was the result of human evolution in movement from a quadruped to an upright position, proposing that the standing position was the cause of back pain because it placed the low back in a lordotic curve. Williams advocated seven exercises to minimize the lumbar curve-pelvic tilt exercises, partial sit-ups, single knee-to-chest and bilateral knee-to-chest, hamstring stretching, standing lunges, seated trunk flexion, and full squats. Williams flexion exercises- Source Athletic Training and Sports Medicine By Chad Starkey, Glen Johnson 1- Pelvic tilt exercises: Lie on your back with knees bent, feet flat on floor. Flatten the small of your back against the floor, without pushing down with the legs. Hold for 5 to 10 seconds.2- Partial sit-ups: The athlete lies in "hooklying" position (supine with knes bent and feet flat). With hands behind his or her head, the athlete elevates the upper torso until the scapulae clear the resting surface and stress is placed on the rectus abdominus. After returning to the start position, the sit-up is repeated for a prescribed number of repetitions. 3- Knee-to-chest:Single Knee to chest. Lie on your back with knees bent and feet flat on the floor. Slowly pull your right knee toward your shoulder and hold 5 to 10 seconds. Lower the knee and repeat with the other knee.Double knee to chest. Begin as in the previous exercise. After pulling right knee to chest, pull left knee to chest and hold both knees for 5 to 10 seconds. Slowly lower one leg at a time.4- Hamstring stretch:Lying supine, the athlete places both hands around the back of one knee. The athlete straightens his or her knee and pulls the thigh toward his or her head so the hip goes into flexion. Williams believed that flexible hamstrings are necessary to accomplish full flexion of the lumbar spine. Although tight hamstrings limit lumbar flexion in standing with knee straight, we now know that tight hamstrings actually tilt the pelvis posteriorly and promote trunk flexion.5- Standing lunges:This exercise actually results in some extension of the lumbar spine when performed properly. Nonetheless, it is a good stretching exercise for the entire lower extremity, especially the iliopsoas, which may be a perpetrator of low back pain if it is abnormally tight or in spasm.The athlete begins the forward lunge in a standing position with the feet shoulder width apart. He or she then takes a big step forward with the right leg and plants the foot out front, keeping the body relatively straight. The knee should stay over your ankle and not extend out over the toes to minimize stress on the knee joint.6- Seated trunk flexion:This exercise is performed by sitting in a chair and flexing forward in a slumped position. Maximum trunk flexion is obtained and direct stretching of the lumbosacral soft tissue structures occurs. 7- Full squat:William's squat position is with the feet placed shoulder width apart, the hip and knees are flexed to the maximum available range of motion, and the lumbar spine is rounded into flexion. Upon reaching maximum depth, the athlete "bounces the buttocks up and down" 15 to 20 times, with 2 to 3 inches of excursion on each bounce, then repeats 3 to 4 times. In modern era Williams flexion exercises are specifically used in medical conditions like Spinal Stenosis, Spondylolisthesis, and facet locking where spinal extension is painful. For years, the Williams Flexion Exercises were the main stay of most low back pain prevention and care programs. They certainly accomplished the goal of flattening the lumbar spine and were advocated by physical therapists who worked with sports and industrial injuries. Although the success was limited, William's comprehensive program helped advance the idea that strong abdominal muscles are needed to prevent low back pain and improve core strength. References For Williams Flexion Exercises Therapeutic Exercise for Musculoskeletal Injuries 4th Edition By Houglum, Peggy A.Athletic Training and Sports Medicine By Chad Starkey, Glen JohnsonClinical Decisions in Therapeutic Exercises , Planning and Implementation ... By CTI ReviewsOrthopaedic Physical Therapy Secrets - E-Book By Jeffrey D. Placzek, David A. BoyceThe Shoulder and the Overhead Athlete edited by Sumant G. Krishnan, Richard J. Hawkins, Russell F. Warren Williams back exercises, also known as Williams flexion or lumbar exercises, are exercises for people with low back pain. Williams back exercises are recommended for people with low back pain to help improve lumbar flexion and

strengthen the gluteal and abdominal muscles.[1] The exercises were first developed for men younger than 50 years of age and women younger than age 40 who had moderate to severe lumbar lordosis and whose plain radiological films revealed diminished disc space between the lumbar segments L1-S1. Also, these patients had chronic low back pain that was mild to moderate in nature. The exercises proposed to open the intervertebral foramen to provide additional lumbar stability[2] Indication[edit | edit source] Flexion exercise is an exercise technique that aims to correct posture, relax muscles, increase endurance, stretch and increase lordosis.[1] To avoid lumbar lordosis Non surgical option to improve Low Back Pain Improve stability of lower back Decrease Pain Procedure[edit | edit source] Williams's exercises include: 1) the pelvic tilt - The posterior pelvic tilt position is performed with the patient lying on their back with their hands at their side and their knees bent. The patient is then told to tighten the muscles of their abdomen, as well as their buttock muscles, flattening their back against the floor. 2) the single knee to chest - The single knee to chest motion is done with the patient lying on a table or bed. They are then instructed to let a leg fall off the table or bed, bend their other leg and wrap their hands around the bent knee, and pull the bent leg toward their chest. 3) double knee to chest - The double knee to chest stretch is also done with the patient lying on their back. The patient is instructed to bring both their knees, one at a time, to their chest. With their hands held together, the patient pulls their knees towards their chest and curls their head forward. While performing the motion, the patient is instructed to keep their knees together and to have their shoulders flat on the floor. The patient then lowers one leg at a time. 4) partial sit-up - The partial sit-up exercise is completed with the patient lying on their back with their hands at their sides and their knees bent. The patient is instructed to use their abdominal muscles to raise their upper back off the floor while exhaling. The patient is supposed to rise only enough to get their shoulder blades off the floor. Furthermore, the patient is not supposed to thrust themselves off the floor or to lift their heads with their arms. While performing this motion, the patient is supposed to keep their knees bent and their feet flat on the floor. The patient should feel the muscle contraction only in their abdominal muscles. The patient is then instructed to gently lower their upper body in a smooth and relaxed motion. 5) hamstring stretch - The patient is in supine lying with hands on the side. With one knee bent and other knee straight, the paint is asked to pull the foot of his straight leg towards himself. He is then asked to raise his leg till he feels the stretch at the back of his thigh. 6) Squatting - Stand with feet just wider than hip-width apart, toes pointed slightly out, clasp hands at chest for balance. Send hips back and bend at knees to lower down as far as possible with chest lifted. You can swing your arms back for momentum. Press through heels back up to explode up, jumping vertically in the air. 7) Hip Flexor Stretch - Kneel on your affected leg and bend your good leg out in front of you, with that foot flat on the floor.. Keeping your back straight, slowly push your hips forward until you feel a stretch in the upper thigh of your back leg and hip. 8) Lumbar flexion with rotation - The lumbar flexion position with rotation is completed with the patient lying on their back with their hands at their sides and their knees bent. The patient is then instructed to rotate their knees towards the direction of pain. 9) Seated Lumbar Flexion - The seated lumbar flexion exercise starts with the patient sitting upright in a chair. The patient is urged to slowly bend forward until they feel the tension in their back. In contrast, the standing lumbar flexion exercise starts with the patient standing upright with their feet spread shoulder-width apart. The patient slowly bends forward, sliding their hands down to their legs until they feel the tension in their back. The Williams back pain exercises can be repeated several times. The recommended duration for the exercise is every day for 10 to 20 minutes. Exercises are done with the patient lying supine on a flat surface. Then the patient would perform the exercise and repeat. [3] Resources[edit | edit source] References[edit | edit source]