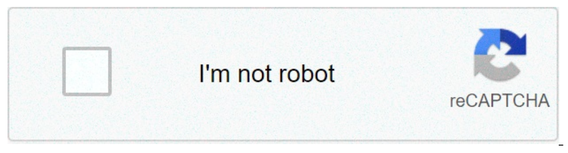

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Knee warm up for running

Knee osteoarthritis doesn’t have to stop you from running—when done carefully, it can actually reduce pain associated with arthritis. Many people mistakenly believe that running causes knee osteoarthritis—however, doctors now know this is not true. Researchers who compared long-term effects of walking, running and other strenuous forms of exercise found that running significantly decreased the risk of hip and knee replacement, while other forms of exercise increased it. Another long-term study of runners versus non-runners showed that the runners did not have a higher incidence of knee osteoarthritis than the non-runners. While doctors are still trying to understand how running can improve knee arthritis directly, it is well understood that running can facilitate weight loss, which is known to significantly reduce stress on joints and improve OA symptoms. If you have knee osteoarthritis, running can be a healthy way to manage symptoms, but there are a few considerations that should be made before you begin. Take it Slowly, and Listen to your Body Like with any new fitness program, it’s important to start slowly. D. Casey Kerrigan, MD, a pioneer of gait analysis research at Harvard University and owner of OESH Shoes, suggests working closely with your doctor, listening to your body and using pain as a signal to back off when you’re pushing too hard. “The goal is to run without knee pain. Build up to it,” says Dr. Kerrigan. Advice can seem contradictory—on the one hand, you are advised not to run through knee pain, but on the other hand, how do you know when to stop, if some amount of knee pain is a part of your daily life? For people with knee OA, the pain can seem constant. Kerrigan recommends taking note of your baseline pain, and paying close attention to your knees to be sure that pain isn’t increasing. If pain starts to get worse, stop running and rest for a day or two. Keep a journal so you can keep track of what you did last time, and use it to guide your next workout. This is a great way to track progress, as well as keep up with any factors that might be causing you pain. Different Sources of Pain Be sure to pay attention to any new pain—something other than OA could be exacerbating your existing pain. Other common types of knee pain that affect runners include patellofemoral pain syndrome, commonly referred to as “runner’s knee,” and chondromalacia patella, which is a condition often mistaken for patellofemoral OA. Patellofemoral pain syndrome is characterized by pain in and around the kneecap. While there is no one cause, it is generally considered an overuse injury that can be brought on by poor alignment of the knee and/or hip. The best way to avoid patellofemoral pain syndrome is to start slowly with speed as well as distance, and be sure to allow plenty of rest between runs. Chondromalacia patella carries symptoms similar to those associated with OA. “Many people think it is the same thing as osteoarthritis, but the differences are important in how we approach it,” says Kerrigan. Chondromalacia, which most often affects women, is caused by softening of the cartilage under the kneecap, largely due to poor tracking of the patella in its groove. Treatment and pain management methods are similar to OA, but can also include exercises to strengthen the inside thigh muscles, which can improve tracking. Always consult a doctor for any new or concerning pain. Pay Attention to Footwear and Choose Forgiving Surfaces The most important component in managing OA knee pain while trying to run is footwear. Research shows that the best footwear for minimizing knee pain associated with OA is a flat-soled shoe. “When it comes to shoes,” says Kerrigan, “the flatter the better.” It’s not just the shoe you run in that affects your running. “You’re only wearing them for a short time when you’re running,” says Kerrigan. “It’s what you’re wearing the rest of the time that’s important. If you want to run, minimize total daily load on your knees by wearing shoes throughout the day that don’t increase loading.” When possible, run on grass or gravel. Another good option is asphalt, which absorbs more of the impact than the harsh and unforgiving surface of concrete. Overall, Kerrigan has one simple piece of advice for people who have knee OA and want to run: “Go do it! Don’t listen to people who sit around and say ‘you’re going to ruin your knees.’ You’re going to do the exact opposite! But it’s going to take a little bit of time to get there.” Related Resources: Stretching before a run is critical, according to James Gladstone, chief of sports medicine service and associate professor of orthopedic surgery at the Icahn School of Medicine at Mount Sinai. “If you’re doing static stretches, which means non-moving stretches, then do them slowly, as if you were trying to uncoil a tight elastic band,” says Gladstone. However, static stretching with cold muscles isn’t recommended and may cause more harm than good. “Dynamic stretching is even better because we are stretching the muscles naturally while moving,” says Gladstone. He recommends jogging or performing some lighter activity to get your heart rate up before beginning to stretch. Stretching, when done correctly, can prevent injury. “Muscles work better when they’re warm and able to respond,” says Gladstone. Additionally, a dynamic stretching routine will activate the muscles used while running, sending the message to your body that you’re about to work. “Dynamic stretching also promotes blood flow and lubricates your joints, which help decrease your risk of injury,” says certified personal trainer and UESCA-certified running coach Thomas Watson. Watson recommends warming up directly before starting to run. “If you pause between your warm-up and your actual activity, your muscles will begin to cool and contract. In other words, the benefits you get from a warm-up slowly wear off, so use it or lose it,” says Watson. Try incorporating your warm-up into your run by beginning with a light jog before stopping to do some dynamic movements and stretches. 01 of 06 “This is the one stretch I always do before heading outside for a run, especially if I've been sitting at a desk for a few hours. It activates the glutes, hips, lower back, and lateral quads, and is one you can adjust depending on your flexibility,” says Watson. Use a wall for stability if necessary. From a relaxed standing position, bring one ankle up, pointing your knee outward. Bring the ankle as close to the waist as is comfortable, and aim to take your shin parallel to the floor. Hold the pose for 20 seconds; edge deeper if you're comfortable. Repeat with the other leg. Perform 3 sets in total. 02 of 06 “Another great stretch for tight runners, this stretch takes place in the lateral plane, one that we neglect as we run,” says Watson. You can hold on to a table leg or similar for stability. Start standing with feet wide apart, your hands clasped in front of your chest for balance. Bend your left knee as you drop down and shift your weight over the left leg while keeping your right leg straight. Keep your upper body upright, and don't extend your bent knee past the toe. Go as deep as you comfortably can, holding at the bottom of the movement for 5 seconds before returning to the starting point and switching sides. Continue alternating sides for 60–90 seconds. 03 of 06 Excellent for runners who suffer from tightness in the hips and hamstring muscle groups. Using a wall for stability, swing one leg back and forth, ensuring you maintain a straight upper body and minimizing rotation at the pelvis. Do this for 20 seconds on each leg. 04 of 06 Watson recommends this stretch for isolating and targeting tight hamstrings. From a relaxed standing position, step forward with your left foot approximately 12 inches; keep the heel on the ground but the toes pointed upward. Shift your weight to your right foot and bend it at the knee while folding your upper body forward to reach toward your left foot (it doesn't matter how close to your foot you can reach). You'll feel the back of your straightened left leg tighten; stay in this pose for 15–20 seconds, flexing and unflexing your left foot. Change sides, and repeat for 3 reps total. 05 of 06 You can do this traditional stretch once your muscles are warm. “When done right, the standing quad stretch will activate your hamstrings and get them ready for running,” says Watson. From a standing position, fold one leg back and grab the ankle with your hand. With your core engaged, pull on the ankle while simultaneously focusing on tucking your pelvis (posterior rotation). Hold this for 20–30 seconds, then switch legs. 06 of 06 Despite the complicated name, this dynamic move is ridiculously simple to pull off and excellent for opening those hips,” says Watson. The idea here is to draw a circle with your knee. Start in a standing position, with feet shoulder-width apart. Lift your right leg so your knee forms a right angle, like you're getting ready to step up. Then, driving from the hip, rotate the leg outward, opening out the pose, then downward and back inward to the starting position. Focus on an engaged core and stable pelvis; the movement should come from the hips. Repeat this 10 times on each side, for two rounds. Running lowers knee inflammation and may even protect against arthritis, according to a new study. If you're a runner, then maybe you've worried about the long-term consequences of all that pounding on your knees. But here's some encouraging news: According to a study from Brigham Young University, running appears to reduce inflammation in the knee joint—not increase it, as commonly believed. In fact, the authors say, running may actually protect knees down the road, and safeguard against degenerative diseases like osteoarthritis. The new finding “flies in the face of intuition,” said study co-author Matt Seeley, PhD, associate professor of exercise science at BYU, in a press release. “This idea that long-distance running is bad for your knees might be a myth.” To test this age-old theory, Seeley and his colleagues analyzed samples of fluid taken from the knee joints of healthy men and women, ages 18 to 35, both before and after a 30-minute run. Specifically, they measured the synovial fluid for two proteins (called GM-CSF and IL-15) that indicate the presence of harmful inflammation. They found that levels of both proteins went down after 30 minutes of running, suggesting a decrease in overall inflammation in the joint. To rule out other factors that may have contributed to the drop, the researchers also performed a “control” test, taking fluid samples before and after a 30-minute seated rest. During that test, protein levels did not change between samples. RELATED: 10 Exercises for Healthy Knees The study, published in the European Journal of Applied Physiology, was very small: the researchers were only able to compare a full set of before-and-after samples for six participants. They say their findings should be confirmed in larger populations. Plus, since the participants only ran for half an hour, the same results might not apply to people logging longer distances. Still, Robert Hyldahl, PhD, assistant professor of exercise science, believes the results are a good argument against the belief that runners are more likely to get osteoarthritis of the knee than non-runners. Rather, they indicate that running is chrondoprotective—which means it may help delay the onset of degenerative joint diseases. “What we now know is that for young, healthy individuals, exercise creates an anti-inflammatory environment that may be beneficial in terms of long-term joint health,” Hyldahl said in the press release. RELATED: 5 Ways to Treat Injuries and Speed Recovery Osteoarthritis, a painful disease in which the protective cartilage between bones wears down over time, affects about 27 million people. Women are at higher risk, as are people who’ve had traumatic sports injuries. (Next, the researchers plan to study whether running’s anti-inflammatory effects also apply to people with previous knee problems, like ACL tears.) Sedentary behavior is also a known risk factor for osteoarthritis. Strength-training and weight-bearing exercises have long been recommended to keep joints healthy, but experts have been cautious to recommend high-impact, repetitive workouts like long-distance running. These new findings imply that, for healthy individuals, that caution may not be necessary. “This study suggests exercise can be a type of medicine,” Seeley said. Of course, it is possible to get hurt while running—especially if you ramp up your routine too quickly or too intensely. And if you do wind up with pain and inflammation after a long run (in your knees or anywhere else), it’s important to figure out what’s going wrong so you can take steps to treat the problem. Endurance athletes are in constant pursuit of improved speed, strength and durability. We'll wear special shoes, buy into fancy therapies, and subscribe to designer diets all with hopes of becoming better runners. Whether or not these things make a difference depends on the individual and the approach, proving there are few measures that work for everyone. An exception, however, is the warm-up. One of the most time-tested running practices, studies show that it enhances performance and prevents injuries for just about anyone who has ever laced up a pair of kicks. Despite being one of the oldest tricks in the book, research on warming up continues to be conducted. Most recently, a study published in the Journal of Science and Medicine in Sport emphasized why putting a bit of effort into your warm-up is particularly important. Upon recruiting a group of well-trained distance runners, the researchers guided runners through a warm-up routine that included a traditional 10-minute self-paced jog, and strides with or without a weighted vest. The scientists also monitored participants during a series of jumps and a treadmill test. Most notably, the study showed a significant uptick in peak running speed and running economy after the participants warmed up with the weighted vest. They concluded that the strides with the vest had a "priming effect," in that the exercise helped ready the runners' legs for subsequent performance. While it is no surprise that a warm-up had an impact, this research demonstrates that the type of warm-up you do matters. More: 7 Best Plyometric Exercises to Improve Running Economy Aside from priming your legs for exercise, there are other vital reasons to warm up. At the most basic level, it does just what the term suggests—it increases the temperature of your muscles so they can contract and relax more efficiently. "We want the core and peripheral temperature to rise to get the body ready to roll into the actual pace and effort demand of the given workout," explains Todd Weisse, head coach of the Williamsburg Track Club in New York City and director of Operations of Track and Field and Cross Country at Columbia University. "The second purpose is to get the central nervous system revving. Without a warm-up that approximates the feel of the hard work you're about to do, you often cannot emotionally accomplish the workout well." Your muscles need a bit of forewarning before high-intensity exercise ensues, but so does your mind. "The warm-up is a time for me to remind athletes that the focus is on the goals we are moving towards and how this particular workout fits into the overall picture," Weisse adds. By prepping your brain to expect the upcoming hard running session, you are more likely to persist in the face of self-doubt, screaming muscles and busting lungs. While you don't necessarily need to wear a weighted vest, the most recent research points to the fact that the best warm-ups aren't simply comprised of a few minutes of easy jogging around the track. Weisse emphasizes the importance of tailoring your warm-up for the activity, whether that be 100-meter sprints or a long tempo run. "For sprints, the nature of the workout is far more explosive due to the start reaction, the initial movements of the start, and the demands of the event itself," he says. Distance runners often require a comparable warm-up in terms of time, but may include different types of drills. Regardless of the type of running you'll be doing, dynamic drills are one of the most effective warm-up methods. Research demonstrates that a dynamic warm-up not only increases overall flexibility, but also improves running performance. Conversely, more traditional static stretching has been shown to be detrimental to a runner when performed prior to competition. "For all athletes I coach, I have them do a dynamic warm-up and strides in addition to jogging," says Weisse. More: Run Fast With Strides An Ideal Warm-Up for Runs of Any Distance For athletes running anything between a mile and a marathon, the best bet is to start the warm-up with some easy jogging, then move on to dynamic drills and strides. While it can depend on the athlete and the workout itself, give these basic dynamic moves a try next time you're prepping for a hard workout. All that is needed is 20 meters of real estate and a bit of focus to get the movements right. 1. Butt Kicks: Moving forward in a straight line, alternate picking your feet off the ground and kicking your butt with your heels. Focus on executing that movement at a high cadence, rather than moving forward at any particular speed. 2. High Knees: Similar to butt kicks, you'll want to maintain a fast cadence as you alternate between bringing your knees up towards your chest. Hold your arms at your side the same way you would if you were running, and work on popping up each knee with force and fluidity. 3. High Skips: These are just like the skipping you did when you were a kid, except they are slightly exaggerated. Focus on getting off the ground and driving your knee upward with each skip. Simultaneously drive your opposite arm forward and up to support this movement. 4. Frankenstein: With your arms outstretched in front of your body like Frankenstein, alternate between kicking each leg up, aiming your toes at your palms, and keeping your legs straight. Like a toy soldier, keep your toes pointed upward as you kick. 5. Walking Lunges: Step forward and slowly lower your body to form 90-degree angles with both your front leg and your trail leg. Be cognizant of keeping the knee of your front leg aligned with your ankle, instead of over or in front of your toes. Purposefully raise your body back up, and alternate sides. 6. Leg Swings: Using a fence or wall for balance, swing your right leg forward, keeping it straight, and then swing it backward. Work to bring the leg up and back as far as is comfortable. Do 10 swings, and switch sides. Next, try swinging your leg across your body and back. As range of motion improves, you'll be able to swing farther in all directions. Sign up for your next race.This article originally appeared on Active.com