Quick Fixes for Sore Muscles

Muscle soreness is an annoying — and often painful — side effect of new or intense exercise. Ease your soreness with one of these effective strategies.

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6 Ways to Ease Sore Muscles

Sore muscles can slow down the best athletes. Here is how to relieve the pain and get back to your routine faster.

Sore muscles are one of the less pleasant side effects of exercise. Depending on the type and intensity of the workout, muscle soreness can range from barely noticeable to extremely painful.

Why Do Our Muscles Get Sore in the First Place?

Muscle soreness after exercise (also referred to as delayed-onset muscle soreness, or DOMS) signals that you caused damage to your muscle tissue, according to the American College of Sports Medicine. When this damage, or micro-tearing, happens, your body initiates the repair process by triggering inflammation at the injured site, explains Shawn Arent, PhD, CSCS, a professor and the chair in the department of exercise science at the University of South Carolina in Columbia and the director of its sports science lab.

Fluid accumulates in the muscles, putting extra pressure on the damaged areas, leading to that familiar sensation of tightness and pain that typically begins to develop 12 to 24 hours after your workout, Dr. Arent explains.

While you create a little bit of damage every time you exercise, certain types of workouts are notorious for higher levels of damage and — by extension — soreness. In particular, any workout that's new to you, more intense than usual, or involves a lot of eccentric movements will likely cause more damage and soreness than other types of workouts.

Upping the volume or intensity of your workout can cause muscle soreness. Here's what to do about it.

It's the eccentric, or lengthening muscle, contractions that are causing the soreness, says Jan Schroeder, PhD, a professor in the department of kinesiology at California State University in Long Beach. Think: walking or jogging down a hill, or the lowering motion during a biceps curl or chest press. Your muscles typically sustain greater damage during these types of movements than during concentric exercises (ones where your muscle is working as it is shortening). Muscles face a lot of stress during both types of movement, but fewer muscle fibers get recruited to carry out eccentric contractions versus concentric ones (such as curling a dumbbell or pressing weight overhead), according to a review published in the May 2019 issue of *Frontiers in Physiology*.

Some Muscle Soreness Is a Good Thing, but It Shouldn't Last for Too Long

Torn, inflamed muscles sound bad — and we certainly want to minimize inflammation in our normal daily lives, because past research has shown chronic inflammation contributes to many chronic diseases — but some degree of inflammation can be an important signal for muscle growth and repair,

according to Arent. If you help your muscles recover from the damage, they'll likely grow back bigger and stronger, "so it's not so much that we don't want inflammation to occur, but we want to get it under control as soon as possible," Arent says.

And you probably want the soreness to go away so you can get back to moving and living pain-free.

Keep in mind that you don't have to be sore after a workout in order for it to be effective. Soreness means damage, and damage is fine in small doses, but you don't have to create soreness-inducing damage every time you work out. "That shouldn't be your goal," Dr. Schroeder says. "You don't have to be sore to know you had a good workout."

Does Warming Up Lessen Post-Workout Muscle Soreness?

You may have heard that stretching can help prevent injury and soreness. But stretching your muscles before you exercise is probably not a good idea. "I'm not a fan of stretching before you start training," Arent says.

A Cochrane review of 12 studies that looked at how stretching before or after a workout affected later muscle soreness consistently found that stretching did not have an effect on muscle soreness within a week after a workout.

Some evidence suggests that a dynamic warmup immediately before a workout could reduce muscle soreness up to two days later, but the reduction in soreness seen in the research has been very small.

6 Things You Can You Do During and After Your Workout to Ease Muscle Soreness

While there aren't any instant solutions — your muscles just need time to heal — there are some strategies you can use to ease soreness and aid recovery. Here's what you should know.

1. During and After Your Workout: Hydrate

It might sound obvious, but staying hydrated is an important aspect of muscle recovery. Water keeps the fluids moving through your system, which eases inflammation, flushes out waste products, and delivers nutrients to your muscles, Arent says.

The trouble is, it can be tricky to know if and when you're dehydrated, as you'll probably reach dehydration before thirst hits, according to Schroeder. The color of your urine provides a good indication: Medium or dark yellow signals dehydration, whereas pale yellow means you're hydrated.

Just be aware that taking vitamin supplements may cause your urine to look darker than usual. Who will be affected, and by what types of vitamin supplements? That's hard to say. "Everybody's different," Schroeder says.

2. Immediately After Your Workout, Use a Foam Roller (Self-Myofascial Release) or Massage Gun

Self-myofascial release (SMR) is a technique used to release tension in muscles and connective tissues (foam rollers, lacrosse balls, and massage sticks are common SMR tools), helping to move the fluids that accumulate in the muscle after exercise.

A review published in November 2015 in the *International Journal of Sports Physical Therapy* found that foam rolling may help increase range of motion and reduce DOMS. Foam rolling, as well as other types of massage, increases circulation to deliver more nutrients and oxygen to the affected area, which helps reduce swelling and tenderness, Arent explains.

If you're interested in trying a foam roller, look for a softer version to begin with. Firmer foam rollers allow you to apply more pressure, but they can be intense if you're unaccustomed to them. Lacrosse balls can also be handy tools to keep around, as they're ideal for smoothing out hard-to-reach spots, like the glutes, lats, calves, and the illiotibial (IT) bands, Arent notes.

Massage guns (also called "percussive massage treatment" or "vibration therapy") are another popular tool to promote post-workout muscle recovery.

"Percussive self-massage devices work similarly to massage in general," Arent says. These handheld machines deliver rapid vibrations that, when placed on your muscles, can help promote blood flow to that area. Many massage guns come with attachments of various shapes and sizes to better target different-size muscle groups.

According to Leada Malek, DPT, CSCS, a board-certified sports specialist in San Francisco, few studies have examined the effectiveness of massage guns specifically, but massage guns may combine two elements that have been backed by science: conventional massage and vibration therapy. For example, past research has found that both methods are equally effective in preventing DOMS.

If you're interested in using a massage gun post-workout, Dr. Malek suggests finding an area that feels tight and lightly sweeping over the belly of the muscle. "Add pressure as tolerated, but not too aggressively," she says. The Hospital for Special Surgery recommends doing three to five sweeps over one area at a time. Take care not to spend too long in one spot or you risk irritating the muscle.

3. Eat Within a Half Hour After an Intense Workout

By feeding your muscles the nutrients they need to repair and grow back stronger, you may be able to speed up the recovery process, Arent says.

He suggests kick-starting your recovery by making sure to get 20 to 40 grams (g) of protein and 20 to 40 g of carbs into your system within 30 minutes of an intense or long workout (one that is 60 minutes or longer). (A serving of Greek yogurt with a handful of berries and a tablespoon of honey is one snack option.)

Protein is important for the amino acids needed to rebuild your muscles, while carbohydrates play a starring role in replenishing the fuel stores your muscles used up during your workout, according to a position paper on nutrient timing published in 2017 in the *Journal of the International Society of Sports Nutrition*.

But don't stop at the post-workout snack; you won't help your muscles recover if you go hungry or skimp on nutritious foods the rest of the day, Arent notes. Prioritize meals and be sure to keep your daily protein intake fairly consistent so your tissues are fed a steady stream of amino acids throughout the day. Recommendations vary, but the International Society of Sports Nutrition advises 1.4 to 2 g of protein per kilogram (kg) of body weight every day if you're active, with the doses spread out evenly every three to

four hours. That means if you weigh 150 pounds, you'll need approximately 95 to 136 g of protein every day.

Fruits, vegetables, and legumes are also key for giving your body vitamins and minerals — like vitamin C and zinc — that promote healing, according to the Academy of Nutrition and Dietetics.

4. Later On: Sleep

Sleep is critical for many reasons, but it's also one of the most important components of exercise recovery, Arent says. "It may not seem like it has an immediate effect on [muscle soreness], but it can be useful for sure," he adds.

Non–rapid eye movement (NREM) sleep, for example, increases protein synthesis (the creation of new proteins), which is needed to repair damaged muscles, according to a review in *Sports Medicine*.

So, the post-workout phase is no time to skimp on shut-eye. Aim to score at least seven hours of sleep, as recommended by the National Sleep Foundation.

5. The Day After a Tough Workout, Do Light Exercise

Sore muscles need to rest, but that doesn't mean it's best to kick your feet up and spend the day on the couch. Try to get some gentle movement through activities like restorative yoga; an easy walk, swim, or cycle; or even light resistance training. The key is to avoid doing another intense workout using the same muscle groups on consecutive days. On an effort scale of 0 to 10 (where 10 is maximum intensity), aim for an effort level of 3, Schroeder says. You want to get blood moving to the sore muscles to deliver oxygen and nutrients needed for repair — without causing more damage to the muscle tissues.

6. You May Want to Steer Clear of NSAIDs

Though you may be tempted to pop a painkiller and call it a day, Arent warns that in doing so you may sacrifice key parts of the muscle rebuilding process. Nonsteroidal anti-inflammatory drugs (NSAIDs) like Advil (ibuprofen) and Aleve (naproxen) may ease pain associated with muscle soreness, but they may also prevent your muscles from growing back bigger and stronger. A small study published in the August 2017 issue of *Acta Physiologica* found that taking the maximum dosage of over-the-counter ibuprofen stalled progress during an eight-week resistance training program geared toward building muscle and strength in young adults.