

## **Dr. Mercola on Super-Slow Workouts**

This is Dr. Mercola, and I suspect you realize how important exercise is to get optimally healthy. In my own journey I made many mistakes along the way with my own efforts. I first started exercising about 45 years ago so I have learned many lessons in that time and I would like to share some of them with you so you don't have to make the same mistakes I did

If you walk into a typical fitness center you will see the vast majority of people making the MAJOR exercise mistake and that is they are only using the cardio equipment. Typically they are reading a book or doing some type of low intensity training. Well this is better than doing nothing it really is not going to provide a fraction of the benefits that is possible.

There is nothing wrong with using the cardio equipment but the key is USING IT PROPERLY

The way you use it properly is to use HIGH INTENSITY workouts. Most of the new science is confirming that you will be able to achieve FAR more benefits than low intensity workouts and here is the KEY in a fraction of the time.

If you only have 30 minutes you can easily fit one of these in.

The key is to go to maximum intensity and you can get an idea of what that looks like by watching my two videos below in which I demonstrate Peak Fitness exercises on a recumbent bike and an elliptical

You can do Peak Fitness exercises on virtually any piece of cardio equipment including a treadmill but I don't recommend using a treadmill as it is a bit dangerous because of the speeds involved and it also takes much longer to get up to speed on the equipment as a bike or elliptical can go to max in a few seconds, the elliptical may take ten seconds or so to raise the elevation and speed and decrease it and when you are tired if you can't decrease it fast enough you might get injured. On the bike or elliptical you can instantly slow down which makes it much safer.

You can also sprint to do the Peak 8 exercises but I would strongly caution against it. That is what I did and it is VERY common to pull your hamstring. That is what I did and the injury took me about three years to recover.

So let me describe what the principles of Peak Fitness are

1. Warm up for three minutes
2. Exercise as hard and fast as you can for 30 seconds. You should be gasping for breath and feel like you couldn't possibly go on another few seconds

3. Recover for 90 seconds, still pedaling, but at slower pace and decreased resistance
4. Repeat the high intensity exercise and recovery 7 more times

This takes exactly 20 minutes and it is only FOUR minutes of all out exercise. I typically cool down for a 3-5 minutes and use a functional parameter of my heart rate. I like to get it down to around 120 before I stop which gives me enough time to recover and not pass out when I get off the equipment.

You can get an idea of how hard you need to go by looking at my videos below.

I would strongly suggest using a heart rate monitor as it is VERY difficult to measure your heart rate. You want to get your heart rate up to your CALCULATED maximum heart rate. There are many formulas to do this but the most common is 220 minus your age.

Like any exercise you should always listen to your body. If this is the only exercise you are doing you can probably do three a week and be fine. However if you are doing strength training that may be difficult.

After doing this for a few years my rhythm is to one peak fitness a week on cardio equipment and two strength training workouts a week. I go up to three Peak Fitness a week if I don't have access to weight equipment. The KEY that many fail when they do these exercises is not give themselves enough recovery.

I certainly made that mistake which is why I cut back on my number of workouts. If you are competing you can certainly increase the number BUT if you are exercising to get healthy and live longer than you will want to make sure you have plenty of recovery and are not struggling to finish your workout.

So now I would like to tell you how I do my strength training workouts.

I believe that nearly everyone should do some strength training.

By aggressively working your muscle to fatigue, you're stimulating the muscular adaptation that will improve the metabolic capability of your muscle and cause it to grow.

There are many different ways you can go about lifting weights but I will describe a version that seems to work well for many people and it is called Super Slow.

You can use about four or five basic compound movements for your exercise set. These exercises can be done using either free weights or machines. The benefit of using a quality machine is that it will allow you to focus your mind on the effort, as opposed to the movement.

This super-slow movement allows your muscle, at the microscopic level, to access the maximum number of cross-bridges between the protein filaments that produce movement in the muscle. You want to pick a weight that is light enough so you can do at least 8 but heavy enough so you can't do more than 12 repetitions., If you can do more than 12 than you need to use a heavier weight. This super-slow movement allows your muscle, at the microscopic level, to access the maximum number of cross-bridges between the protein filaments that produce movement in the muscle.

So let's first start by describing how you do the exercise

1. You Begin by using the appropriate weight based on the principle I just described. You then lift the weight *as slowly and gradually as you can*. The first inch should take about two seconds. Since you're depriving yourself of all the momentum of snatching the weight upward, it will be very difficult to complete. Begin the full movement in less than 7-10 seconds. (When pushing, stop about 10 to 15 degrees before your limb is fully straightened; smoothly reverse direction)

*"It's sort of like a caterpillar or a centipede that's crawling along a surface. If you start off moving very, very slowly, you're going to engage more legs or more movement arms at the microscopic level. What you have in terms of movement is the difference between a centipede and a millipede, and that also produces very gradual movement. What the slow movement does is it keeps the muscle under a continuous load. It can never escape being under the stress of the weight, so the fatigue accumulates very quickly.*

2. Slowly lower the weight back down
3. *An important point about the last repetition is that you lift the weight until your fatigue accumulates to the point where you no longer have enough strength to continue to move the weight, at which point we will have you continue to attempt to produce movement even though it is not occurring for several more seconds, which drives your level of fatigue more deeply.* " don't try to heave or jerk the weight to get one last repetition in. Instead, just keep trying to produce the movement, even if it's not 'going' anywhere, for another five seconds or so. The magic is NOT in moving the weights but contracting the muscle and you don't have to move the weight to contract the muscle
4. *You don't ever really want to stop and rest the weight on the rack you always want to keep it moving back and forth*
5. *Because you are moving the weight so slowly you radically decrease your risk of injury*

You repeat until exhaustion which should be about 8-12 reps. If you are outside those parameters you will need to adjust your weight according the next time you do the exercise.

Also, since safety is always foremost in any weight resistance exercise, if you're just starting out your exercise program, you may want to begin with only the resistance machines, which give your body added support while you concentrate on isolating and strengthening muscle groups. You can then work up to free weights as you add more weight to your program, and gain strength.

You can do about five movements in your workout and the basic are

1. Pull-down (or alternatively chin-up)
2. Chest press
3. Compound row (A pulling motion in the horizontal plane)
4. Overhead press
5. Leg press or a squat

I demonstrate a few more of the exercises in the next section as I use both free weights and weight resistance machines. Both types of equipment can help you strengthen and build muscle; however, if you use free weights, unless you're a seasoned body-builder with good knowledge of proper weight-training form, I suggest that you use a "spotter" or have a trainer nearby who can make sure that your form is correct, and to help you, should you have any trouble at all with the free weights as you attempt to push higher weights

**It is important to understand that I am NOT demonstrating the classic Super Slow training in this video but a hybrid that is about four seconds which is still far slower than most people lift weights.**

**For the next exercise** I am demonstrating a leg curl with a 4-second positive and a 4-second negative, meaning it takes four seconds, or a slow count to four, to bring the weight up, and another four seconds to lower it. Done correctly, lowering the weights at this "slow" speed forces your muscles to do the work, thus strengthening and building them up rather than allowing the weights to just pull you down.

This exercise accentuates your hamstrings, which are the large muscles running down the backs of your legs, above your knees. They are an important muscle group that act as both a hip extensor and knee flexor, and keeping them strong can literally help you keep on your feet as you age. Coupled with strong quadriceps, which I will address in another exercise here, having strong hamstrings can also help prevent hip and knee injuries that often lead to surgeries for injuries like torn ACL's and hip replacements.

The objective of the slow repetition leg curl is to perform 10 to 12 repetitions, with one set to failure, meaning doing the exercise with the maximum weight you can handle in 10-12 repetitions, all in one set. The "failure" part of the exercise is the point at which you can no longer maintain good form and still lift the weights. My resistance has been calculated to be 80% of my 10-rep max. Note that my hands are loosely gripping the handlebars on this weight machine. The grips are only there for you to hold onto to help maintain balance as you lie on the machine. Holding the grips loosely also helps ensure

you're your body centers the work of lifting on the hamstrings, rather than "borrowing" strength from a strong grip.

**On this first exercise**, is a barbell squat. Many consider this to be the KING of strength training exercises you can do as it will rapidly push you to anaerobic metabolism because you are using so many of your muscles. It will give you great abs, increase your vertical jump, your functional strength, your sprint times. And will increase the strength of nearly all the muscles in your body because of its powerful effects on stimulating growth hormone.

Will help lower your body fat, sleep better increase your body's endorphins or pain killer and of course will increase your bone density and help give you stronger bones

Make sure to widen your base by spreading your feet apart, solidly on the floor, in a comfortable stance to perform this exercise properly. Also, for safety's sake, notice how I am staying inside the power rack frame, and you should too. That way, if anything should go wrong and you fall or drop the weights, the bar will catch them.

If you are doing a free weight squat then I would strongly recommend using a trained spotter. This is less necessary on a Smith machine but still a good idea

The downward portion of the lift always begins with your hips moving backward first. If you bend your knees first you are setting yourself up for problems in the middle and end of the lift by causing you to have to adjust for your flexed knees. Moving your hips and buttocks to the rear will set the squat up perfectly.

This can be hard to do if you have decreased hip flexibility. I certainly did when I first started doing them and it took me a few years to change that. Ideally have a trained professional guide you with this.

You can visualize trying to touch the wall with your buttocks as you move backward with the hips. Beginning with the hips allows the body to drop into a picture perfect squat with the lower legs perpendicular to the floor and your back straight and solid. Your hip flexors and extensors are two of the most powerful muscle groups in the body will be at their maximum potential in this position.

This starts the body and bar back up again by counteracting the downward movement of the weight. If you have not kept tight you will have flexed a small amount and this action somewhat nullifies this tendency. Try to wiggle your toes at the bottom, if you are unable to do so then you are already tipping forward.

Make sure you don't drop your shoulders and keep your collarbone up.

**Moving on** to the flat barbell bench press, You can also do this exercises with dumbbells

For proper alignment, remember to keep the bar over the nipple area of the chest. Note that I have my hands a comfortable distance apart—but not too far. Putting them too close together isn't good either, since that will work the triceps more than we want for this exercise. Do not extend the bar over your face or above your head. Again, you are performing the exercise at 4 seconds up and 4 seconds down, remembering that lowering the bar slowly is what helps build the strength you're working for.

The bench press will help you tone your pecs—the pectoralis major and minor, as well as your triceps and forearms. It also helps work your front shoulder muscles and the area from the bottom of your armpit to the middle of your ribcage that is often referred to as the “boxer's muscle.” Again, choose the poundage on your weights that will allow you to do 10-12 reps to failure, and remember to just barely touch the top of your chest—don't let the weights fall or rest there.

**In the next exercise**, I am performing a lat-pulldown with a supinated grip, where I pull the weight down in front of my head with the palms of my hands facing my body. For good form with this exercise, make sure to keep your shoulder blades retracted as you perform the extension. If you're doing it right, you can feel your torso tighten as you lower the weights to a count of four—the lat-pulldown will strengthen the latissimus-dorsi, teres-major, and pectoralis major muscles in your torso, and will help reshape it.

Do you see that I'm not pressing my legs against the supports? Keeping your feet flat on the floor and relaxed forces you to direct the work to the muscle groups you're isolating. This might be a good time to mention that, when you're using weight machines, the placement of the seats are very important—too high and your feet may dangle, and you might end up exercising the wrong muscles. It also isn't good if the seat is too low—if you're not sure how to adjust the seat, just ask one of the gym trainers to help you. Keeping a little notepad with you as you switch weights is helpful too—write down the seat and weight settings so you know right where to start next time.

The best thing about this exercise is that if you increase the weights gradually over time as you gain strength, it won't be long before you start noticing what a “hard” body you're building!

**Next is the barbell shoulder press**, which accentuates the anterior deltoid, the muscle that strengthens your shoulders, helps shape your biceps and defines the area between your shoulder and pectoral muscles. In this case, I am not using a pad behind my back—this way I can utilize more of my core muscles, and enhance the torso strength I've been building with the lat-pulldown. I'm also using my low back muscles to stabilize my spine. If you do it this way too, be sure to maintain good posture throughout the exercise—if your back begins to bend midway through, you may need to use a back pad or lighter weights until you're stronger.

For proper form, grasp the bar slightly wider than shoulder width, and again, count to four up and down, and do 10-12 reps to max. Overall, the exercise helps strengthen your arms and upper body.

**Now we have a barbell curl.** For this exercise, make sure you widen your base and bend your knees just a little bit. Also, use your core, and maintain a good posture. If you look at my form, you could almost draw a straight line right down the middle of my body. That's what you need to strive for—if you can't manage it, opt for lower weights until you can. Also notice that in this exercise, my shoulders are stabilized and locked. I am only pivoting at my elbow joint.

This exercise works your biceps primarily, but it also strengthens your forearms and shoulders. Do you see my biceps flexing as I go through this exercise? You hardly need to tell your body to squeeze those biceps as you slowly lift and lower the weights—if you do it properly they do it all on their own, and it won't be long until you have the strong, hard biceps. One note—unless they're bodybuilders, women often don't want to build up their biceps and triceps like men do. In that case, ladies may wish to level off, and not increase the poundage anymore once your arms are at the shape you want them.

**Next we have a tricep pressdown,** also known as a triceps pulldown. Again, posture—with that line going down your torso—and form is important in executing this exercise. Grip the bar with both hands about shoulder-width apart, and push down. Make sure you have your neck in a natural, neutral position and look straight ahead as you isolate the one muscle you're working on here.

Make sure you're going down for the full extension of 4 seconds, as well as the slow rise back up. Allow your other muscle groups to give you the stabilization you need to isolate just the triceps—if you're doing it this exercise correctly, you'll feel the pull in the back of your arms. If you can't lift and lower the weights without bending over, you're not getting the full benefit of the exercise. It's also possible that your weights are too heavy. Try lowering the weights just a little, and see if you can feel those triceps now! Ladies: this is one way to get rid of those saggy bags under your arms! Build up this muscle and you'll see a difference in no time.

You'll notice that all of these exercises involve isolating muscle groups. The purpose is to target parts of your body separately so they work together better. Once you're toned overall, you'll be on the road to good health and a longer life.

**This is the leg extension,** which focuses on the four muscles on the upper leg and thigh—the quadriceps. These are the other set of muscles that work with your hamstrings, that are so vitally important to maintaining good leg, hip, and knee strength. Make sure you're keeping your muscles engaged the entire time, with only a quick pause at the top and no rest at the bottom. You'll notice that your stomach muscles work with your legs on this exercise, but be careful not to allow your back to do the work—not only will it NOT build up the muscles you're targeting, but it could strain your back, causing problems that may need medical attention.

Did you know that muscle weighs more than fat? The upside is that these heavier muscles are tight and trim, and take up less space than an equal weight of fat. That's why as you gain muscle, you may gain a little weight even though you look smaller all over and may take a smaller size pants or dress. Or, if you're on a weight-loss diet, you may not lose as much weight on the scales, but you will lose a bunch in inches, and again will notice it in smaller clothes sizes.