The Danger of Not Using Your Muscles After Stroke & What to Do About It

August 15, 2017

Do you know what can happen if you stop using your muscles after stroke?

Two things can occur:

1. Your muscles can get weaker and smaller
2. Your brain can completely forget how to use them

Both of these side effects are preventable and *reversible*, and this article will show you how.

Muscle Atrophy – Smaller, Weaker Muscles

The most common post-stroke side effect is hemiparesis or hemiplegia, which is weakness or paralysis on one side of the body. This makes moving difficult (or impossible) particularly on the affected side of the body.

This movement impairment can cause a survivor to move much less than before – understandably so. However, when muscles aren't being used, they can become weaker and thinner through a biological function called *atrophy*.

Muscle atrophy occurs when you fail to move your muscles and they naturally become smaller. It's the opposite of what happens when you lift heavy weights and your muscles become bigger.

The Complication of Swallowing Problems

Muscle atrophy can be exacerbated when coupled with swallowing problems. When a stroke survivor is bed-ridden and also has a swallowing problem, it's very hard to get adequate protein and movement into their body.

Since you're not using your muscles, your body starts to dissolve your muscles as a source of fuel.

This is the reason why many survivors begin to grow very thin after stroke. The lack of movement coupled with a very low caloric intake causes the body to get rid of muscles rapidly.

Luckily, this condition is completely reversible.

Muscle Atrophy Treatment

Atrophy can be reversed by introducing movement (and eventually rehab exercise) into the body.

When a survivor cannot move her muscles on her own, as is the case with hemiplegia (paralysis on one side of the body), then someone can assist the survivor by passively moving her limbs.

(Read: Active vs Passive Exercise after Stroke)

Even though the stroke survivor isn't moving her muscles 'on her own,' it still helps prevent muscle atrophy – albeit it only helps a little, but it's much better than nothing (as you will see with learned nonuse, which we will discuss next).

Then, once movement is restore in the body, a survivor can start to reverse muscle atrophy through a solid rehab exercise program, eventually adding resistance (like dumbbells or resistance bands) to strengthen the muscles even more.

Learned Nonuse – Completely Forgetting

If a stroke survivor completely neglects using their affected limbs, however, a dangerous side effect can occur: learned nonuse.

When learned nonuse occurs, the brain completely forgets how to use the neglected muscle. This is where the saying "use it or lose it" comes from – and it's a completely valid point.

Luckily, learned nonuse can be easily prevented by moving the body every day, even if it's just for a little. In the case of hemiplegia, even passive movement can help prevent this post-stroke side effect from occurring.

Learned Nonuse Treatment

When learned nonuse occurs, treatment is still available. For example, constraint-induced movement therapy can help reverse learned nonuse by forcing use of the affected limb.

During this therapy, which is mostly used for upper extremities, the 'good limb' is constrained to completely prevent movement and the affected limb is forced to perform.

Unfortunately, this form of therapy can be frustrating and intimidating, but it can also be highly effective.

Rehab Exercises Are the Ultimate Treatment

Every stroke survivor should strive to move all their muscles at least a little every day.

Even if you cannot move your muscles yourself, then assisted movement can still help prevent learned nonuse and slow down muscle atrophy.

Finding a great rehabilitation exercise program will help immensely. As long as you get your body moving, any form of exercise will be a great step towards preventing muscle atrophy and learned nonuse.

How will you get some movement into your affected muscles today?