

Will Incorrectly Practicing Stroke Exercises Lead to Bad Results?

December 22, 2017



Movement impairments are a common stroke side effect that can prevent you from moving your affected side properly.

This often leads to balance issues, walking disability, and/or an overreliance on your non-affected side. The best way to fix these problems and improve movement after stroke is with repetitive exercise that helps activate neuroplasticity and rewire the brain. The more you practice moving your affected muscles, the better your brain will get at controlling those muscles again.

(If you're unfamiliar with this concept, see "How Repetition Heals Your Brain After Stroke" dated 10/12/2016.)

What If You Can't Exercise with Good Form?

The question that often comes up is, *"Do I have to do my exercises perfectly though? Because I don't have enough mobility for that."*

This is a valid question. The concern among some therapists is that practicing movements incorrectly will lead to abnormal movement patterns (i.e. bad habits). This is actually a heated debate in the stroke community.

One group of therapists believe that it's better to be inactive than to practice a movement incorrectly. Another group believes that it's better to move as much as you can, even if it's not correct, than to be inactive.

In this article, we'll explore the pros and cons of each thought camp, plus our personal opinions about what's best. Let's dig in.

The Problem with Practicing Incorrect Movement

When you practice something repetitively, you begin to rewire your brain and strengthen those neural pathways. The stronger these pathways become, the more your brain likes to use them. That's why bad habits are so hard to break. You've practiced them over and over and over and your brain really likes using those pathways.

The fear with incorrect repetitive practice is that you'll form bad habits and keep them. This fear is valid, but it's actually unlikely that you'll form bad habits if you keep trying your best as you progress.

Short-Term Imperfect Practice Is O.K.

As long as you're always trying your best, then incorrect movement is only temporary. As long as you continue to push yourself, you will keep overriding incorrect movement patterns with better ones.

In [this study](#) on motor learning, researchers discovered that motor learning consists of the formation of new movement segments; and each segment can be formed separately. This is great news for stroke recovery because it means that you can regain movement one segment at a time. So even if you can't complete an exercise perfectly, practice will help you get there. As your movement improves, you can build new segments, which will allow you to exercise with better and better form.

Bad vs Good Habits

With this idea, patients won't necessarily be learning bad habits if their form improves quickly enough to continuously reestablish better movement habits.

Obviously, this leaves room for mistakes, which is why it's always best for patients to work alongside a therapist. But when therapy isn't an option due to financial limitations, patients need to work with what they have. And, in our opinion, there's nothing wrong with short-term imperfect practice as long as each movement is practiced to the *best* of the patients' ability each time.

The Problem with Physical Inactivity After Stroke

However you choose to move, it's better than choosing to not move at all because physical inactivity leads to all sorts of problems like:

- Weight gain (a stroke risk factor)
- Muscle atrophy (losing the muscle you aren't using)
- Learned non-use (when your brain completely forgets how to use your affected muscles)

As you can see, the price of physical inactivity is high, which is why we believe that it's better to practice something incorrectly than not practice at all.

So, What Should You Do?

Every stroke patient has 3 options when it comes to physical therapy:

1. Exercise alongside a therapist to ensure good form
2. Exercise at home with good enough form
3. Don't exercise at all

While option #1 is best, most people don't have the resources to afford multiple trips to the clinic each week – and you need to exercise frequently if you want to see results. *That's why your best bet is a combination of #1 and #2.* While a trip to the clinic might not help you achieve the optimal amount of repetition, you can fill in the gaps at home.

For example, our FitMi home therapy tool is designed to help you achieve 12 times more repetition than the average therapy session, which helps you see faster results than just exercising at the clinic alone.

Although your form might be imperfect, you'll start building new movement segments, which can be improved upon in the future. You can also have the safety of working with a therapist a few times a month to make sure that you aren't learning any truly bad habits.

Summary

So, in our opinion, it's best to practice your **stroke exercises** at home *with the best form you possibly can*; and then work with a physical therapist as often as you can to stay on the right track.

Be aware of forming bad habits, but don't be so terrified of them that it prevents you from practicing at all.