# Interventions Using Rood’s Approach

Edited Video Transcript

All right, so going through these theories, the first one really looks to Rood's theories on reflexes. We've talked about reflexes several times. We've talked about them in terms of development and how they integrate, but we've also talked about how they're very useful for organizing movement. One of the ideas is that reflexes are a building block of movement and we co-opt those to be functional and do goal-directed tasks. So with this the theory is that when we have damage to our central nervous system, we lose that ability to co-opt these reflexes. The reflexes go unchecked. Therefore, we see things like increased tone; we see things like synergies come out. So Rood developed a theory that we can use these reflexes as a tool for relearning motor control. We do this by normalizing tone. So, we can either facilitate tone, do things to increase tone, or we can inhibit tone. We can do things to turn tone down. So, there's a bunch of things that have been hypothesized to facilitate and inhibit tone, for example, things like quick stretch tapping and vibration. We'll see today [that] these typically increase tone whereas a slow sustained stretch, slow rhythmic movements, and tendon pressure tend to inhibit tone. We can use these as tools to manipulate that starting spot of tone. Like I said in our introduction today, if a muscle is at a high-tone spot, it's going to take less activation to get it to go. If a muscle is in a low-tone spot, it's going to take more activation to get it to go. So, we can use this as a tool.

### Tapping to Increase Tone

Today, I’m going to show you tapping and vibration as a tool to increase tone by facilitation and our slow sustained stretch and tendon pressure as a way to inhibit tone. With this, let's have you scooch forward. I’m going to work with you for this initial part. So, the idea, let me just pull up, is let's say her finger flexors, where we can say, “Hey, this tone is too low, so we're going to ramp it up a little bit to make grasping a bit easier.” Or, we can say, “This tone is too high, so we're going to turn that knob on tone down a little bit to make opening the fingers a little bit easier.”

Our tools for increasing tone: we can do tapping on that muscle belly. The idea of tapping is you're going to do this quick tap—a few fingers, quick forceful tapping over the muscle belly, and sometimes you have to play. The theory is that this triggers that stretch reflex of the muscles—sends that signal up to the spinal cord, sends a signal back down to the muscle, and says, “Hey tighten up a little bit.” You can see an immediate response. It's highly dependent on the person and what's happening, where they're in recovery, their level of tone, where you're tapping. One of those things that I try if it works, is to increase tone.

### Vibration to Increase Tone

Our next tool that we can use to increase tone is vibration. Vibration does a similar thing for triggering that stretch response. So what you're going to do here is hold that vibration over the muscle right about there. It's not a touch to the skin—it's trying to push down into that muscle, and you do have to move a little bit to find a sweet spot, but with that you see that little bit of twitching. This is her muscle responding to that vibration. So, we can use these as tools to increase tone temporarily.

### Slow, Sustained Stretch to Decrease Tone

We can then use tools to decrease tone doing a slow, sustained stretch. If you make a fist for an individual with increased tone of their finger flexors, their hand may by default be in this fisted position. The challenge is that it makes activating the muscles on the opposite side harder. So what you can do is work on stretching this out, inhibit tone, turn tone down, to get that antagonist movement to be a little bit easier. So this is doing this slow, sustained stretch. The procedure that I’m doing here is I’m going to take her hand, flatten her hand out, and then work down until I can roll her fingers out and maintain. So again, “Make a really tight fist, hold it, okay.” So even if she's making a tight fist by flattening her palm, I’m going to create this little bit of a gap, and over time, I can roll. I’m making progress. I’m making progress. I can roll, still be nicer. No, okay, I’m making progress, right? So in this case, what you're going to end up doing is effectively over-tiring that muscle. This is the slow, sustained stretch. “Does it hurt you? No? Yeah, as long as you're moving the way their joints move, and over time. “You just gave up. Also sometimes, you will feel that, okay? No, it's okay, don't feel bad.” So by doing that slow, sustained stretch, you can inhibit tone.

### Tendon Pressure to Decrease Tone

The next thing you can do—it's called a tendon. You'd be doing tendon pressure. So basically taking the tendon of those muscles right at the muscle belly. So again, “If you do that tight fist, you come there and do that sustained tendon pressure. You're right there.” Over time, that's going to send a signal, and her hand's going to give up quicker. The challenge is I can't do two things at once. I can't give tendon pressure, and yeah, actually yep, yep, there it goes. I’m trying, so yep. So you can see that she's starting to collapse a little bit quicker for that now with facilitating inhibiting tone. This opens a window temporarily so you can do something else with that muscle. We do not have any data showing that facilitating or inhibiting actually causes long-term changes to tone. It's really pretty equivocal at this point in time, so I use this to open a window. That window may stay open for one, two, three minutes; it's a very short duration of effect, but that enables you to do [that]. That's where the power comes in. Yeah, I will, maybe let's say if tone's high, I’ll do stretching in two or three minutes, and then I’m going to come on and have them do something with with this… So if let's say it's again the fingers, if I stretch and her fingers are more relaxed, then I’m going to focus on her opening her hand [and] activating these finger extensors on the opposite side, okay? All right, I’m going to have you all practice that with your partner.