Can Toe Length Predict Longevity? with Dr Emily Splichal Transcript

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Introduction to Foot Function and Longevity

Hi, everybody. How are you? Dr. Emily here, functional podiatrist and human movement specialist here to talk about the correlation between your foot function and longevity.

And I propose that question that can your function actually predict your longevity? Or if we go a little bit more specific, can the function of your toes, namely, Toe flexor strength.

Predict your longevity. Now I'm going to share research study in a little bit, but what I want to show around this is that when we think about optimal foot function and foot strength, what always tell people is the power of the human foot lies within the toes.

And when I say toes, I don't mean just toe splay and toe position, But I am really talking about toe strength.

Walking Speed as a Predictor of Longevity

So here we go. Can your toe-strength, meaning toe flexor strength actually predict your longevity and the way that we're going to correlate that is going be based off of your walking speed.

Now walking speed is a accepted sixth vital sign as far as predicting morbidity and mortality. And where this correlates is that as your walking speeds slows, you will see this correlation in morbidity and mortality.

So walking's speed there theoretically could be a predictor of longevity. Now a key component of walking speed is overall foot function. And I go into this in a lot of lectures that I give, but it's going to be diving into that toe flexor strength.

So here we go with the research study. This is a research that was done in or it was published in Journal of Applied Biomechanics.

Study Overview: Toe Strength and Foot Anatomy

It was a 2026 study that presented or article. What they looked at were several features here. They looked at toe flexor strength, they looked flexer digitorum brevis size, so did the size of the muscle correlate to the strength.

They look at flexing the torn brevus activation as well. And then what was interesting is they look that toe length. So is there a correlation between toe-length and toe strength?

and then also heel length. Now the reason why they were looking at heel-length is because there's going to be an element of plantar flexion torque involved.

So as you go into a push-off position, which is called a rigid lever, this is actually where you are using peak toe flexation activation or strength. It's where lift your heel, you enter the propulsive phase of gaze, You enter what is call the rigid-lever, And as, as your ankle is plantar flexing, you are activating your posterior chain, which is Plantar Flexion Torque, Which wraps around the heels.

Research Findings on Toe Flexor Strength

So here, them measuring heel length is going to be an important correlator of Plantarflexion torque and then toe length because you have now another lever point, which is going to be around the MPJs into the toe length.

So this is what essentially the study was looking at. And then it looked at walking speed. Okay. Now, What they found is that there was a predictive correlation around stronger toe flexors.

So greater toe, flexor strength walked significantly further and faster during this six minute walk test. The endurance or the distance and the speed was significantly greater in those who had stronger tow flexers, greater tow, strength.

What that did is that allowed them to be able to better generate propulsive force during push off, which is a lever. It allowed him to bettter stiffen the MPJ so they pulled the joint in as they rolled through the mpj so that a stiffer joint allowing for greater force.

They were able access the ankle torque more so and then they had enhanced energy return. So yes, this is what you could predict from that. Stronger toes equals more economical propulsion equals better endurance, therefore distance and speed.

Okay, now the second thing that they found was shorter heels. So actually people who have a shorter heel bone had a faster walking speed.

Heel Length and Walking Speed

And this is really interesting because it is then showing a anthropological, like a skeletal structure to the heel bone supporting this potential. longevity.

So longer heels, theoretically you would think someone with a longer heel would be able to create more torque out of the ankle. However, what they saw is that those with shorter heel were able better access the elastic energy storage and therefore they were to shift from a muscle action into more of a fascial based action, which is interesting.

What they did not see a correlation in is flexor digitorum brevis thickness. That was not correlated with this walking speed. The activation level was NOT and then toe length was Not.

So very, very interesting here. Your toe flexors strength, of course, your anatomical heel length is something that was able to predict Longevity. So how does this tie into for everybody is if you want to live a very long time, you wanna live also having high quality of life, happy cognitively and look fabulous.

Practical Foot Strengthening Advice

All of that's important for longevity, but you cannot underestimate the power of walking speed in this longevity story. And what supports that long longevity store that you can control is your toe flexor strength.

This is where and why intrinsic foot strengthening is so important. Forward lean, short foot, balance exercises, all of these are incredible for strengthening your feet.

this is why Noboso is dedicated to helping people connect to their feet, All of my work, everything that I advocate, and all the programs that i create.

So in summary, If you are looking to live a long life, you have to be thinking about walking speed, which means you to have be think about your foot function, namely toe flexor strength.

Get those shoes off, get into your toe spacers, and get in to that intrinsic foot strengthening. Do at least 30 minutes of barefoot stimulation every day.

And then I advise people do just a couple minutes a foot strengthening every single day, if you were curious to read this study, I will make sure that I link it in the stories.

But again, it was a 2026 publication in the Journal of Applied Biomechanics. Are you ready to start short footing?