Introduction to Muscle as an Endocrine Organ

Fussel is an important endocrine organ. makes chemicals that circulate throughout our body that determine such things as our HDL cholesterol, our good cholesterol, which helps us to reduce our bad cholesterol.

It also makes BDNF, brain-derived neurotrophic factor, which is good for our brain and our cognition. Have you made it past menopause or are you going through it now?

I'm Dr. Pat McShane, and on the Women's HealthSpan Voices podcast, I'll guide you through the health challenges of the menopausal years and beyond, guiding the way to thriving in this powerful era of your womanhood.

Hello and welcome. We talk a lot about exercise in this video series, but not so much about the muscle that enables us to exercise. And it turns out that skeletal muscle is the largest organ in our body, which makes perfect sense if you think about it for a minute.

And it has a multiplicity of functions, not just the movement that we're so familiar with, but it's actually an endocrine organ and it's very metabolically important for our overall health.

Muscle, Metabolism, and Blood Sugar Control

And we've begun to learn that it also impacts on our brain and our cognition in different ways. So let's talk a little bit about this today. Muscle is an important endocrine organ.

It makes chemicals that circulate throughout our body that determine such things as our HDL cholesterol, our good cholesterol, which helps us to reduce our bad cholesterol.

It also makes BDNF, brain-derived neurotrophic factor, which is good for our brain and our cognition. I mentioned that Muscle is very metabolically important.

And one of the things that I discovered when I used a continuous glucose monitor for a month or two was that if I were to walk around or even just stand up and do the dishes, my blood sugar dropped quite dramatically.

So most of the glucose that is circulating in our bodies finds itself going to our skeletal muscle. Obviously, we need some for our brain and our heart and kidneys and so on, but the bulk of it really goes to our muscles.

So if we are sedentary after eating, our blood sugar control is much more difficult because our muscles are so important in that regard. Our muscles consume fatty acids and glucose as their energy source.

People who have more muscle are known to have resistance to a number of health problems and much better resilience when they do experience a health problem.

And by this, mean things like recovery from injuries or illnesses or cancer, and also just not getting some of these illnesses in the first instance.

Sarcopenia and Age-Related Muscle Loss

It turns out that our skeletal muscle is just doing a host of good things for us. And I read recently that there are 650 kinds of proteins that are manufactured by our muscle, which is pretty remarkable if you stop and think about it, because we think of it as just something that enables us to move or perform certain activities, but it's much more than that.

After our 30s, we start losing our muscle for the most part, and over 50, we lose about one or two percent per year.

And about 10 % of people have what is called sarcopenia, which means basically reduction in the amount of muscle in their body.

Once they hit around age 60, it's estimated that over age 80, as many as 50 % of people may have sarcopenia. And sarcopenia as a whole subject in itself, and that's been studied in some detail, it's strongly correlated with frailty, which is the inability to go through normal daily activities on one's own, it's highly correlated with falls, with fractures, and with basically all kinds of disability and even mortality.

So, sarcopedia is to be avoided if possible. How can we avoid sarcopenia? Well, certainly age is a great risk factor. but it goes beyond that. Sedentary lifestyle is a huge risk factor as well and dietary issues, primarily protein, also vitamins B, C, and D, and also magnesium and selenium in our diet.

So that means basically a broad-based diet for the… trace minerals and the vitamins. And for protein, there's been a lot of resurgence of interest in how much protein we really need to be eating.

Protein Needs for Maintaining Muscle

Most experts in the current era think that women in our age range, postmenopausally, should be eating around 30 grams of protein per each meal, or about 90 to 100 grams per day.

If you're sarcopenic and if you're muscle mass starts out low, you probably need even more than that. And if you're trying to build muscle, if you're exercising with resistance, etc., you may need more protein than that also.

But that's a starting point for most of us. The recommended dietary allowances that you probably are familiar with basically are the bare minimum that we should be eating.

And that's true for vitamins as well as we've talked in previous videos. Older people need more protein even than younger people because our bodies become what we call anabolically resistant.

It's harder for protein to make it into our muscles as we get older. And there's a number of metabolic steps that might be involved in this. But the bottom line is that we have to eat more protein and it's better to do it throughout the day, not just one huge chunk at dinner time, which is so often the pattern in the standard American diet.

We may have a bagel for breakfast, a quick little salad with a couple of somethings on top of it, and then a huge piece of meat or chicken or fish for dinner.

Well, that's not the best way to do it. If you are a vegetarian, you need to eat even more protein to get the same effect on your muscles because the protein is less biologically active and it's harder to get it into your muscles.

Exercise is the other piece of the puzzle here that is under our control to improve our skeletal muscle.

Resistance Exercise and Building Strength

And again, many people are very fit aerobically, but they may be running and going to classes and so on, but they are not performing resistance exercise.

And that is what builds muscle is using your body weight and you can do it with your body weight or the machines at the gym or free weights that you can easily have available to make sure that your muscles are getting proper load.

And probably twice a week is a great starting point, three times if you're getting real serious about all of this. So I hope I've convinced you today that you're Muscle is important that it's doing a lot of great things for you and that you have to do some things back for it.

And that includes proper diet, particularly protein, but also the vitamins and the minerals that I mentioned and

exercise. So this will keep you fit and out and moving around, taking good care of yourself into your later years.

Thanks so much for listening.

Closing Thoughts and Podcast Outro

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