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We are so excited to welcome you all to our 1st edition of our *Exercise & Aging Lab* newsletter.

Fall is here and we are well into our new semester. Students are still not back yet, but the exercise and aging lab is up and running in full speed! As you know, our **LOAD** study has 11 participants. We had a small issue with one of our testing machines. But it is fixed, at least for the time being, and have started recruiting again. Our plan is to start with 12 participants and do a second wave after a month or so.

We are also approved for our second study where we will compare two instruments to measure leg power in aging adults and look at the changes in power after 2 years. Will power decline or stay the same?

We have added four lovely research assistants to our team: Frank, Esteban, Alex and Paola. Of course, all of them are majoring in exercise science and carefully hand-picked!

In today's inaugural edition, we have a lot of learning to do: We will look at the purpose of the LOAD study, what is sarcopenia and why it matters, what's the *key* to resistance training, and the 'why, what and how' of RPE scales.

The goal of the lab is to improve physical function, quality of life and well-being of aging adults, mainly via exercise. As they say, it is not how long you live, but how well you live! This newsletter will also help serve this goal by educating you about the latest science in gerontology.

If you have any questions/suggestions, please email us. If you have friends who are interested in future studies, please have them send an email and we will add them to our database.

Keep exercising,
Anoop Balachandran PhD



Progressive Resistance Training?

The **KEY** to resistance training is **progression**. In other words, you must keep increasing the weights you lift. So keep an eye on the exercises and how much you went up in the last 1-1.5 weeks. If you don't challenge yourself, the muscles see no reason to get bigger nor stronger.

In our study, for example, if you are lifting 50lbs, and if you can do 3 sets of 12/24 reps and your RPE is below 7, you should increase by 10%, which is 5 lbs.

So the bottom line is , after 10 weeks, you should be lifting a lot more than when you started at week 1.

Keep lifting & don't forget to progress!



Why do we need the LOAD study?

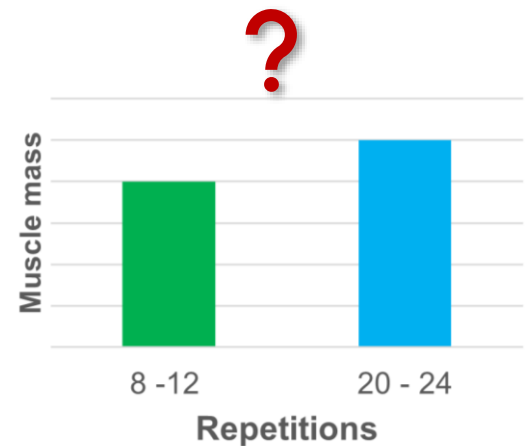
What is the purpose of this study? Hasn't this question been looked at before?

Although the general guideline is to use 8-12 repetitions for muscle growth, recent studies in young folks have shown similar improvements in muscle mass with BOTH high and low reps¹.

To our knowledge, the LOAD study will be the first to look at the effect of weight lifted or repetitions on muscle mass and strength in adults over 50 years. If true, this means **seniors can use lighter weights** without worrying about getting hurt or being in pain, and still improve muscle and strength!!

Besides muscle mass and strength, we will also look at other measures such as power, physical function, strength and endurance. Also, your enjoyment, acceptance, attendance, rating of perceived exertion (RPE) and so forth. Hence, we bug you to put those in your workout logs.

Importantly, apart from improving your own strength and muscle mass, **you are contributing to your group numbers**, which finally determines the outcome of this study. So, make your group look good!



It goes without saying that we will publish the study in well-respected scientific journal and will send you a free copy of the paper! We will also use this as data to submit a grant for a bigger and longer study.

Finally, we would like to thank you all for your participation and your commitment to science. And we hope you enjoy the 10 weeks with us, make new friends, and make strength training a habit for the rest of your long life!

1. <https://pubmed.ncbi.nlm.nih.gov/28834797/>



What is sarcopenia?

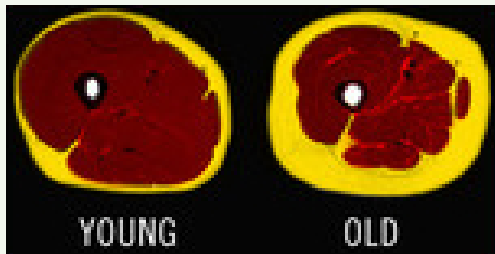
We all have heard about Osteoporosis (loss of bone). But what is "**Sarcopenia**"? Sarcopenia (*sarc* means flesh, *penia* means loss) is the loss of muscle mass with aging. The latest definition includes not just muscle mass, but strength and function with age¹.

Like it or not, this decline in muscle mass and strength starts around the age of 50 years. And every year you could lose 1-2% of muscle and 1-5% of strength.

So what? This decline in muscle and strength could potentially lead to increase in falls, decrease in

everyday function, loss of independence, mobility issues, lower quality of life, and even death.

At the present time, we have no drugs approved to prevent or reduce sarcopenia: The only way to slow the loss of muscle and strength is by exercise, especially, you guessed it - **strength training!**



1. <https://academic.oup.com/ageing/article/48/1/16/5126243>

What is an RPE scale?

What? The scale, rate of perceived exertion, is a subjective scale to monitor and guide your effort or intensity during workouts.

How? The scale ranges from 1 to 10. 1 is when you are resting and 10 when the effort is maximum. In our study, we try to maintain between **7 & 9**. If it goes below 7, we increase the weight. So, it is important to record your RPE's for every exercise.

Why? The simple scale helps to ensure that you are not pushing too hard nor too easy.

Study: In the study we use both the repetition range and the RPE scale to decide when to progress weights. So, we have an objective and a subjective criterion to guide your workout!



Latest news/events

- **DEXA:** We just purchased a **DEXA** (use x-rays) which is the gold standard for measuring muscle mass and bone density. Thanks to the CUNY grant. We hope to get the NY license (and find an X-ray tech) soon so that we can start using it!



- **Latest publication:** Our latest publication involved validating a tool to measure leg power in adults over 60 years. Power declines at faster rate than strength and is strongly related to function, but not many tools out there that are quick, cheap, portable and accurate to measure power. [Take a look please.](#)

- **Plant:** We also added a new little plant to our lab. Everyone who enters the lab, can't help but notice it!



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