I am a physiologist interested in mechanisms of muscle contraction in health and disease.

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Leonardo F. Ferreira, Ph.D.

One of my research questions:
How does heart failure cause diaphragm weakness?

Technology I use:
I use a rodent model to explore heart failure. Key methods are assessment of intact muscle contractile function in vitro, mechanical tests in single muscle cells, and measurement of oxidant emission by muscle.

My most exciting discovery:
My primary interest is in the diaphragm muscle, and how sphingolipids and oxidants modulate contractile function. I found that sphingomyelinase (an enzyme) and ceramide (a lipid) cause muscle weakness.

To be a scientist, you need:
1. Persistence/Grit
2. Growth mindset
3. Critical thinking
4. Communication

I knew I wanted to be a scientist when...
I was in physical therapy school and noticed that I was more passionate about understanding the physiological basis of diseases and therapies than treating patients.

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