

Are We Giving Too Much Weight to Muscle Loss after Surgery and other Therapies for Obesity?

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NO



QUALITY MATTERS.
FUNCTION MATTERS.
EXERCISE MATTERS.

BUT...None of those answer Today's Question...

The Debate: Does Muscle Loss Matter?

- ✓ over-reacted lean-mass loss
- ✓ quality can improve when quantity declines
- ✗ None of that establishes that
quantity changes don't matter

MUSCLE RESERVE

mass is more than metabolism

Illness – Hospitalizations – Surgical Risk – Immobilization –
Weight Cycling – Aging

RESERVE = what you bring into the stressor
RESILIENCE = your capacity to withstand + recover

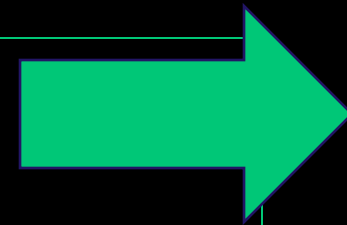
How much can we afford to lose?

**A smaller body
may appropriately
require less
muscle.**

**Some loss makes
physiological
sense.
May be adaptive.**

BUT...

**Expected loss doesn't
establish **acceptable** loss**



Have we **ACTUALLY** Measured Muscle?



We talk about 'muscle loss' - - but what have we historically measured?

METABOLIC BARIATRIC SURGERY

- 37 → LEAN MASS
- 20 → FAT FREE MASS
- 3 → SKELETAL MUSCLE

PHARMACOTHERAPY

- 1 → SKELETAL MUSCLE

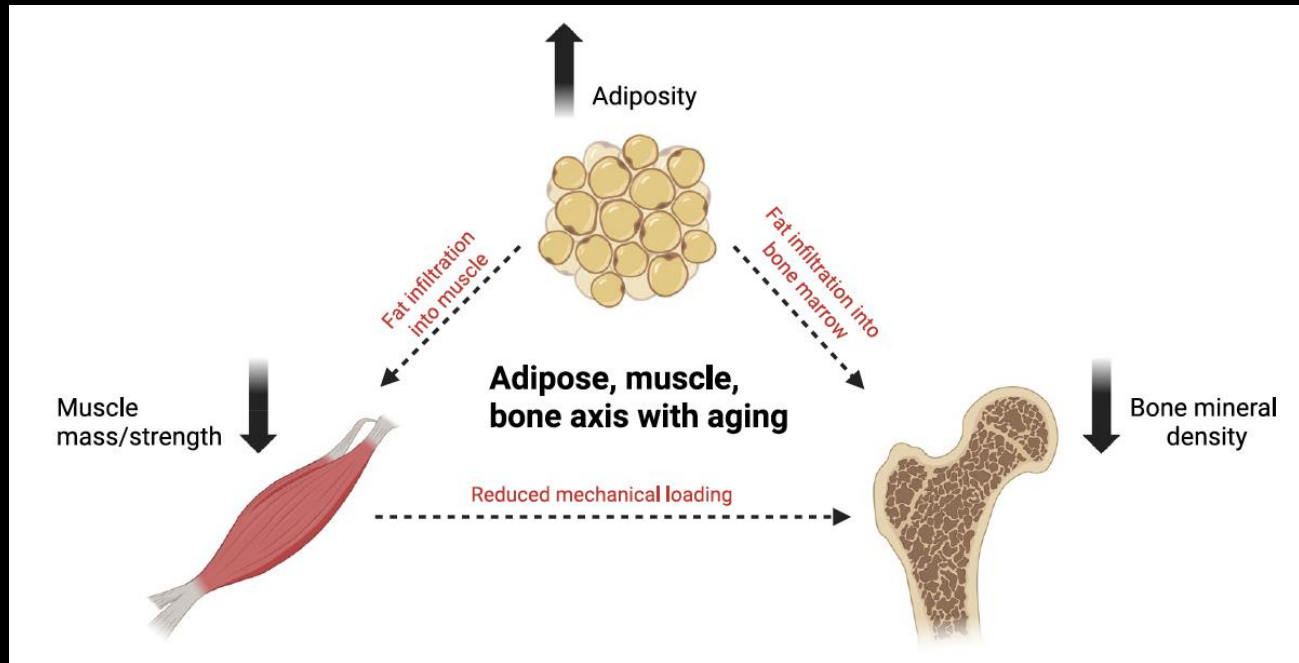
More Assumptions than Measurements

We've been doing bariatric surgery for decades.

We've now rapidly adopted incretin therapies.

And somehow our “confidence” about skeletal muscle has moved considerably faster than the direct measurement of skeletal muscle.

Why Care: Muscle doesn't live alone



Biological Crosstalk:

- Mechanical loading
- Myokines
- Adipokines
- Inflammation
- Insulin sensitivity
- Ectopic fat
- Bone remodeling



**Body tissues
remodel together.**

Who Can Afford to Lose Muscle?

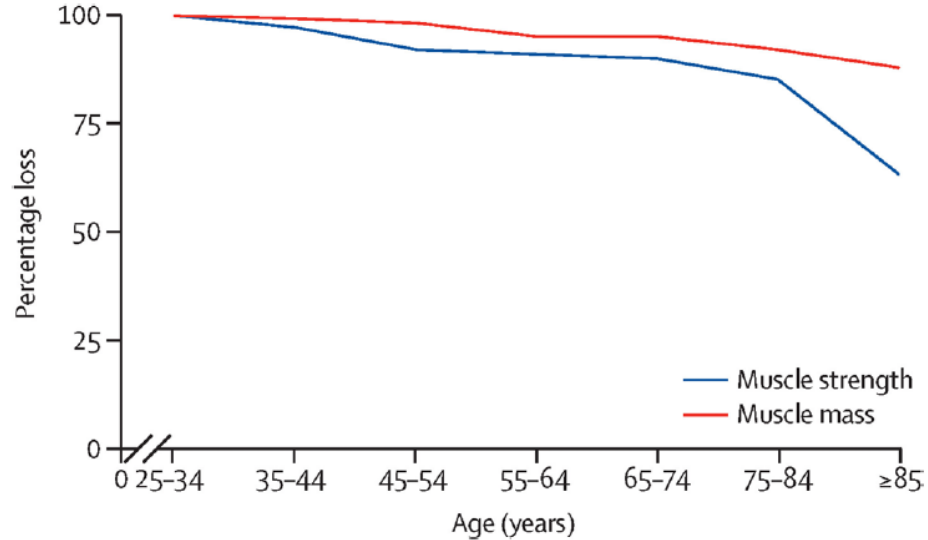


FIGURE 2 | The decline in muscle strength and muscle mass with age. Data from Ferruci et al. [24], and image from Cruz-Jentof and Sayer [25], by permission of Elsevier.

- ↓ 1% = muscle loss per year
- ↓ fiber size (atrophy)
- ↓ fiber number (hypoplasia)
- ↓ 50% of peak by 8th decade
- ↓ Strength drops at a faster rate = 3-4%

REVIEW

Unanticipated Effects of Obesity Medications

The Effects of Incretin Mimetic Therapies on Muscle and Bone Health in Older Adults: A Narrative Review

Joseph M. Saavedra¹ | Alissa S. Chen² | Kathryn N. Porter Starr^{3,4} | John A. Batsis^{5,6}

600,000 Sign-Ups Medicare GLP-1 Bridge Program 2 months



Ted Kyle ✓ • 1st
Founder, ConscienHealth
4h • 🌐

CMS announced this week that 600,000 seniors signed up for a GLP-1 in the Medicare Bridge Program in just 60 days – heavy traffic indeed.
HT: [Obesity Action Coalition](#), [Obesity Care Advocacy Network \(OCAN\)](#), [The Obesity Society](#)
<https://lnkd.in/dx7pXK5a>



**Heavy
Traffic
on the
GLP-1
Bridge:
600,000
Seniors
Sign Up**

Can we **build it back** or **preserve it**?

- Aging?
- Homogenous across disease states?
- Hypocaloric state?

- We (sort of) know that we can lose it.
- Do we know if we can actually...
 - Rebuild it?
 - Preserve it?
 - Attenuate it?

Sarcopenia → Sarcopenic Obesity

- Reduction in function AND mass *Global Leadership Initiative on Sarcopenia*
- Sarcopenia = 9-18%
- **Sarcopenic Obesity = 20% 60-69 years**

Skeletal muscle architecture is not seen in conventional lean mass measures or proxy estimates of muscle mass used clinically!

Fat infiltration - IMAT

Muscle density - Crossbridge myocyte function - Contractile efficiency

**We aren't always
measuring it
before initiating treatment.**

**I would love exercise to be the
solution...BUT**

- Lack of evidence**
- Lack of engagement**

WE DON'T KNOW

- What are we actually losing?
- Who has muscle to spare?
- What magnitude of loss becomes clinically meaningful?
- Can we reliably rebuild what was lost?
- Does better function today guarantee reserve tomorrow?

Until we know, who can safely afford to lose it?

PROTECT THE RESERVE

I am not arguing that every gram of muscle must be preserved...

I am arguing that we haven't...

- adequately measured skeletal muscle
- adequately phenotyped the people losing it
- established the magnitude of loss that becomes clinically meaningful
- demonstrated that what is lost can reliably be rebuilt during weight loss, aging, and other factors.

Uncertainty:

Do no harm. Protect the reserve