

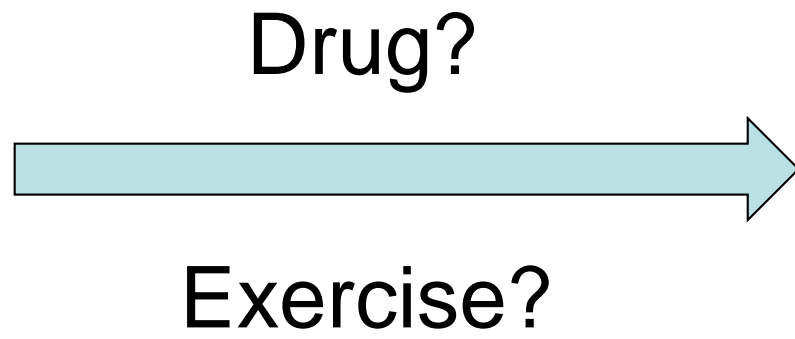


JOHNS HOPKINS
M E D I C I N E

Exercise Prescription for Myositis

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Intervention



Exercise as Medicine

- Everyone claims to do so
- Not everyone is actually doing it
- Practical difficulties



Misconceptions

- Exercise is good for ANYTHING
- Exercise is important, but NOT as important as real drugs
- There is nothing scientific about exercise – it just works!
- This is NOT a medical intervention – you don't need to see a specialist, just go to a gym!

Exercise as a Medical Intervention

- There are different kinds of exercise: endurance, cardiovascular, resistance, etc.
- Each exercise has very specific goals
- There are different “dosing” for exercise

Imagine...

- You have a diabetes and your doctor wrote a prescription like this...

For _____
Address _____ Date _____

R_x

*Diabetes drugs, ask
pharmacist to evaluate and
treat*

REFILL _____ TIMES _____, M.D.
DEA NO. _____ Address _____

In Reality

- This is very common, and completely accepted

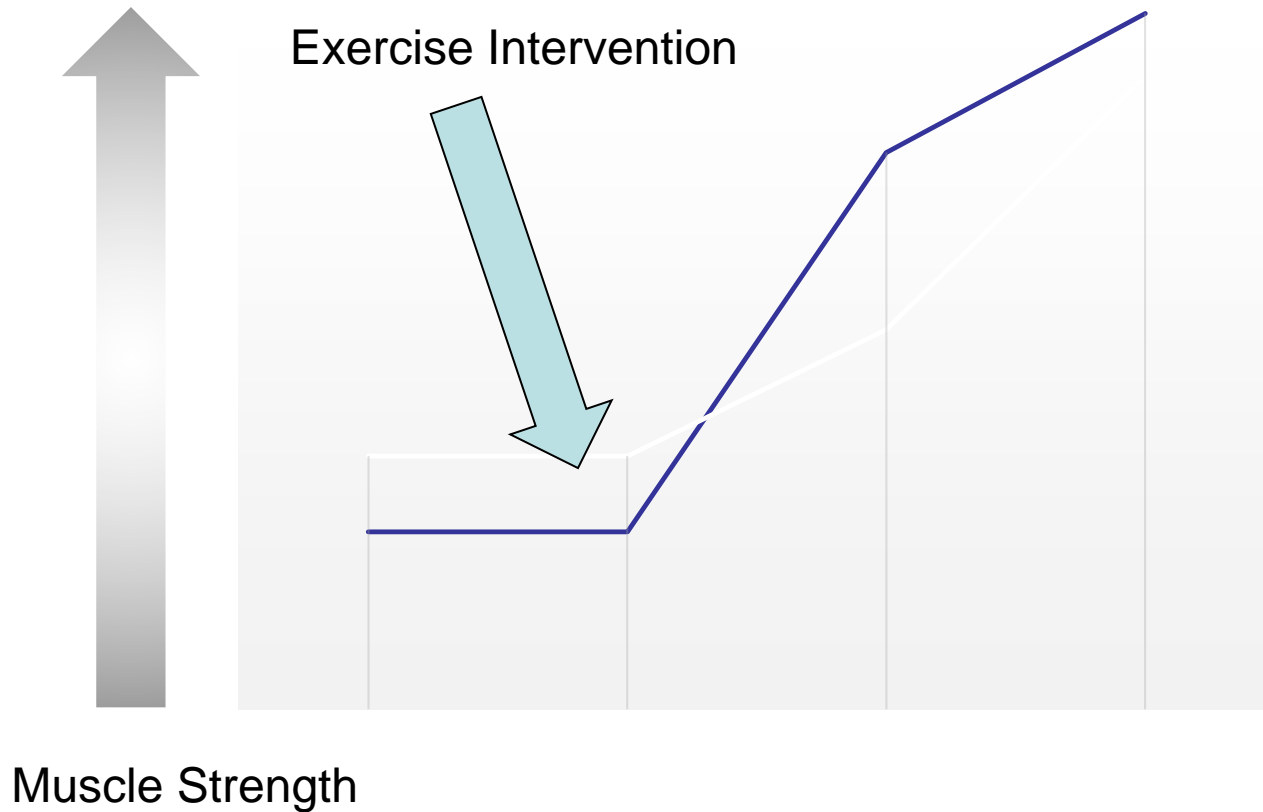
For _____
Address _____ Date _____

R_x

Physical Therapy, therapist to evaluate and treat

REFILL _____ TIMES _____, M.D.
DEA NO. _____ Address _____

What Are Needed to Prescribe Exercise?



- Accurate and objective measure of muscle strength
- Types of exercise should be well defined
- Standardized way of “dosing” the amount of exercise

How to Measure Muscle Strength?

- Not as easy as you think!
- Different “kinds” of muscle strength: endurance, resistance, isometric, isokinetic, etc.
- Normal vs. Abnormal?

For Myositis

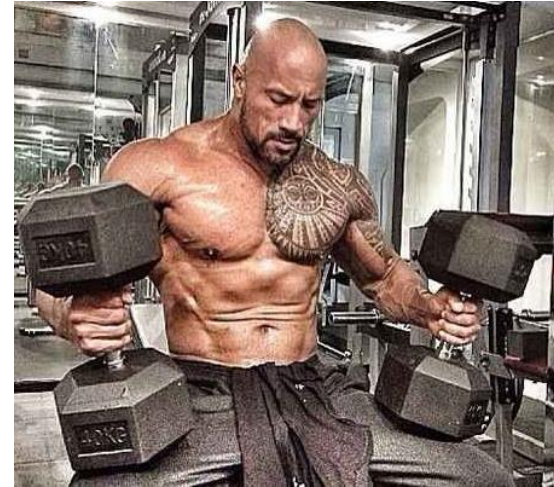
- Functional Index (FI)-2 was developed to accurately measure endurance quality of myositis
- FI-2 is standardized and quantifiable
- In our clinic, we also use other standardized measures (grip strength)

Types of Exercise

- **Cardiovascular:** the goal is to improve cardiovascular function (outcome: “VO₂max” or heart rate)
- **Endurance:** the goal is to increase repetition
- **Resistance:** the goal is to increase the weight
- **Balance**
- **Flexibility** (stretching)

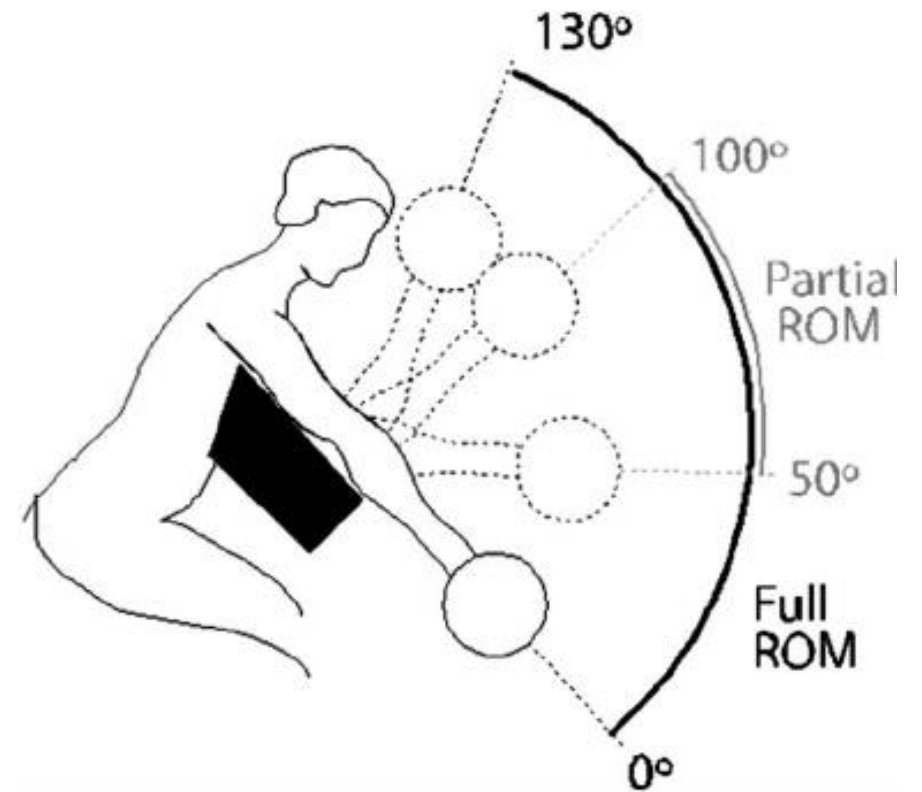
How to Determine the “Amount” of Exercise?

- Exercise can be “dosed” just like drugs
- Big difference in baseline strength
- Then how to determine what’s intense vs. mild?



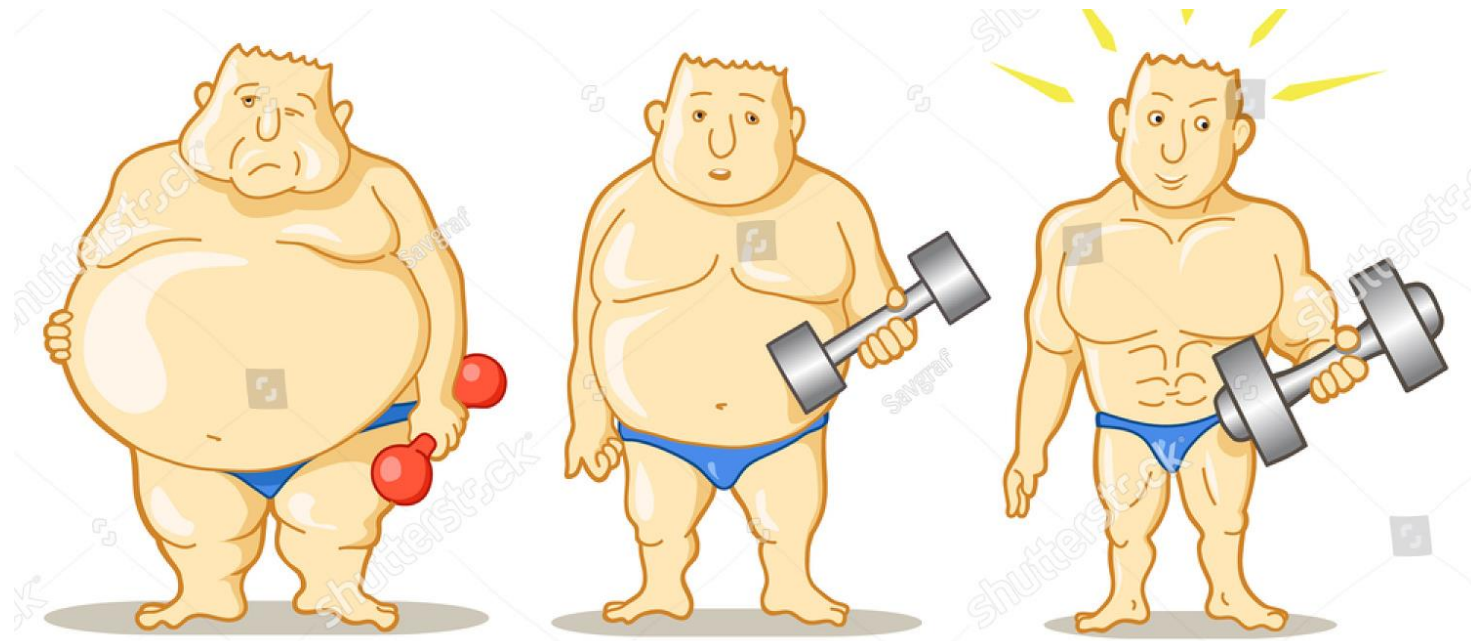
Repetition Maximum (RM)

- **One RM:** the most weight that can be lifted throughout the entire range of motion
- The higher the RM, the lower the weight
- High intensity, typically $< 5 - 10$ RM
- Low intensity or endurance typically > 15 to 20 RM
- Well validated



Caveat

- One RM can change over the course of exercise!
- Need to re-measure RM every 3-4 months



SAID Principle

- Specific Adaptation to Imposed Demands (SAID)
- Training in certain muscle will only improve that specific muscle
- Endurance training -> endurance, not resistance, vice versa



Myositis and Exercise

- For a long time, exercise was NOT recommended
- Over the past decades, the safety of exercise was proven
- A seminal paper by Alexanderson showed clear benefits of exercise on chronic myositis patients

Example: Prescription for PM and DM

For _____
Address _____ Date _____

R_x

3 sets of 10RM, 3 times a week

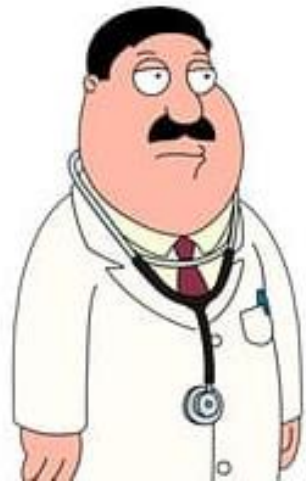
Re-measure RM every 3-4 months

Muscles that are affected (proximal)

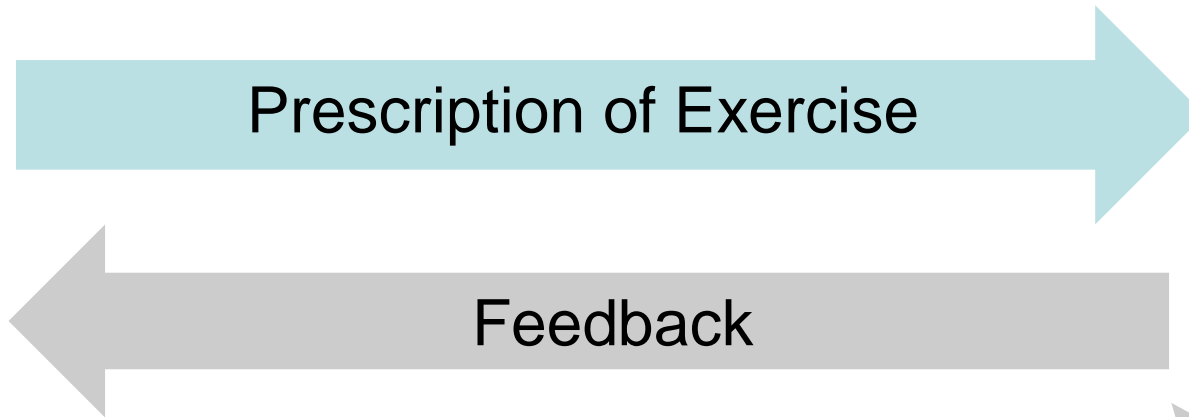
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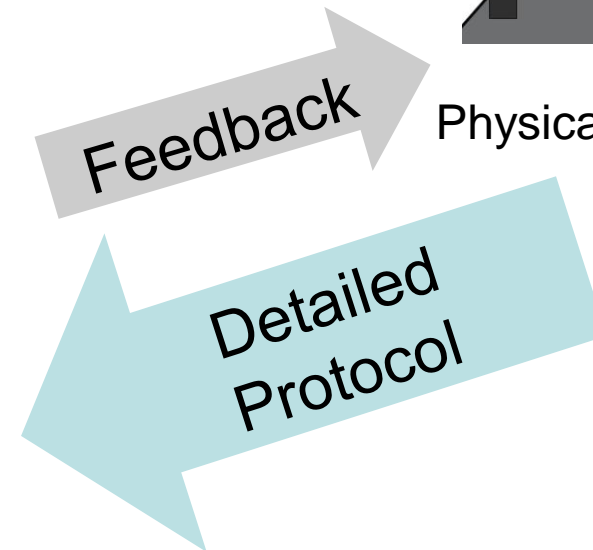
Workflow



Doctor



Physical Therapist



Difficulties

- Doctors and Therapists need constant communication
- Team of MD, PT, OT, and SLP – not always easy!
- Many patients are from out of state
- Politics!

Future Directions

- Awareness!
- National and international network through TMA
- Tele-rehabilitation
- New technologies

QUESTIONS?