Enhancing Care for Older People Webinar Series. Session 25

Date: Thursday 29th February
Time: 1.30-3pm

Speaker 1:
Presentation Title: Improving Quality-of-Life, Functional Capacity, and Strength in Older Adults, using a minimal-dose approach.
Presenter: Liam Pearson, Senior Lab Technician & PhD Researcher, Northumbria University.

Speaker 2:
Presentation Title: Physical Activity and Ageing
Presenter: Lynn Iveson, Advanced Clinical Practitioner - Older People (Physiotherapist) & EnCOP Strategic Workforce Development Lead

EnCOP Strategic Lead: Angela Fraser

EnCOP
Enhanced Care for Older People

Housekeeping

- Please ensure microphones are muted and during presentation cameras are turned off.
- The event will be recorded and shared.
- The webinar recording and presentation will be circulated and uploaded on to the website following the event.
- If you have any questions during the session then please use the chat facility. We will attempt to address questions, if we can't then we will follow up after the event.
- Please also use the chat facility to inform us of any technical issues as this will be monitored closely throughout by one of the EnCOP team.
- Occasionally you may have difficulty seeing or hearing video clips that are played, this will usually be due to your own device or software settings and not something we can influence during the webinar session. Please be assured all content will be shared following the event so you will have an opportunity to view afterwards.
- If you need to take a break at any time throughout the session please feel free to do so.

Session aims and linked EnCOP Competencies

- **Aim:** To enhance or develop knowledge and understanding about Physical Activity and Ageing including new developing evidence for us to consider in older person's care and also expert guidance for use in our day to day roles working alongside older people.
- **Linked EnCOP Domains:**

A. Values, Attitudes & Ethics
B. Evidence-based Practice : Supporting learning, leadership & improving care for older people
C1. Partnership Working and communication with older people, family and friends
C2. Inter-professional and Inter-organisational working, communication and collaboration
D1. Ageing Well – Understanding Frailty - Prevention, Identification and Recognition
D2. Ageing Well – Assessing , Planning, Implementing and Evaluating Care & Support with Older People
D3. Ageing Well - Promoting & Supporting Independence, Autonomy & Community Connectivity for Older People
D4. Ageing Well – Promoting & Supporting Holistic Physical Health & Wellbeing with Older People
D5. Ageing Well – Promoting & Supporting Holistic Psychological Health & Wellbeing with Older People

Northumbria University NEWCASTLE

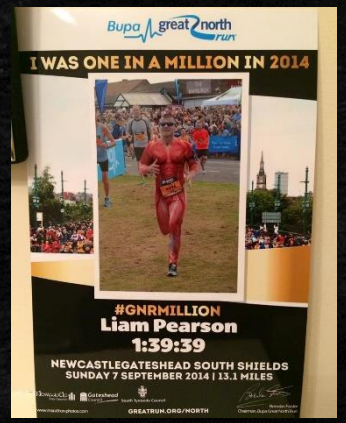
MEMORIAL UNIVERSITY

Enhancing Quality of Life, Functional Capacity, and Strength in Older Adults Through Minimal-Dose Resistance Training

Liam T. Pearson-Noseworthy, MRes, BSc (Hons), SFHEA

PhD Candidate & Senior Lab Technician, Northumbria University

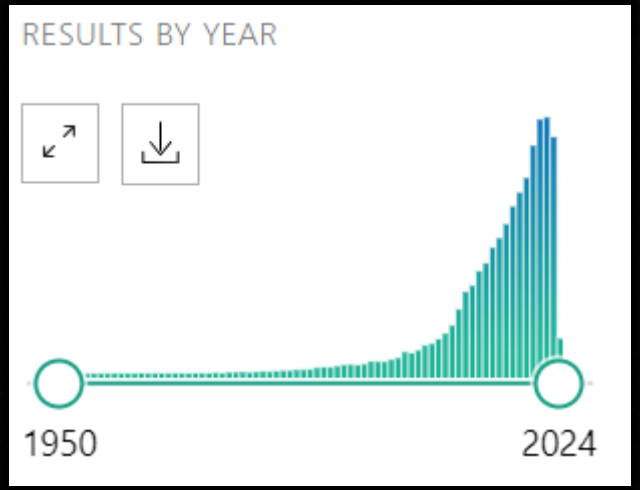
Liam T. Pearson-Noseworthy, MRes, BSc (Hons), SFHEA



What We Know About Resistance Training

"Resistance Training"

(34,733 results)



What We Know About Resistance Training

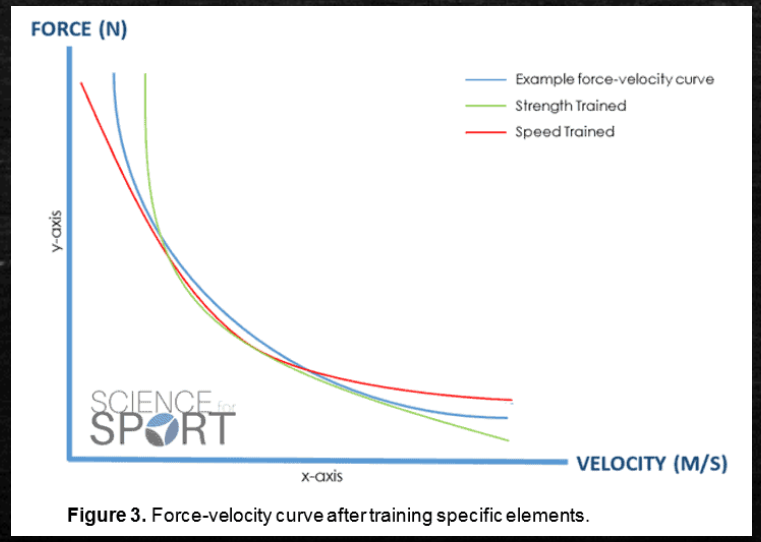
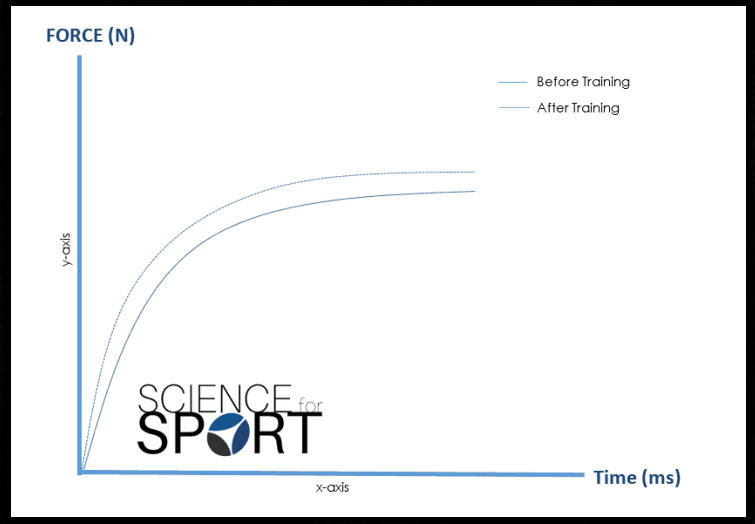
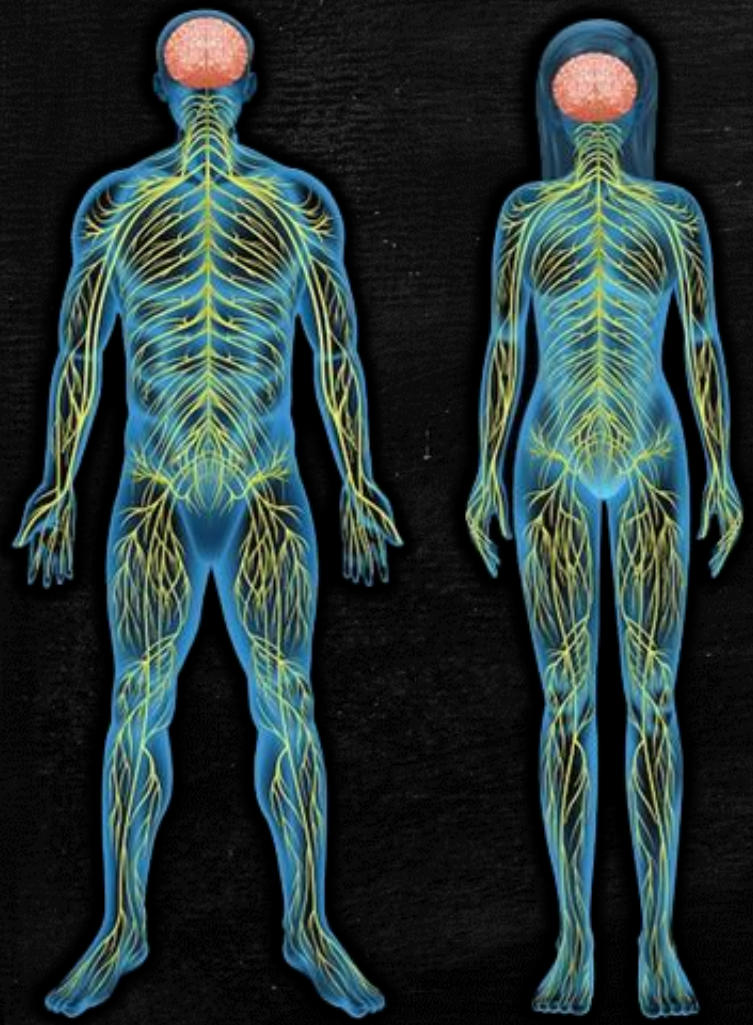
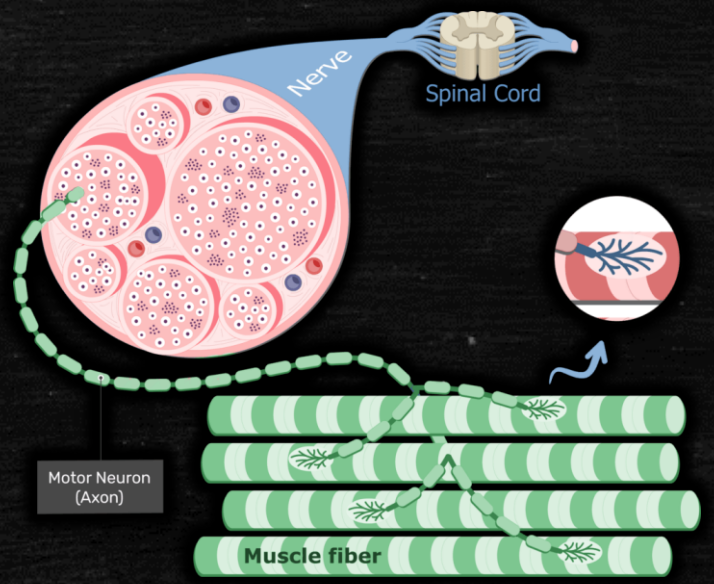


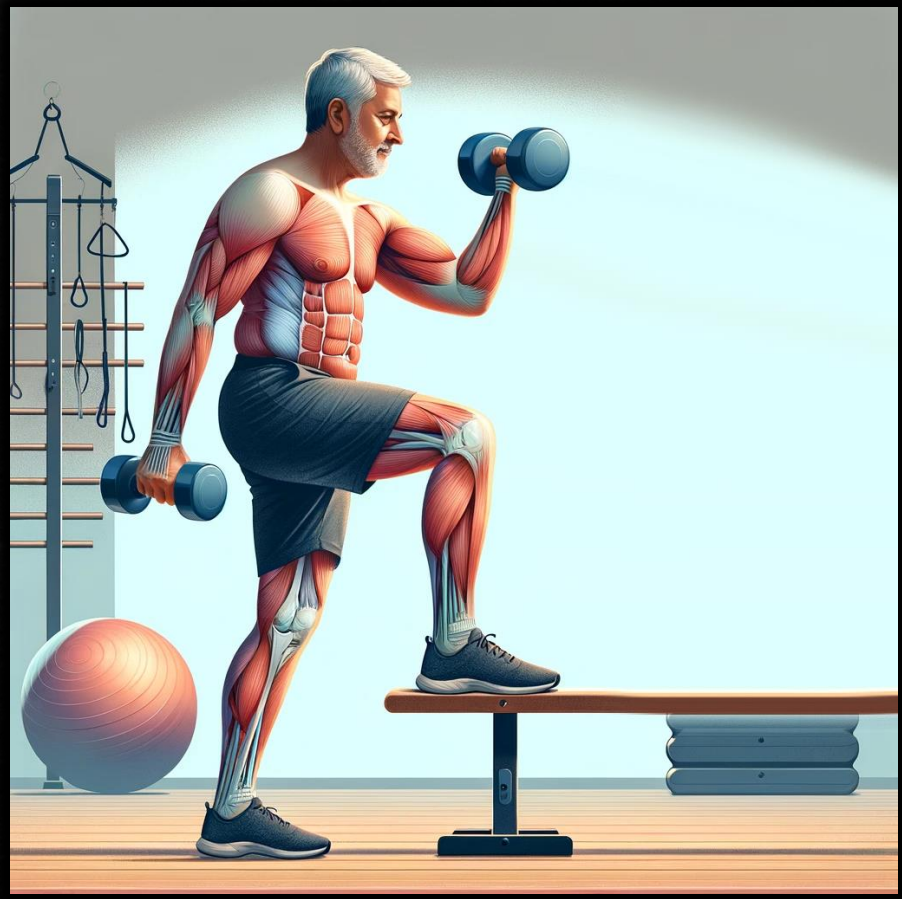
Figure 3. Force-velocity curve after training specific elements.



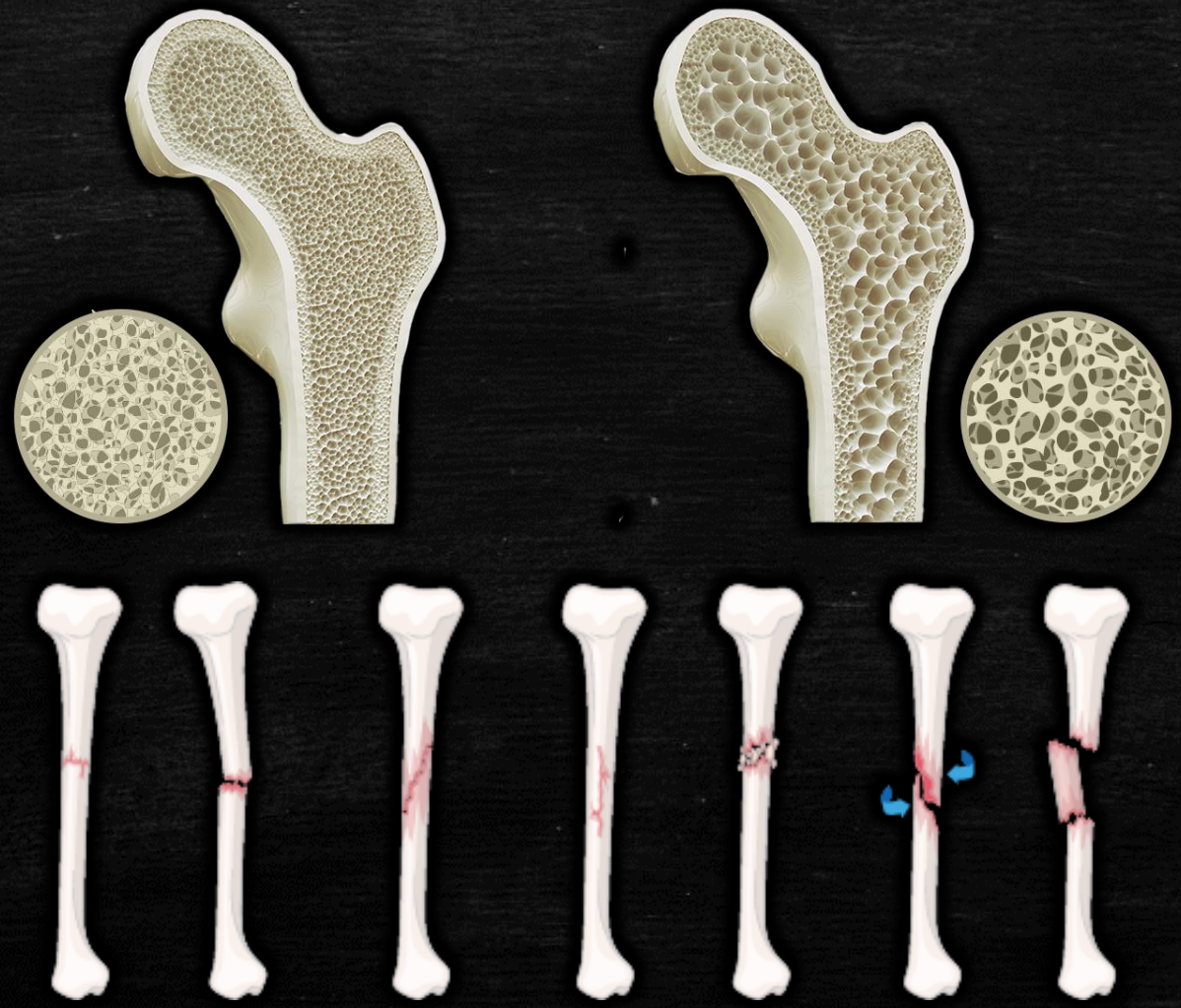
What We Know About Resistance Training







What We Know About Resistance Training



What We Know About Resistance Training

Ageing

Symptom	Ageing	Resistance Training
Strength	✘	✓
Sarcopenia	✘	✓
Nervous System	✘	✓
Functional Capacity	✘	✓
Falls Risk & Bone Density	✘	✓
Mental & Physical Quality of Life	✘	✓

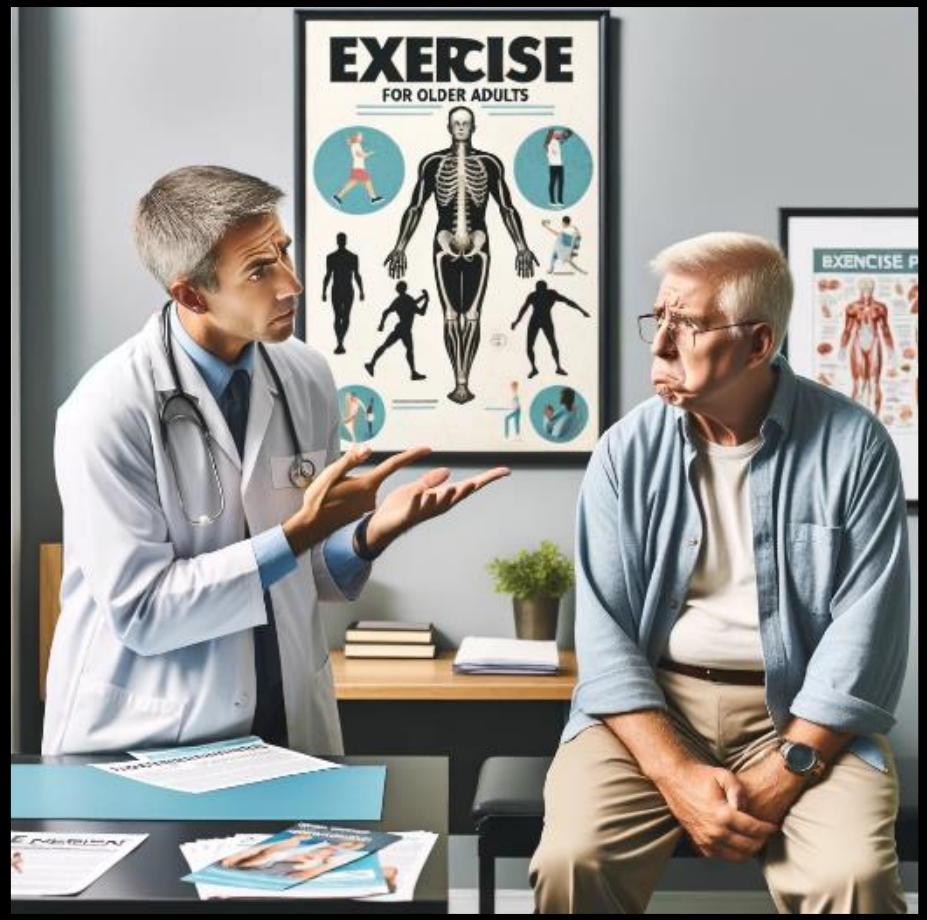
Barriers to Physical Activity

Health-Related Barriers

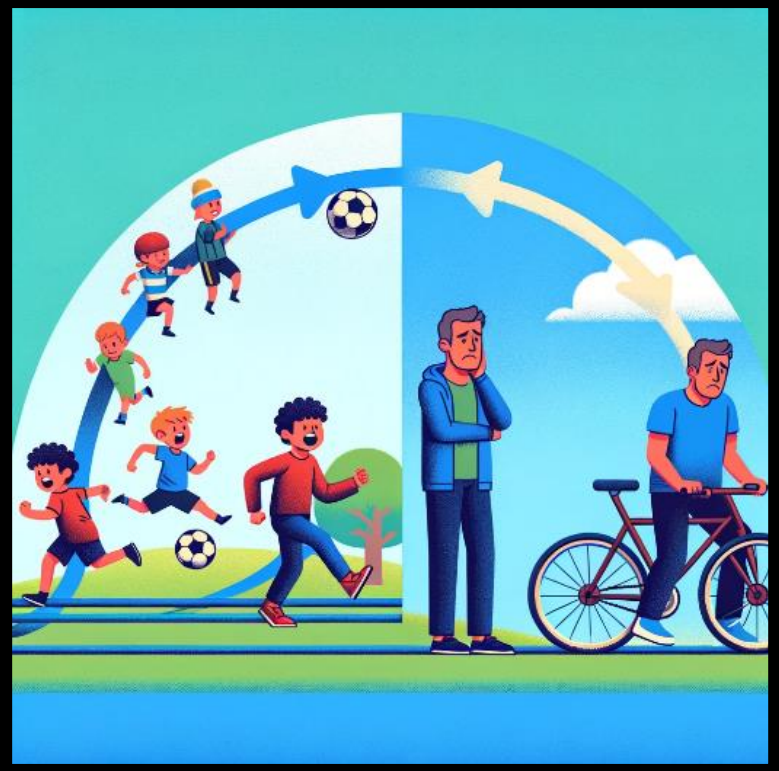
Environmental Barriers

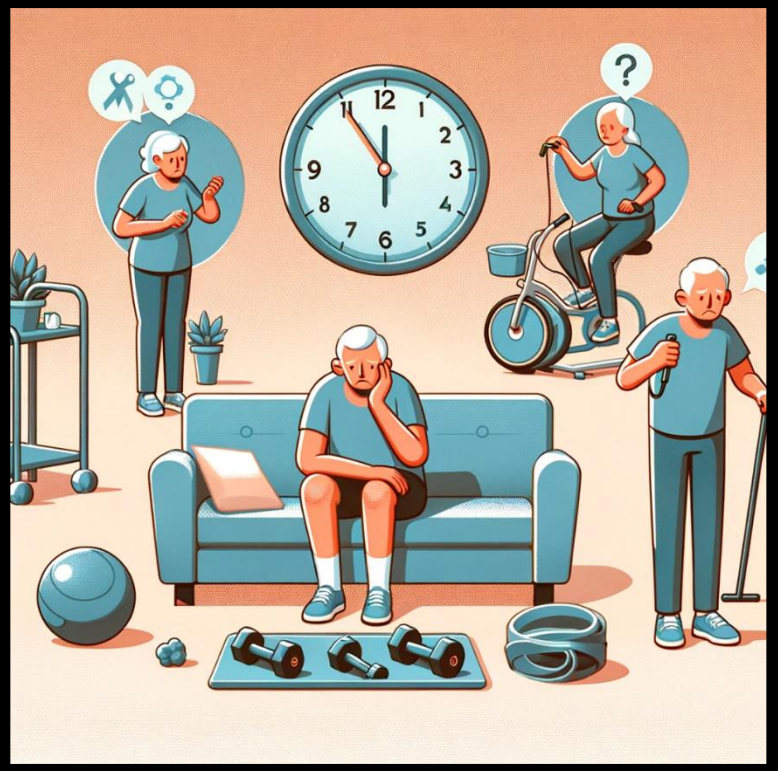
Social and Support-Related Barriers

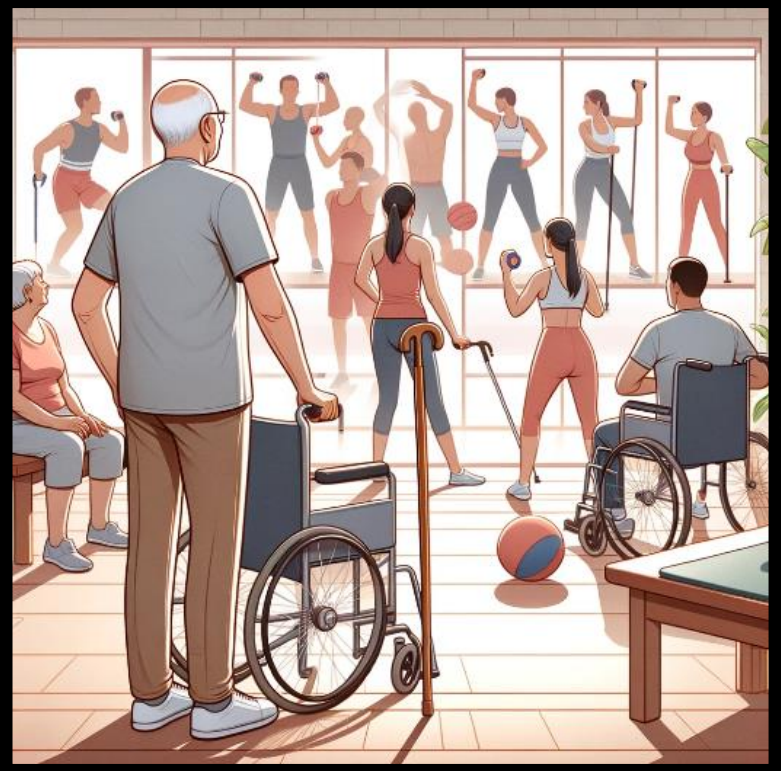
Socioeconomic Barriers



Personal Barriers



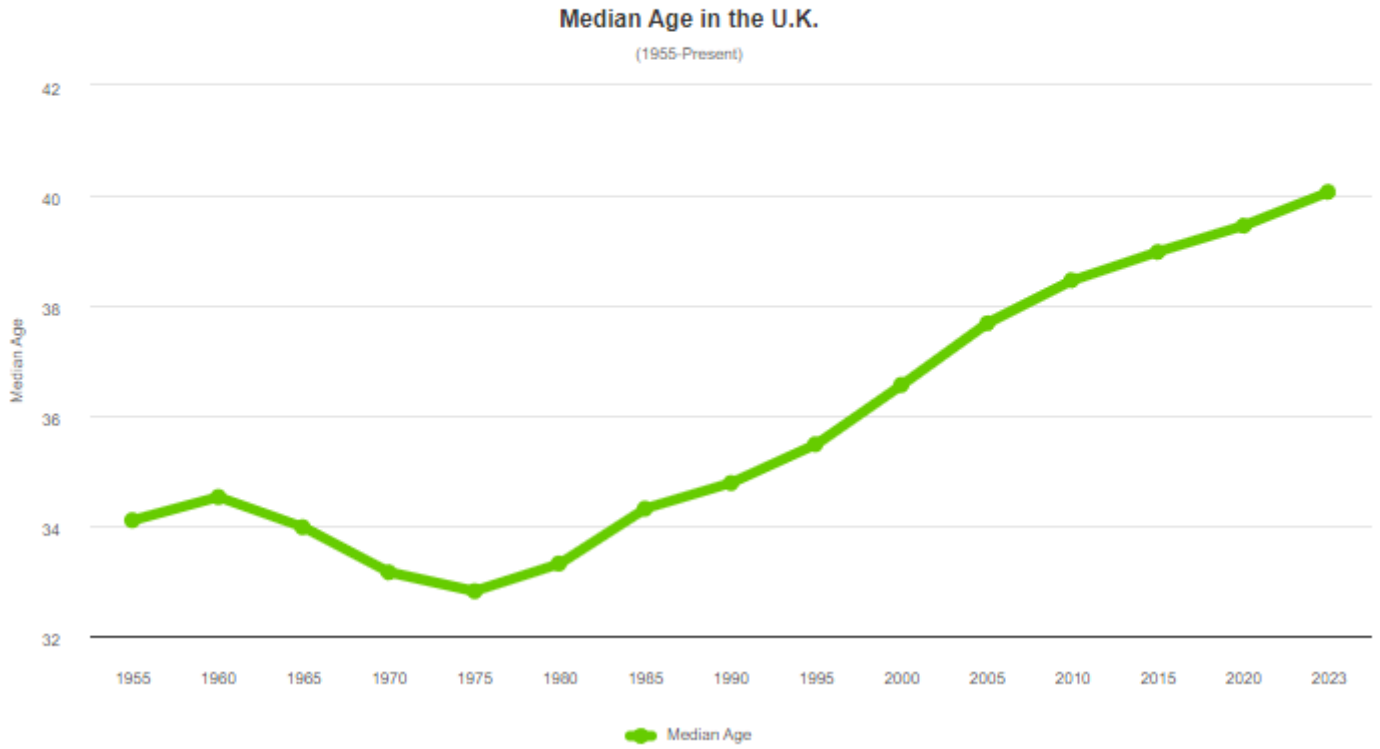




Published Research

Median Age

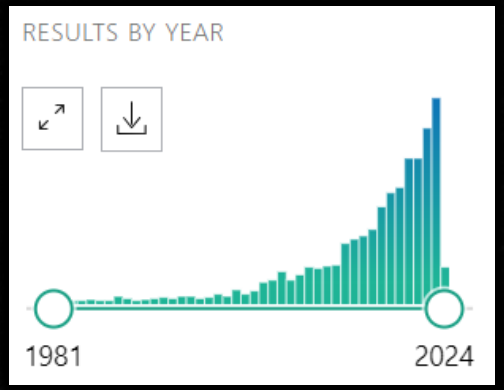
The **median age** in the United Kingdom is **40.1 years** (2023).



Published Research

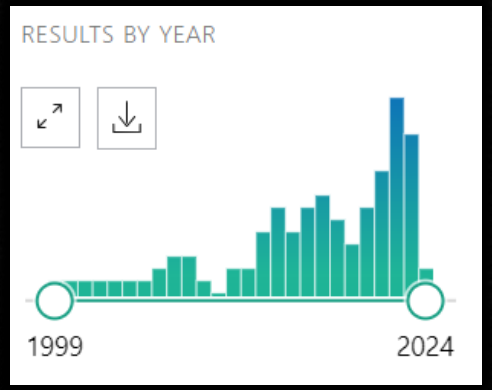
older adult
AND
quality of life

(1,267 results)



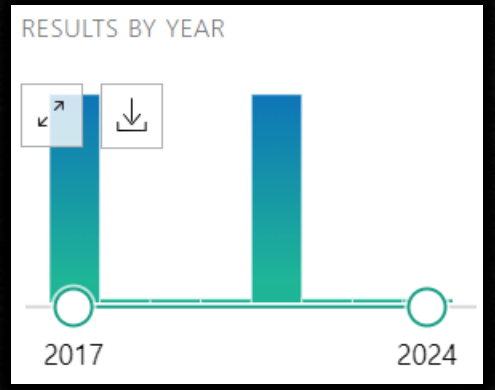
older adult
AND
resistance train*

(98 results)



adult
AND
resistance train*
AND
minimal dose

(10 results)



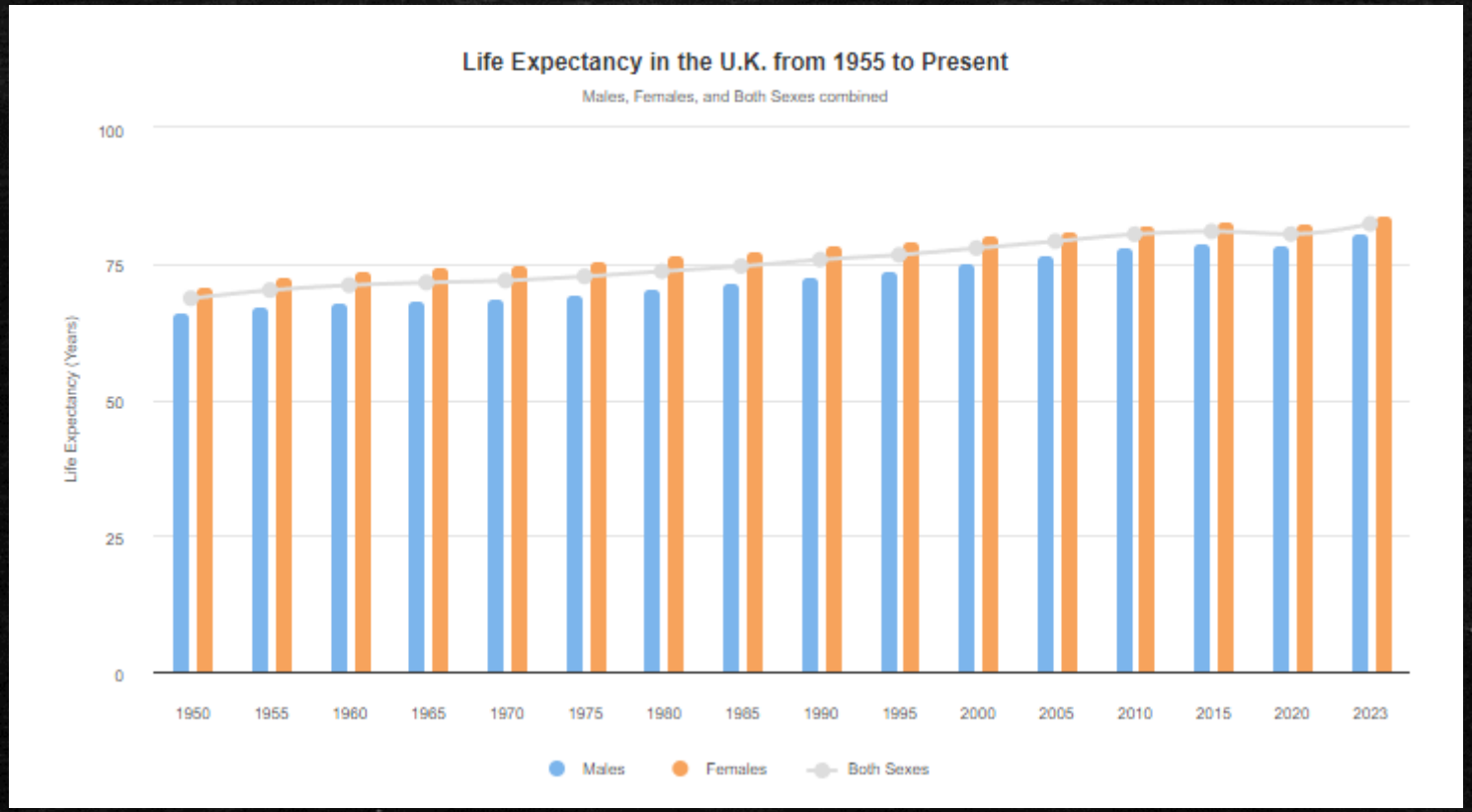
older adult
AND
resistance train*
AND
minimal dose
AND
quality of life

(1 result)

For this commentary,

It is the opinion of the authors that

Consensus is changing



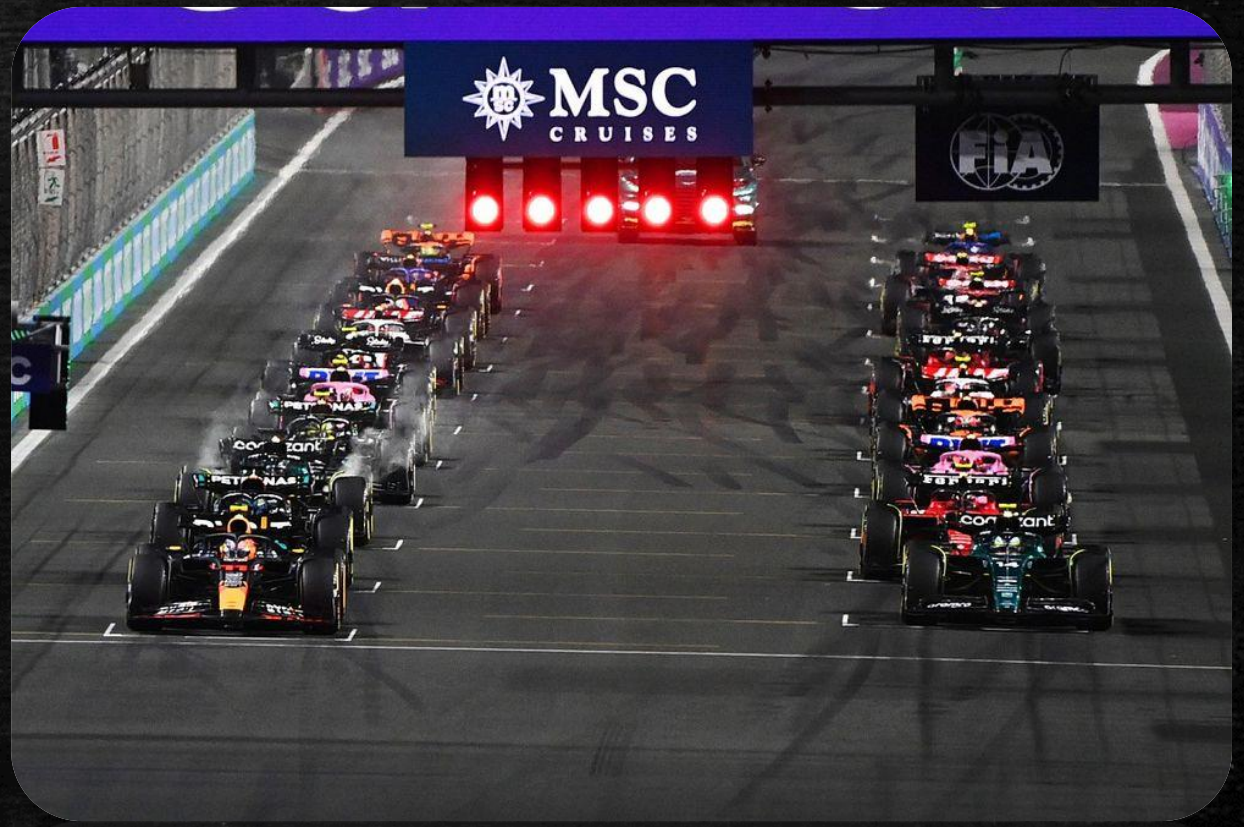
Consensus is changing

World Health Organization

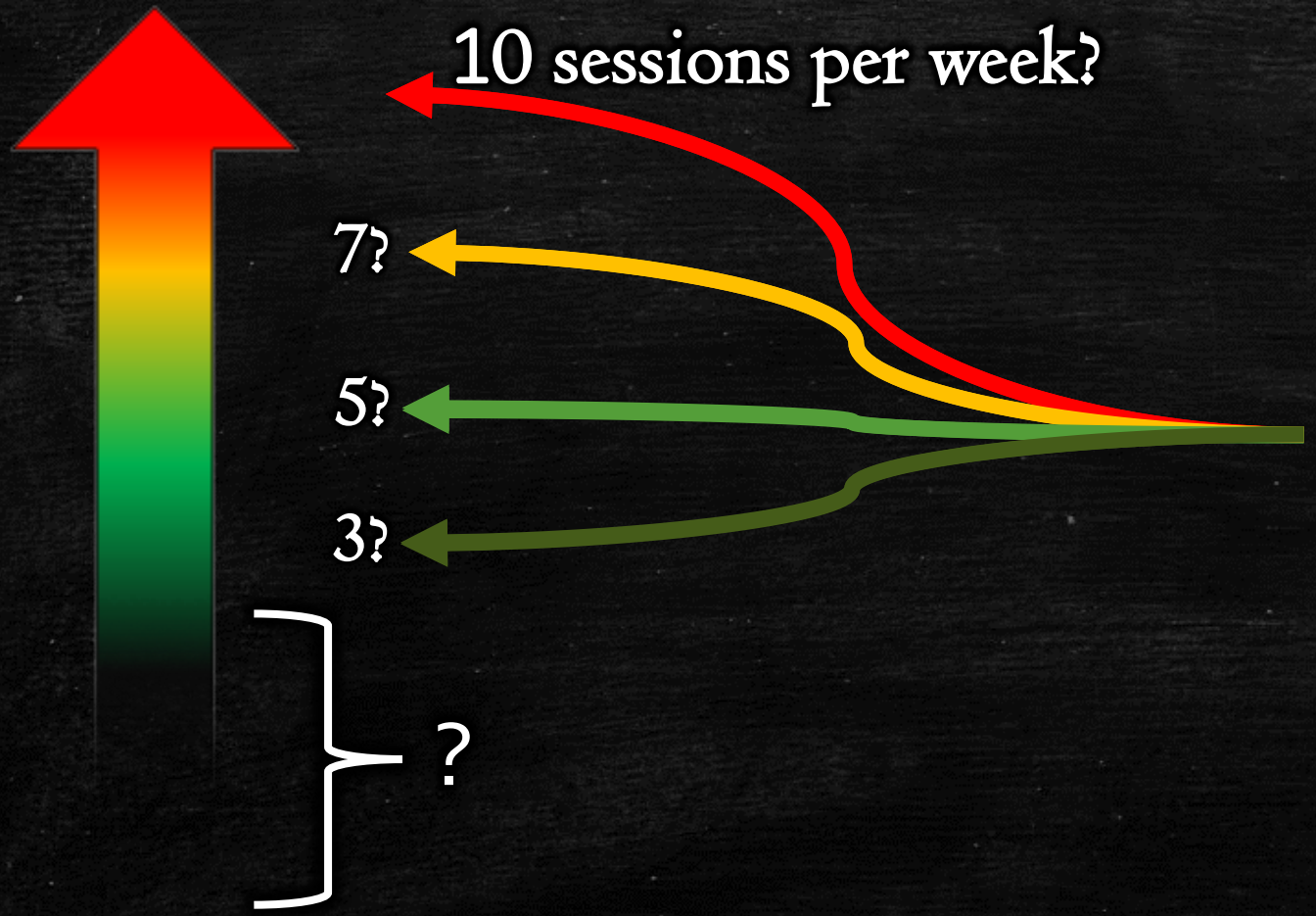
NSCA®
NATIONAL STRENGTH AND CONDITIONING ASSOCIATION

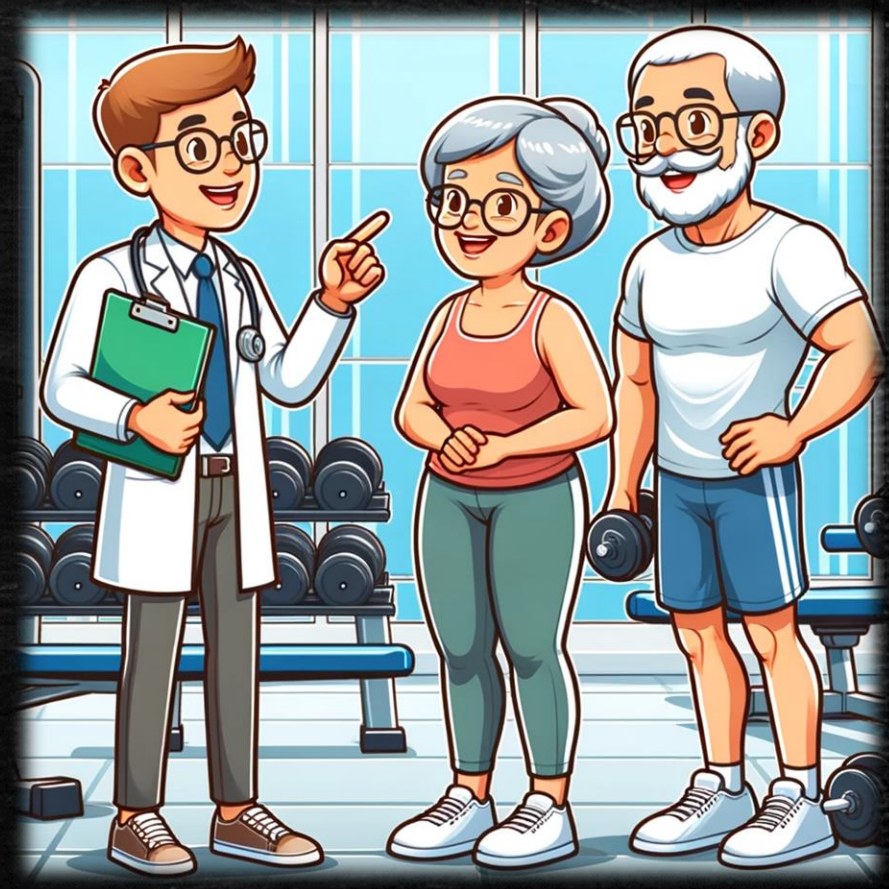
My Study Objective

- Upper & Lower Limits


MSC
CRUISES
FIA

Study Objective

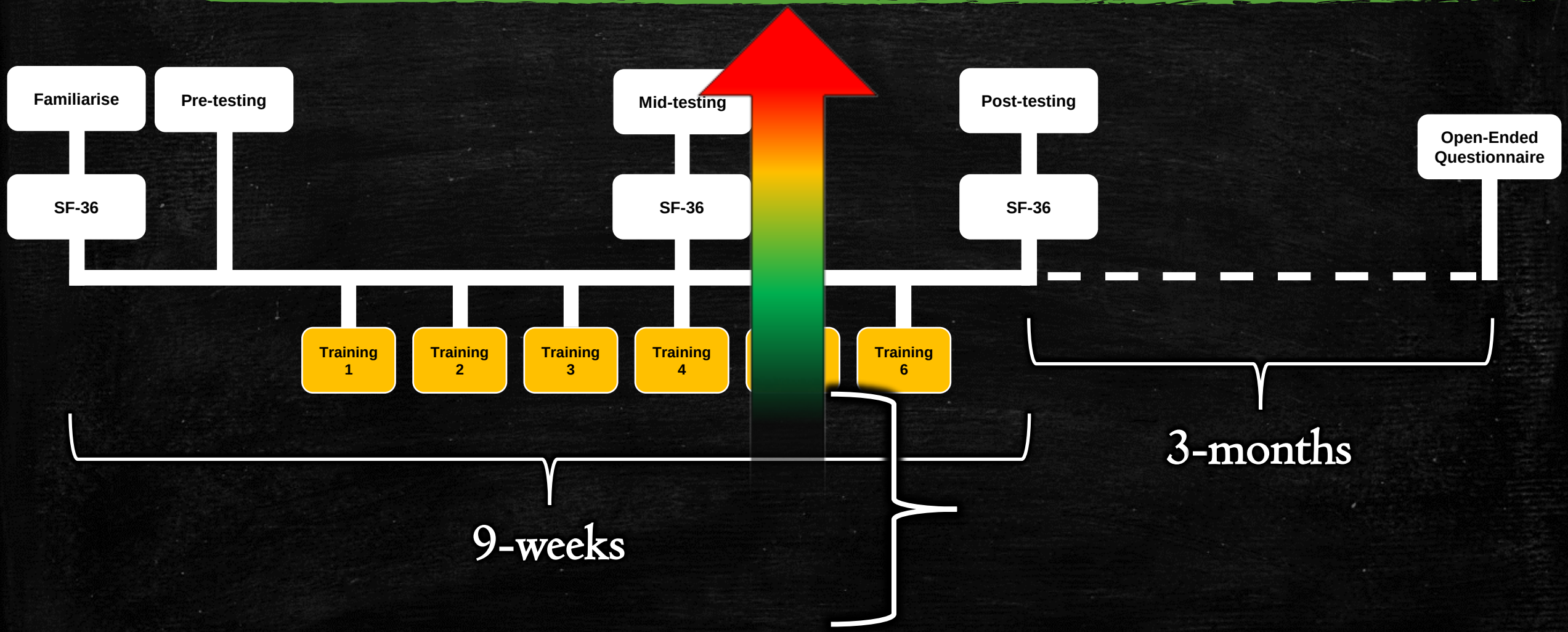




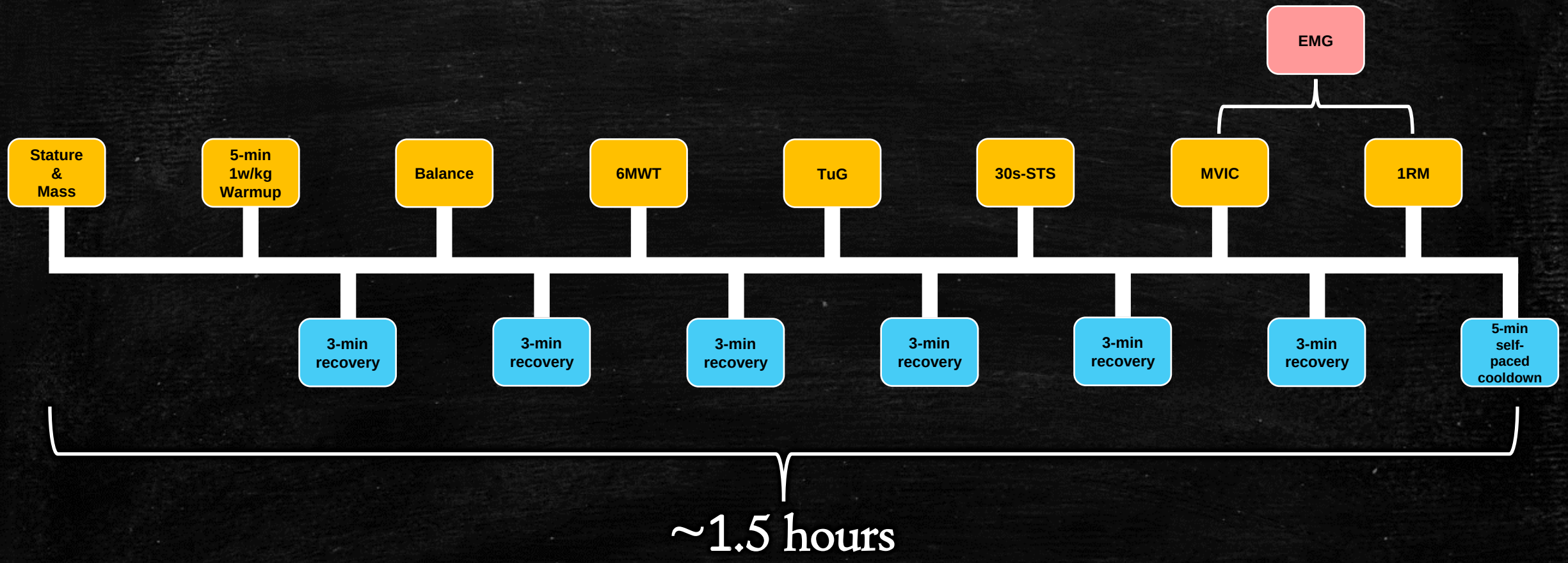
Study Objective

- Upper & Lower Limits
- Which is *"better"*, controlled-tempo vs. max-intent?
- The minimal-dose

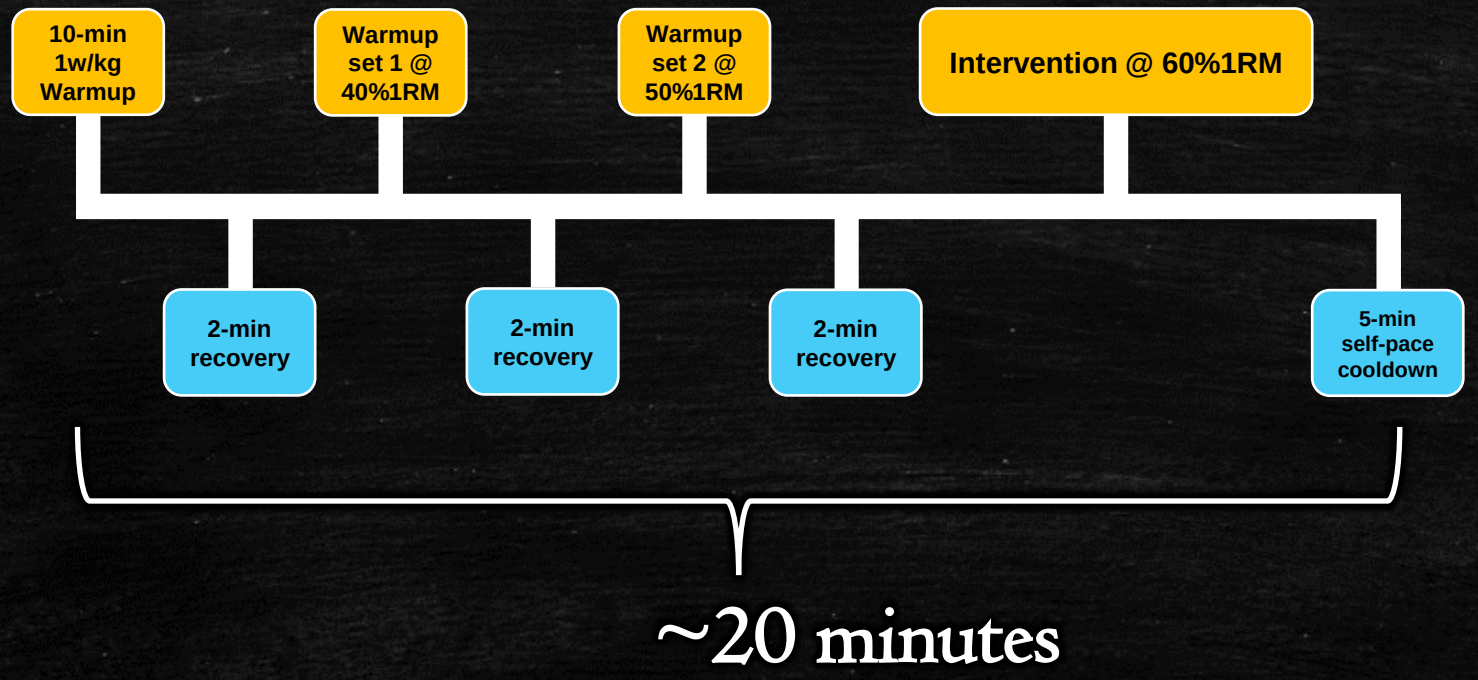
Study Timeline



Testing Timeline

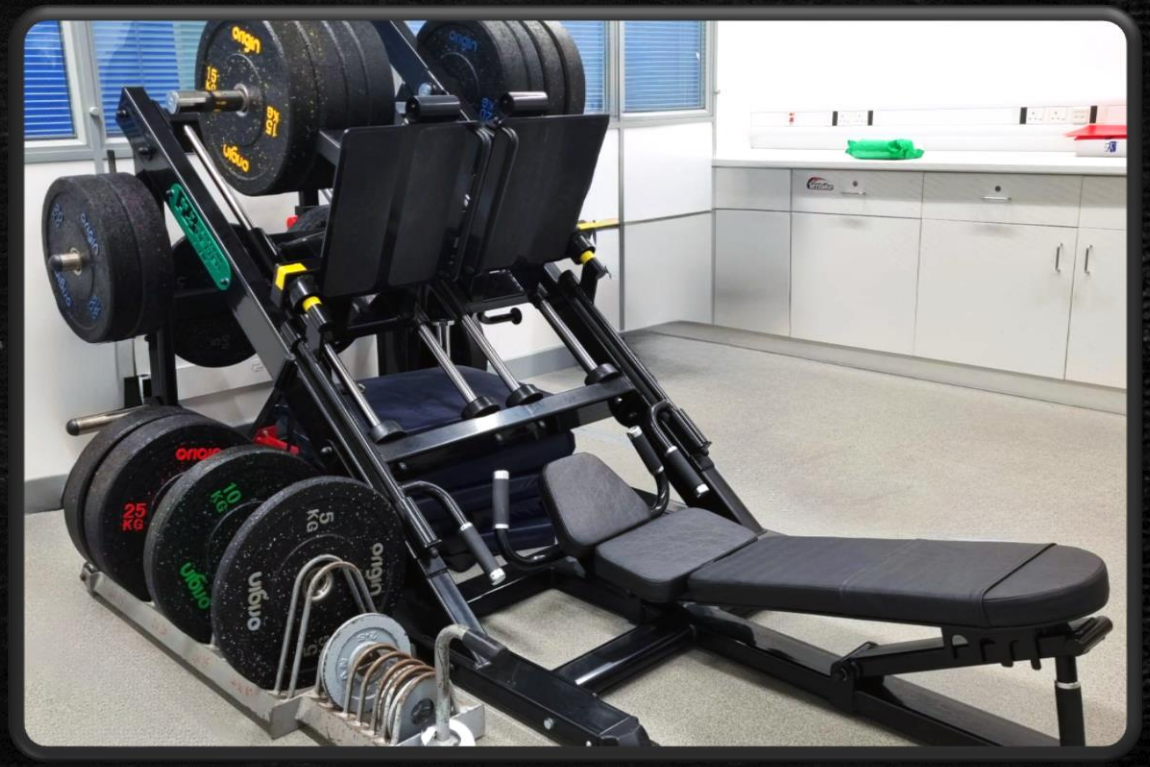


Training Timeline



Intervention

- Unilateral Leg Press at 60% 1-rep-max at either:
  - Slow-Controlled Tempo
  - Maximal-Intent



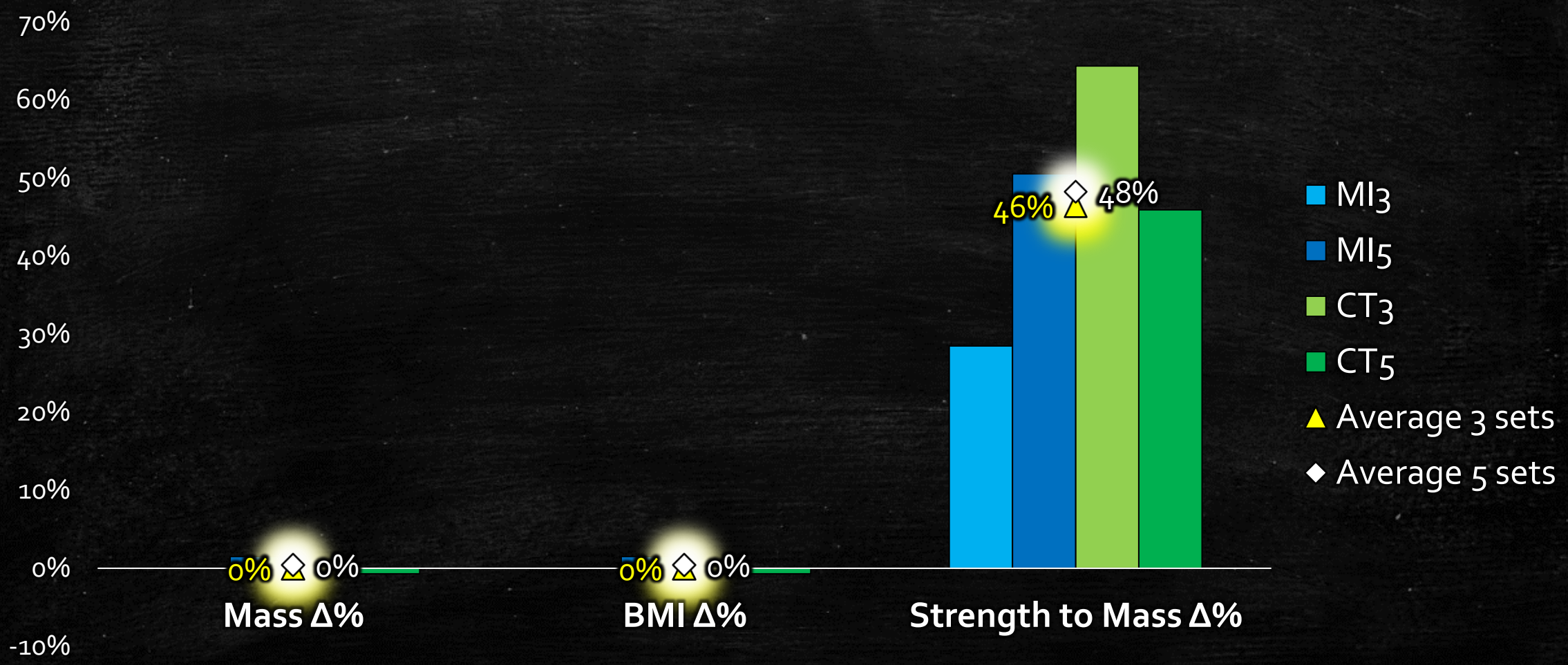
- **Untrained** Individuals

- For either:
  - 5 sets x 5 reps
  - 3 sets x 5 reps

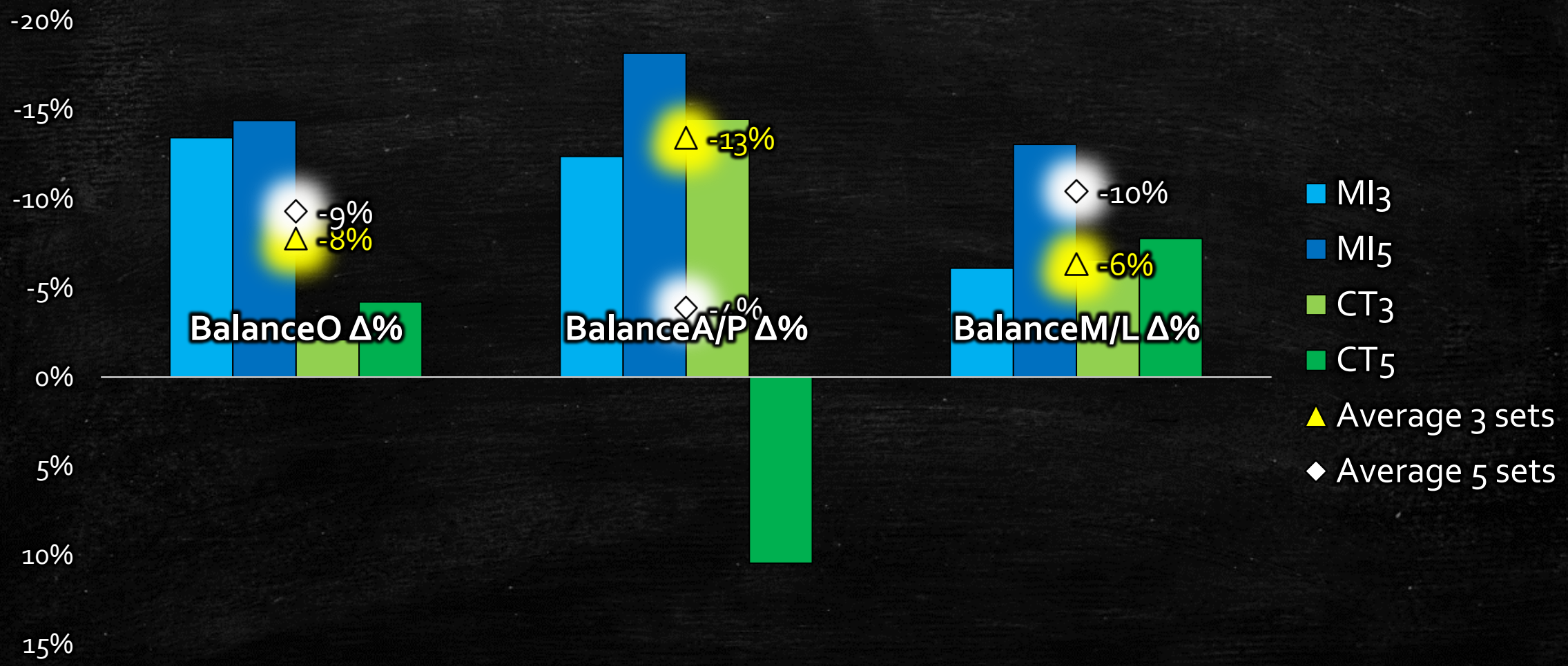
Results

- MI3 = Max-Intent: 3 sets
- MI5 = Max-Intent: 5 sets
- CT3 = Controlled-Tempo: 3 sets
- CT5 = Controlled-Tempo: 5 sets
- Average of 3 set groups = MI3 + CT3
- Average of 5 set groups = MI5 + CT5

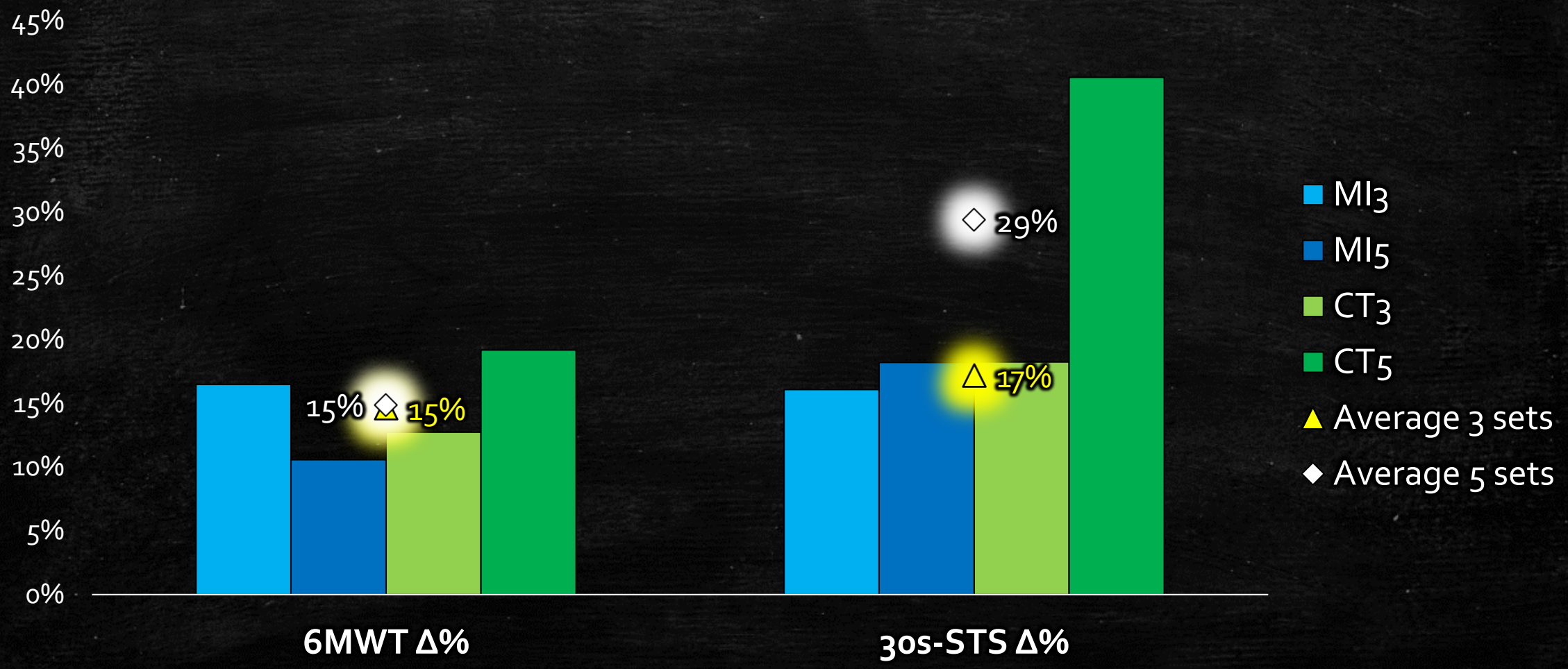
Demographic



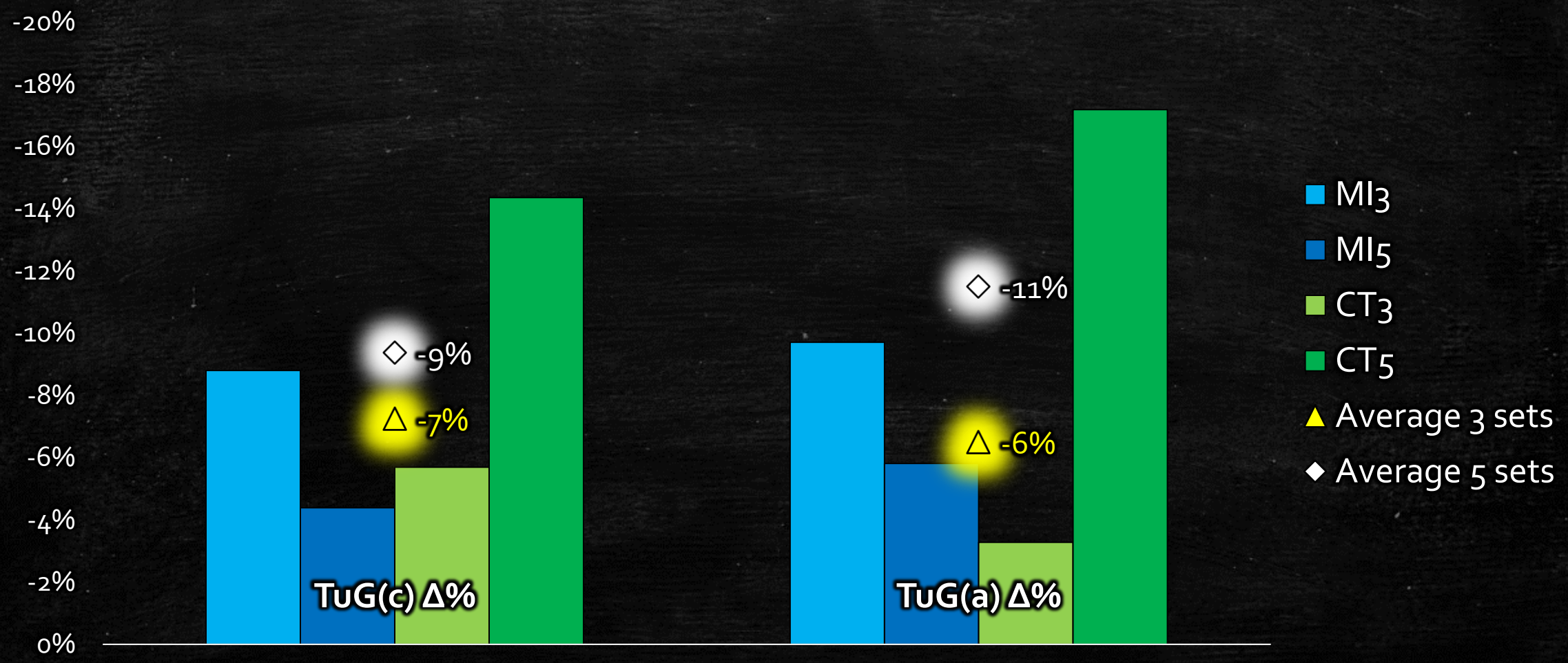
Balance


-20%
-15%
-10%
-5%
0%
5%
10%
15%
-9%
-8%
-13%
-10%
-6%
BalanceO Δ%
BalanceA/P Δ%
BalanceM/L Δ%
MI3
MI5
CT3
CT5
Average 3 sets
Average 5 sets

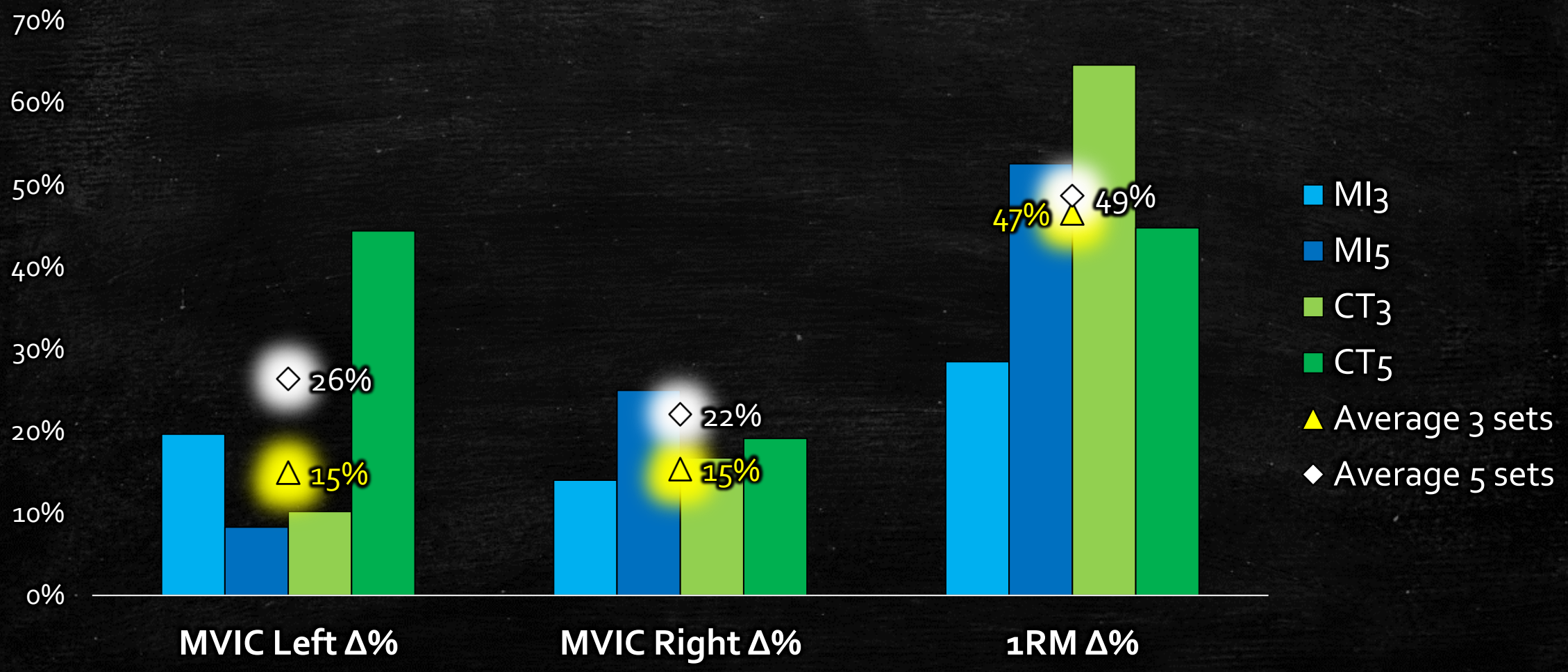
6MWT & 30-sec Sit-to-Stand



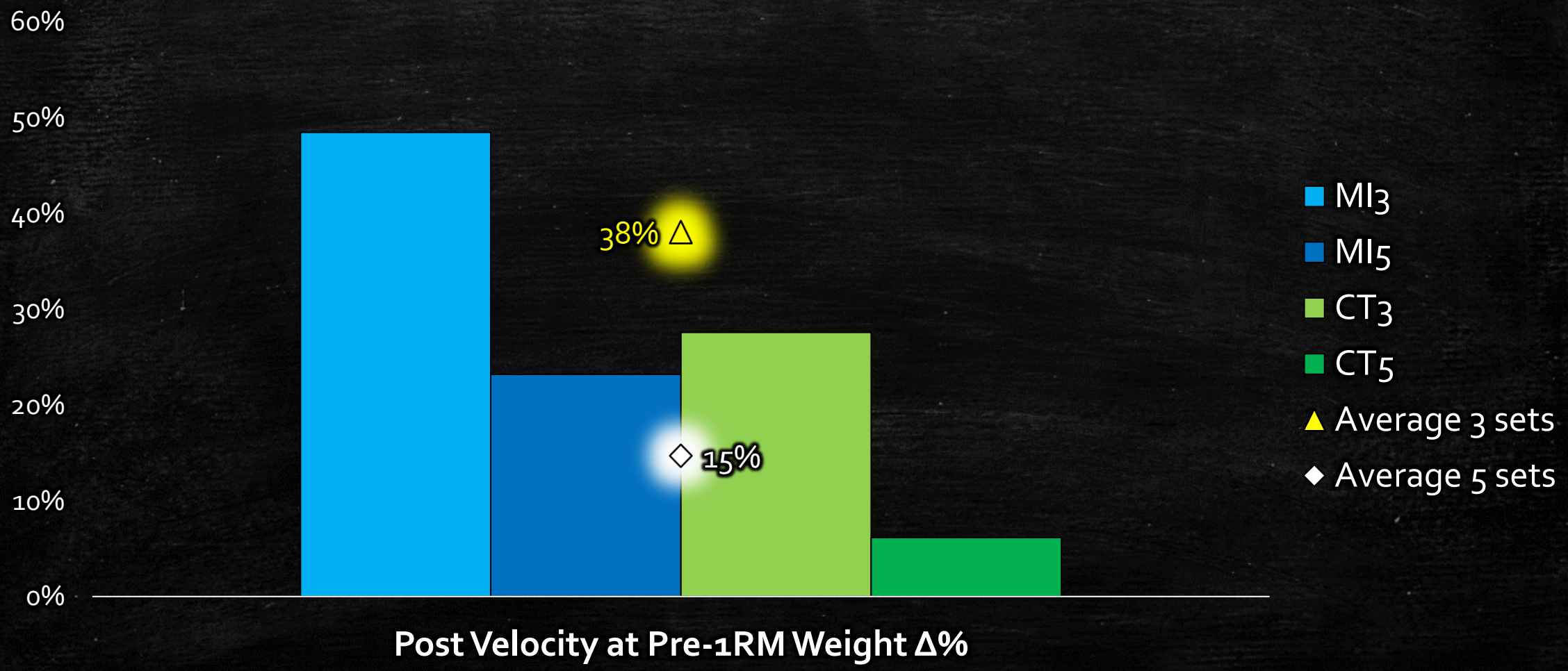
Timed Up & Go


-20%
-18%
-16%
-14%
-12%
-10%
-8%
-6%
-4%
-2%
0%
◇ -9%
△ -7%
TuG(c) Δ%
◇ -11%
△ -6%
TuG(a) Δ%
MI3
MI5
CT3
CT5
Average 3 sets
Average 5 sets

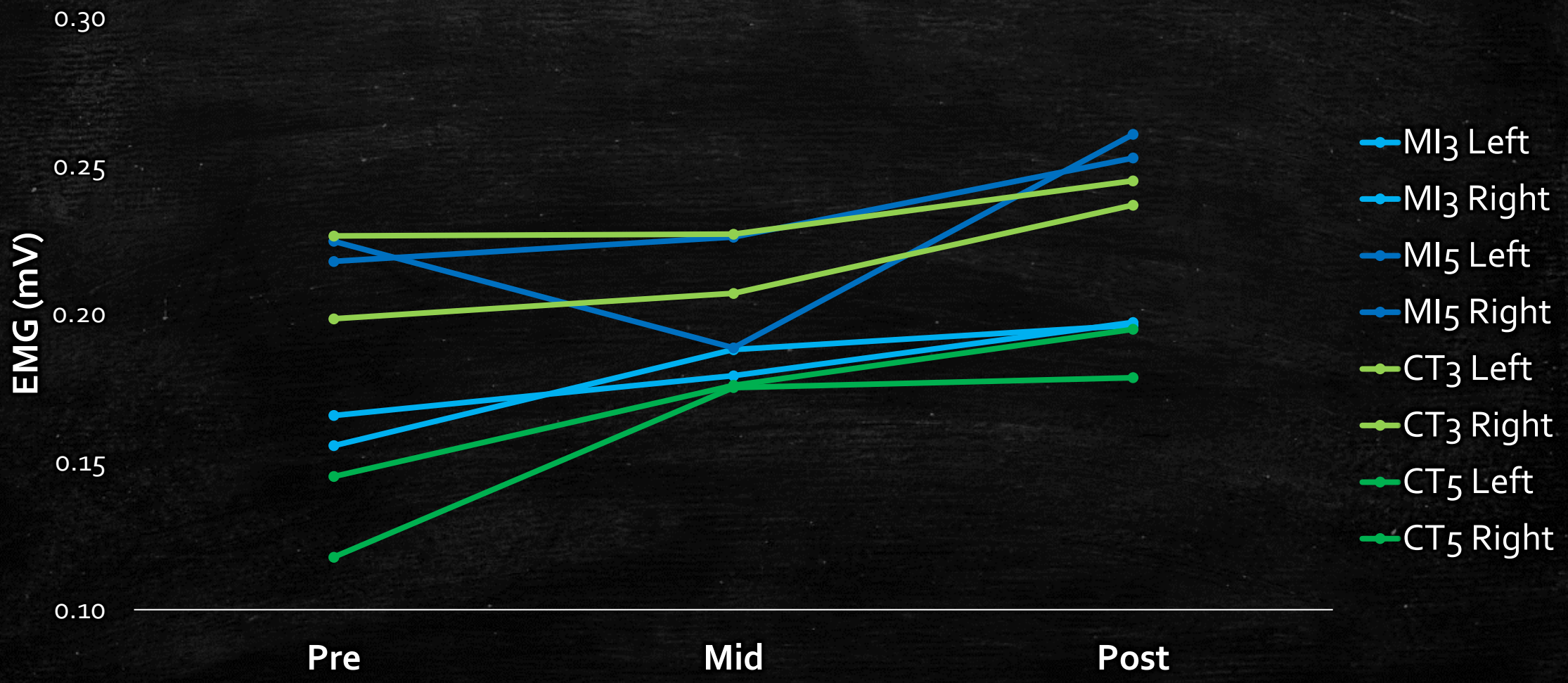
Force Production



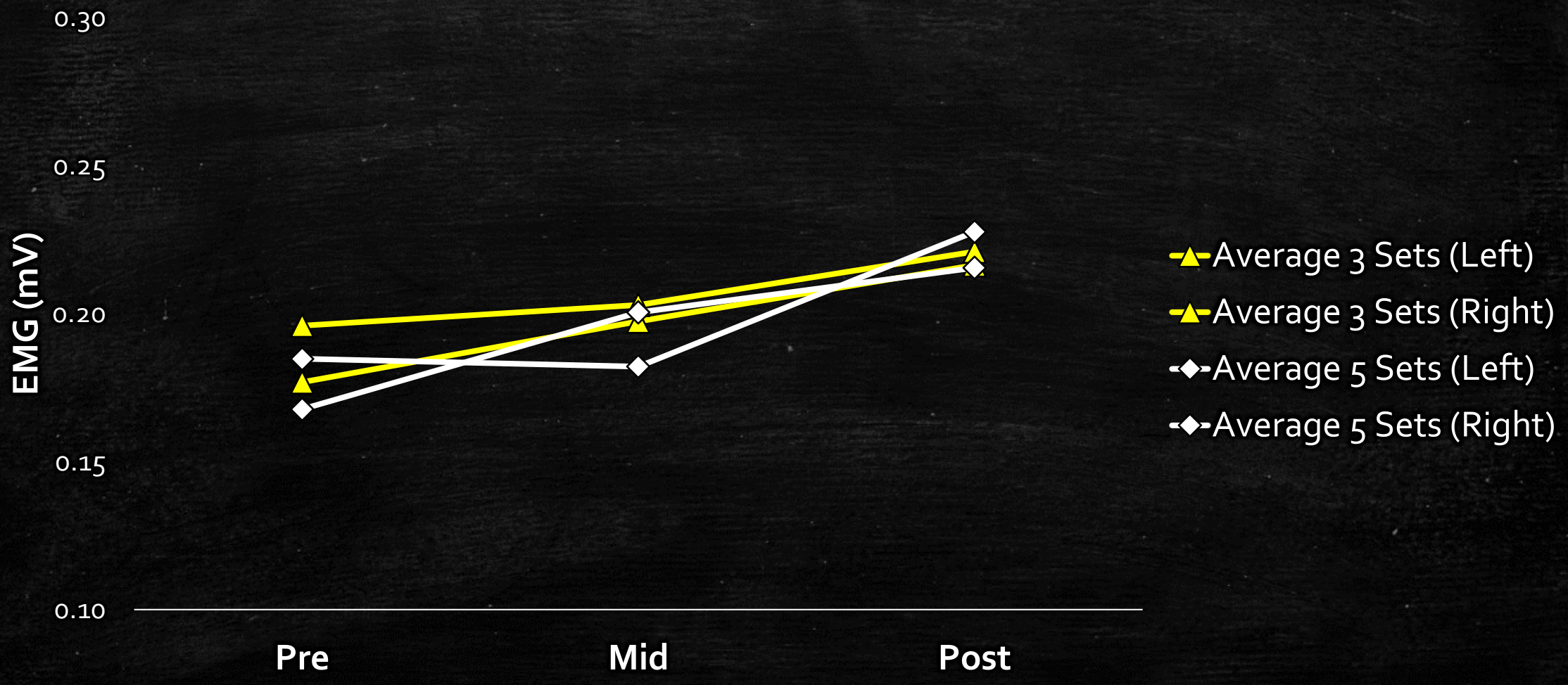
Post-1RM Velocity at Pre-1RM Weight



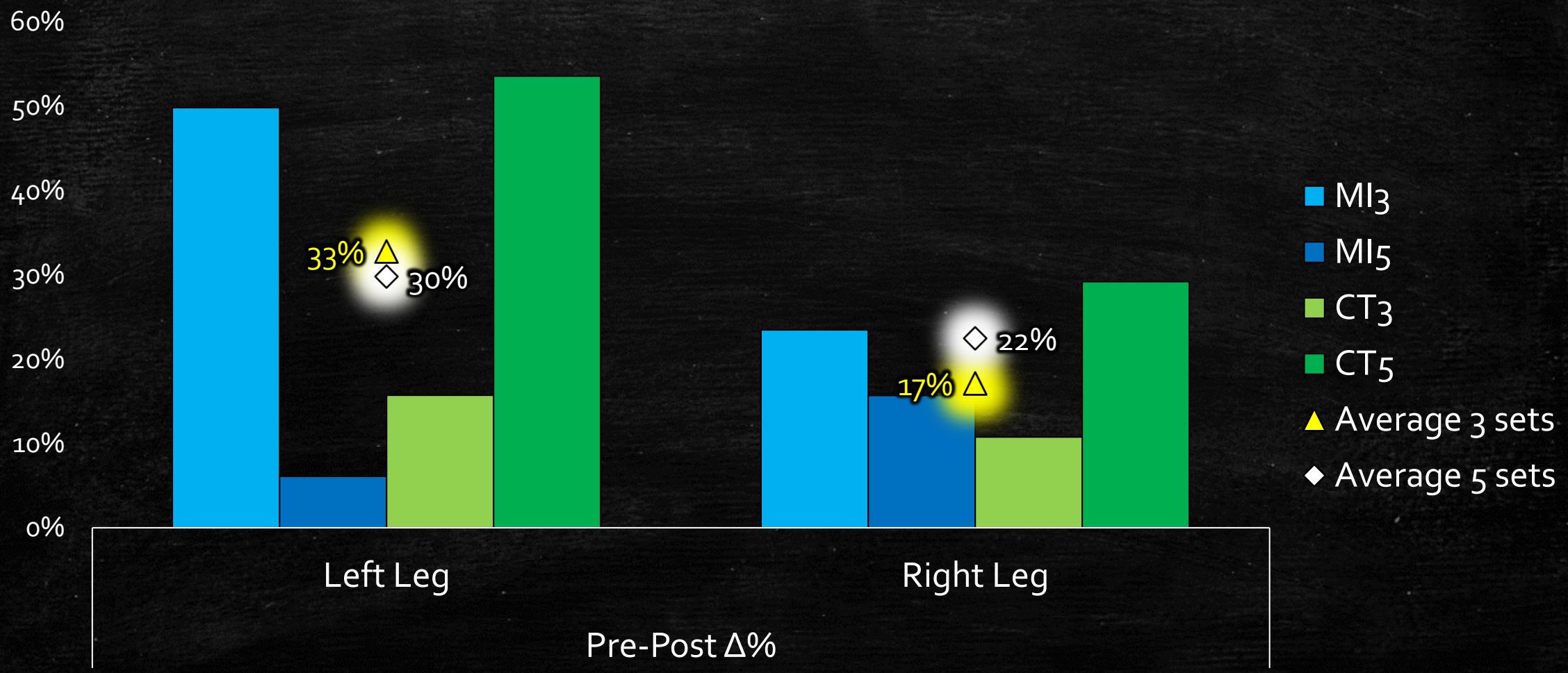
MVIC Electromyography



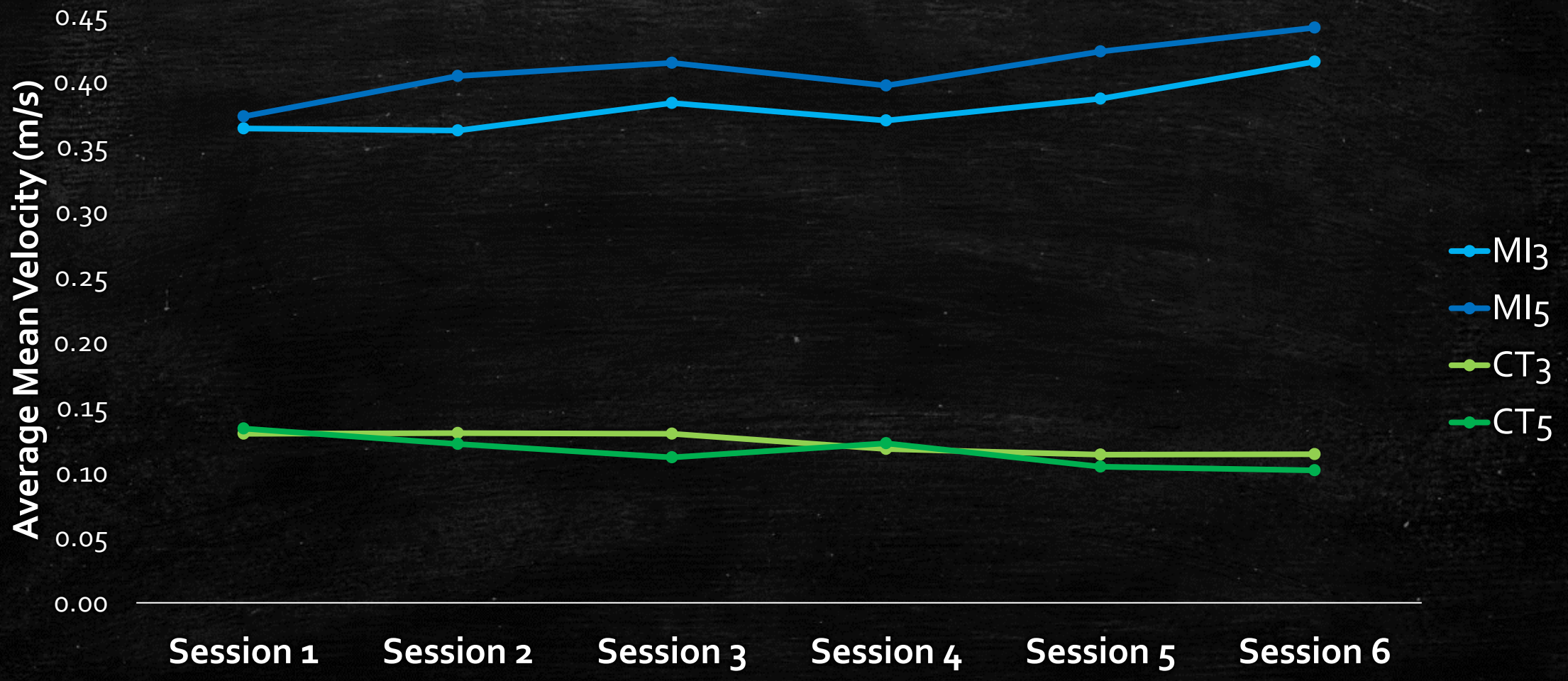
MVIC Electromyography



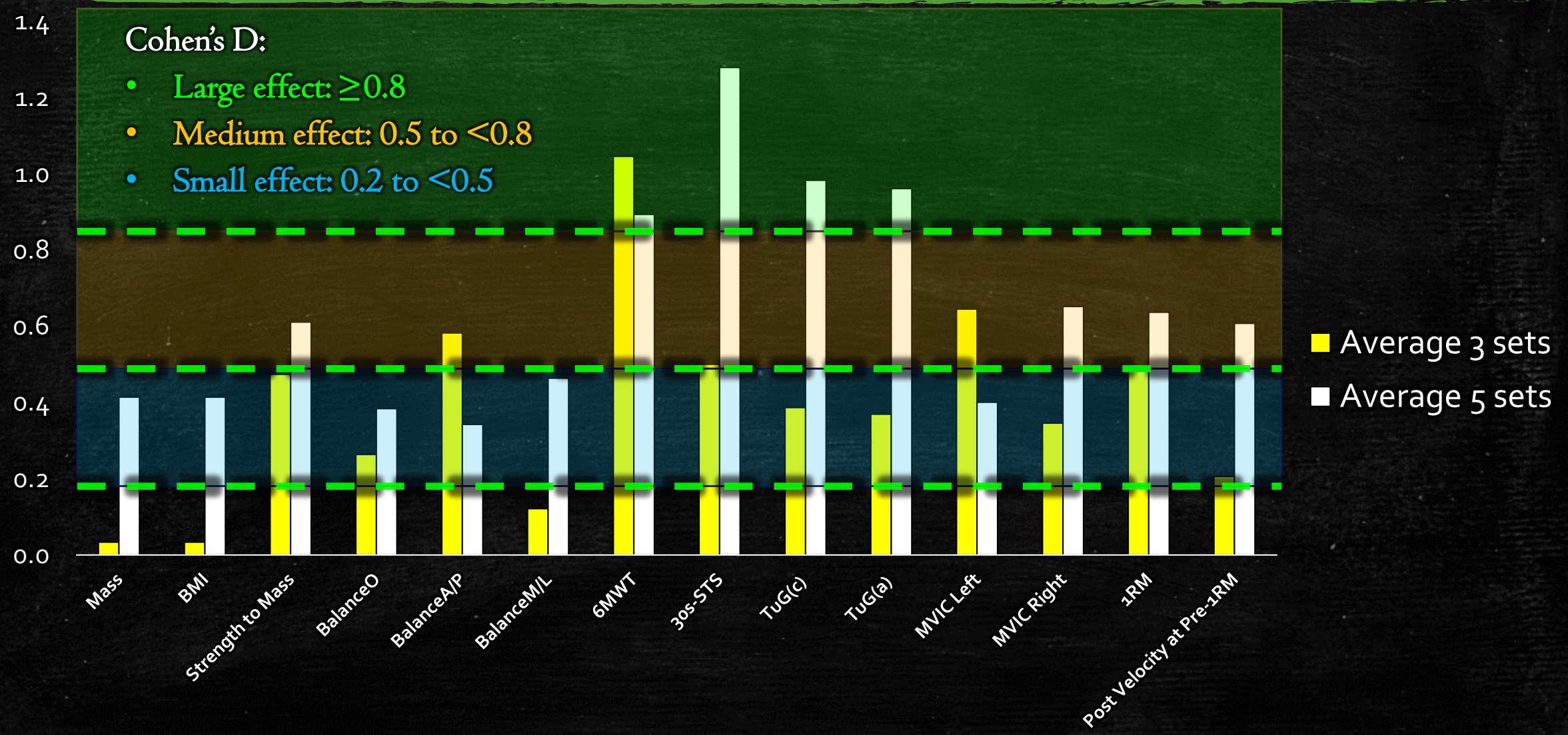
EMG Δ%


60%
50%
40%
30%
20%
10%
0%
33%
30%
22%
17%
Left Leg
Right Leg
Pre-Post Δ%
MI3
MI5
CT3
CT5
Average 3 sets
Average 5 sets

Leg Press Velocity



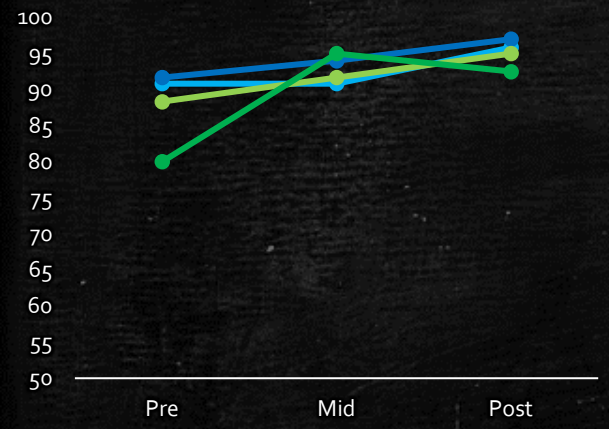
Effect Size


Cohen's D:
• Large effect: ≥0.8
• Medium effect: 0.5 to <0.8
• Small effect: 0.2 to <0.5
1.4
1.2
1.0
0.8
0.6
0.4
0.2
0.0
Mass
BMI
Strength to Mass
BalanceO
BalanceA/P
BalanceM/L
6MWT
30s-STS
TuG(c)
TuG(a)
MVIC Left
MVIC Right
1RM
Post Velocity at Pre-1RM
Average 3 sets
Average 5 sets

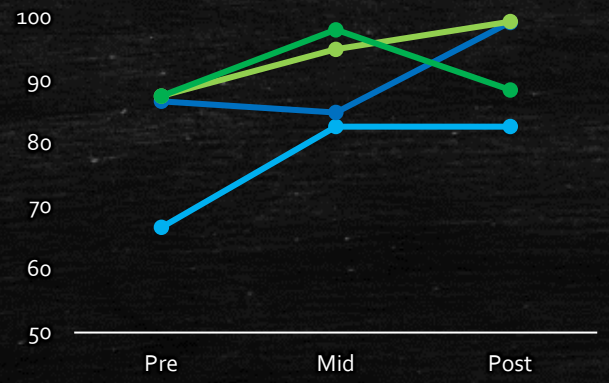
MI3 MI5 CT3 CT5

RAND36 / SF-36: Groups

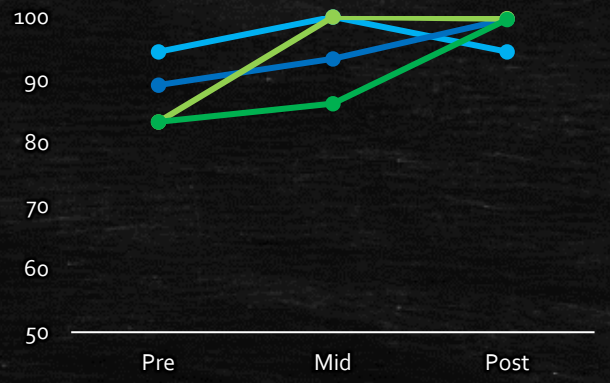
Physical Functioning



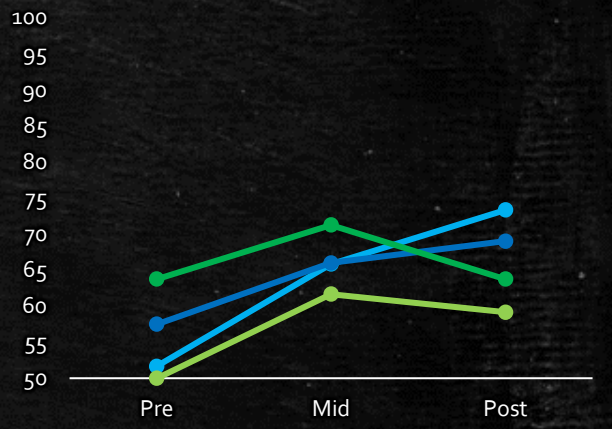
Role limitations due to physical health



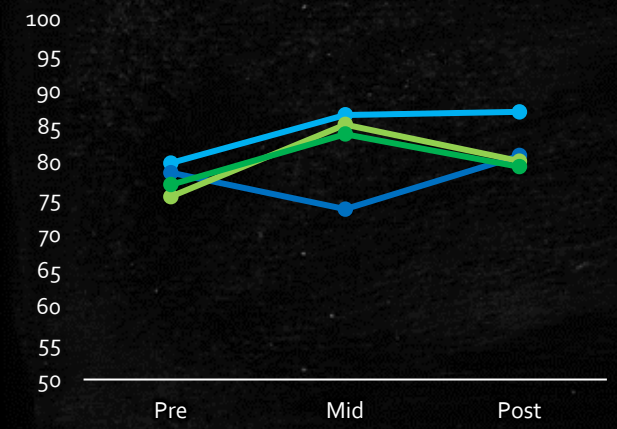
Role limitations due to emotional problems



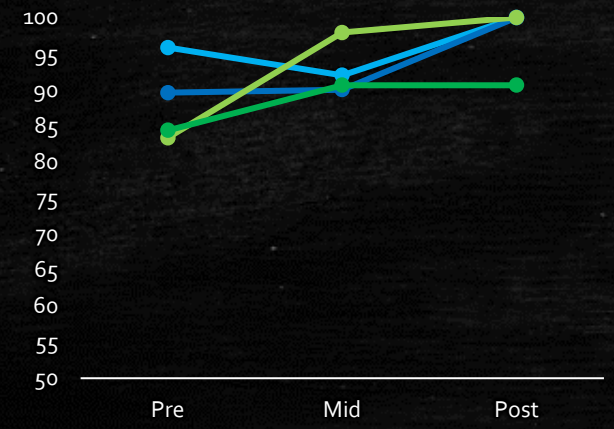
Energy / Fatigue



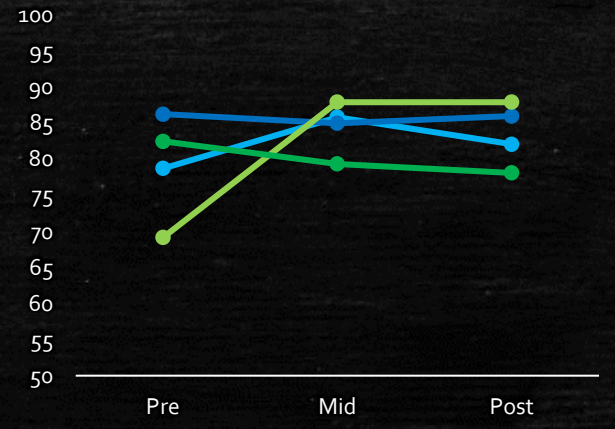
Emotional Well-being



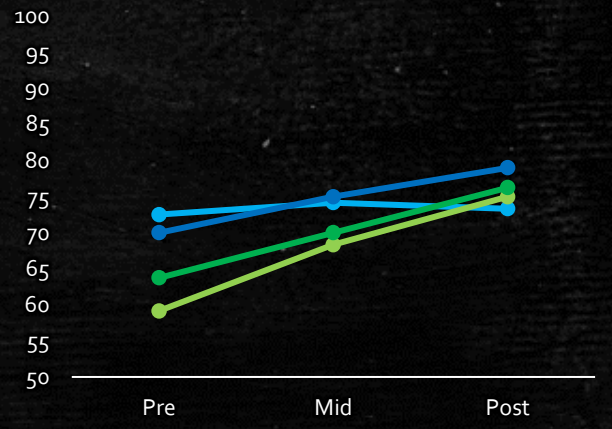
Social Functioning



Pain



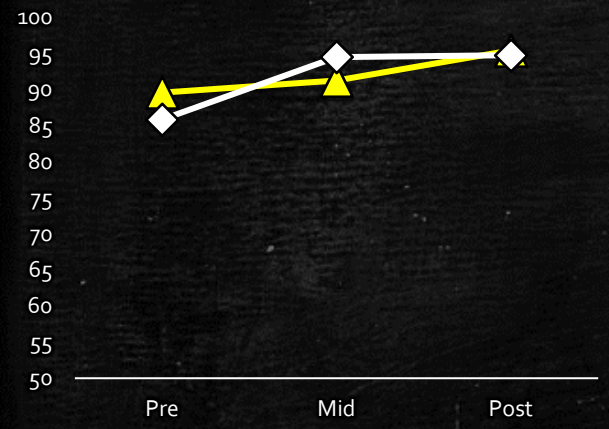
General Health



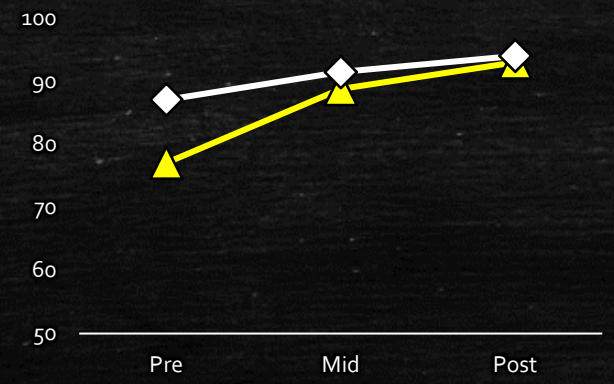
Average 3 set Average 5 set

RAND36 / SF-36: Sets

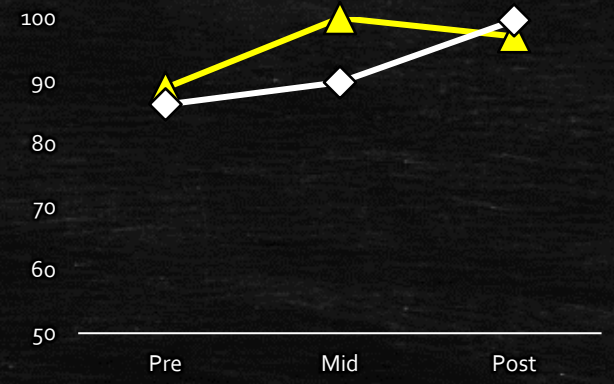
Physical Functioning



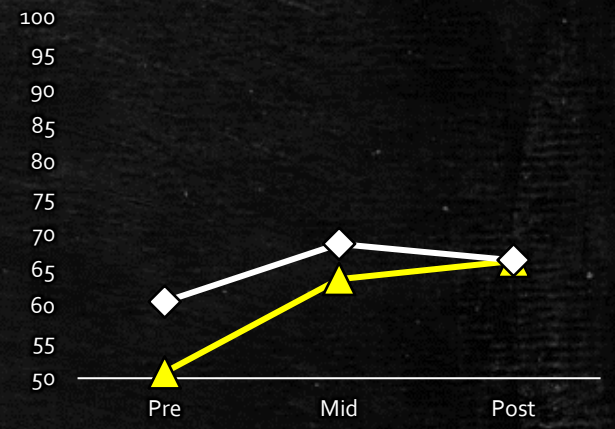
Role limitations due to physical health



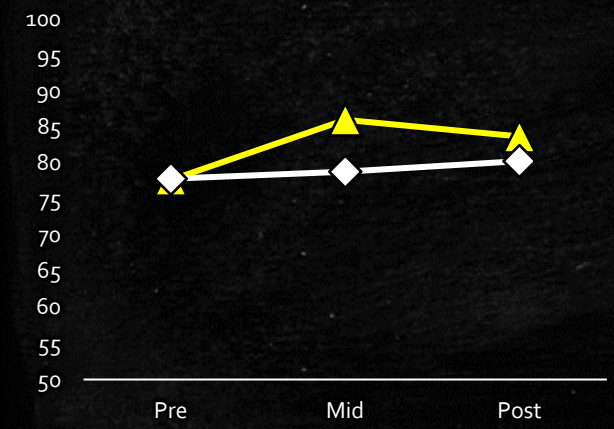
Role limitations due to emotional problems



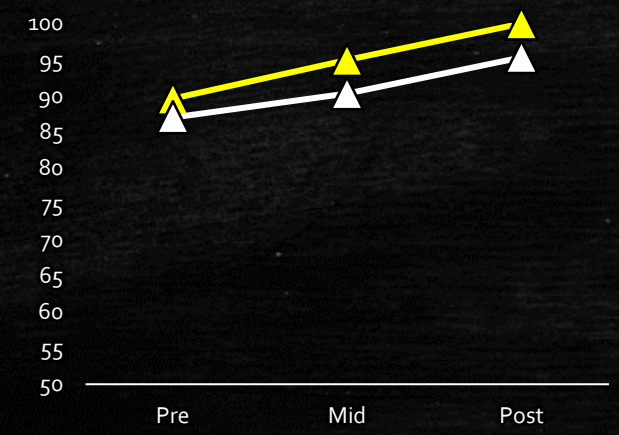
Energy / Fatigue



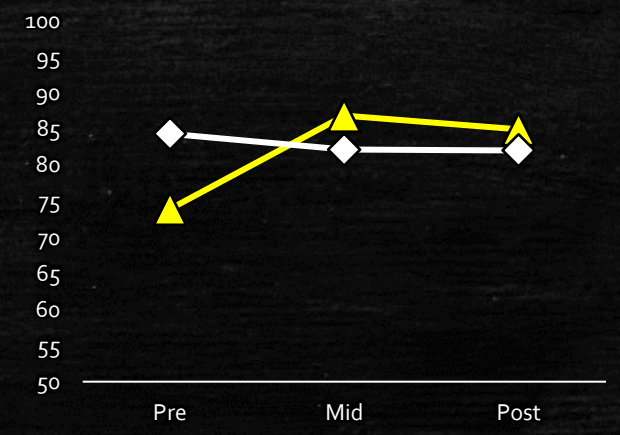
Emotional Well-being



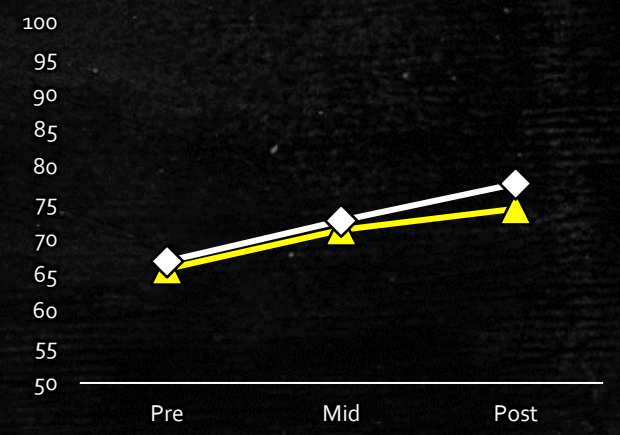
Social Functioning



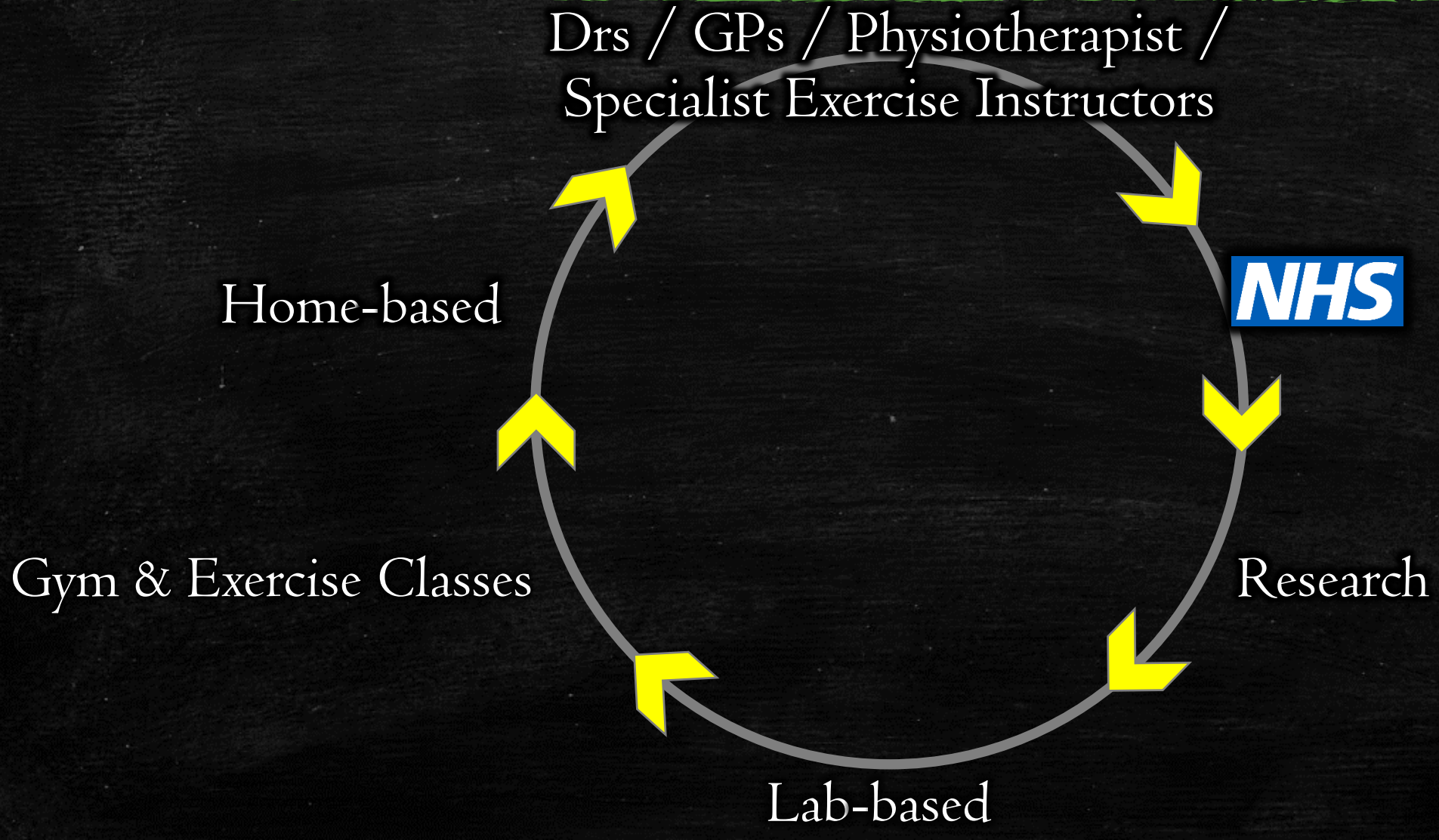
Pain



General Health



The Road Ahead



What's Next?

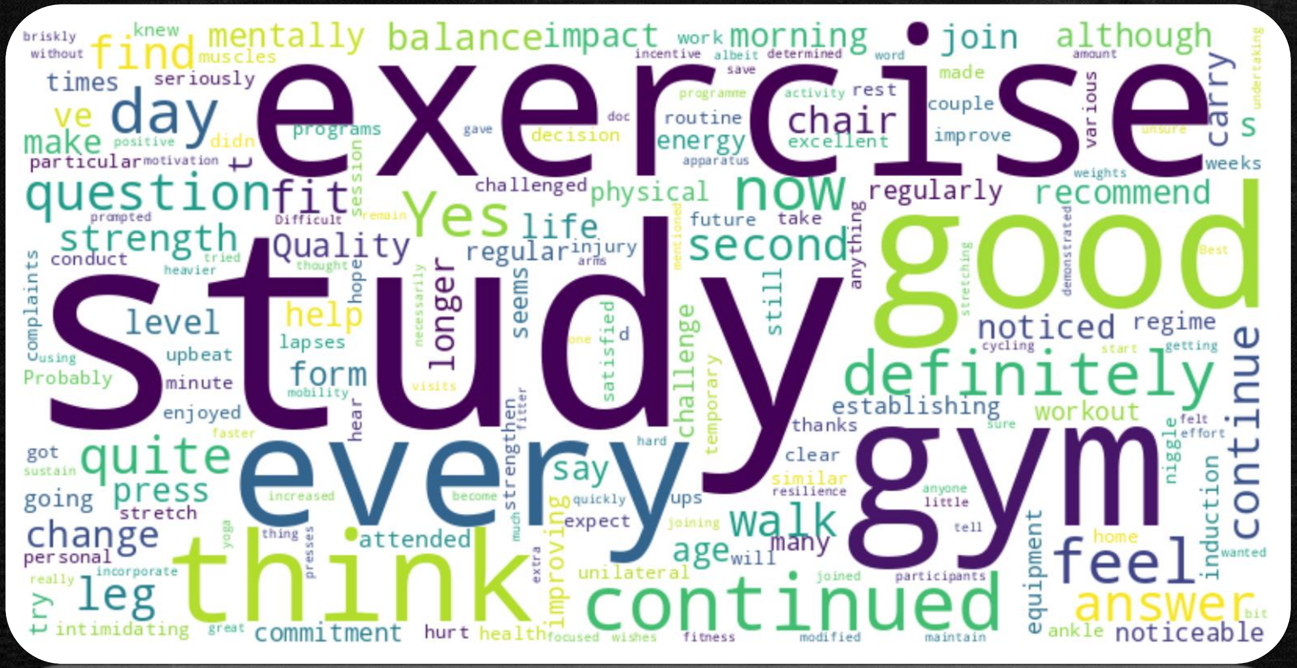
- Cross-Education?
- Long-term sustainability of minimal-dose?
- Are these findings replicable in other populations?
- All 15 reps in one set?

Real World Implications

- Once per week
  - "6 out of 10" difficulty (Eq. 60% 1RM)
    - Lower limb exercise
      - 3 sets of 5 repetitions

May improve your Mental & Physical QoL, Functional Capacity, and Strength✡

✡ = To be confirmed



Any Questions?

Physical activity and ageing

Lynn Iveson
Advanced Clinical Practitioner
(Physiotherapist)

Physical activity is defined as *any* bodily movement produced by skeletal muscles that results in energy expenditure.

Exercise is a *subset* of physical activity that is planned, structured, and repetitive and has as a final or an intermediate objective the *improvement or maintenance* of physical fitness.

Physical fitness is a set of attributes that are either health- or skill-related. The product.

Why is it important?

- *Higher level of physical activity was associated with 41% decreased odds of frailty (37% for physical frailty; 49% for multidimensional frailty).*

- **A big culprit for losing our physical abilities as we grow older is the age-related loss of muscle mass and strength is Sarcopenia.**

- *Typically, muscle mass and strength increase steadily from birth and reach their peak at around 30 to 35 years of age.*

- **Muscle power and performance decline slowly and linearly at first, and then faster after the age of 65 for women and 70 for men.**

What should we be doing?

Studies have identified that effective interventions in preventing and reducing frailty included exercise, nutrition, cognitive training, geriatric assessment and management

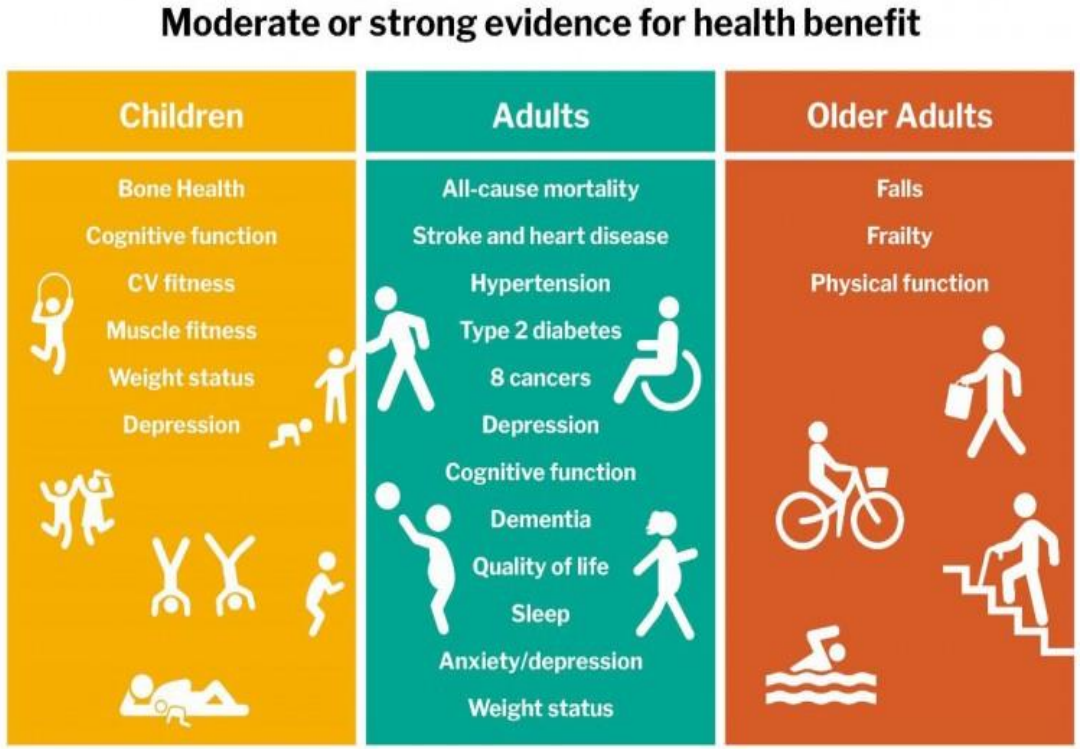
The exercise interventions ranged in duration, frequency, and type of exercises, but all were effective in reducing the level of frailty in pre- frail or frail individuals.

The samples in the studies reviewed, were representative of the average community-dwelling older adult: mean ages were in the seventies and eighties, and half to all participants were women.

“If physical activity were a drug, we would refer to it as a miracle cure, due to the great many illnesses it can prevent and help treat.”

UK Chief Medical Officers’, 2019

“Whatever our age or health status, there is compelling evidence that being physically active can help us lead happier, healthier lives” *Chief medical officers’, 2019*



Chief Medical Officer (2019)

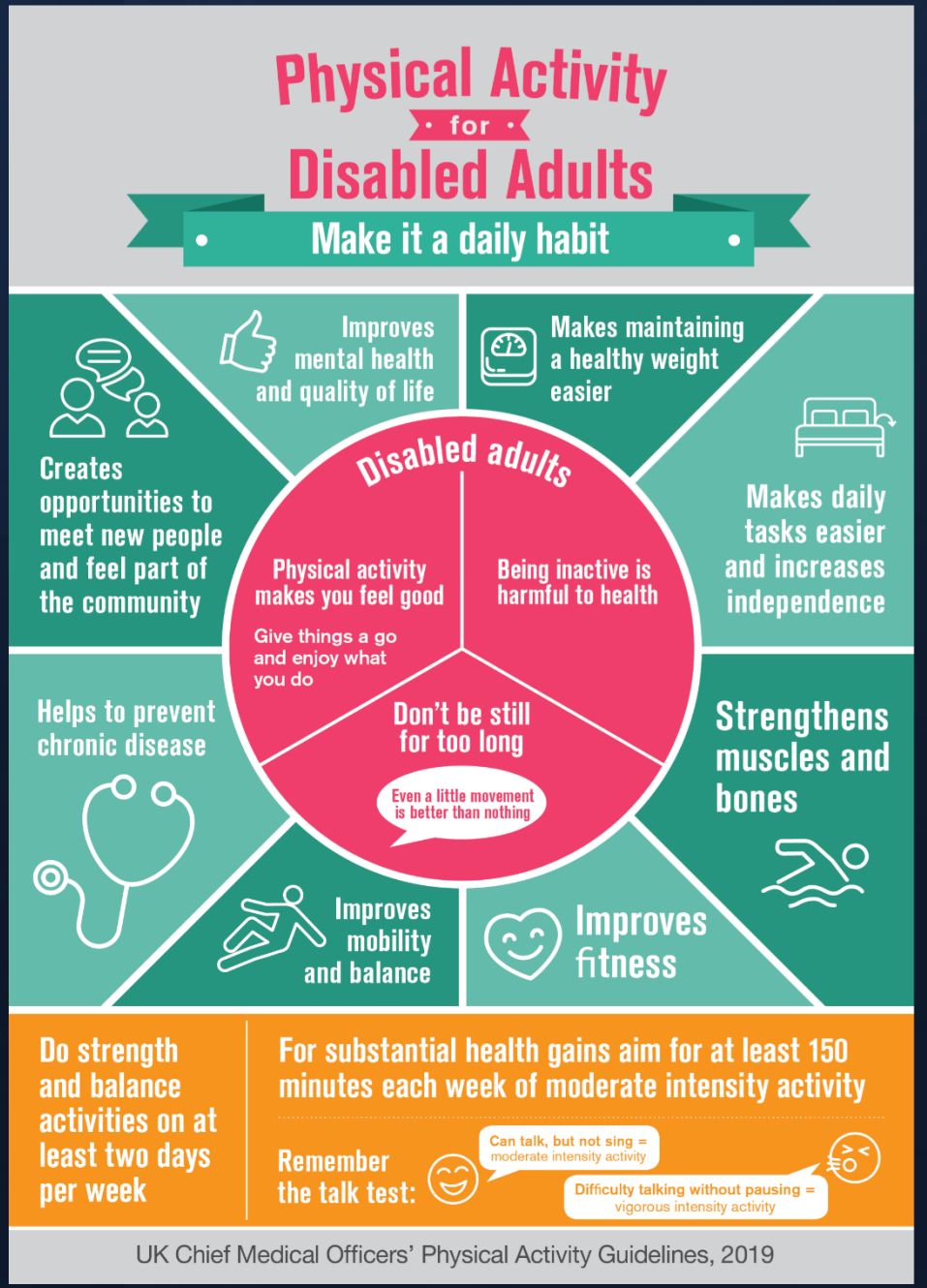
Helps maintain function: Supporting independence, muscle strength and balance.

Helps manage long term conditions such as: diabetes, heart, respiratory, some cancers, and Musculo-skeletal conditions.

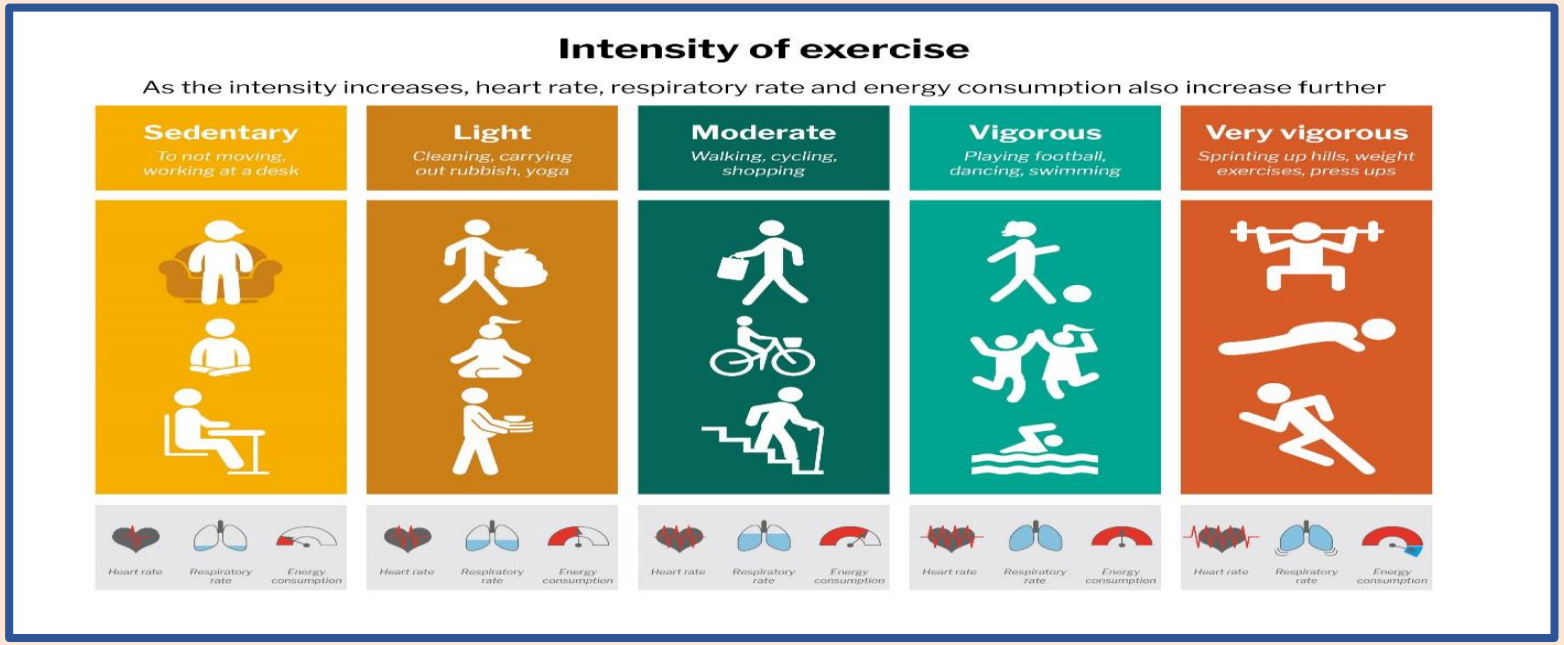
Falls prevention: using a combination of resistance-based strengthening

Mental health: Confidence, Self-esteem, facilitates socialisation and function

UK chief Medical Officers' Physical Activity Guidelines



What does that look like….



Aim to do activities that **improve strength, balance and flexibility** at least twice a week

Aim to be **physically active every day**, even if it's just light activity

Doing daily activities count; gardening carrying shopping and doing household chores

Reduce time spent sitting or lying down and break up long periods of not moving with some activity

Aerobic exercise: as any type of activity that uses large muscle groups. When you notice an increase in heart rate and breathing rate.

Effective physical activities should make you feel warm, increase respiratory and heart rate

Most common barriers to physical activity

Fear health condition will stop activity, or could deteriorate as a result of activity

Fear or embarrassment

Low mood and little motivation to get started

Symptoms vary day to day, disheartened by the bad days/slow progress

K.I.S.S.

Keep it short and simple

Remember the person!

Most common participant reported benefits of physical activity

- Maintain independence
- Ability to complete daily activities
- Manage condition or symptoms (or pain)
- Improved confidence
- Improved sleep
- Improved mood and mental well being
- Keeping bowels regular

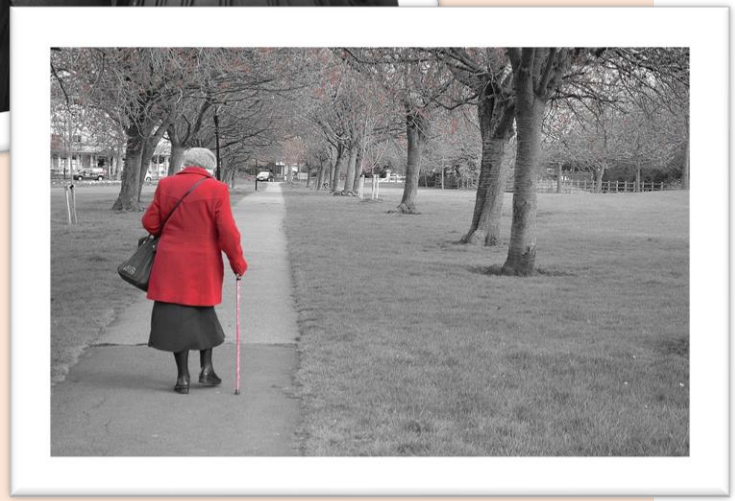

What are the take aways?

Any movement matters!

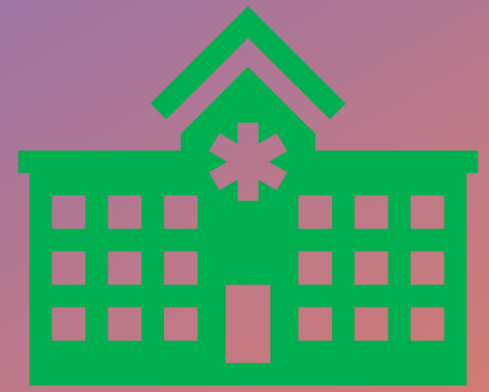
Rest is rust

Use it or lose it

Motion is lotion



How can we facilitate physical activity in our workplace?



Age UK
Improving later life

Strong and Steady

LaterLife Training™

CHARTERED SOCIETY OF PHYSIOTHERAPY

LOVE ACTIVITY
Physio can help
HATE? EXERCISE

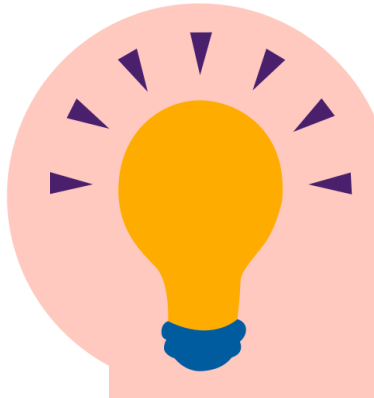
BBC Radio 5 live
10 TODAY
PHYSICAL ACTIVITY FOR OLDER PEOPLE

#EndPJparalysis
GET UP, GET DRESSED, GET MOVING


Thank you

EnCOP

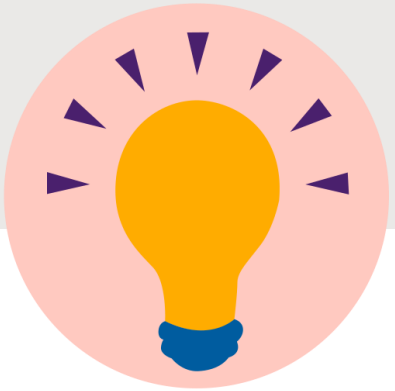
Enhanced Care for Older People



Consolidating Learning:

Reflection on the session & considering application to practice & what this means 'your people'

- Think about this session in relation to your own role
- How much of this was revision?
- What have you learned today ?
- How will this help you in your role ?
- Think about your EnCOP self–assessment; consider which performance indicators this session may relate to and how this can be used as part of your own development / competency achievement.



EnCOP
Enhanced Care for Older People

Reminder of linked EnCOP domains

A. Values, Attitudes & Ethics
B. Evidence-based Practice : Supporting learning, leadership & improving care for older people
C1. Partnership Working and communication with older people, family and friends
C2. Inter-professional and Inter-organisational working, communication and collaboration
D1. Ageing Well – Understanding Frailty - Prevention, Identification and Recognition
D2. Ageing Well – Assessing , Planning, Implementing and Evaluating Care & Support with Older People
D3. Ageing Well - Promoting & Supporting Independence, Autonomy & Community Connectivity for Older People
D4. Ageing Well – Promoting & Supporting Holistic Physical Health & Wellbeing with Older People
D5. Ageing Well – Promoting & Supporting Holistic Psychological Health & Wellbeing with Older People

EnCOP
Enhanced Care for Older People

Feedback about today's session and any future sessions you may like to see included in our webinar series….

All feedback welcomed; You may want to consider the following –

Was it easy to book onto the session?
Did you find the session went well in this online format ?
Was the content of the session relevant to your area of practice / job role?
Did you enjoy the session?

Thinking about future webinar's, which topics linked to older person's care would you be most interested in? Please put any suggestions in the chat.

Please comment in the chat today or feel free to email us: ghnt.encop@nhs.net

Save the date !

Next in our education webinar series (session 26)

Date: 27.3.24

Time: 1.30pm-3.00pm

Title:

Navigating Falls Risks and Interventions for Older Adults

Speaker:

Louise Egan, Lecturer in Physiotherapy and Practice Education Lead , Teesside University

Biography :

Louise is a qualified Physiotherapist who spent 10 years working in South Tees Falls and Osteoporosis Service, providing multifactorial risk assessment and interventions to older people within the community. She is currently working as a Physiotherapy Lecturer and Practice Education Lead at Teesside University, where she is responsible for dissemination of falls and frailty knowledge to students undertaking a variety of health courses and standalone CPD modules. Louise is a Fellow of Advance HE, and is a member of the Chartered Society of Physiotherapy, the British Geriatric Society and The Association of Chartered Physiotherapists in Vestibular Rehabilitation. She is also a member of the National Executive Committee of AGILE (the Professional Network for Physiotherapists working with Older People) and works with Later Life Training, delivering evidence-based training to health and exercise professionals.

More information can be found within the Frailty icare website

www.frailtyicare.org

Our EnCOP pages are located in the workforce section

EnCOP Library of Learning & Development Resources can be found at:

EnCOP Assessment Toolkit Domains « I-Care (frailtyicare.org.uk)