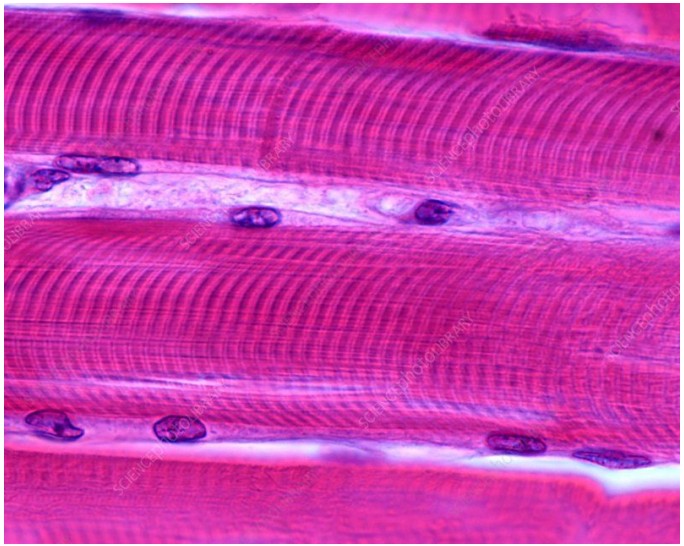
Unlocking Your Exercise Potential!

Aim: Get a deeper understanding of what's going on physically to get more out of your workouts and achieve better results.

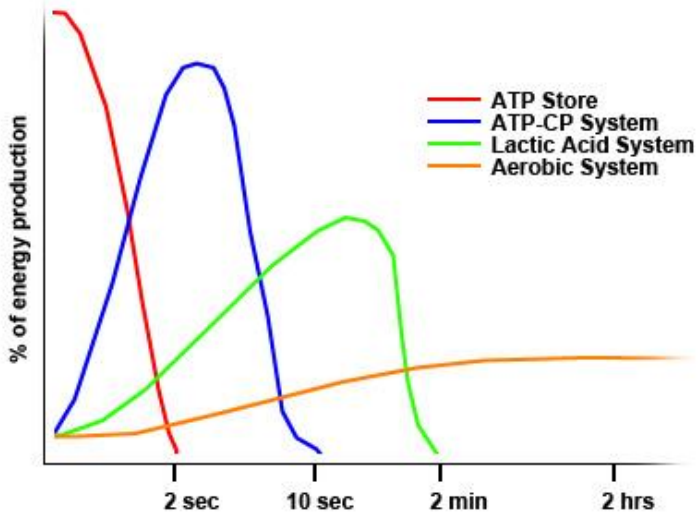
Muscle Fibre Types & Training Implications

- Each one of our skeletal muscles is made up of hundreds to thousands of muscle fibers that are wrapped together by connective tissue.
- Two main types: Type I (Slow-Twitch) fatigue-resistant, oxygen-dependent, built for endurance; Type II (Fast-Twitch) powerful, fatigue quickly, built for explosive effort.
- Your body is not uniform: Higher ratio of slow-twitch fibres naturally found in the abs, calves, and postural muscles (they're "always on").
- You can shift the ratio slightly through consistent training, but genetics largely determine your baseline split.
- **Practical takeaways**: Abs and calves respond better to higher rep ranges (15-25+) as lower reps simply won't create enough stimulus.
- Fast-twitch muscles (chest, glutes, hamstrings) respond better to heavier loads and lower reps (6-12).



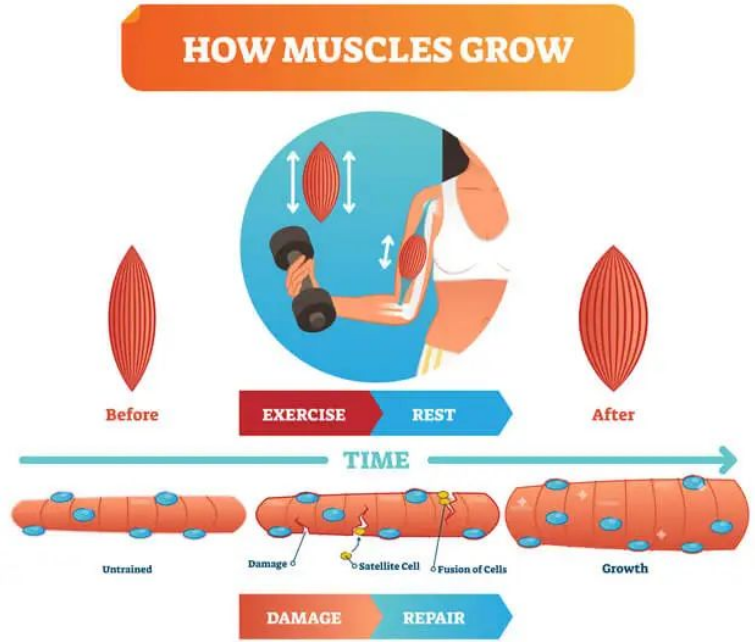
The Three Energy Systems

- Our three energy systems produce the fuel necessary for all muscle contractions.
- ATP-PCr (Phosphocreatine) System powers the first 0-10 seconds of intense effort (sprints, heavy lifts). 95%> MHR. Replenishes in approximately 2-3 minutes, which is why rest periods matter.
- Glycolytic System takes over from 10 seconds to approximately 2 minutes. 85-95% MHR. Burns carbohydrates rapidly and produces lactate.
- Aerobic System dominates from 2 minutes onwards. <85% MHR. Burns carbs and fat, highly efficient, key for endurance and recovery between sets.
- All three run simultaneously; intensity determines which is dominant, not which is active.
- **Practical takeaway**: Shorter rest means more aerobic demand. Longer rest means more strength and power output. Manipulate rest periods to target your goal.



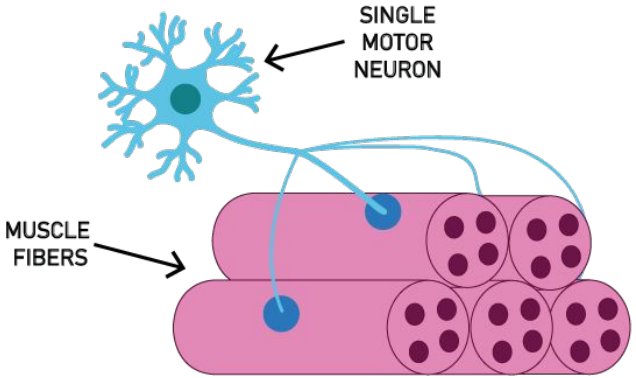
Muscle Damage, Soreness & The Repair Process

- DOMS (Delayed Onset Muscle Soreness) peaks 24-72 hours post-workout, caused by microscopic tears in muscle fibres, not lactic acid (a very common myth).
- The eccentric phase is the culprit: lowering a weight (e.g. the down phase of a squat) causes significantly more micro-damage than the lifting phase.
- Eccentric work is especially stressful as muscles can produce more force eccentrically than concentrically and fewer motor units are needed for the same external load, so individual fibers experience higher stress.
- Satellite cells (muscle stem cells) activate during repair and fuse to existing fibres. This is the biological mechanism of muscle growth (hypertrophy).
- After training, muscle protein synthesis elevates for up to 24-48 hours. This is the window where nutrition and rest directly fuel the repair process.
- **Practical takeaways:** Slow your eccentric phase down (3-4 seconds) to maximise muscle stimulus without necessarily adding more weight, and keep daily protein intake high.



The Neuromuscular Connection

- The body experiences significant neurological development in the first 4-8 weeks of training, where your brain is learning to recruit more motor units efficiently.
- Motor unit recruitment: your nervous system recruits muscle fibres in order, slow-twitch first, fast-twitch only when the demand is high enough.
- This continues throughout your ‘training life’. The mind-muscle connection is real, with studies showing consciously focusing on the muscle being worked increases activation by up to 20-35%.
- Consistent focus on a muscle during training signals the nervous system to preferentially recruit fast-twitch fibres over time. This leads to greater overall development of the targeted area.
- **Practical takeaway:** Slow down, focus, and feel the target muscle working, especially during isolation exercises. Quality of contraction matters as much as load.



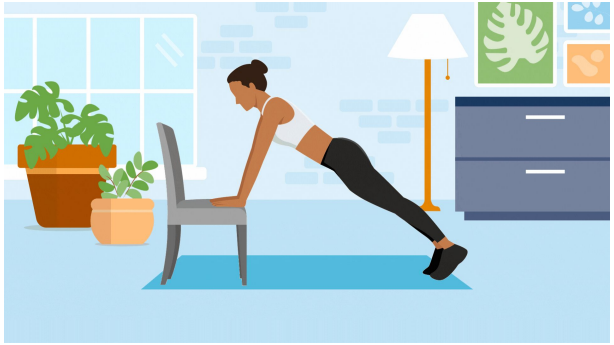
Strength Challenge! (13th-19th May)

Now take this forward into May's challenge - pushing yourself to new success!

Starting tomorrow for the next 7 days, simply post in the Challenge group each time you've done a Trinity LIST workout - which one it was and most importantly, *how* you pushed yourself.

It could be:

- More weight
- More reps
- Less rest
- More volume e.g. it was an extra workout that week
- Exercise progression (e.g. wall press-ups to chair press-ups)
- Doing it when feeling tired
- Sticking to schedule/plan
- Doing it a a different time of day



E.g. - "Workout 3, Week 2 of the Advanced Program done. Reduced rest time from 40 seconds to 35 seconds between sets".

Takeaways/ Questions