Yksilölliset harjoitusvasteet – mitä jos treeni ei tartu?

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KUNTOTESTAUSPÄIVÄT 2019

Kuntotestaus näyttöön perustuvassa personal trainer -toiminnassa

23.3.2019

Many biological phenomena follow Gaussian distribution!

?

Elite athletes

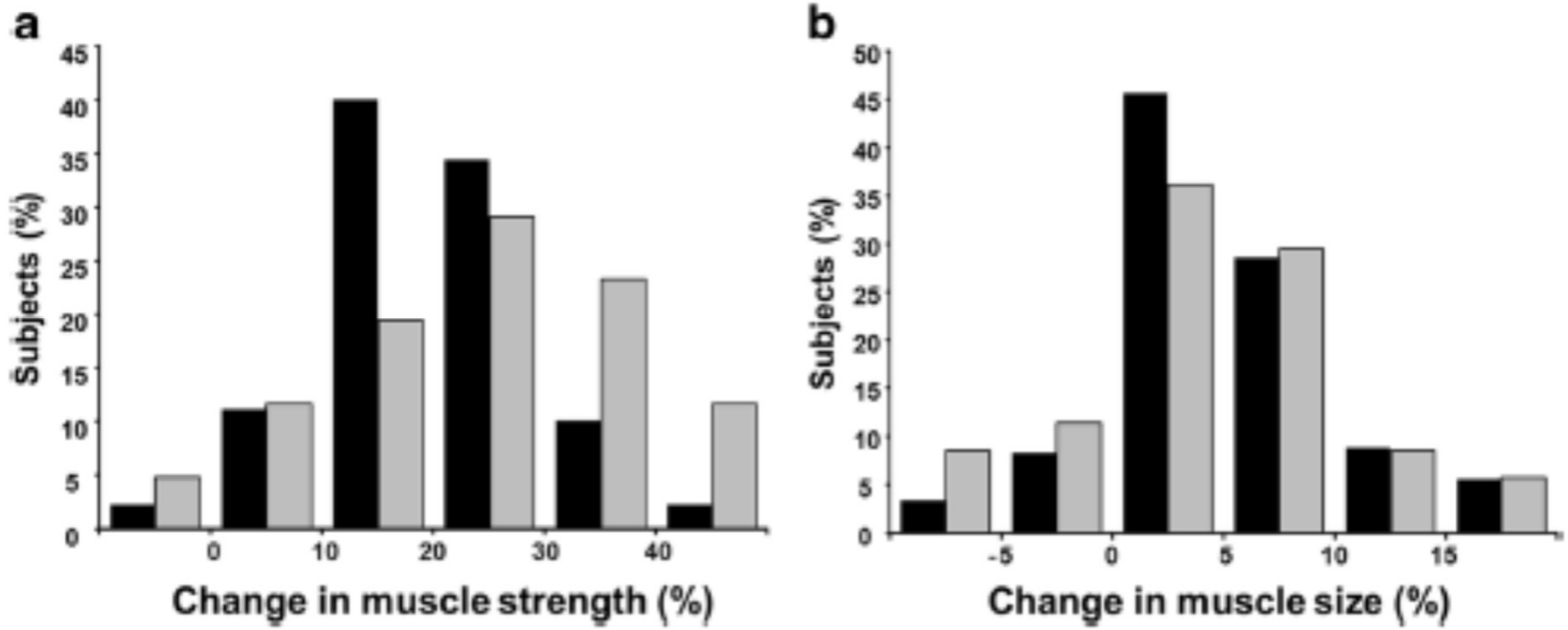
- Innate abilities
- Acquired special abilities

Population

Heterogeneity in resistance training-induced muscle strength and mass responses in men and women of different ages

Juha P. Ahtiainen · Simon Walker · Heikki Peltonen · Jarkko Holviala · Elina Sillanpää · Laura Karavirta · Janne Sallinen · Jussi Mikkola · Heli Valkeinen · Antti Mero · Juha J. Hulmi · Keijo Häkkinen

AGE (2016) 38:10



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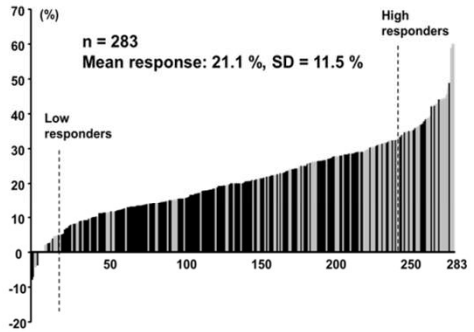
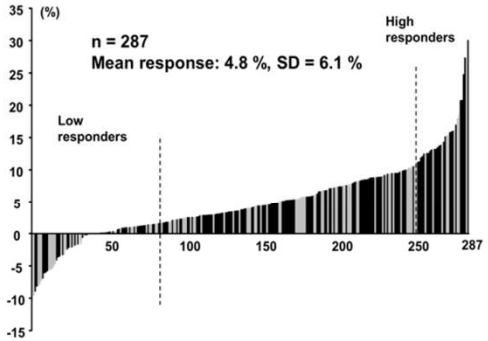
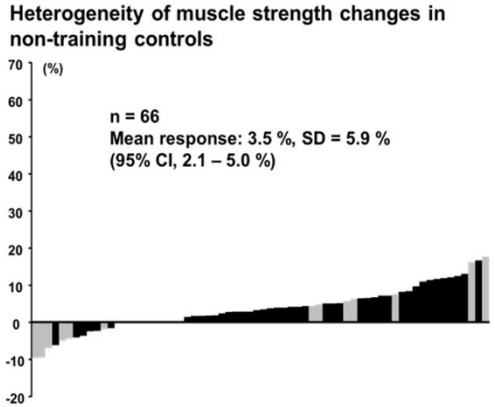
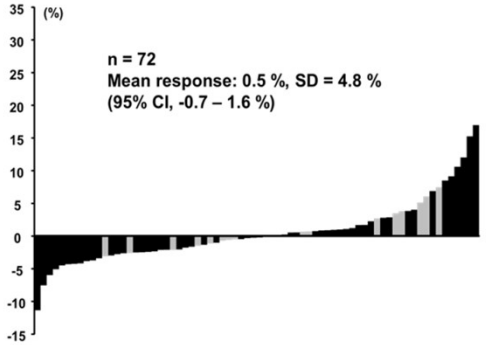
A)



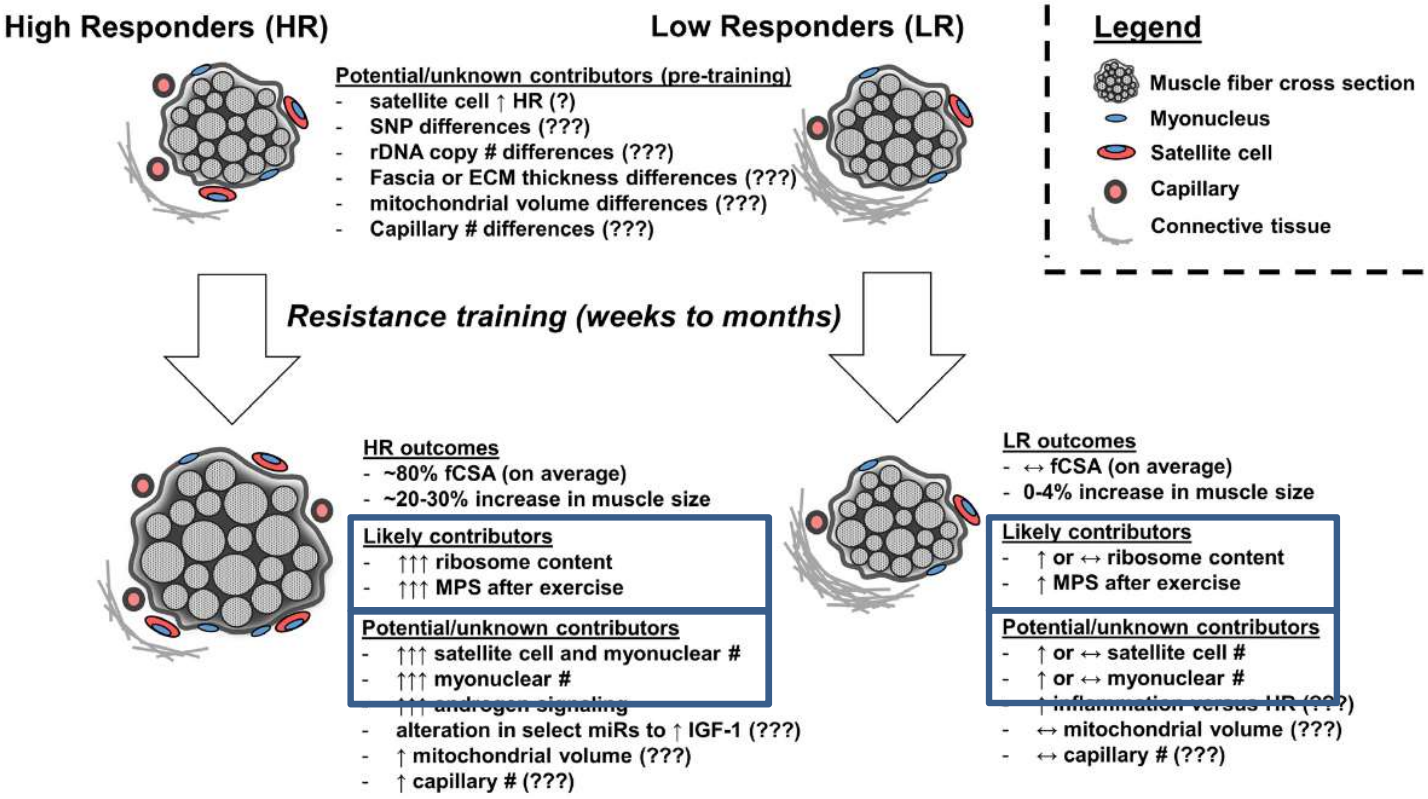
B)







Physiological Differences Between Low Versus High Skeletal Muscle Hypertrophic Responders to Resistance Training: Current Perspectives



Roberts et al. 2018

Individual variation in response to exercise: Specific comments

Low response to exercise is a normal and natural occurrence

Exercise works through so many different pathways and mechanisms, that it seems unlikely that an individual would exhibit no positive effects from exercise
In any case, exercise is not a poison for anyone

However, for those at risk of certain diseases, chasing a response in a specific variable may be important

Exercise clearly exerts benefits above the physiological, reducing stress and improving mental health, as well as serving as a social aid

Be aware of the measurement error

Mann et al. 2014; Sparks 2017; Pickering & Kiely 2019

Did not respond - what should we do about it?

A different training programme (in terms of intensity, volume, frequency duration, or modality) would elicit a positive response:

Add a exercise dosage; volume and/or intensity, or frequency

Low responder = slow responder? Utilizing longer RT intervention

Aerobic vs. resistance exercise; select exercise-type that an individual can more favorably adapt to

Focus on factors that are within the individual's control on exercise response:

Moderating background psycho-emotional stressors

Adequate sleep

Adequate dietary intake

Flexible Training Prescription (based on monitoring stress and recovery of each training session)

Use of genetic information? Pharmaceutical applications?

Mann et al. 2014; Sparks 2017; Pickering & Kiely 2019