

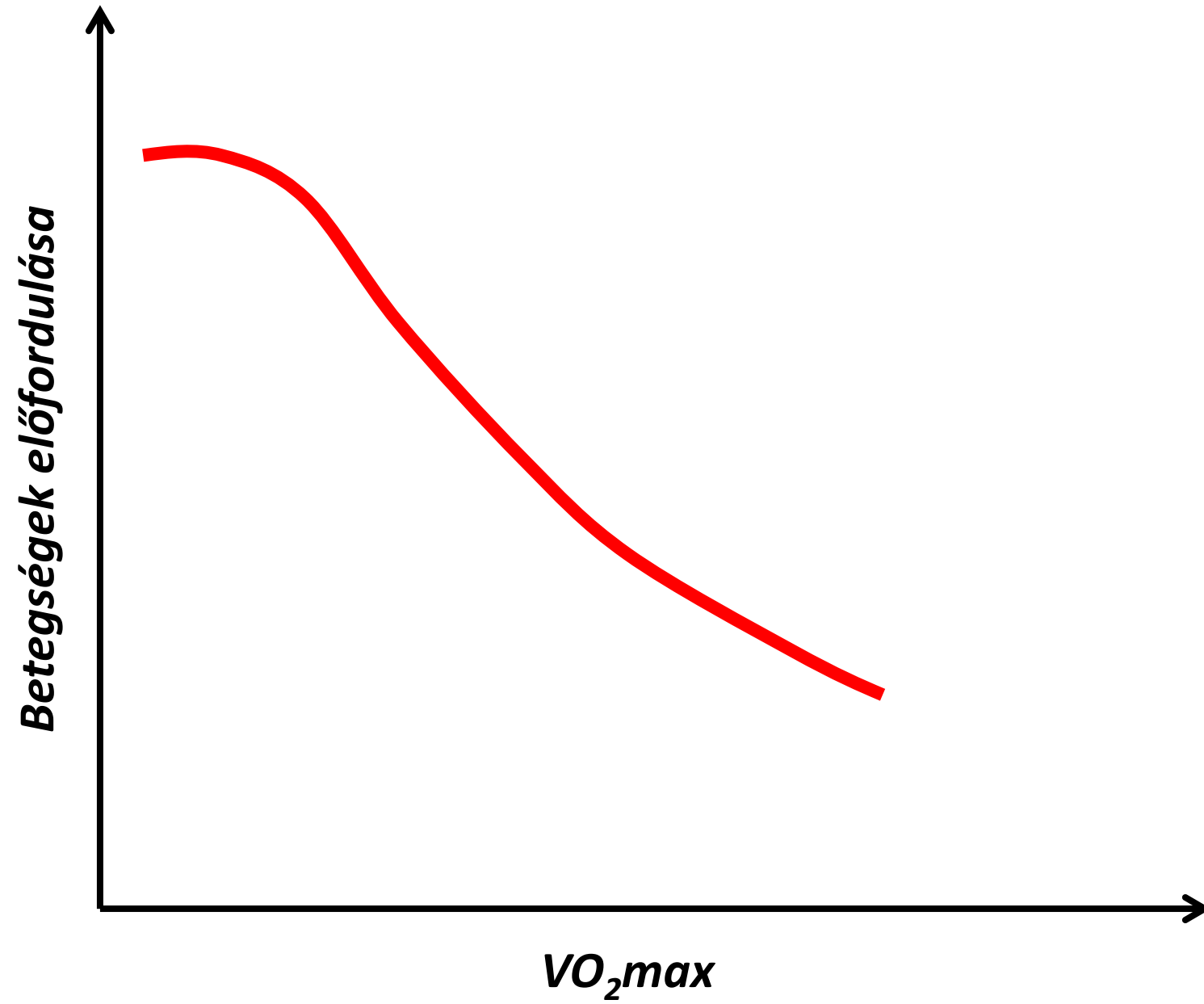


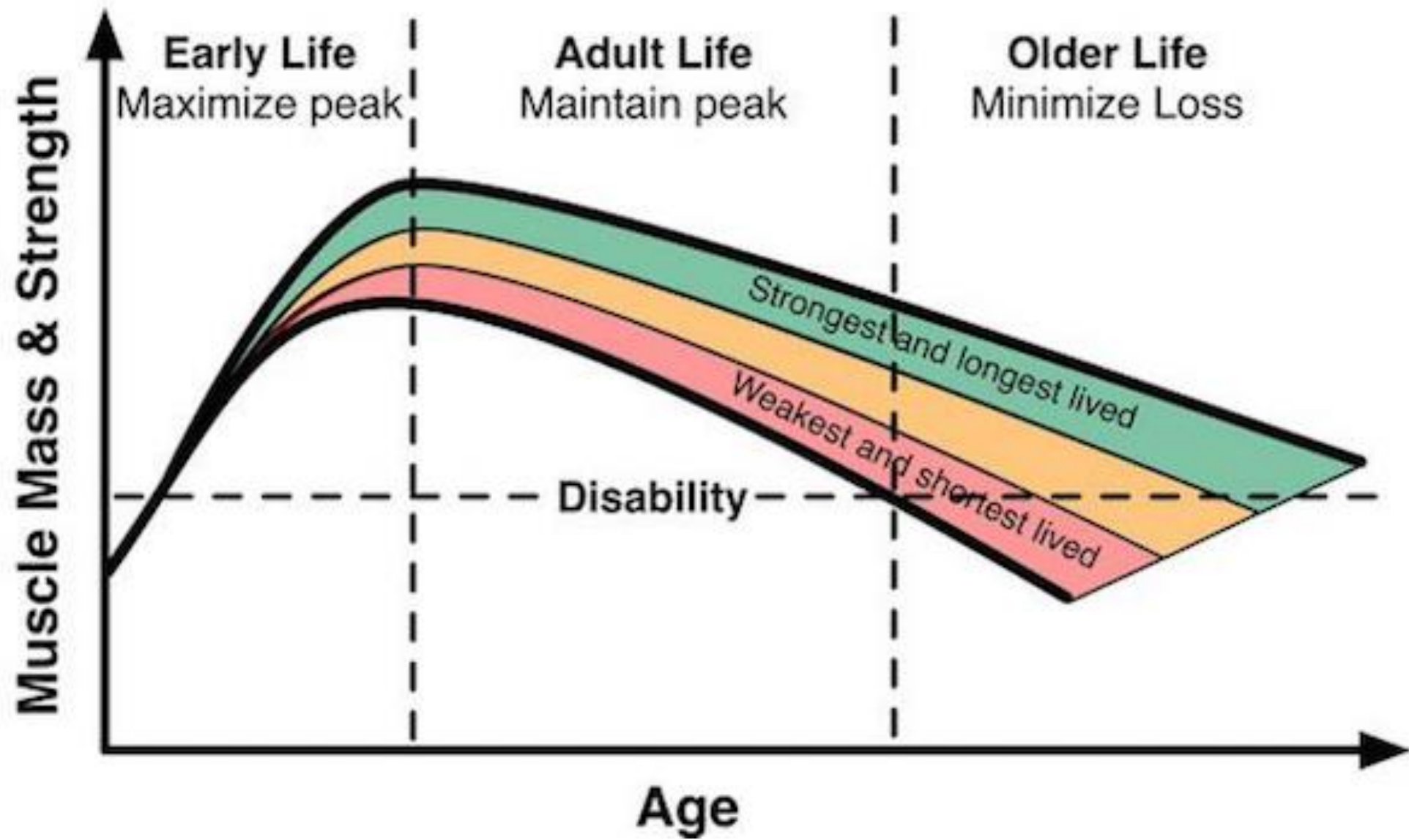
Masters sportolók felkészítésének sajátosságai

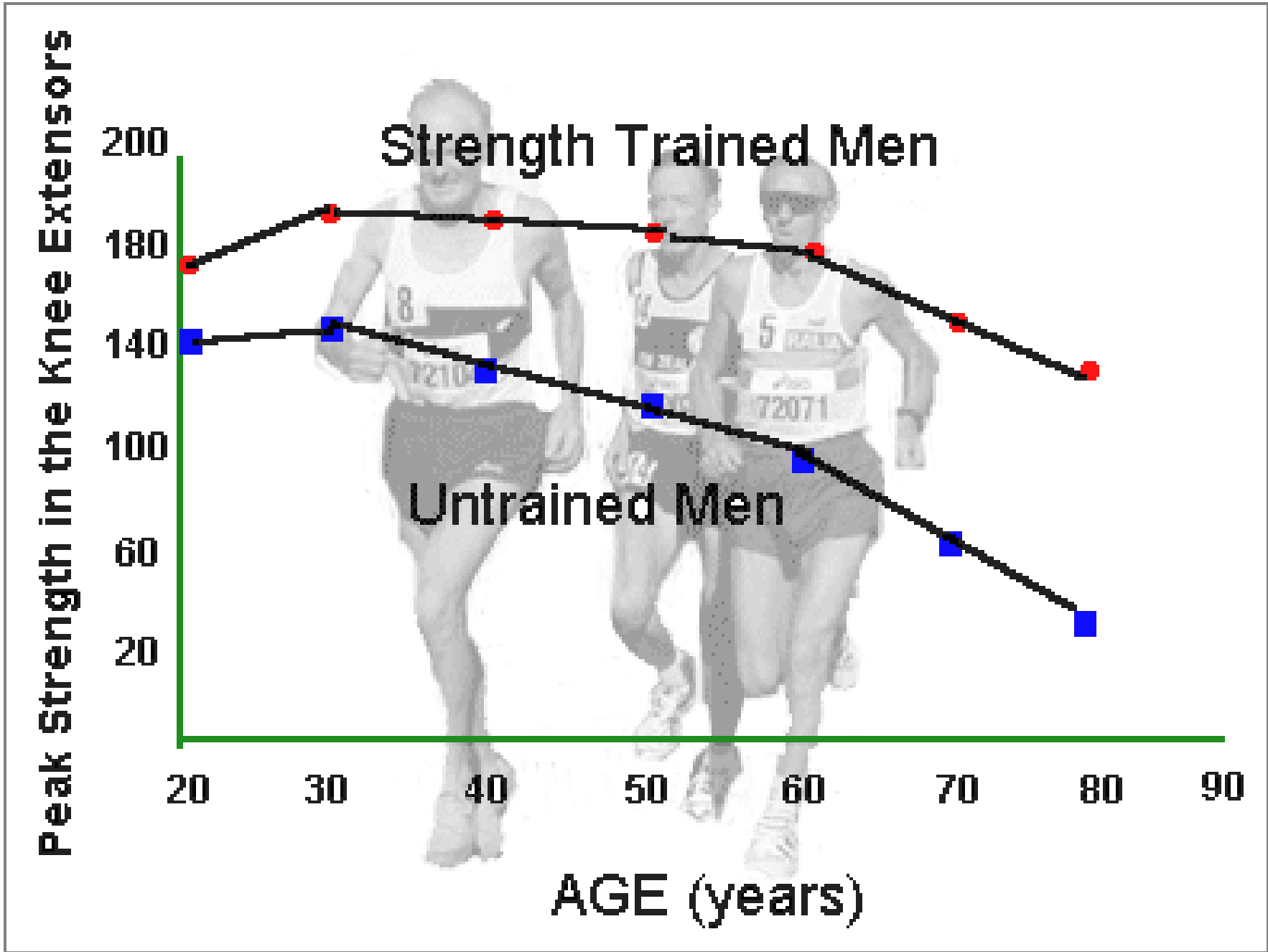
Radák Zsolt

TF, MTA doktora

Ábra 9.2



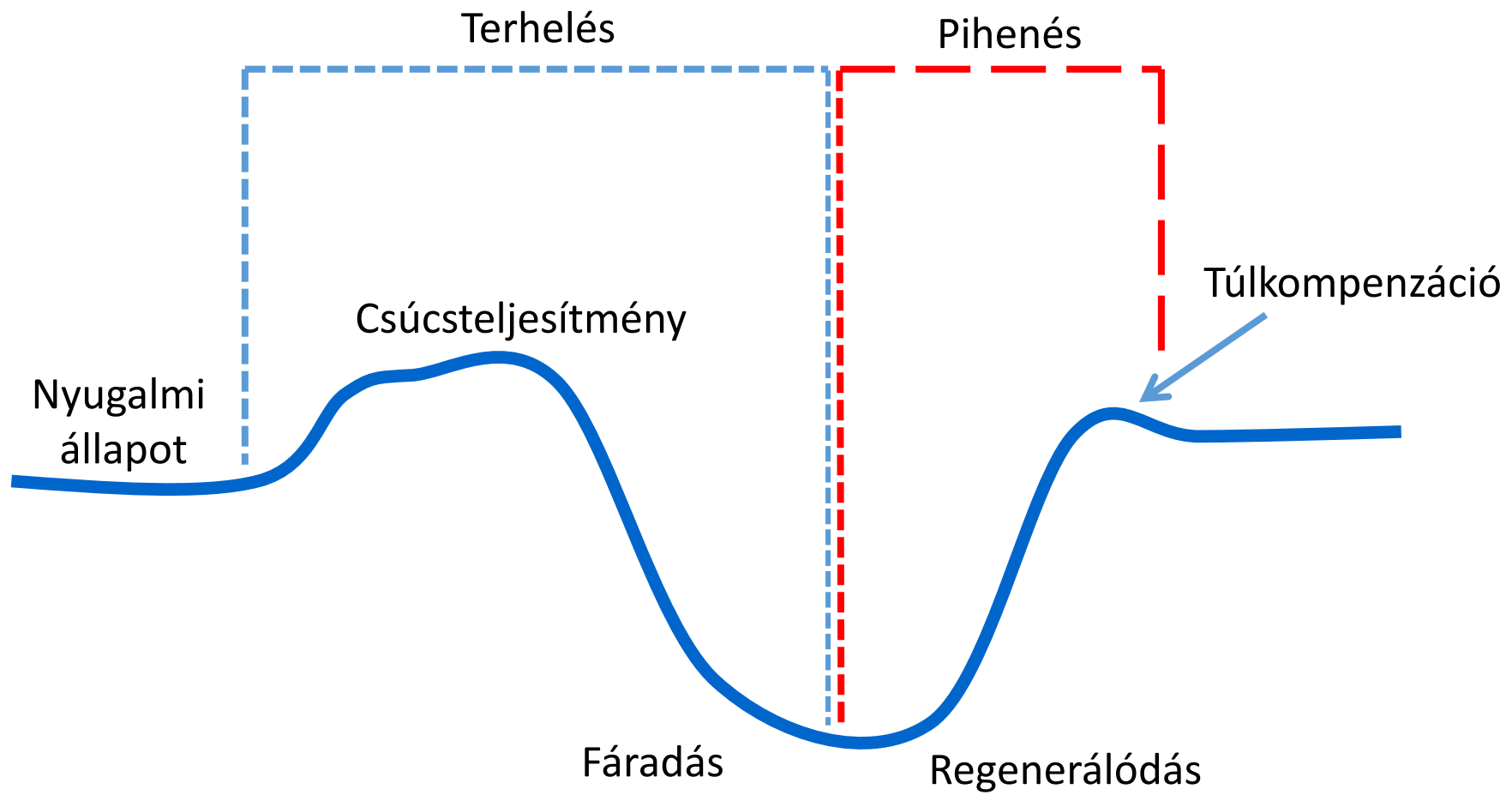


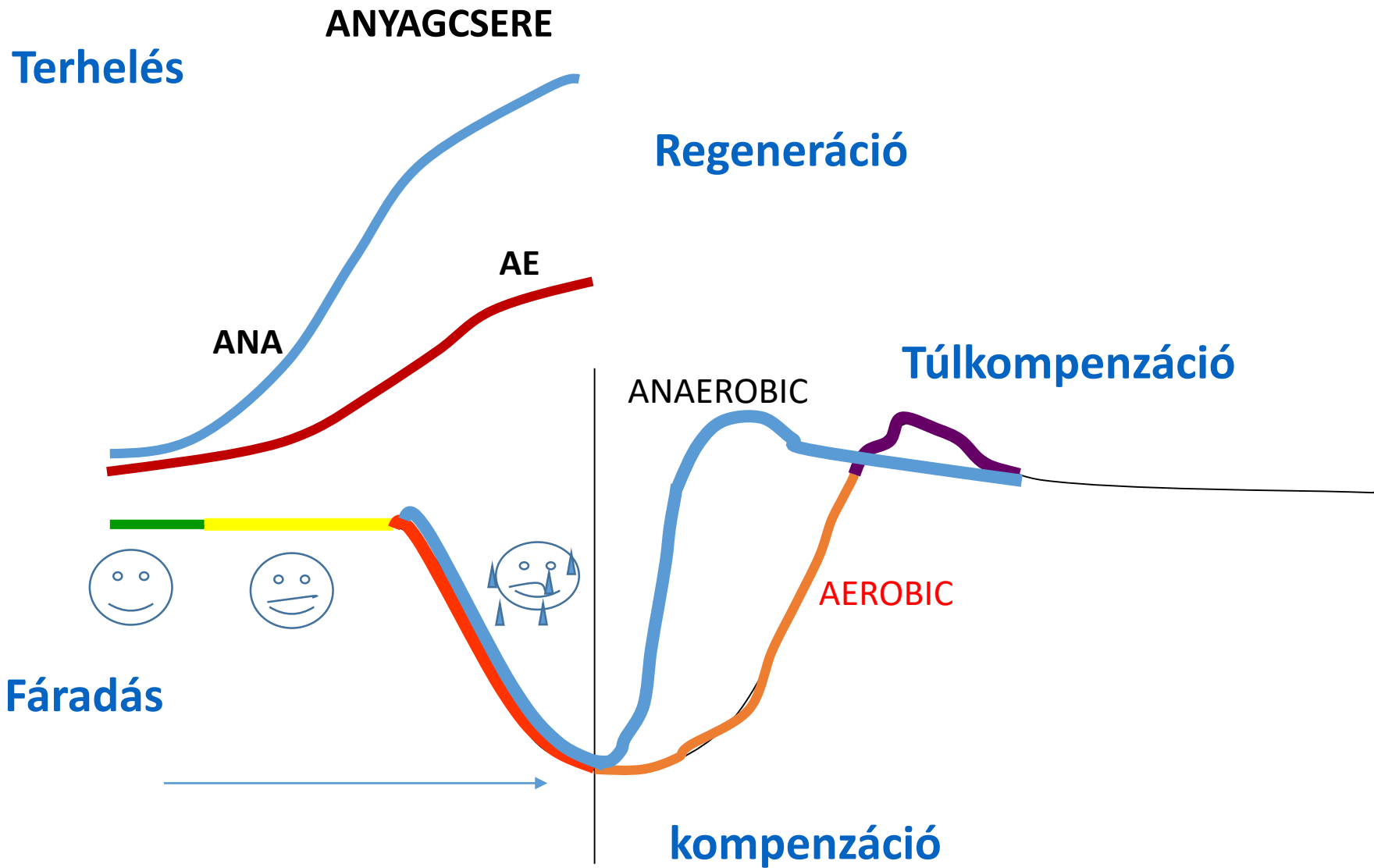




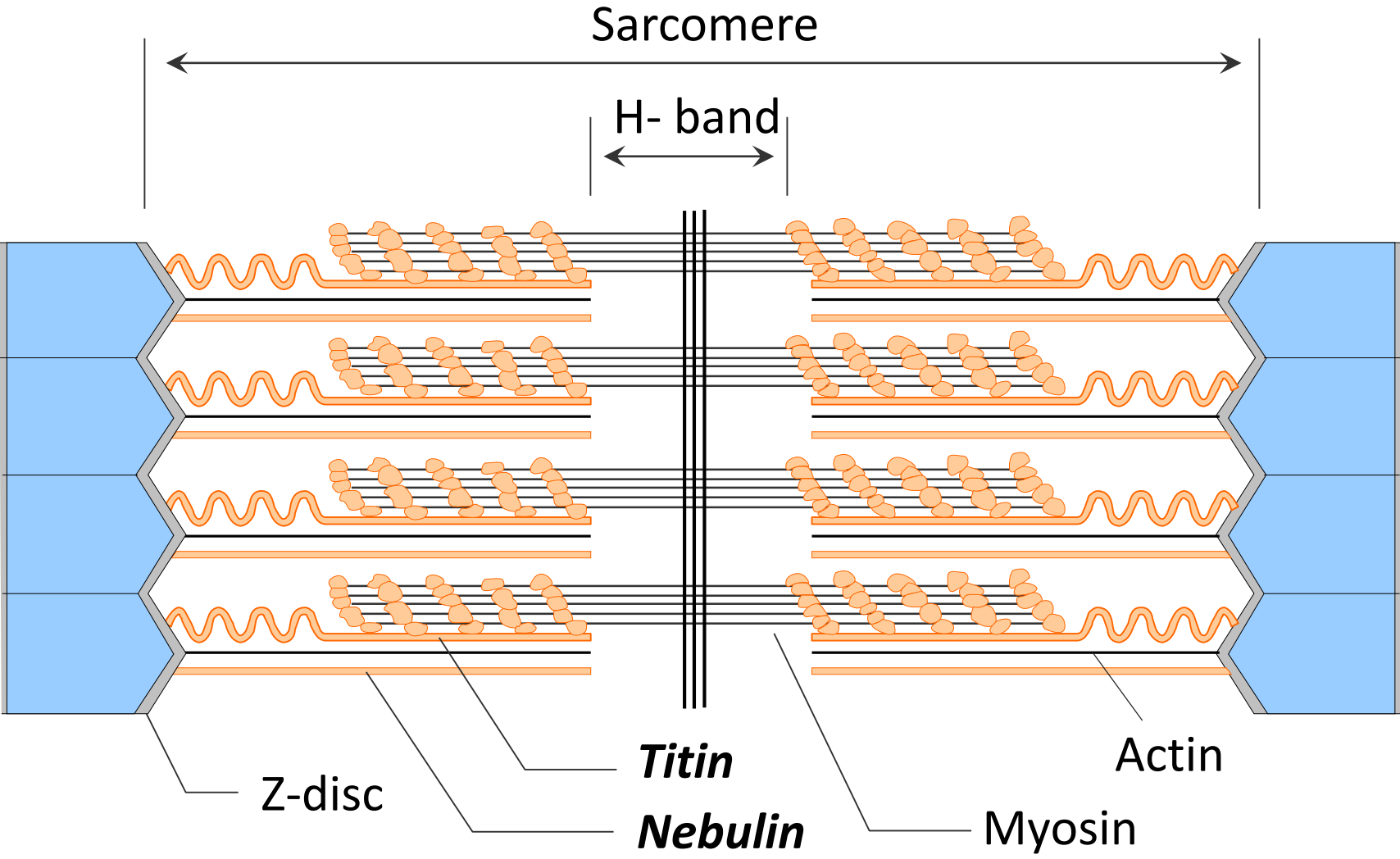
- De ez azt is jelenti, hogy másként kell edzeni???

Ábra 3.2

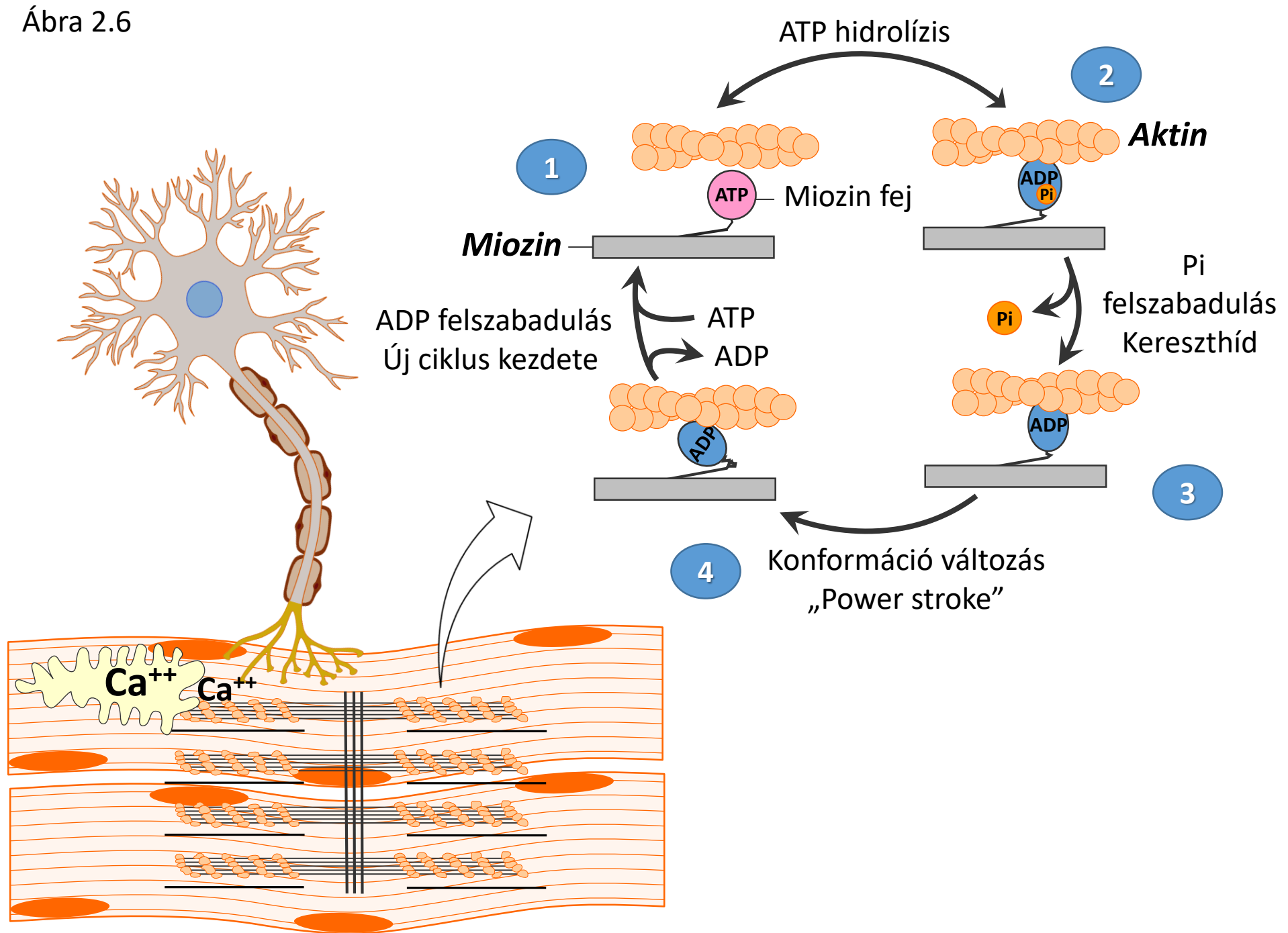


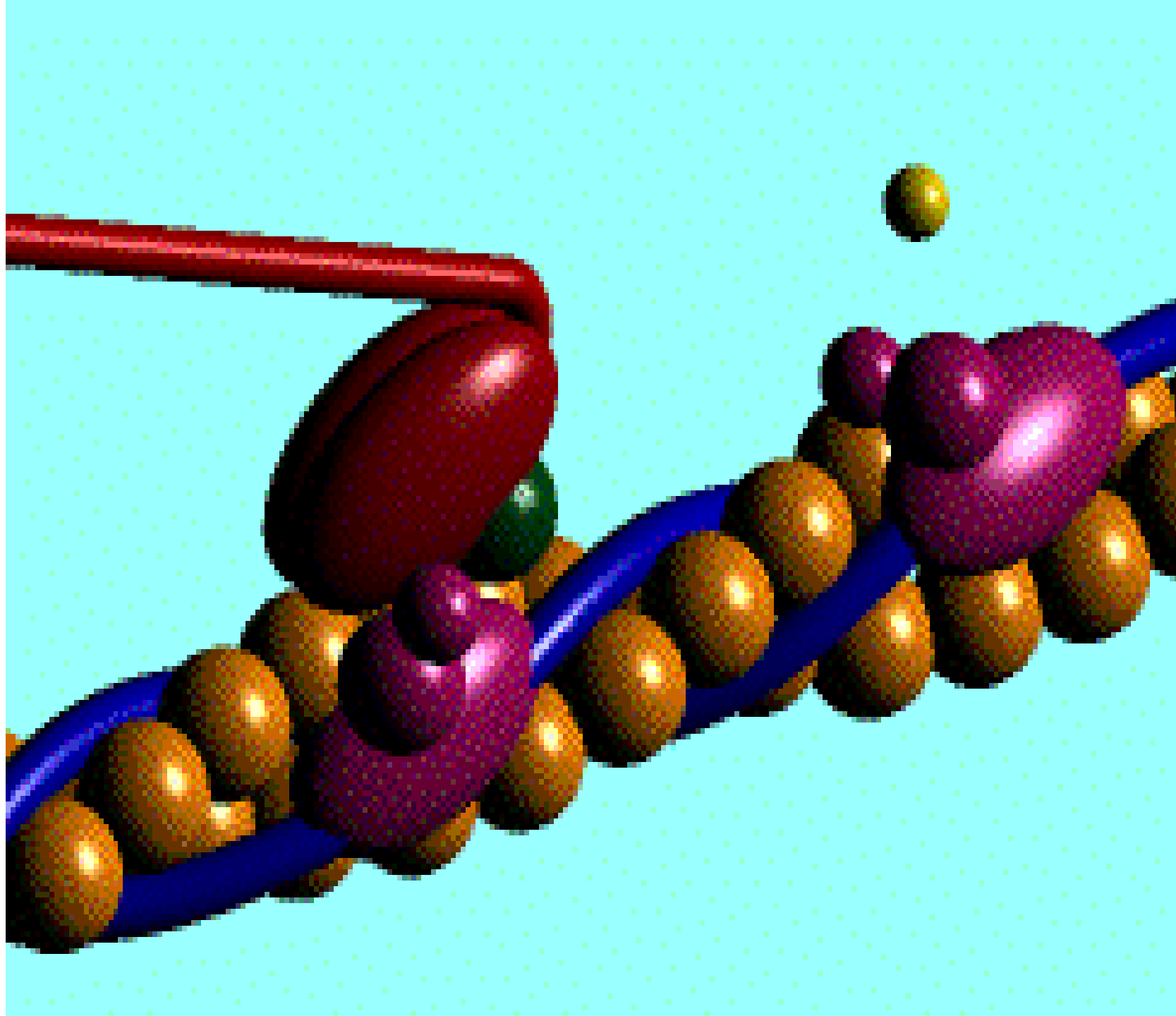


Terhelés időtartama	Példák	VO2max %	Becsült anyagcsere eloszlás (a fő energia szolgáltató kimerülése/tejsav felszaporodás után)			Regenerációs idő
			anaerob alaktacid	anaerob laktacid	aerob	
3-20 mp	labdajáték vágta, 200 m síkfutás	>160%	~15%	~60-65%	~25-30%	pár perc
20-60 mp	400 m síkfutás, 50 m úszás, 200 m kajak	~140-150%	~10%	~45-60%	~30-45%	pár perc
90-120 mp	800 m síkfutás, 500 m kajak/kenu, 200 m úszás	~115-130%	~5%	~30-45%	~50-65%	30 perc - 1 óra
3-5 perc	1500 m síkfutás, 400 m úszás, 1000 m kajak/kenu	~105-115%	~2%	~15-28%	~70-85%	30 perc - 1 óra
5-9 perc	3000 m akadály futás, 800 m úszás	~90-100%	<1%	~8-12%	~85-90%	több óra – egy két nap
20 perc – 90 perc	10 000 m síkfutás, labdajátékok	~60-90%	<1%	~5-15%	~85-95%	3-6 nap

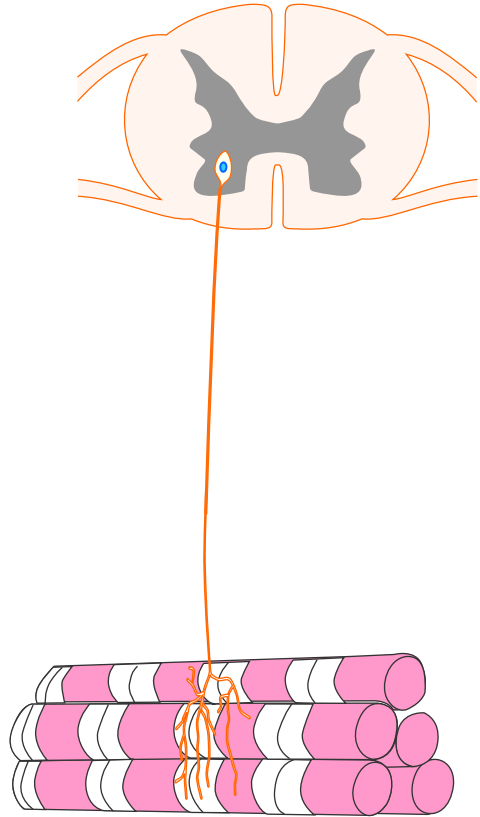


Ábra 2.6

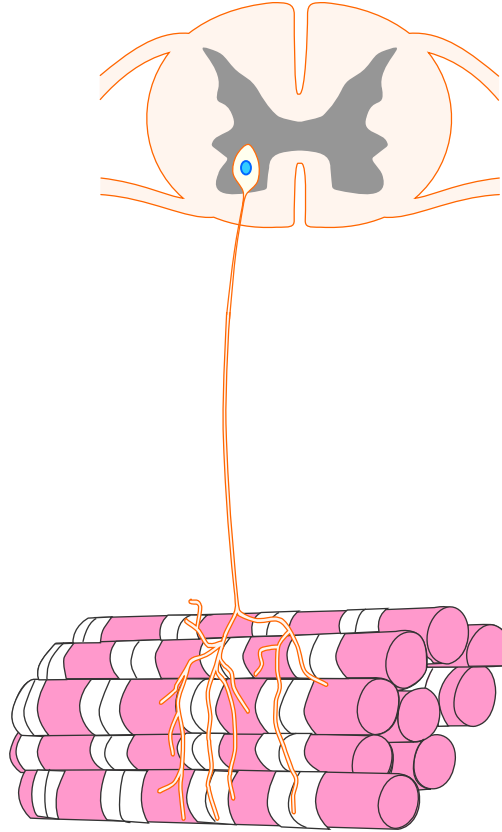




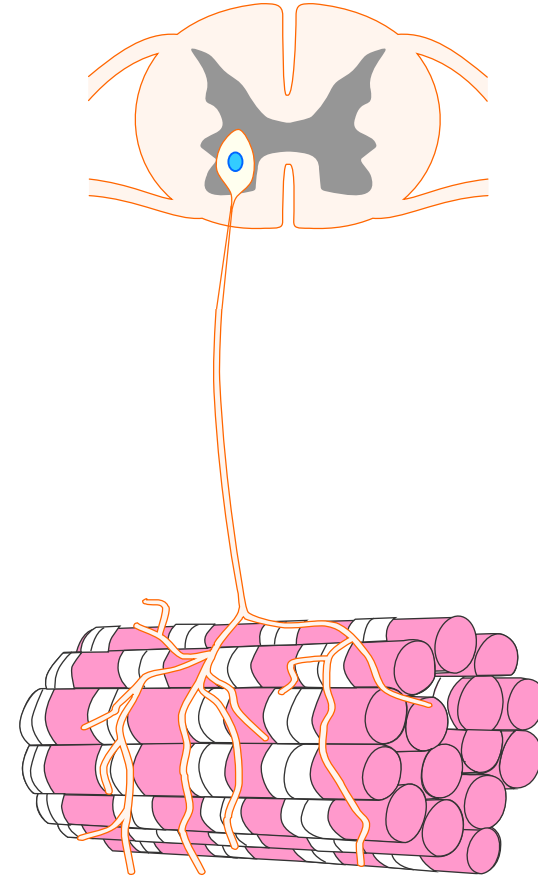
Type I.



Type IIa



Type IIb



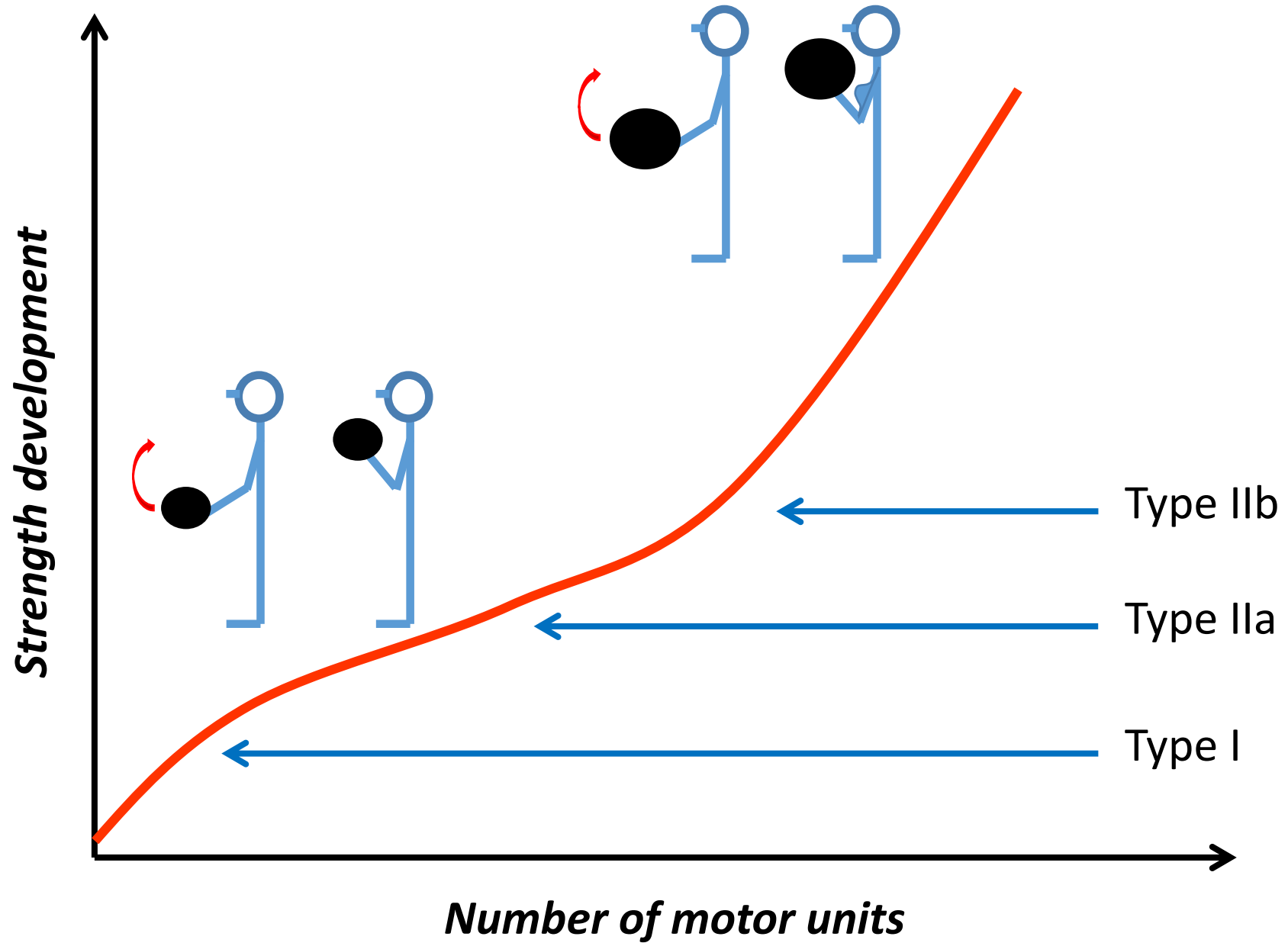
Early contraction

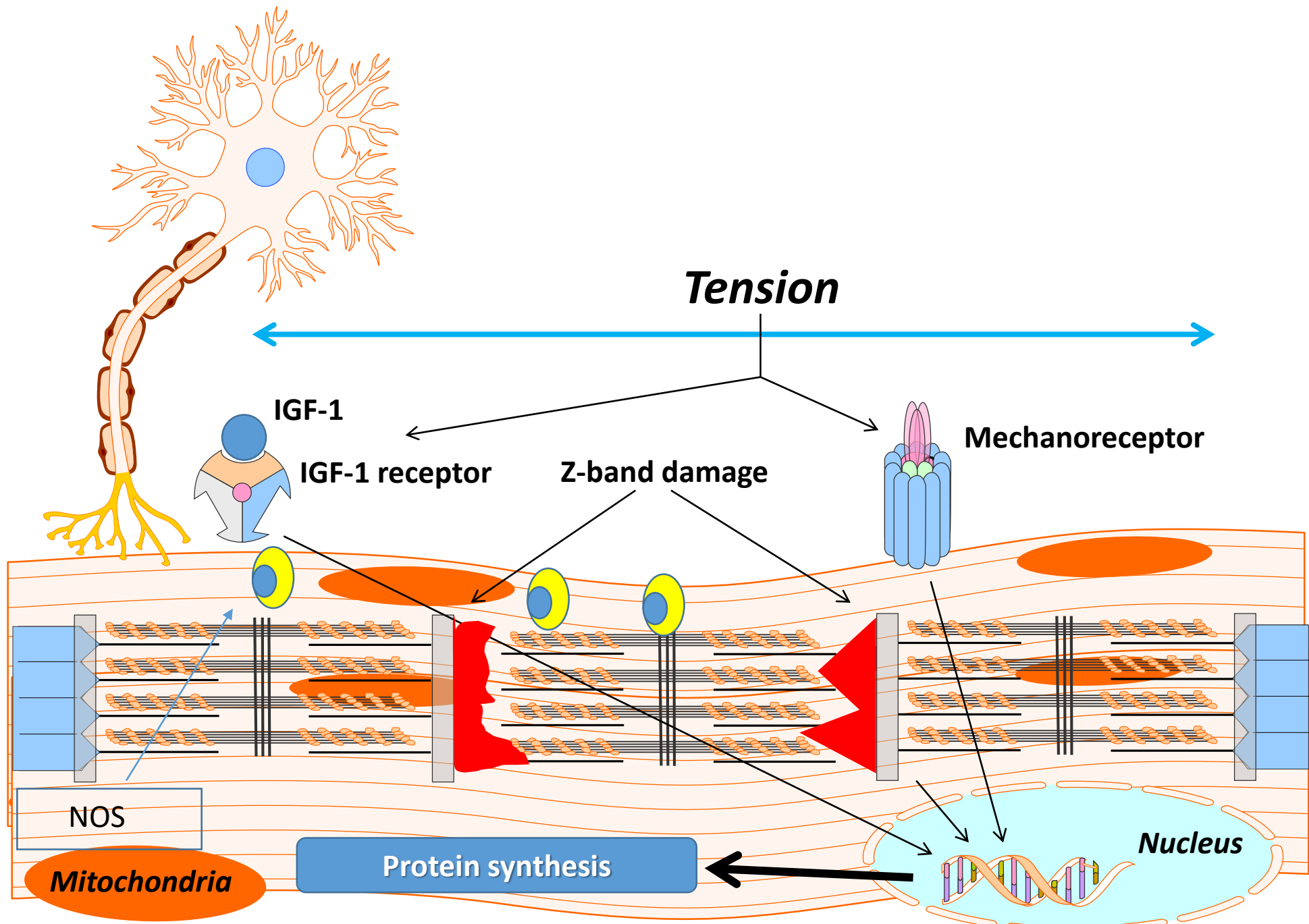
Maximum loading

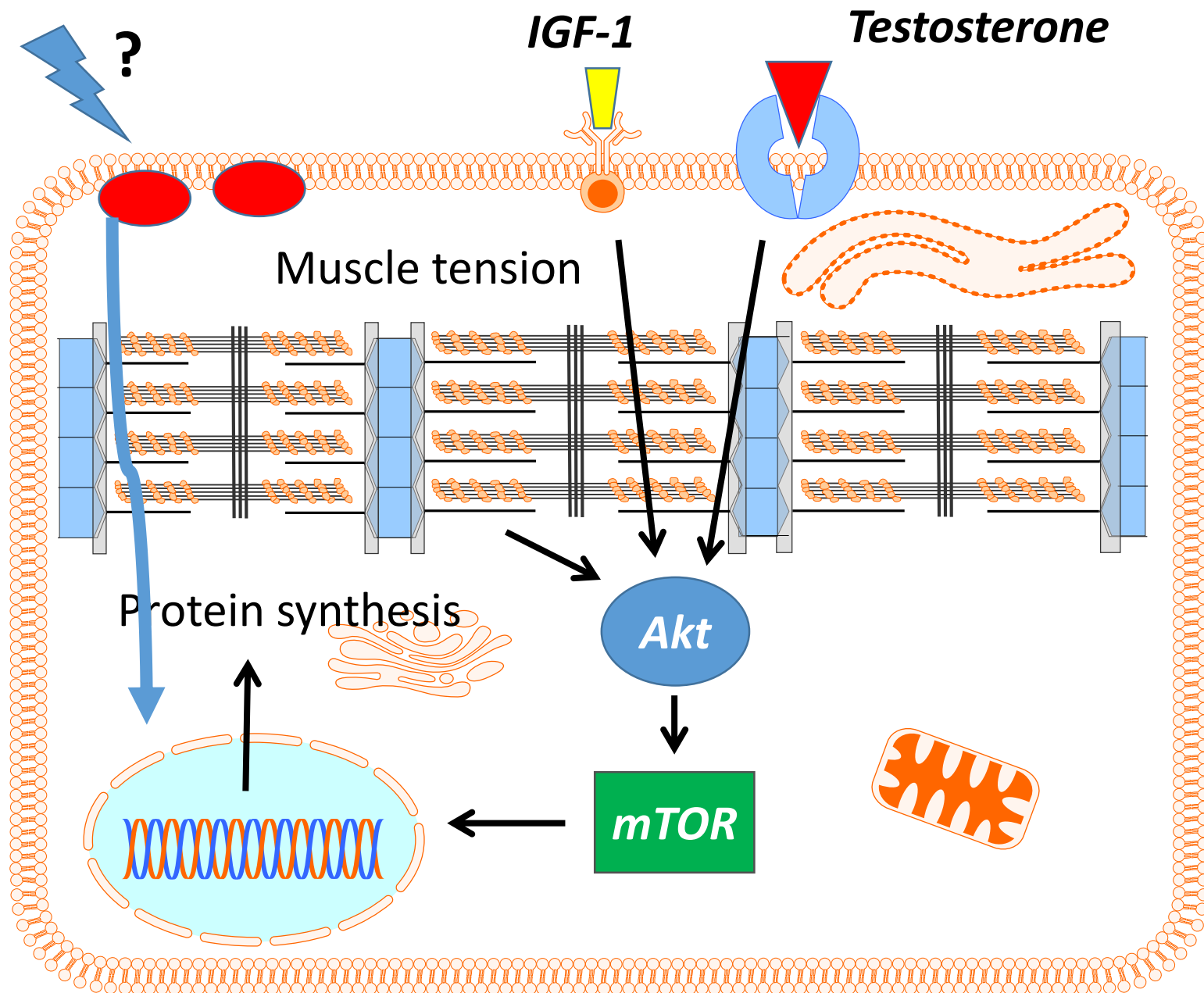
Fatigue resistant

Fatigue









High intensity interval training (HIIT) improves resting blood pressure, metabolic (MET) capacity and heart rate reserve without compromising cardiac function in sedentary aging men



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ABSTRACT

Background: This study examined a programme of pre-conditioning exercise with subsequent high intensity interval training (HIIT) on blood pressure, echocardiography, cardiac strain mechanics and maximal metabolic (MET) capacity in sedentary (SED) aging men compared with age matched masters athletes (LEX).

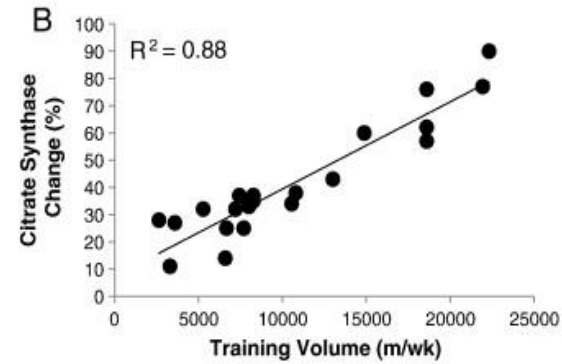
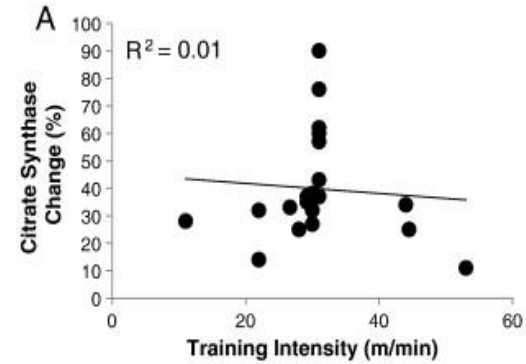
Methods: Using a STROBE compliant observational design, 39 aging male participants (SED; $n = 22$, aged 62.7 ± 5.2 yrs) (LEX; $n = 17$, aged = 61.1 ± 5.4 yrs) were recruited to a study that necessitated three distinct assessment phases; enrolment (Phase A), following pre-conditioning exercise in SED (Phase B), then following 6 weeks of HIIT performed once every five days by both groups before reassessment (Phase C). Hemodynamic, echocardiographic and cardiac strain mechanics were obtained at rest and maximal cardiorespiratory and chronotropic responses were obtained at each measurement phase.

Results: The training intervention improved systolic, mean arterial blood pressure, rate pressure product and heart rate reserve (each $P < 0.05$) in SED and increased MET capacity in both SED and LEX ($P < 0.01$) which was amplified by HIIT. Echocardiography and cardiac strain measures were unremarkable apart from trivial increase to intra-ventricular septum diastole (IVSd) ($P < 0.05$) and decrease to left ventricular internal dimension diastole (LVId) ($P < 0.05$) in LEX following HIIT.

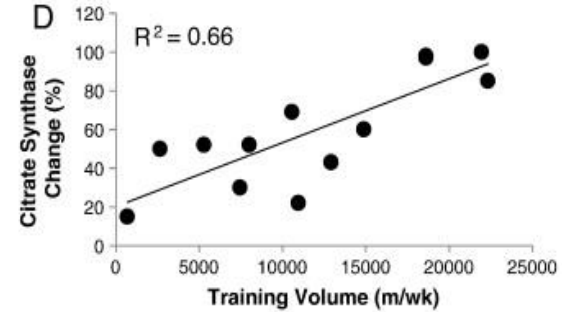
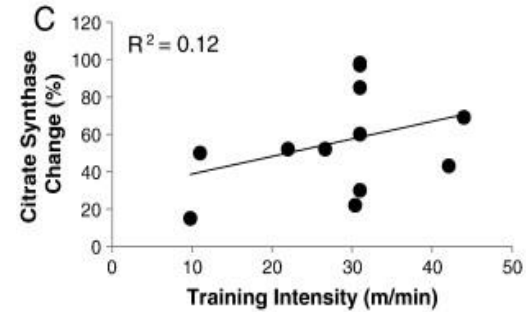
Conclusions: A programme of preconditioning exercise with HIIT induces clinically relevant improvements in blood pressure, rate pressure product and encourages recovery of heart rate reserve in SED, while improving maximal MET capacity in both SED and LEX without inducing any pathological cardiovascular remodeling. These data add to the emerging repute of HIIT as a safe and promising exercise prescription to improve cardiovascular function and metabolic capacity in sedentary aging.

The relationship between training intensity and training volume and training-induced changes in citrate synthase activity of rats.

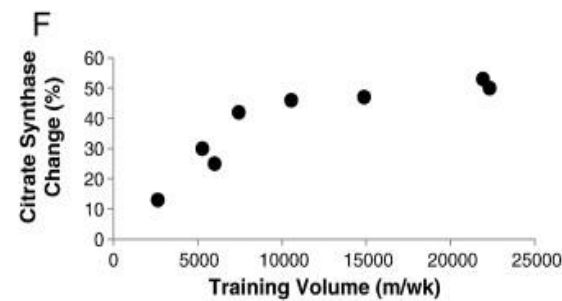
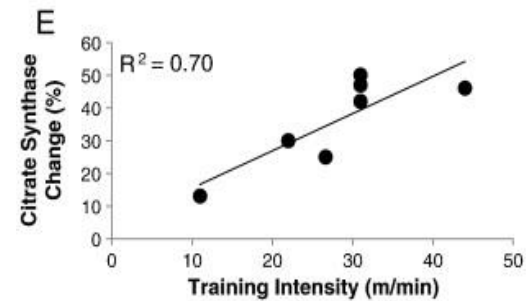
red soleus



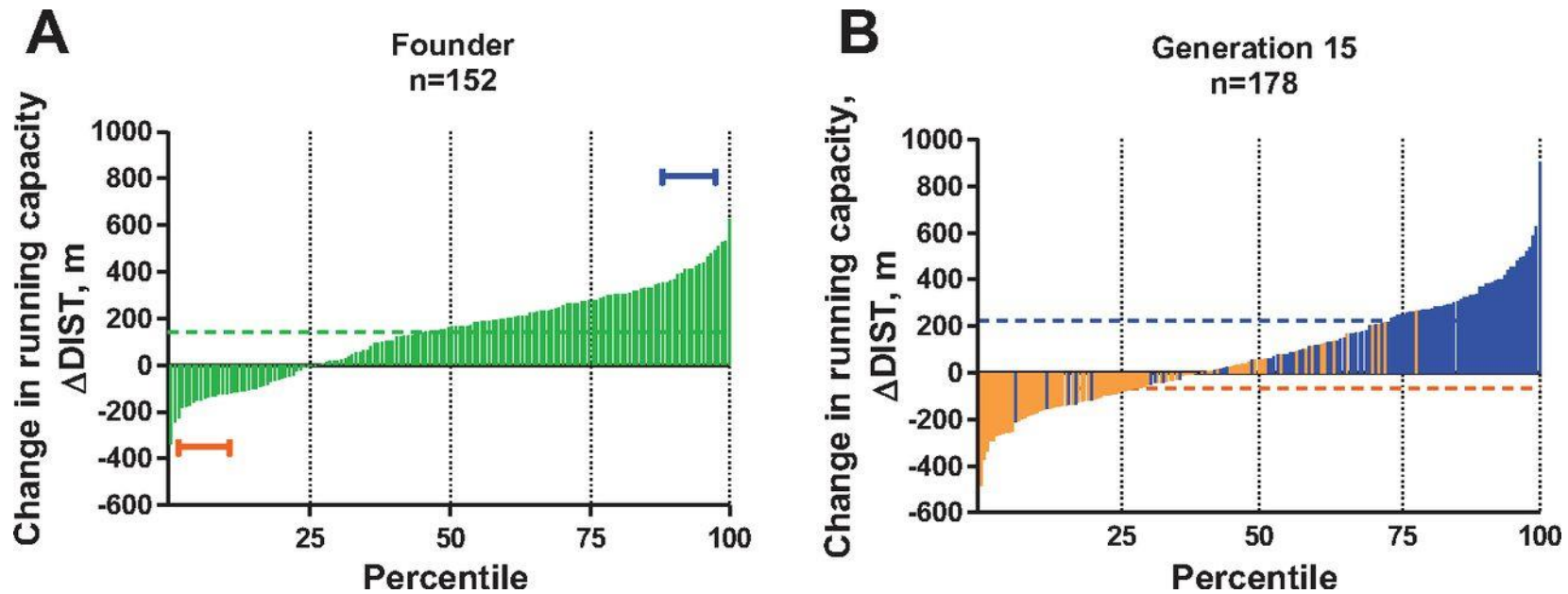
red vastus



white vastus



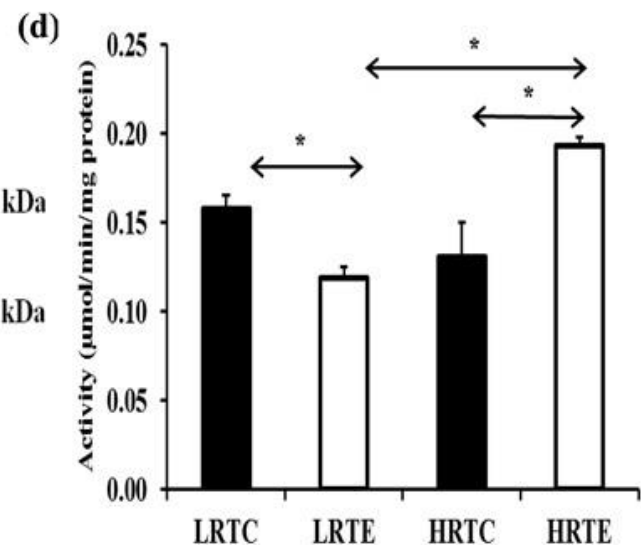
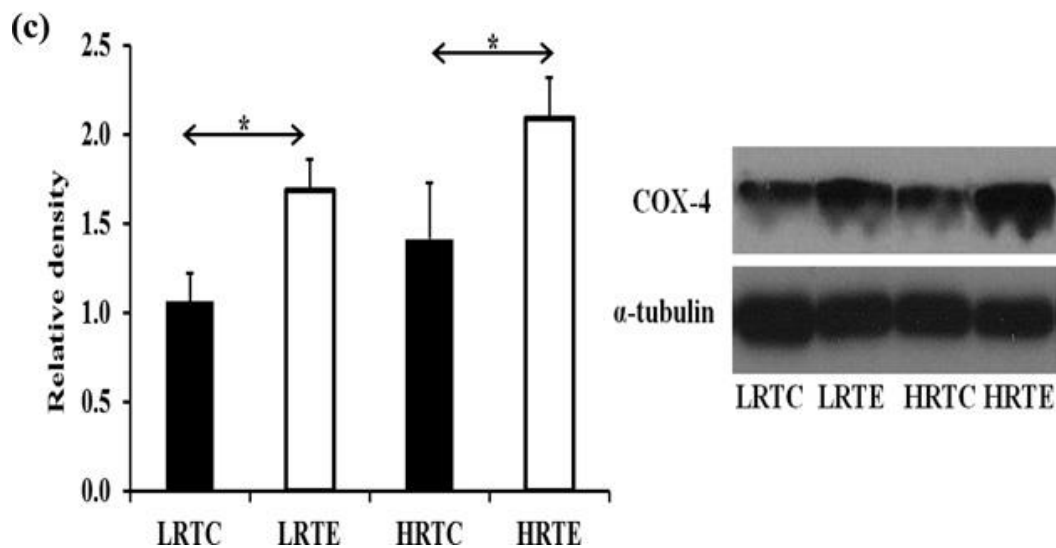
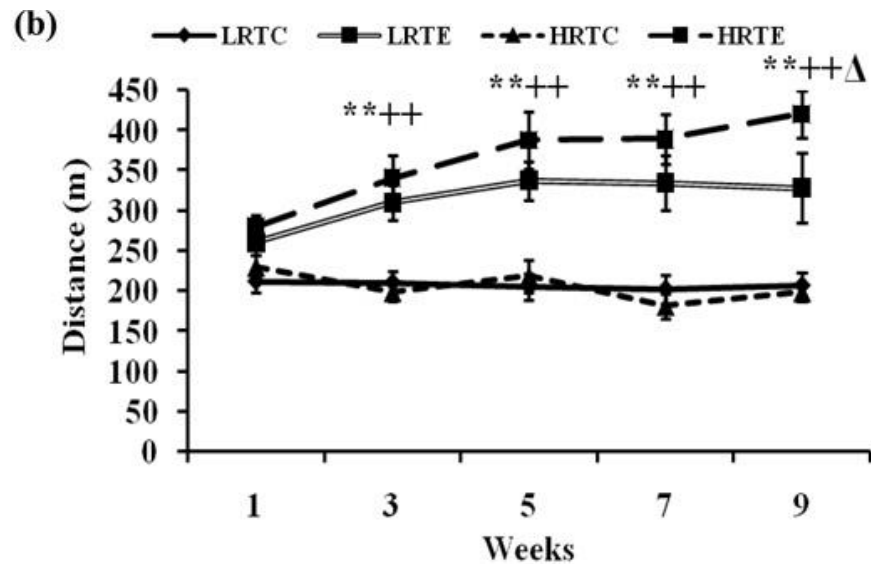
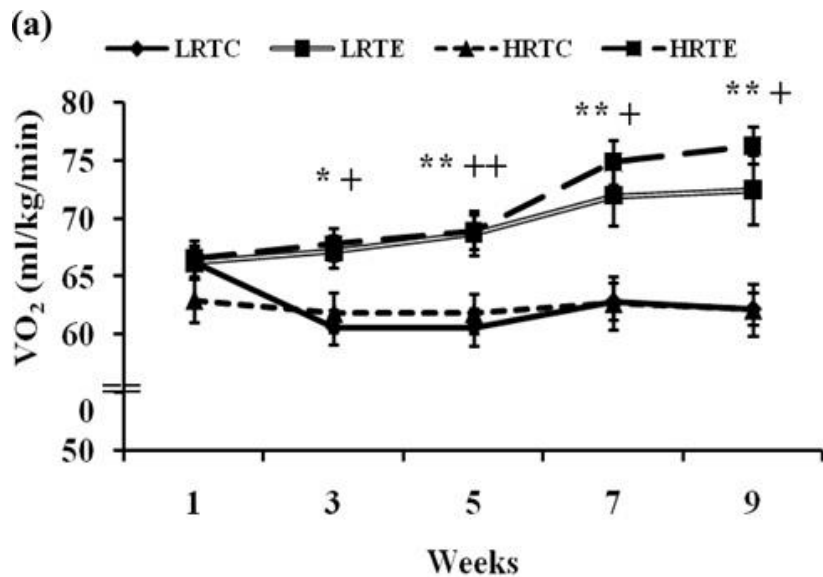
Response to exercise training in genetically heterogeneous rat populations as part of a large-scale selective breeding program for low and high response to training (population 2).



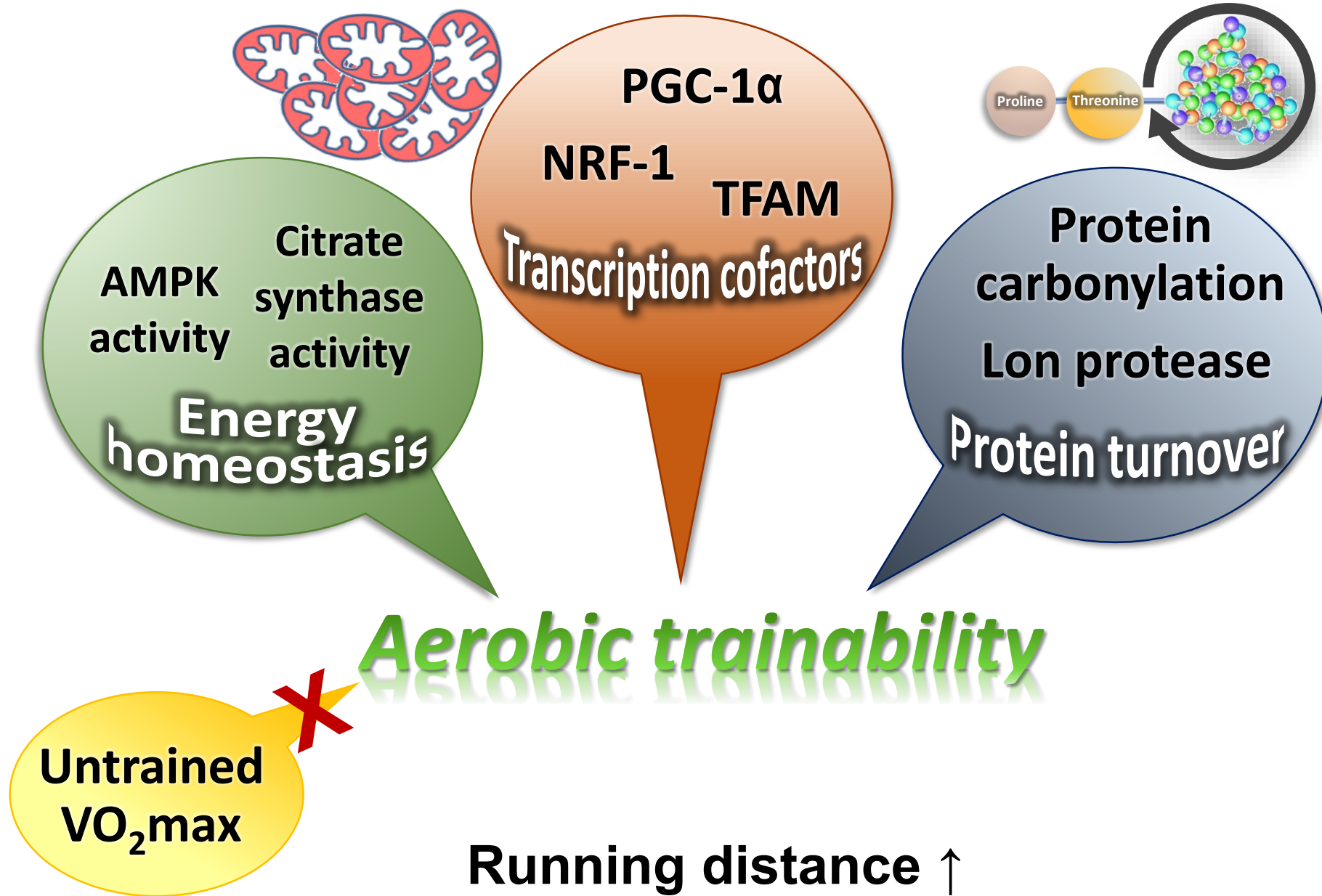
Lauren Gerard Koch et al. *Physiol. Genomics* 2013;45:606-614

Physiological Genomics

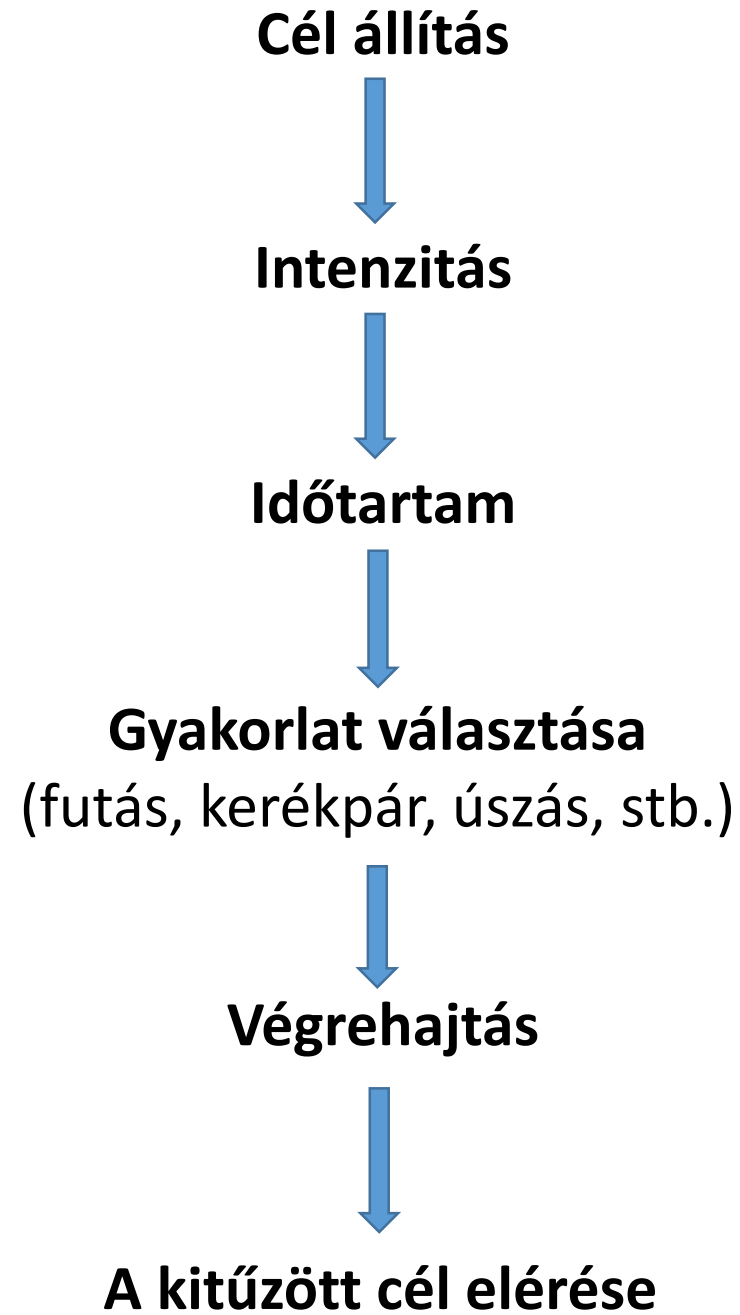
The effects of endurance on training resistant and responder rats



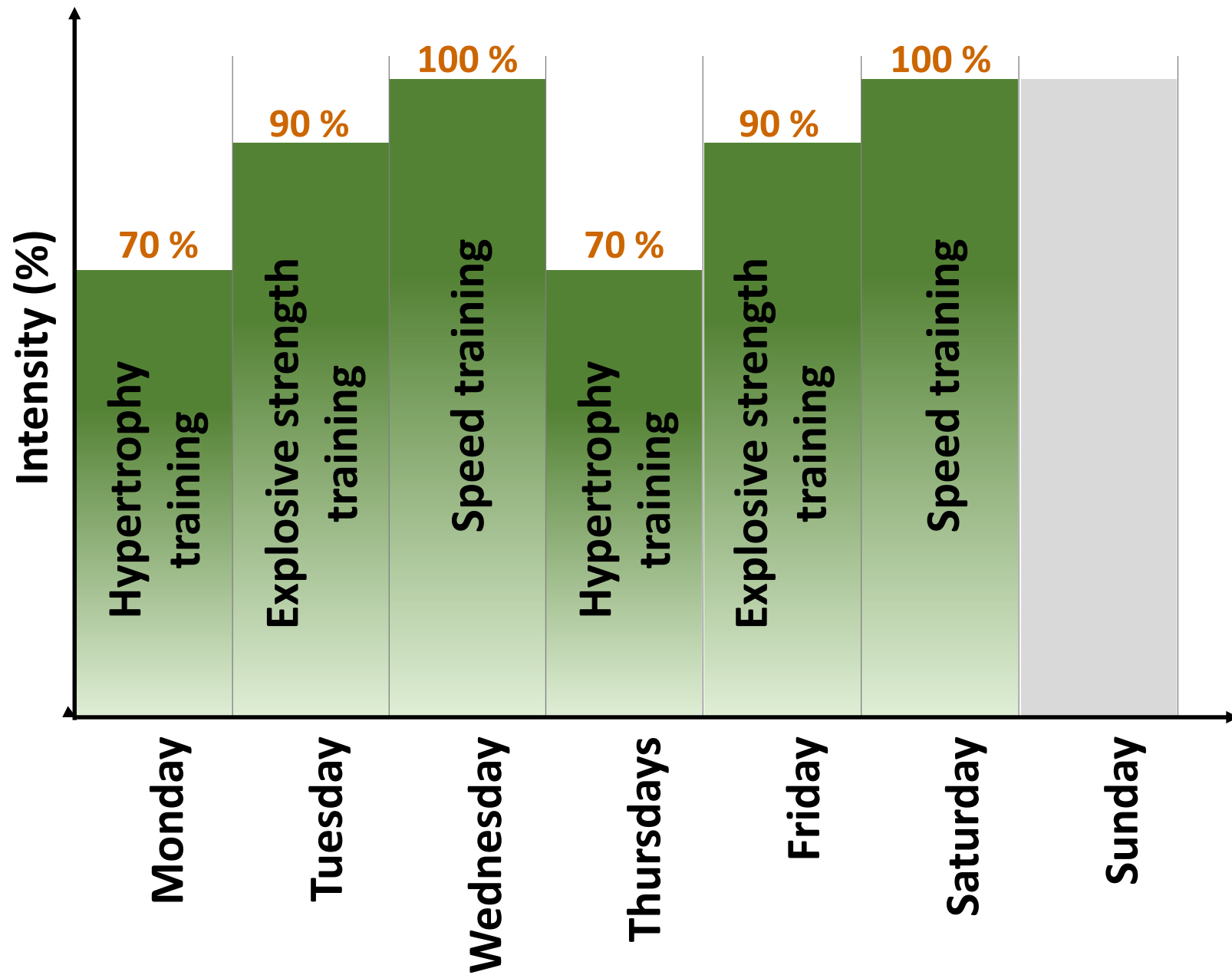
Factors of mitochondrial network & biogenesis



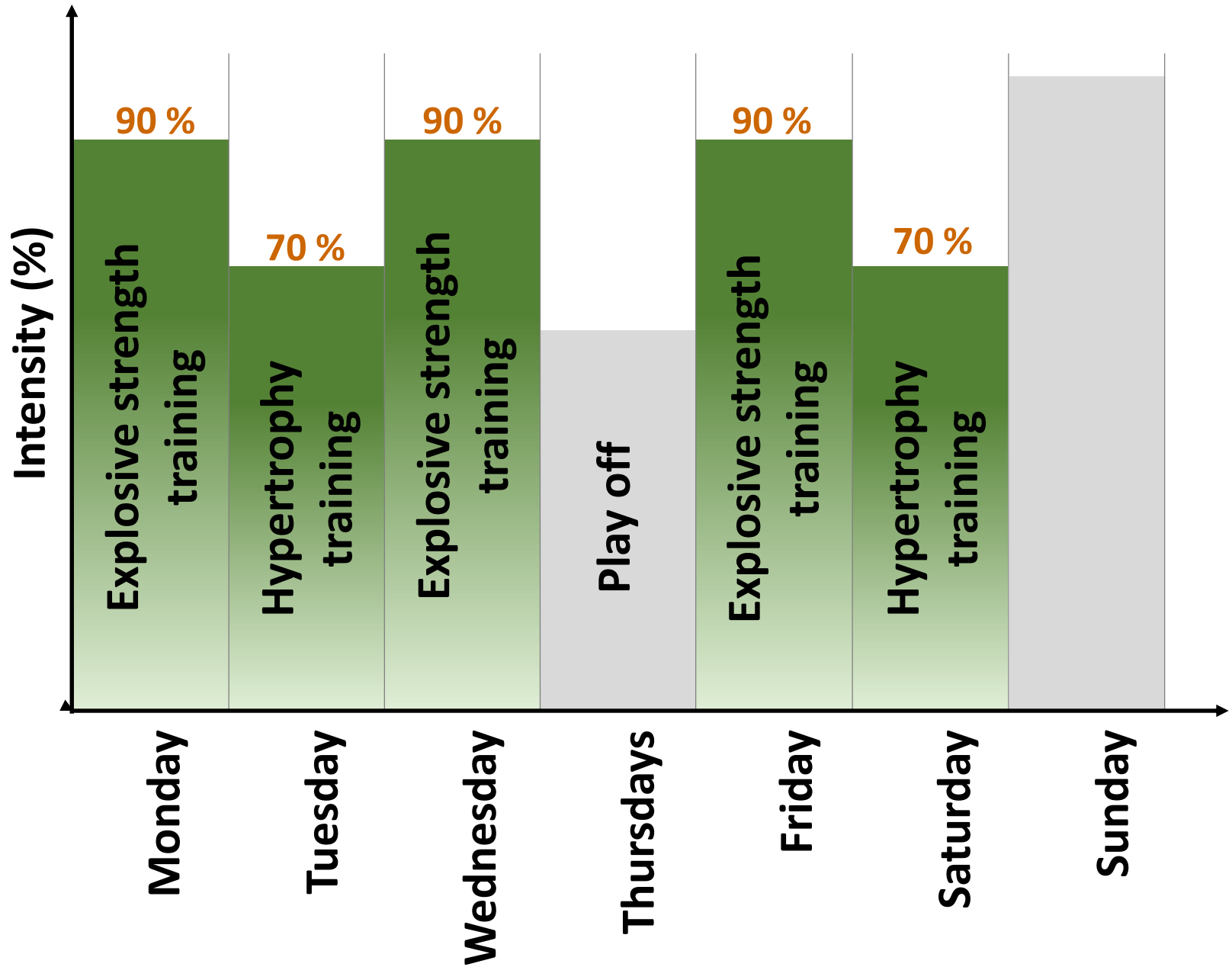
Ábra 13.1



Mikroc: Explosive strength training

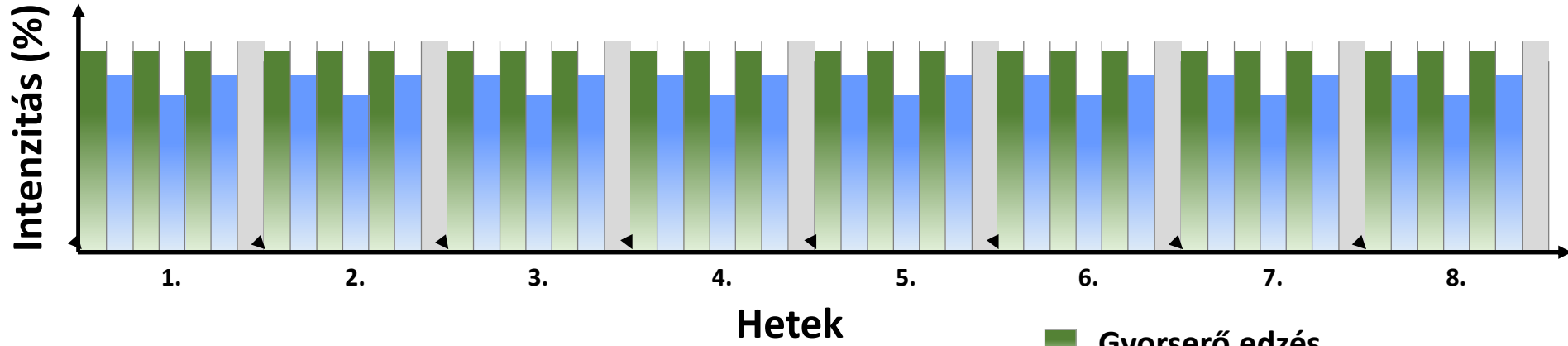


Goal of microcycle: Explosive strength training



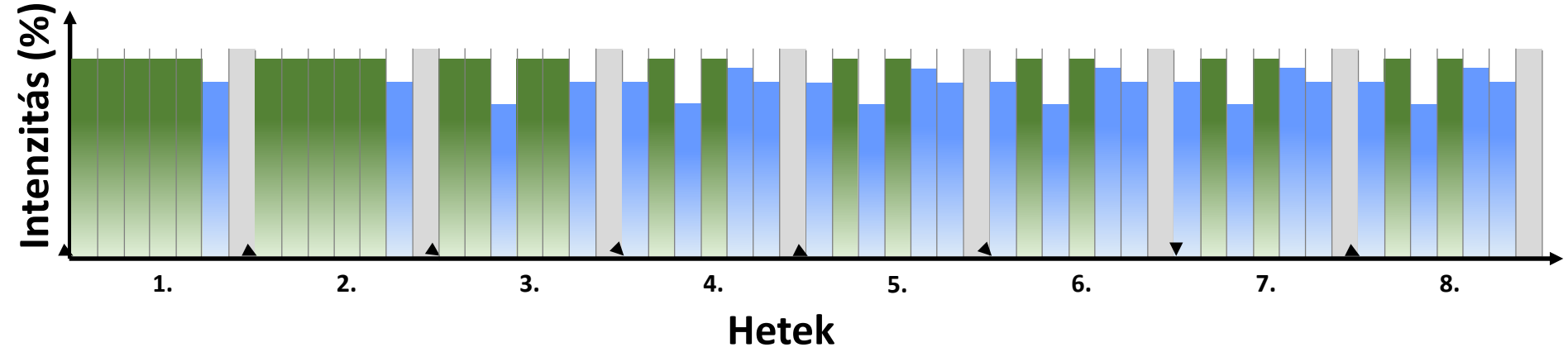
B

Lineáris terhelés Makrociklus cél: Gyorselő fejlesztése



C

Blokk terhelés Makrociklus cél: Gyorselő fejlesztése



Az életkorral csökken az izomtömeg, erő, gyors rostok %-os aránya,
VO2max és a szív alkalmazkodó képessége

Rendszeres edzéssel a csökkenés mértéke lassítható

Az edzésre adott alkalmazkodás mértéke csökken, de még így is jelentős.

Az edzések intenzitása és terjedelme az életkor növekedésével nem kell, hogy jelentősen változzon.

Az edzések közötti regenerációs idő mértéke nő az életkorral.

Hajrá!!!