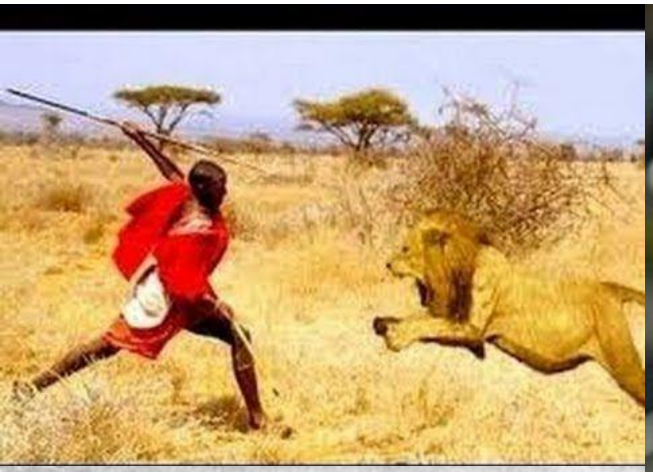
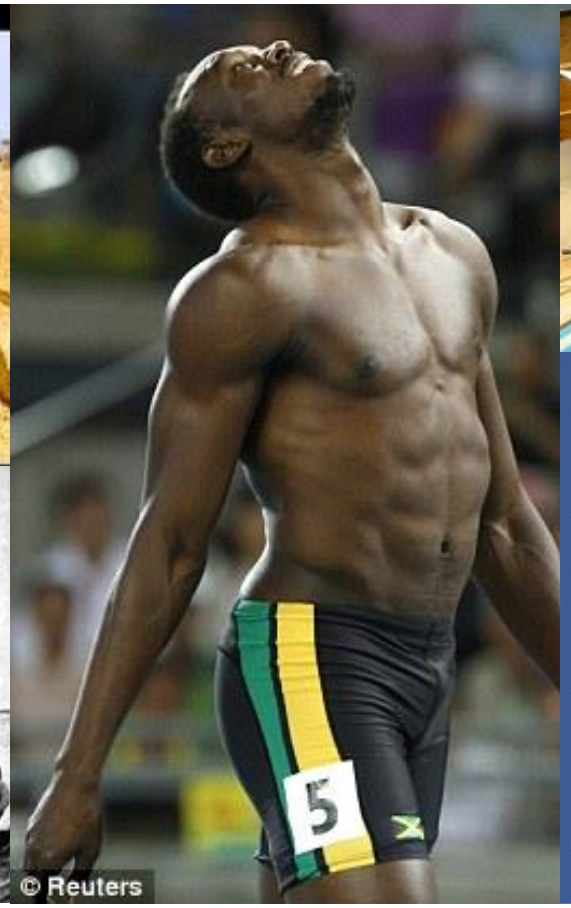
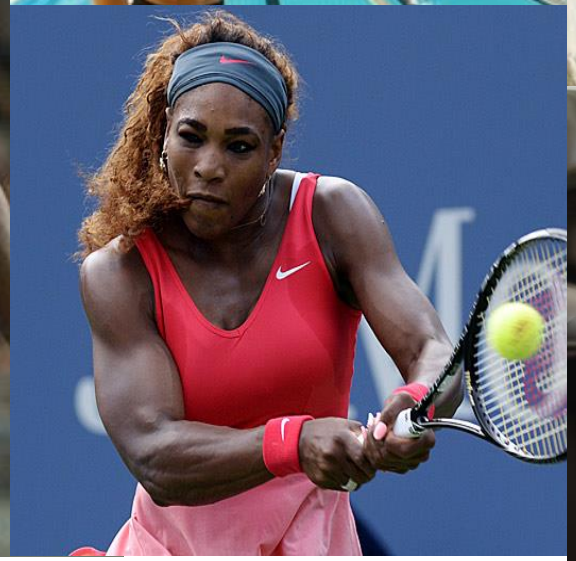
Hví møðast vit av kropsligum arbeiði?
Paradigmuskifti í 100 ár

Magni Mohr, professori í Arbeiðs- og Ítróttarfysiologi







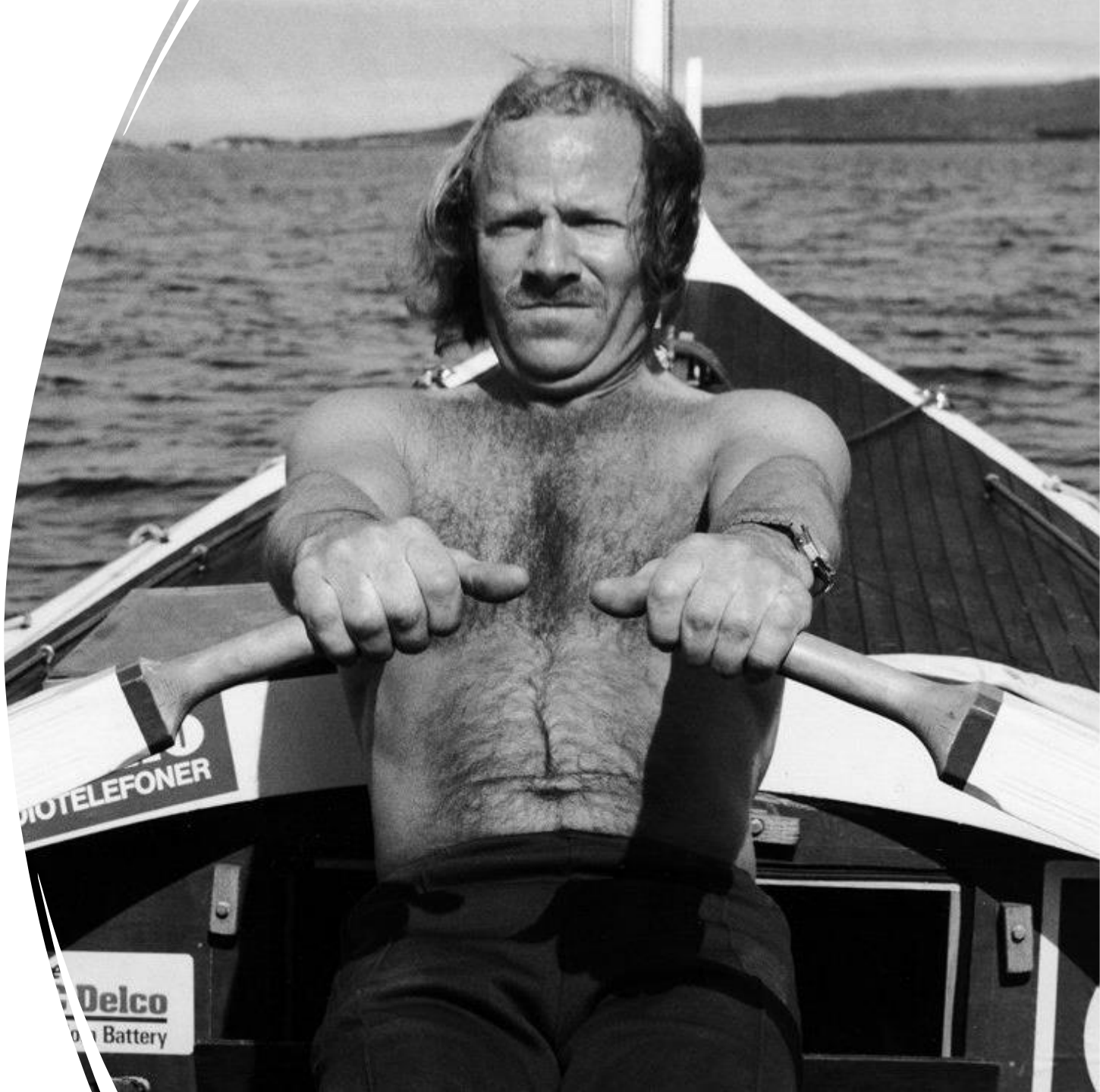
Hvat er orsøkin til at vit gerast móð?

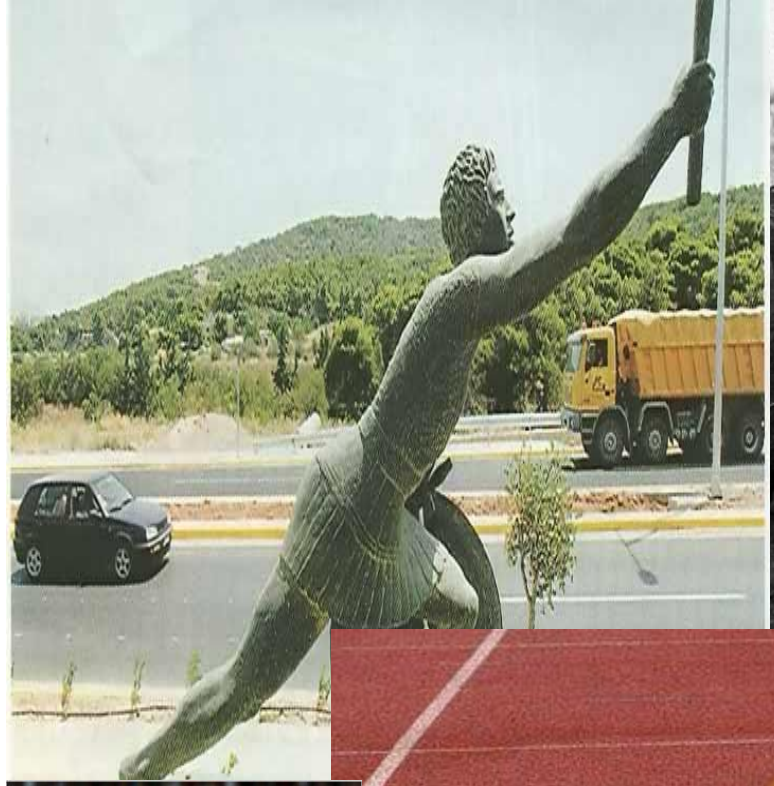
Møði í søguligum høpi

- Søgan um griska boðberan, Pheidippides, sum rann úr Marathon til Athens fyri at fortelja at grikkar høvdi vunnið Slagið við Marathon ímóti persum (490 áðrenn okkara tíðarrokning)
- 

Føroyskar sagnir og so hetjur í nýggjari tíð

- Snopprikkur
- Tofta Regin
- Sigmundur Brestisson
- Bardagin í Mannafellsdali



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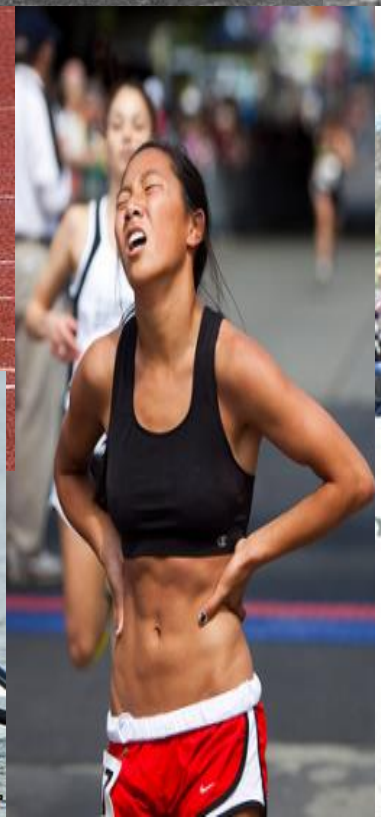
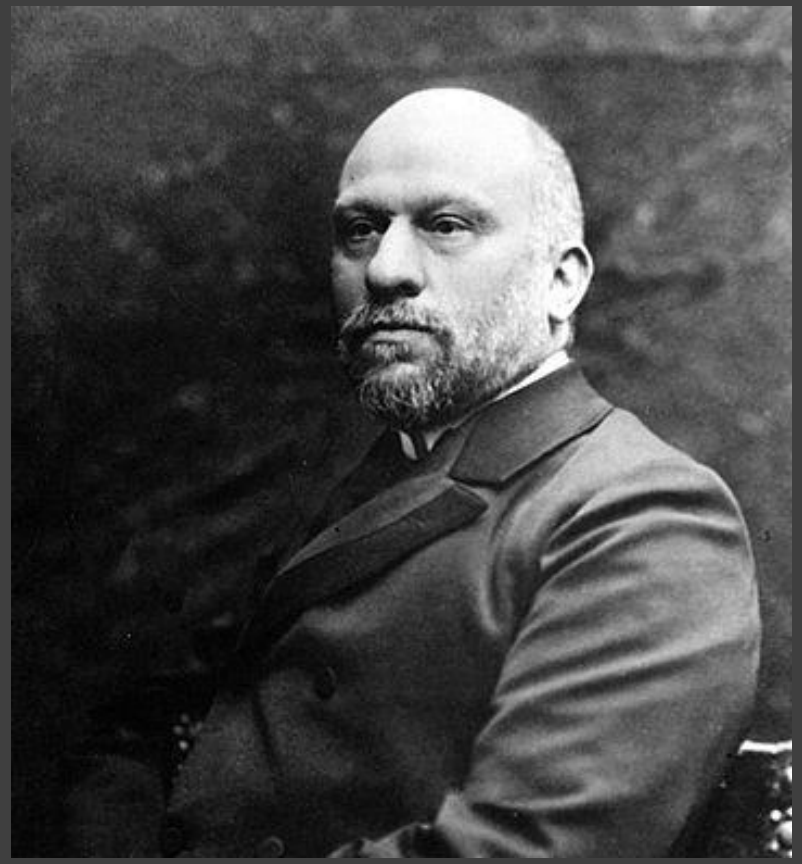
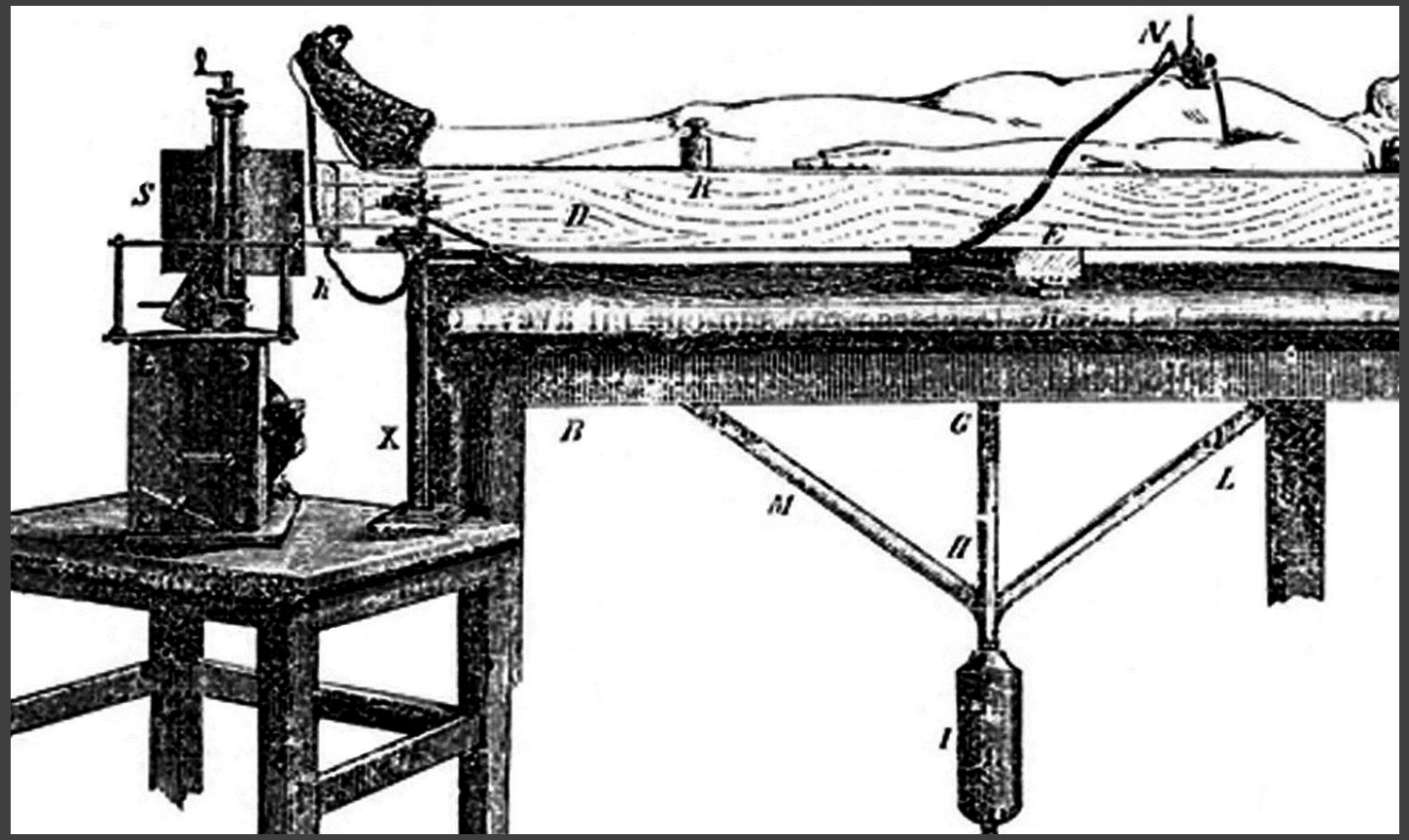
GBR
GETTY IMAGES SPORT




asics





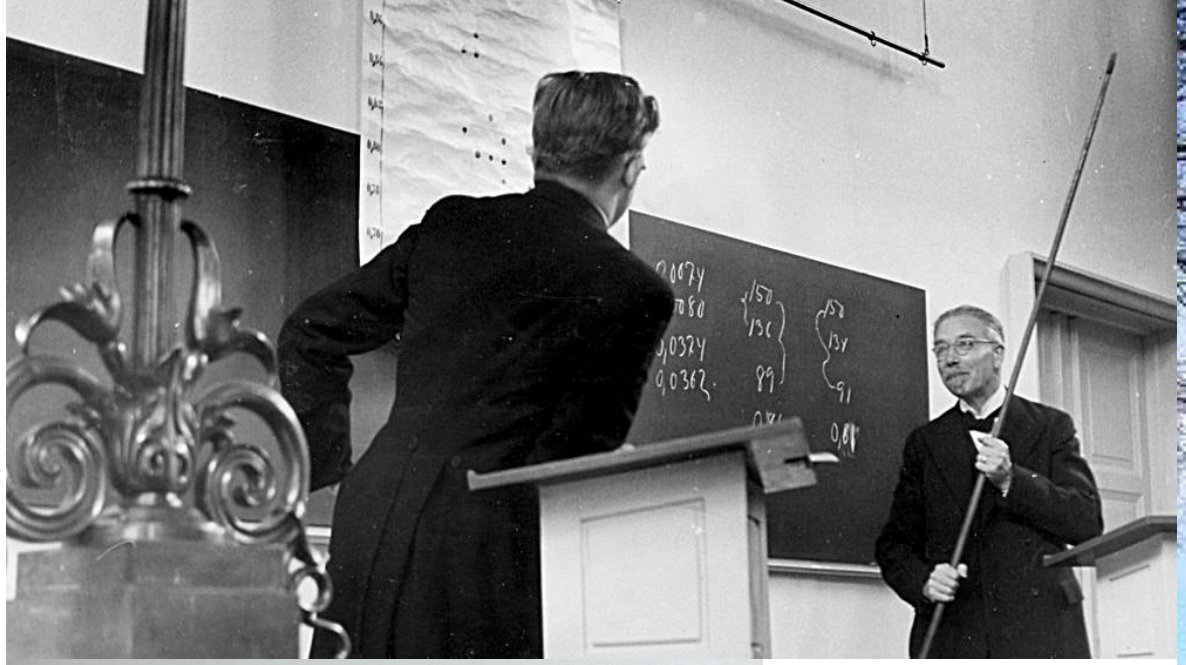
Angelo Mosso:
Tann fyrsti sum vísindaliga lýsti hugtakið vøddamøði seint í 1800-talinum

Mosso royndi at uppfinna tann fyrsta “skannaran” av heilanum og hansara model varð byrjanin til MR og PET-skannaran

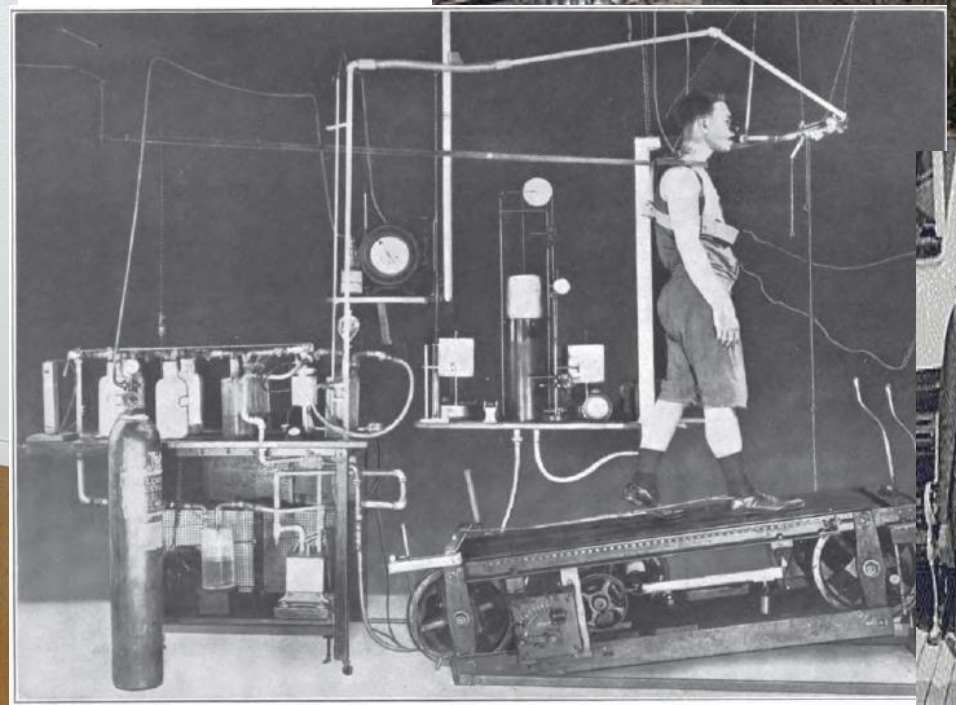
Fyrsta vísindaliga verk um møði, La Fatica, kemur í 1891

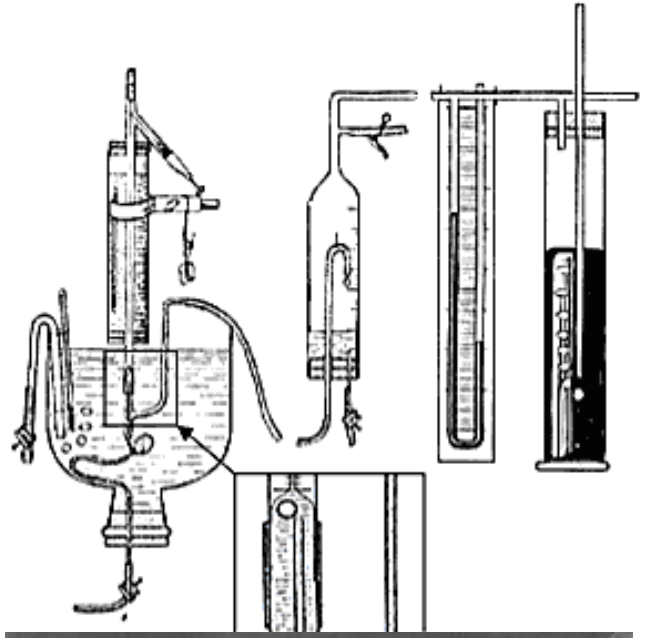
Mosso setur fram ástøði um, at vødda-møði kemur av órógv í javnvágini ella homeostastuni í heilanum, nervaskipanini og vøddunum.

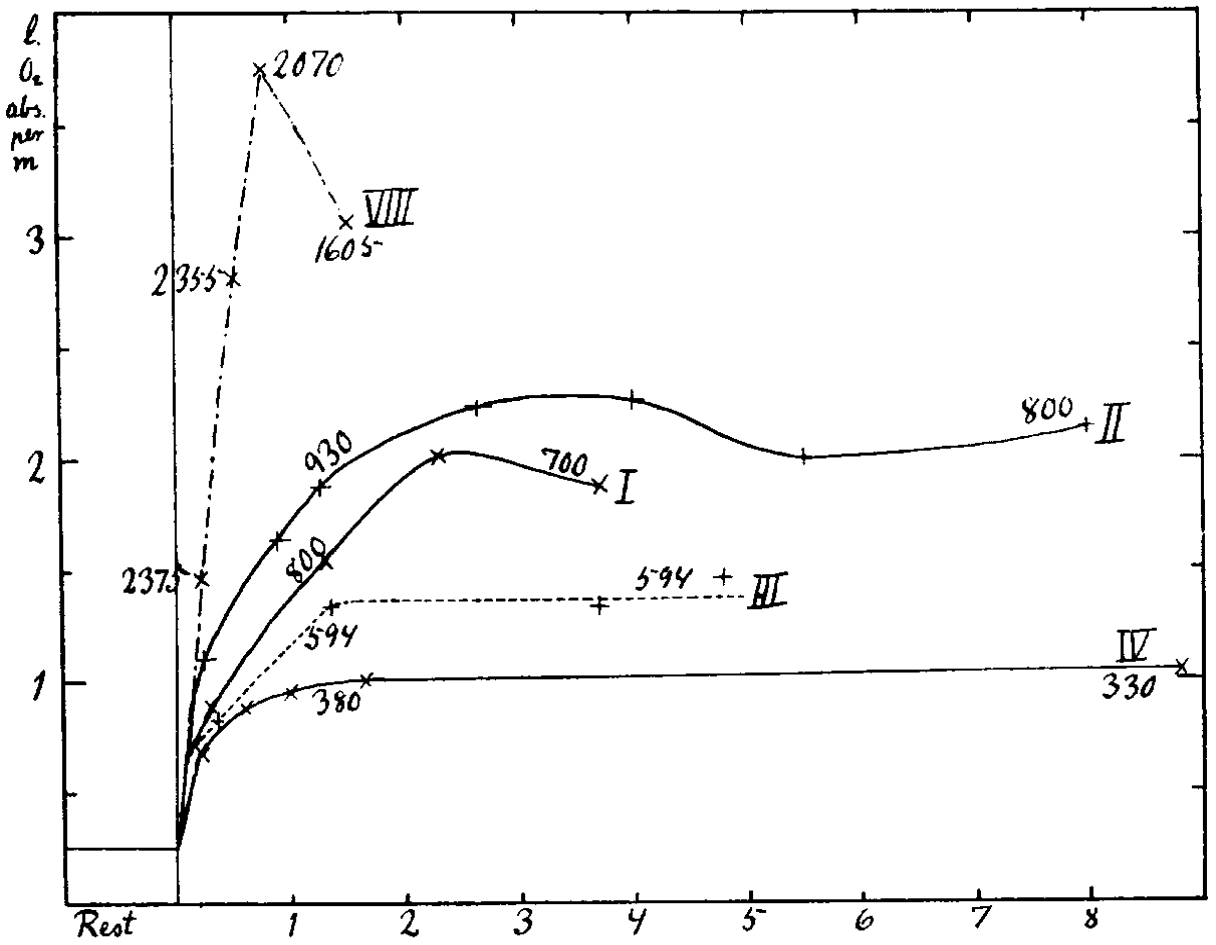
FRÓÐSKAPARSETUR FØROYA



August Krogh

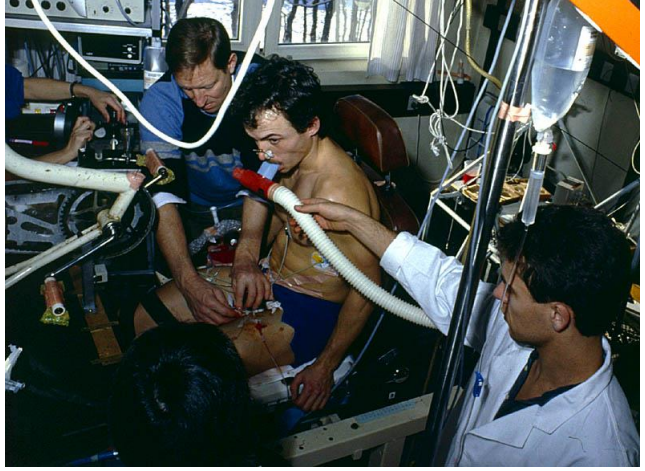




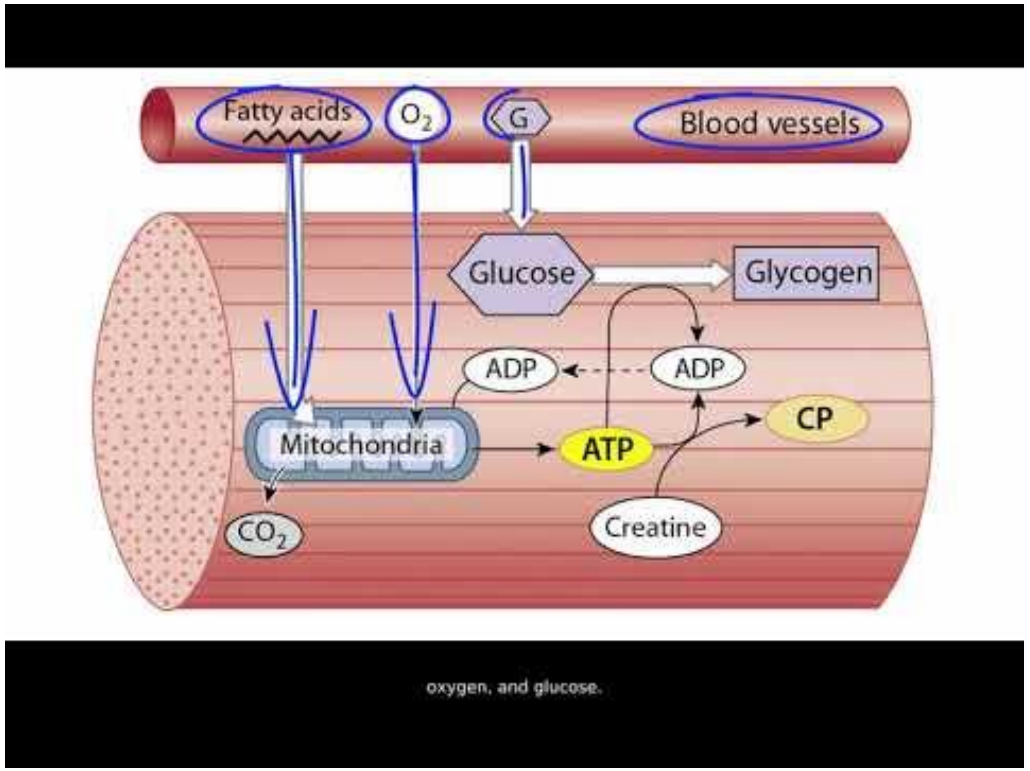


Curves showing oxygen absorption before and during work. Figures along curves kg. m. per min.

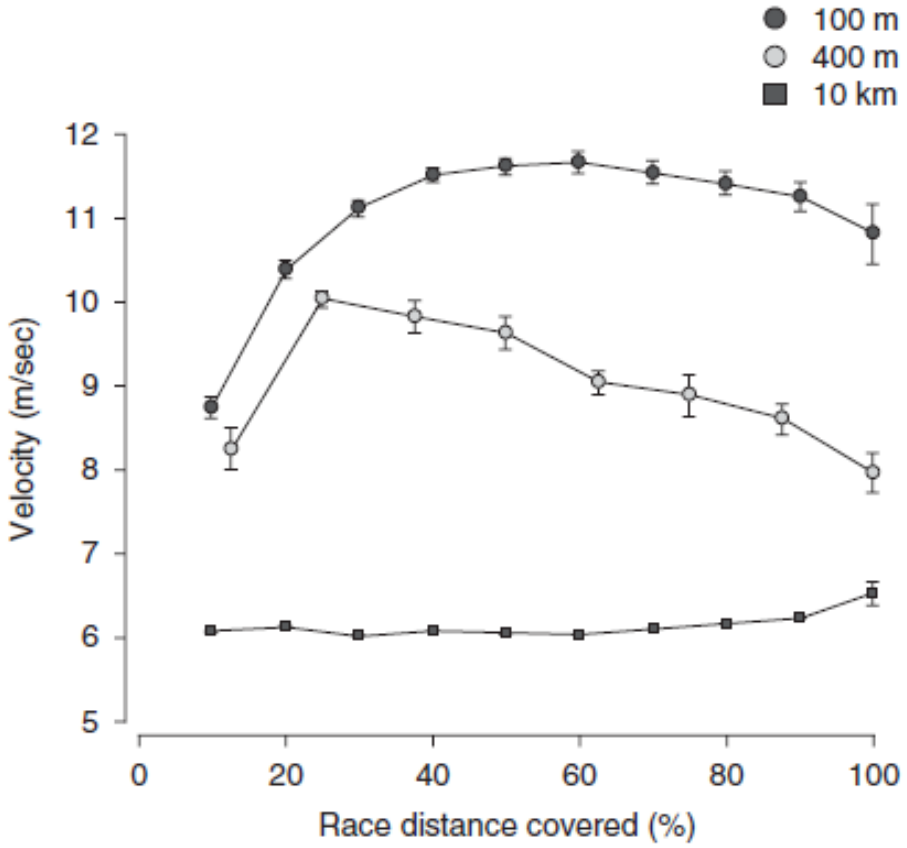
We have pointed out(1) that at the transition from rest to work the oxygen intake does not rise instantaneously though certainly very rapidly to a level corresponding to the amount of work performed.



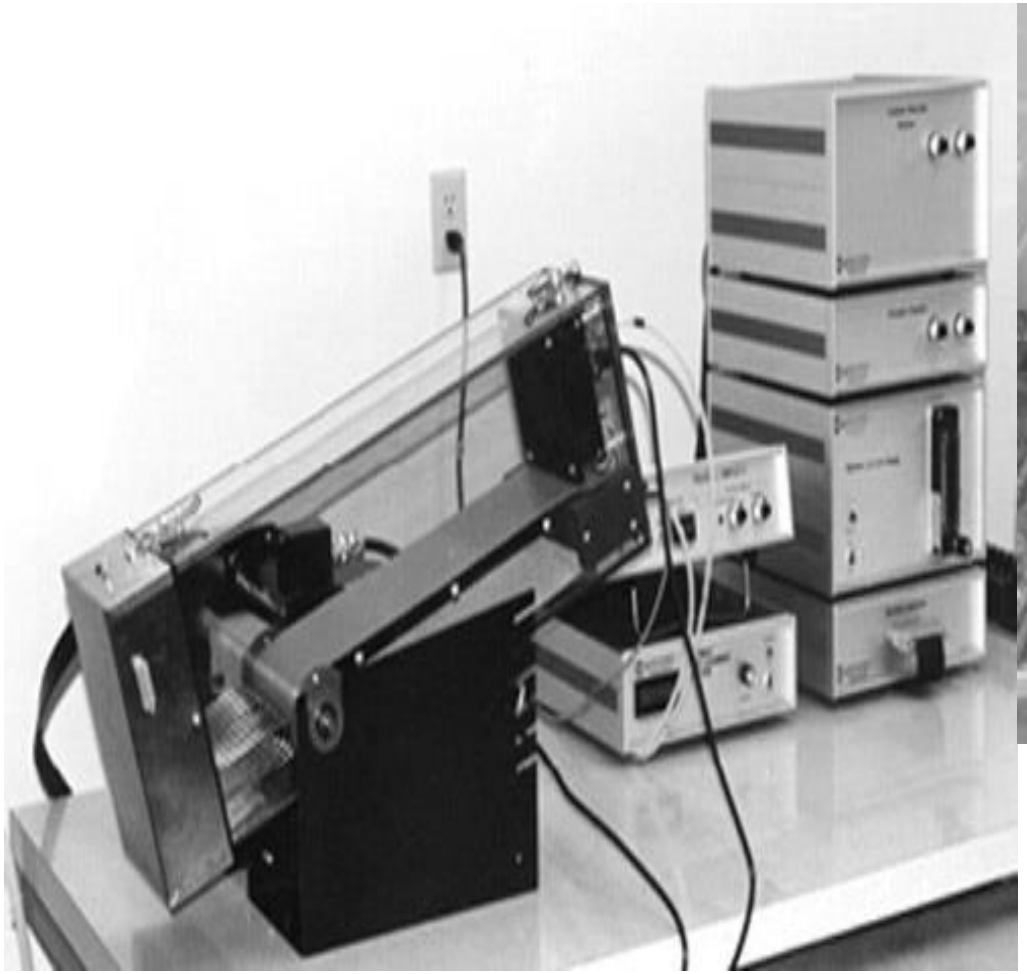
Kanningar í 1950-1980´unum leggja í stóran mun dent á, at møði kemur av orkutroti í vøddakyknunum, sum orsøk av oxygentroti og ella broyttum evnisskifti.

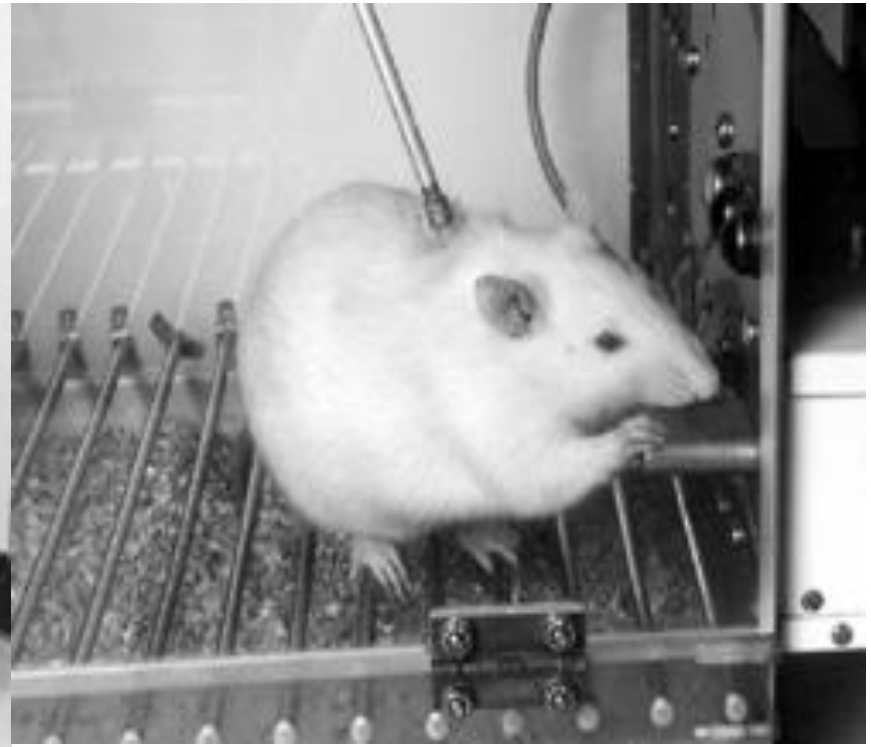


Renniferð á 100 m, 400 m og 10 km teinum hjá úrvalsrennarum

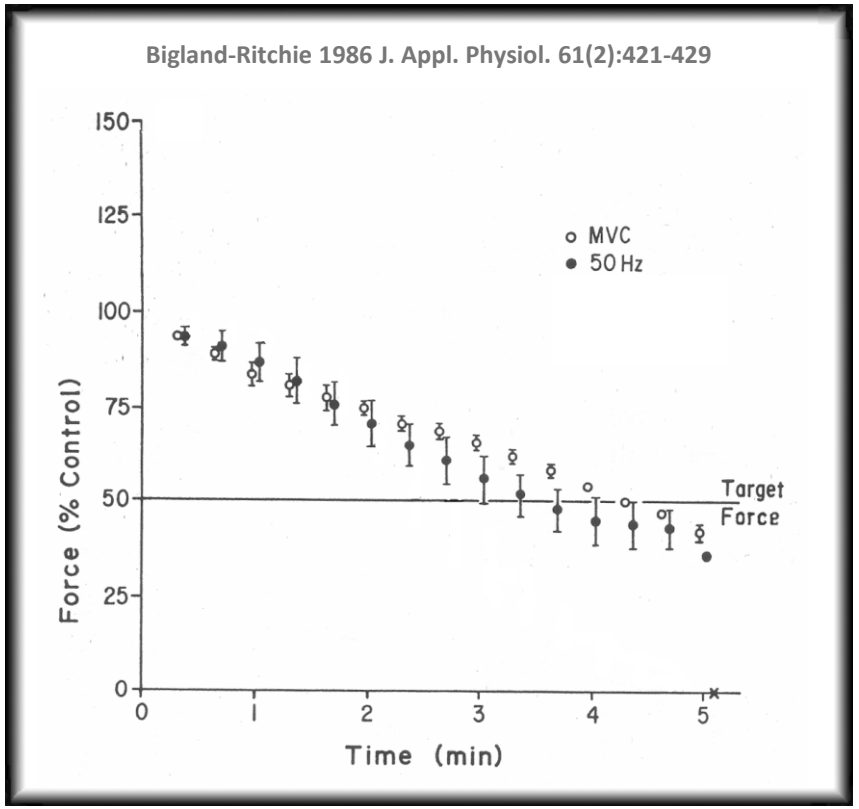


Djóramodellir – kanningar av kropsligari møði



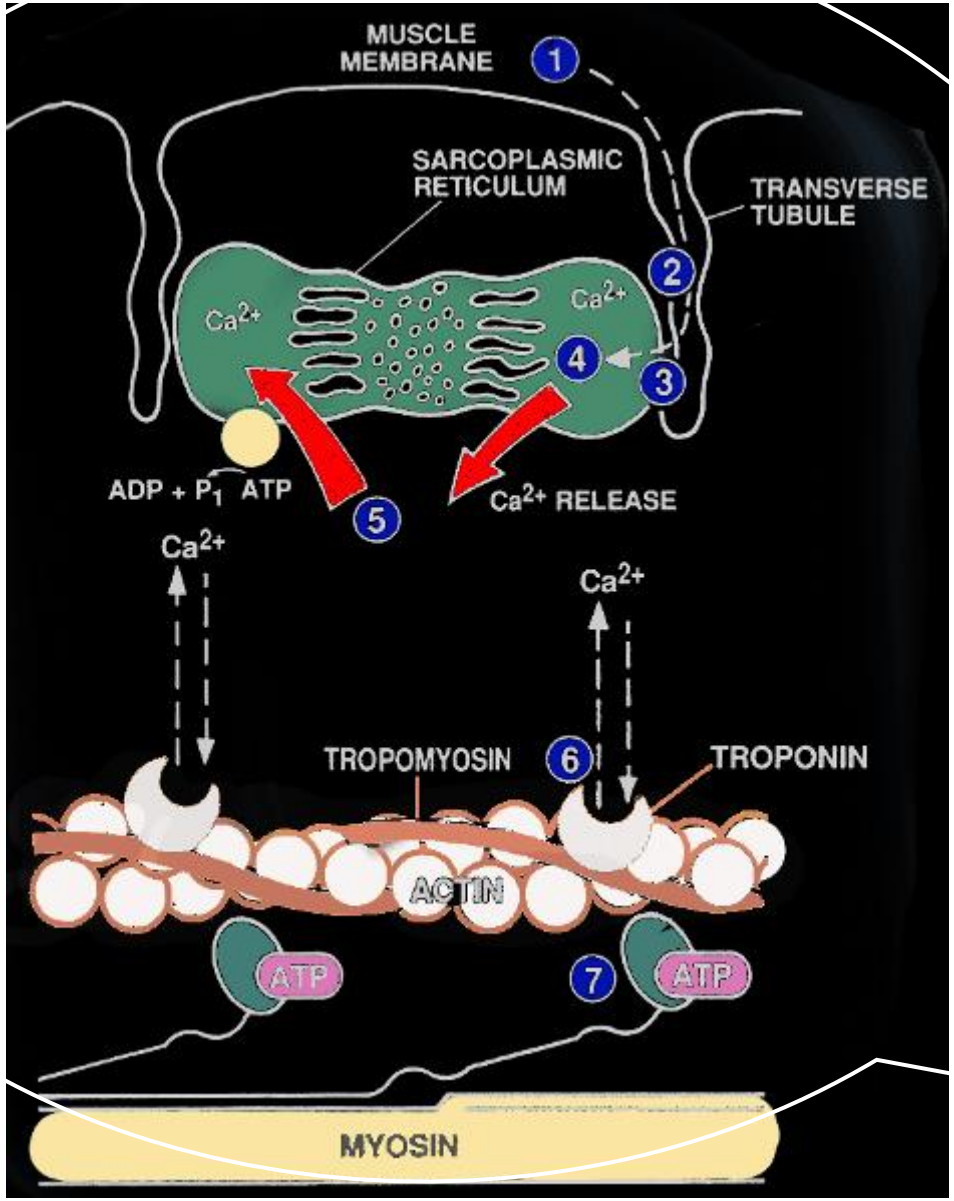


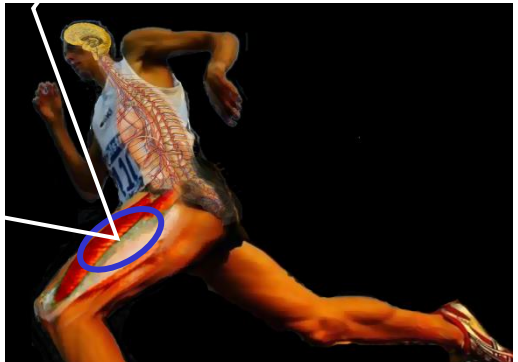
Vøddamøði


Bigland-Ritchie 1986 J. Appl. Physiol. 61(2):421-429
150
125
100
75
50
25
0
Force (% Control)
MVC
50 Hz
Target
Force
0
1
2
3
4
5
Time (min)

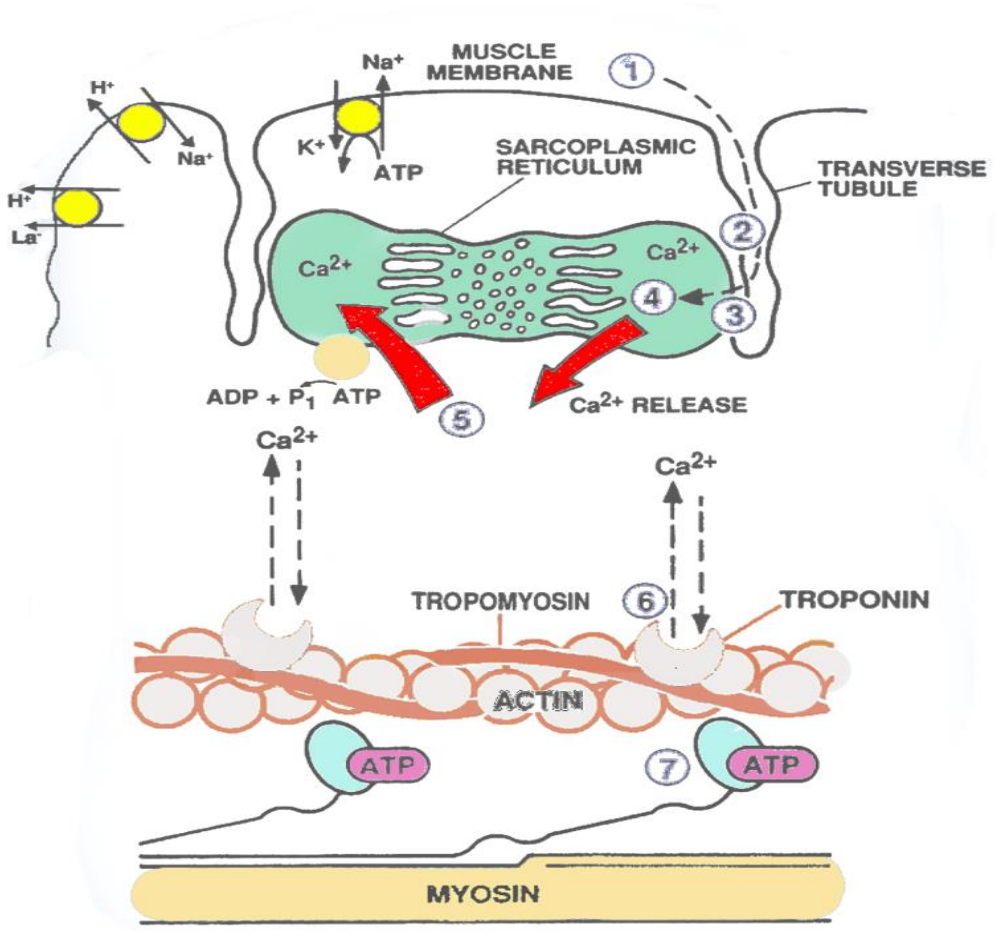
Vøddamøði

- Møguligar mekanismur





Órógv í jón-javnvágini í kyknuni

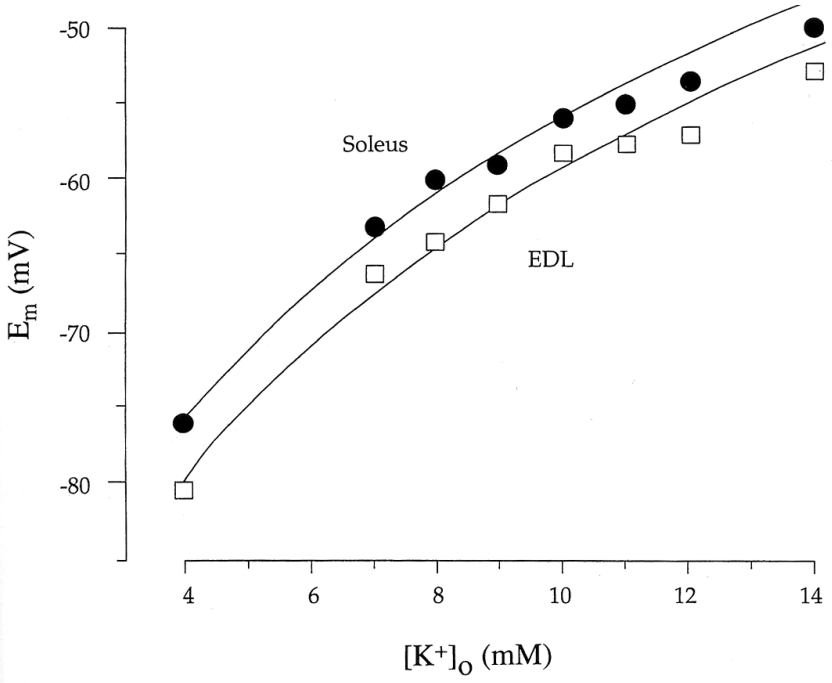


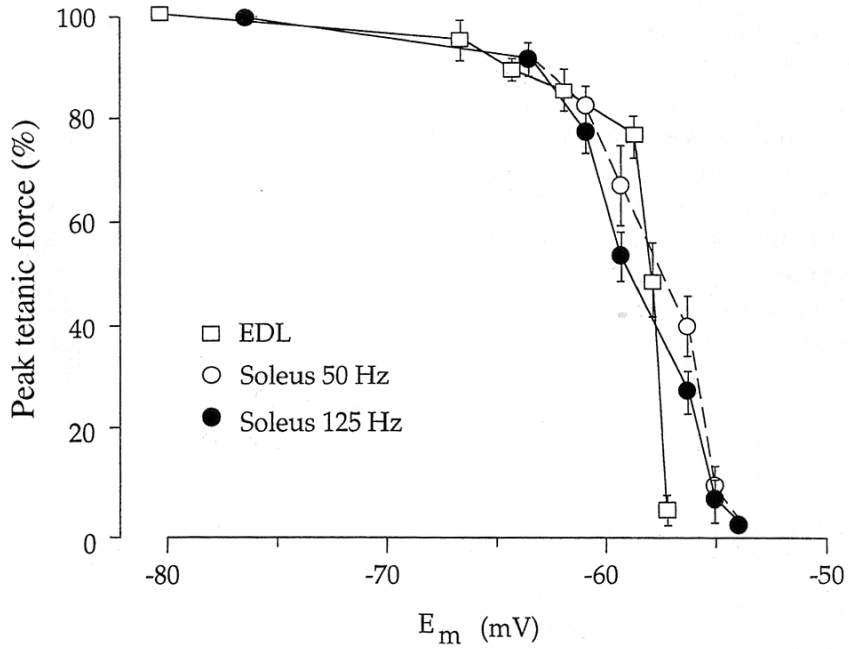
GHK líkningin – útrokning av hvíldarmembran potentialinum

$$E_m = \frac{2.303 \times RT}{F} \times \log_{10}\left(\frac{[K^+]_s + \alpha[Na^+]_s + \beta[Cl^-]_c}{[K^+]_c + \alpha[Na^+]_c + \beta[Cl^-]_s}\right)$$

K^+ og vøddamøði

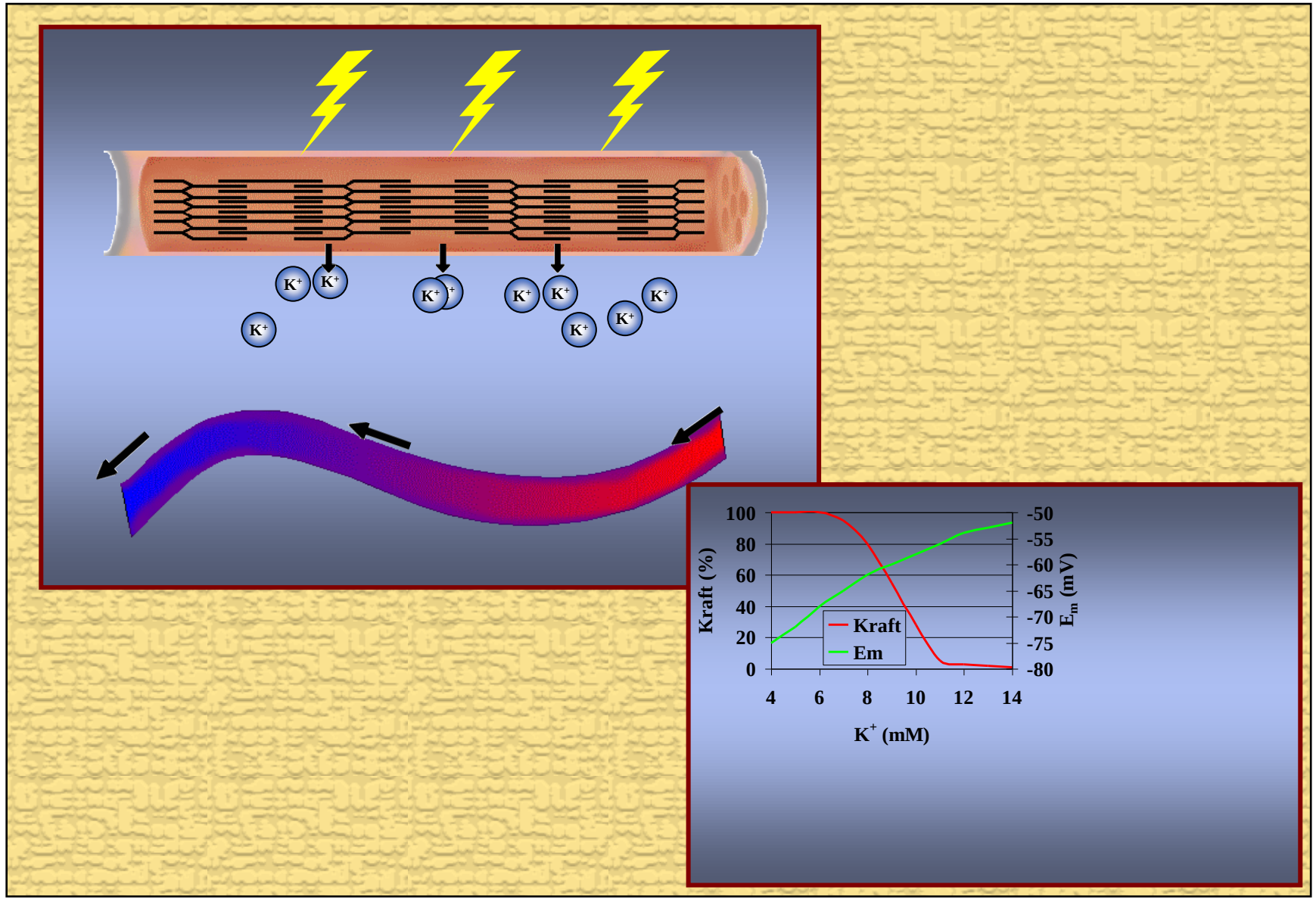
Cairns et al. 1997 Am. J. Physiol. 273 (2pt1): c598-c611



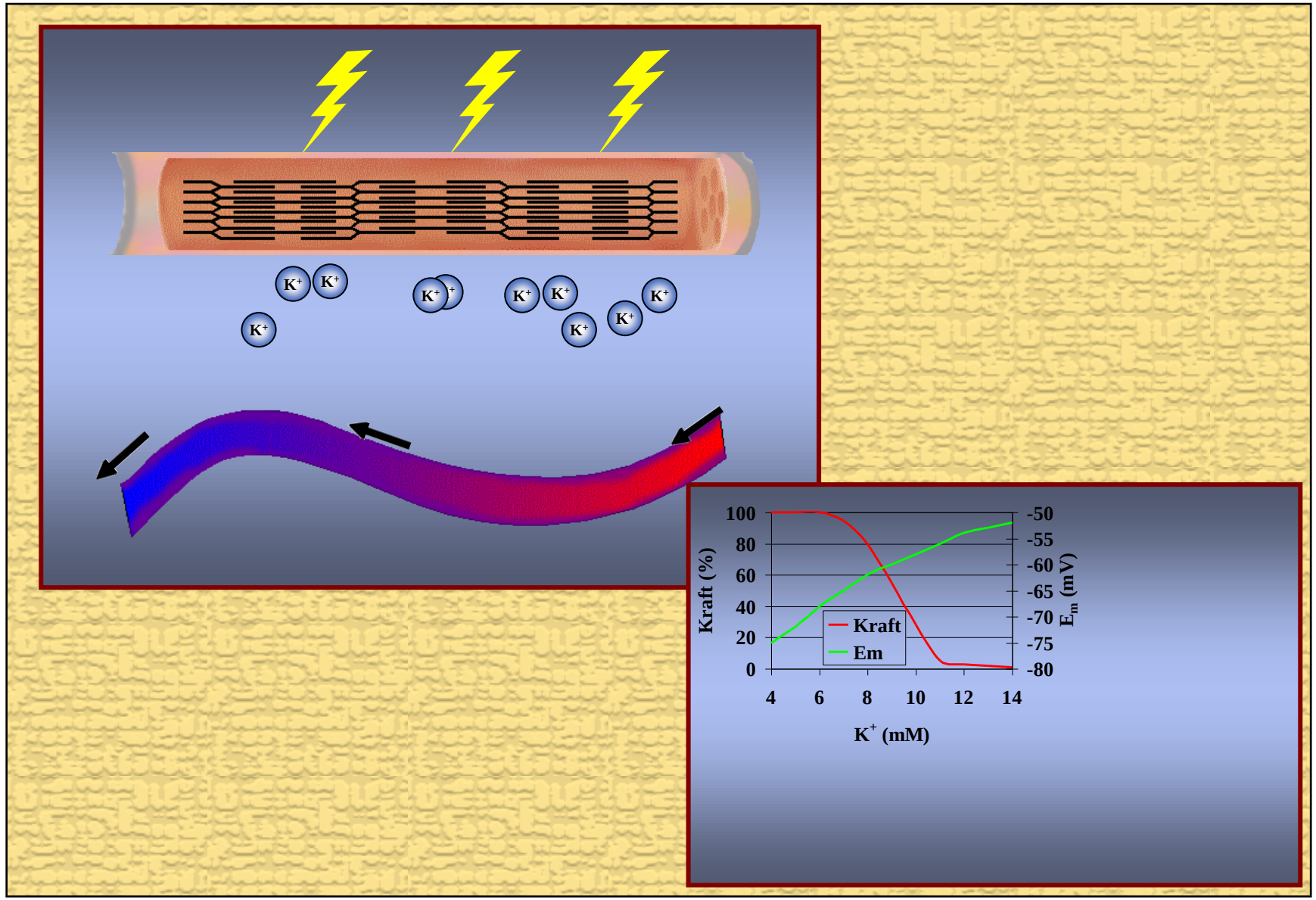


The force reduction with increased extra cellular K^+ accumulation is likely to be caused by the E_m depolarization

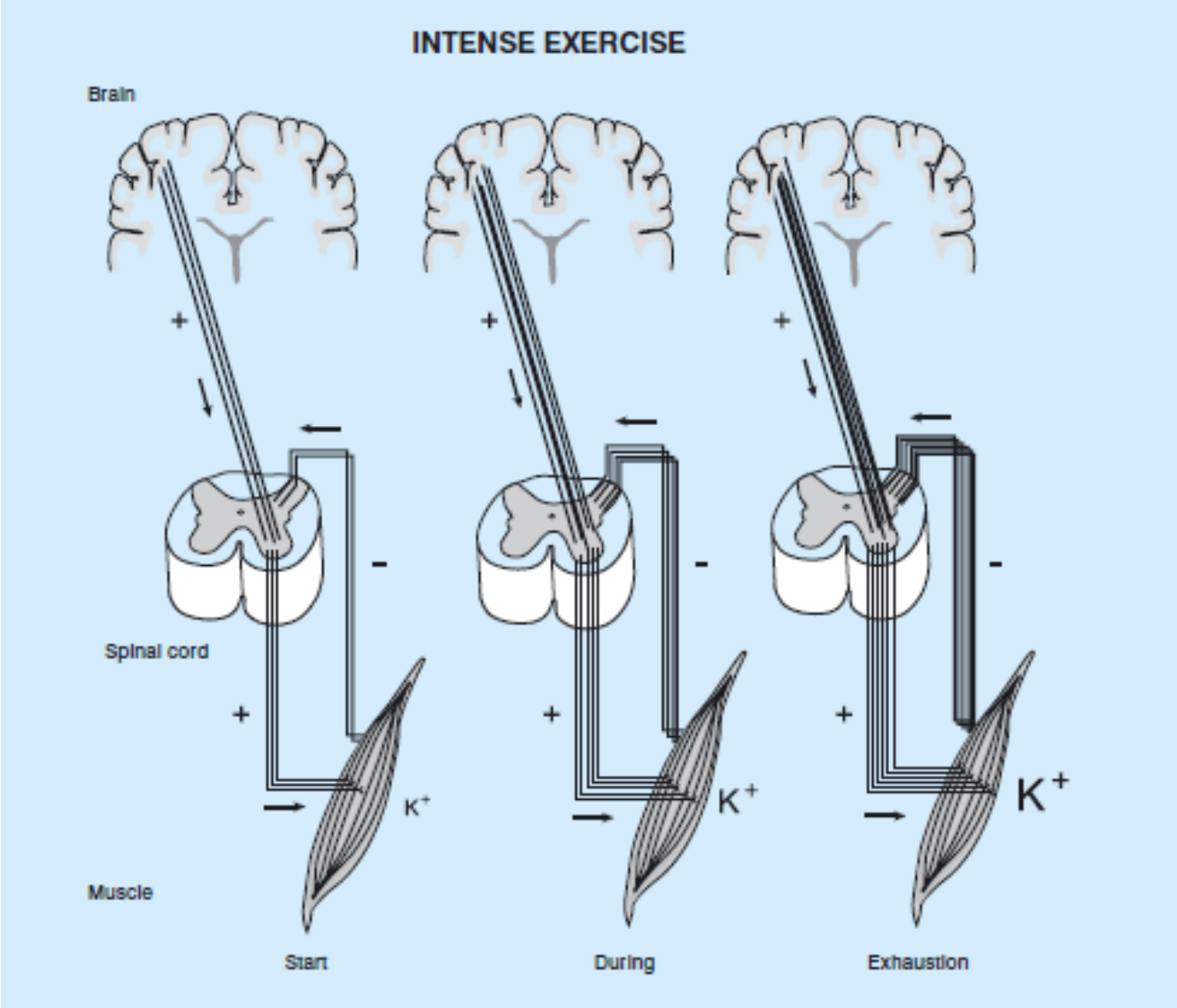
K+ og vøddamøði



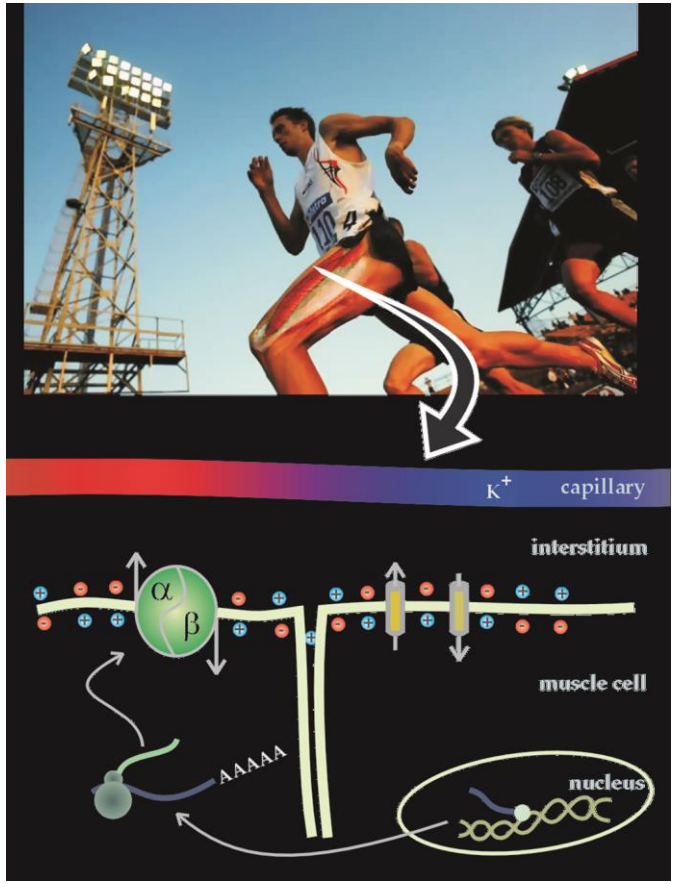
K+ og vøddamøði



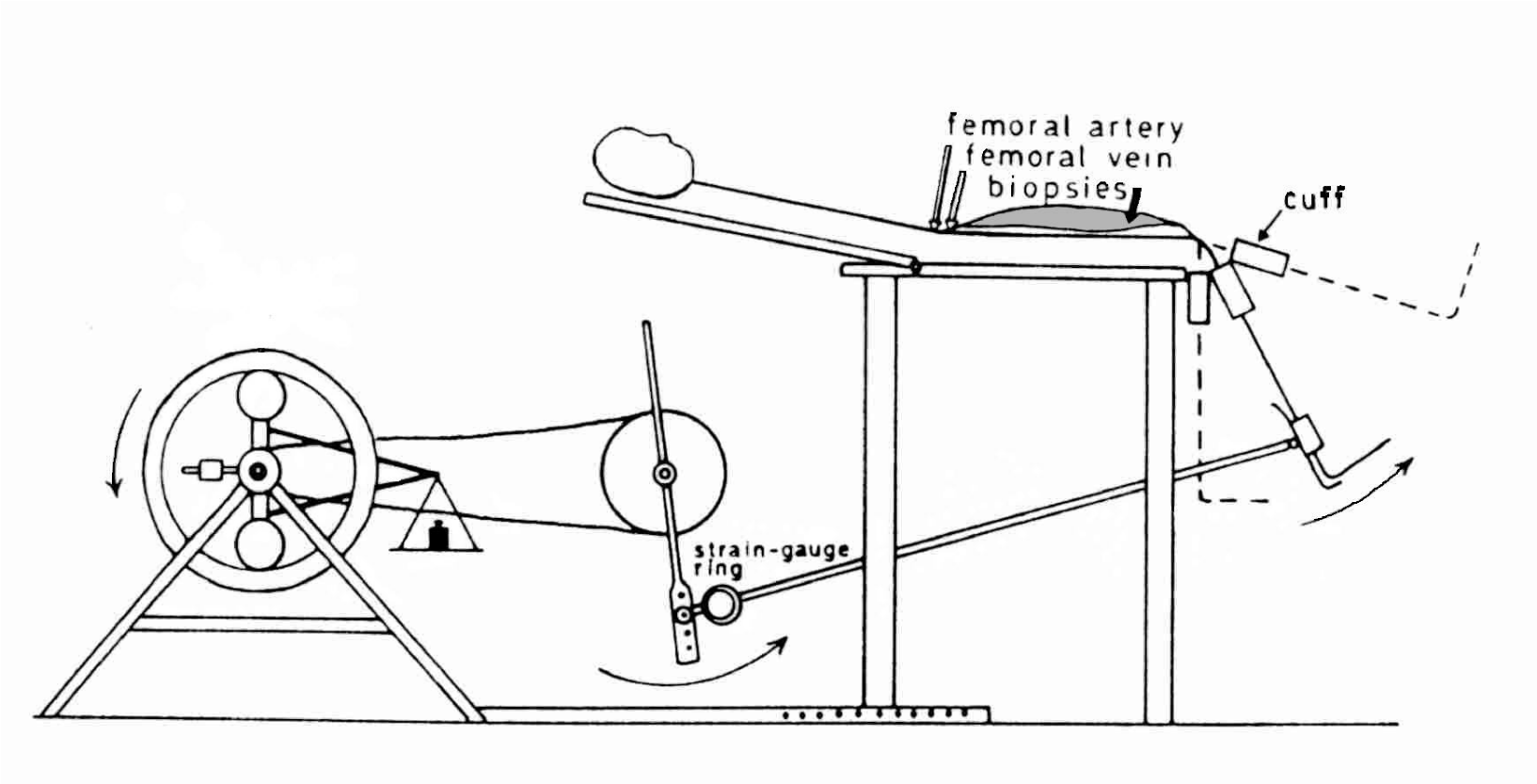
Møði og samskifti ímillum vøddar og nervaskipan

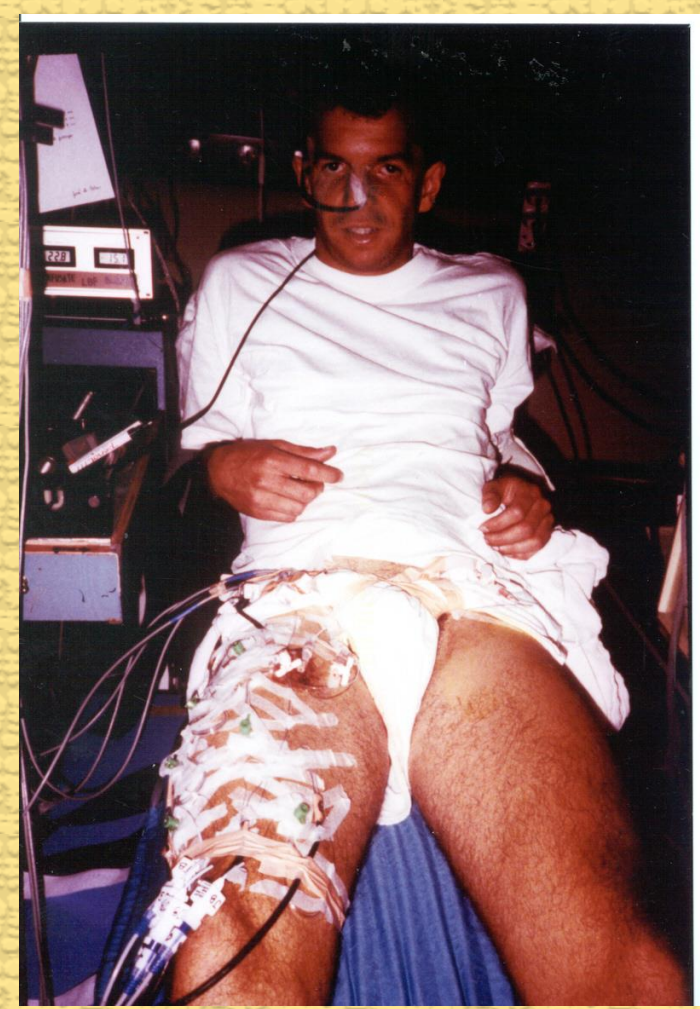


Kanningar av vøddamøði
– in vivo fysiologiskar modellir



1-beins sparkimodellin

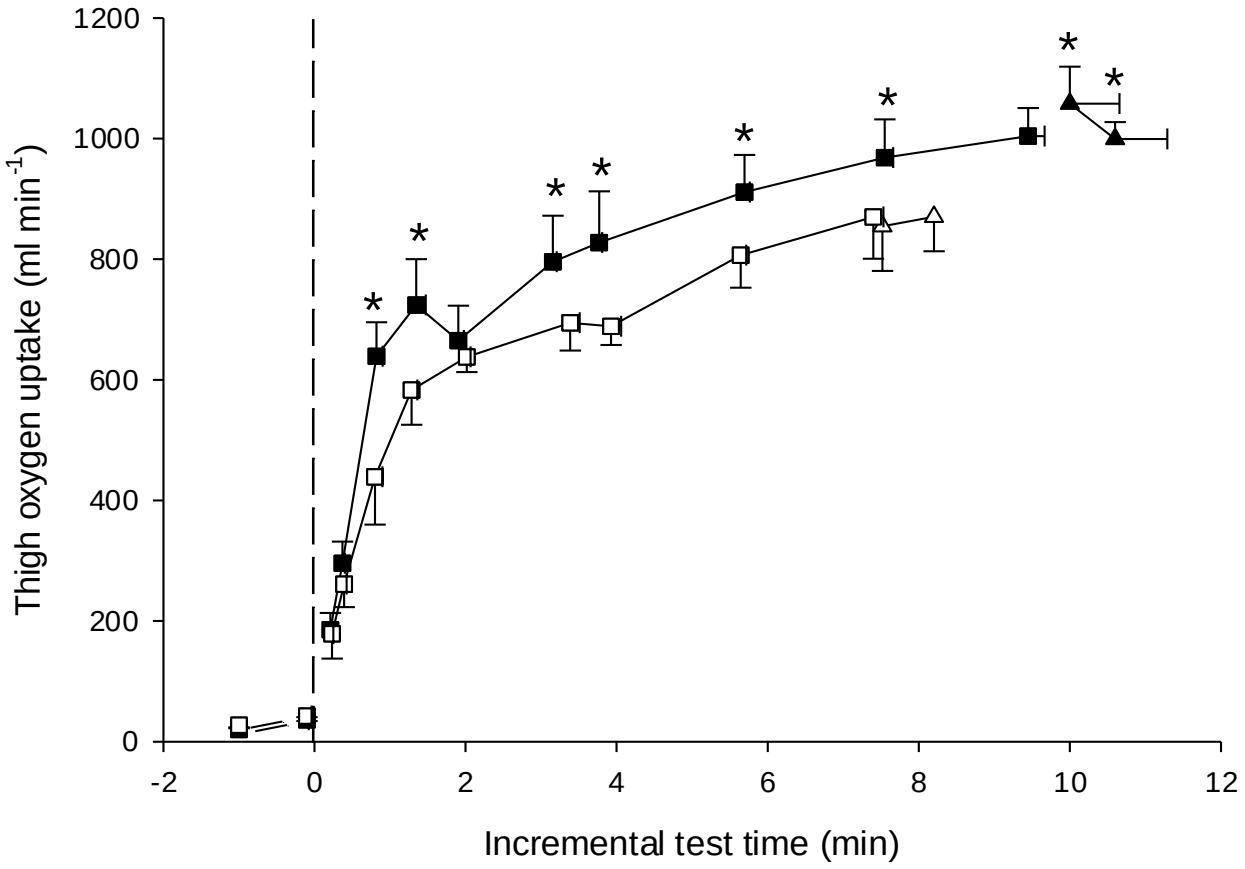




Blóðroyndir frá femoralu arteriuni og venuni

Grundreglan hjá Fick

Oxygenupptøkan hjá lærinum áðrenn og aftan á 6 vikurs venjing

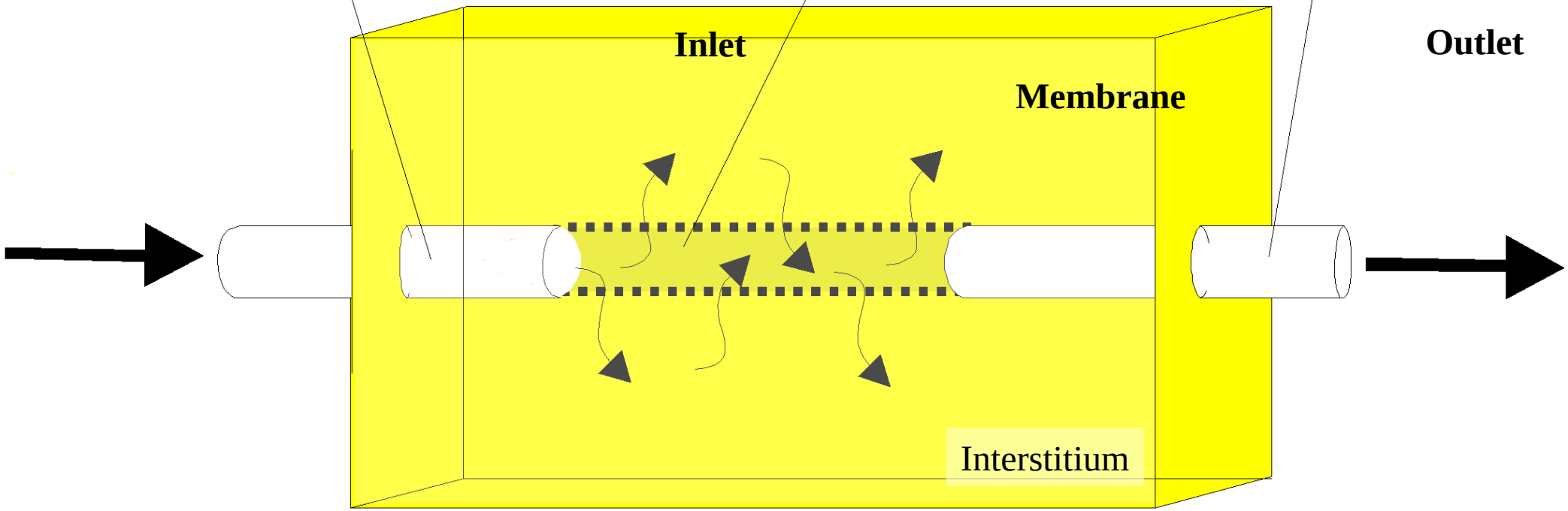


Mohr et al., 2007

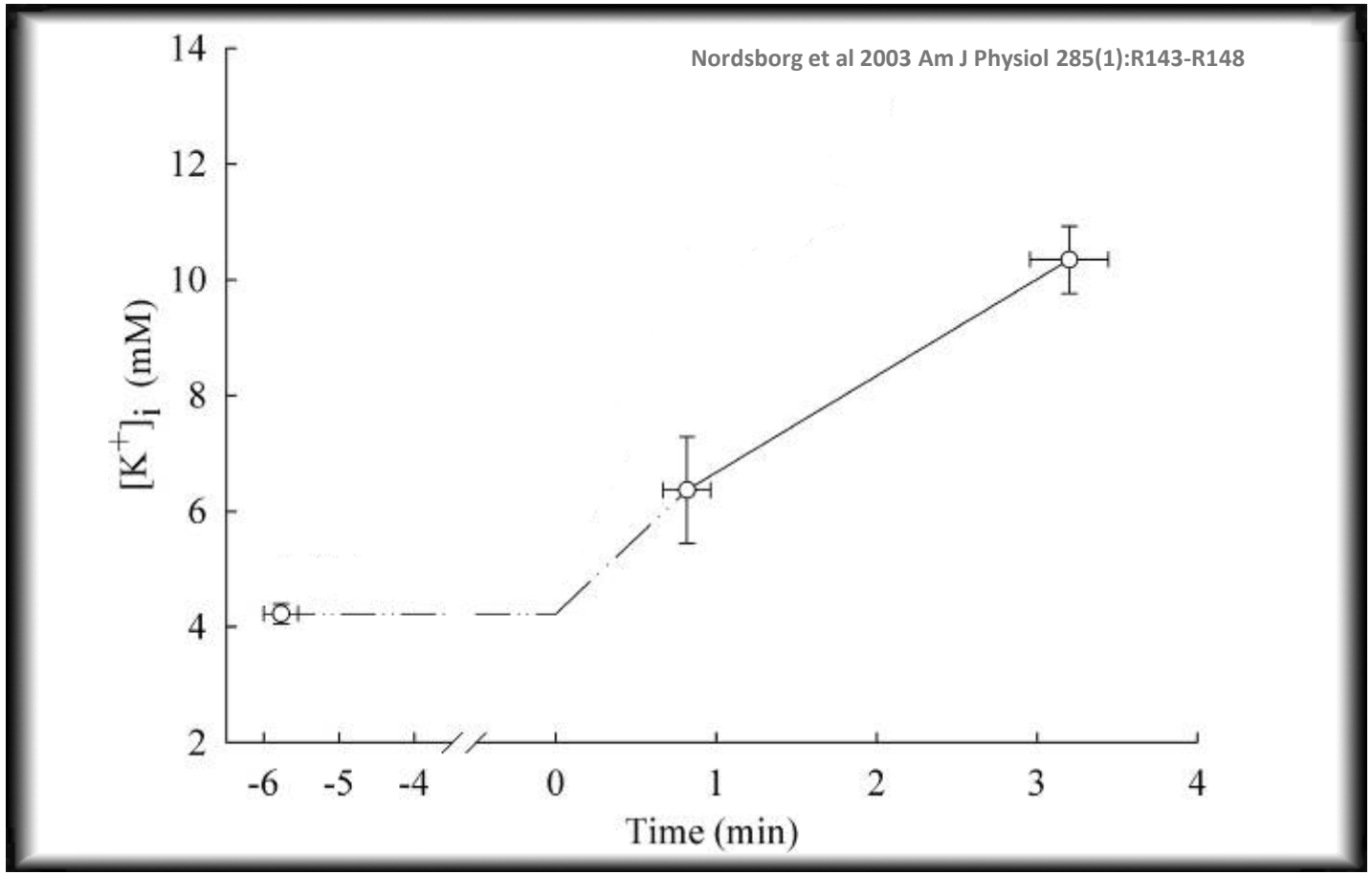
Microdialysa

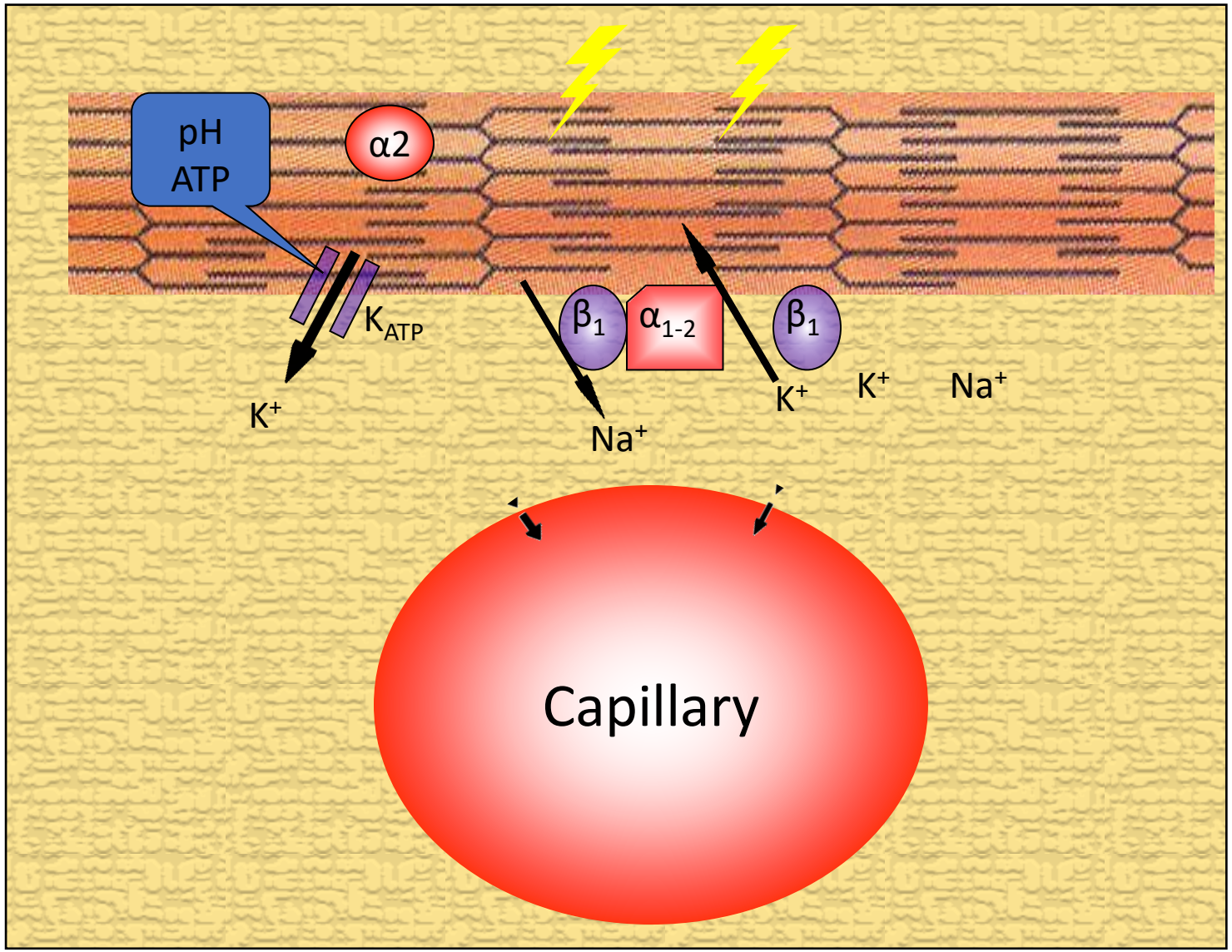
– ein háttur at máta broytingar í jón-javnvágini in vivo

Microdialysu metodan

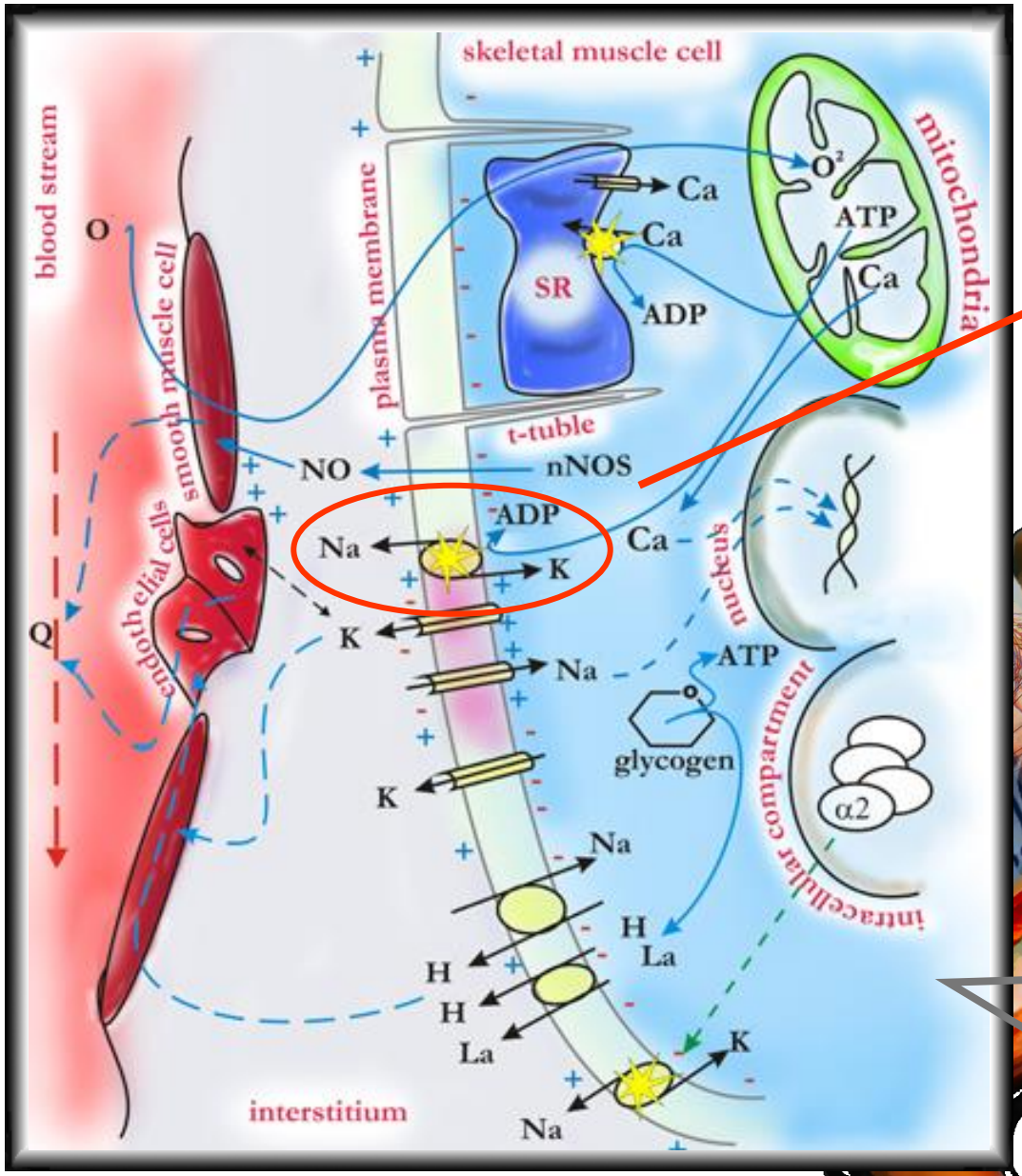


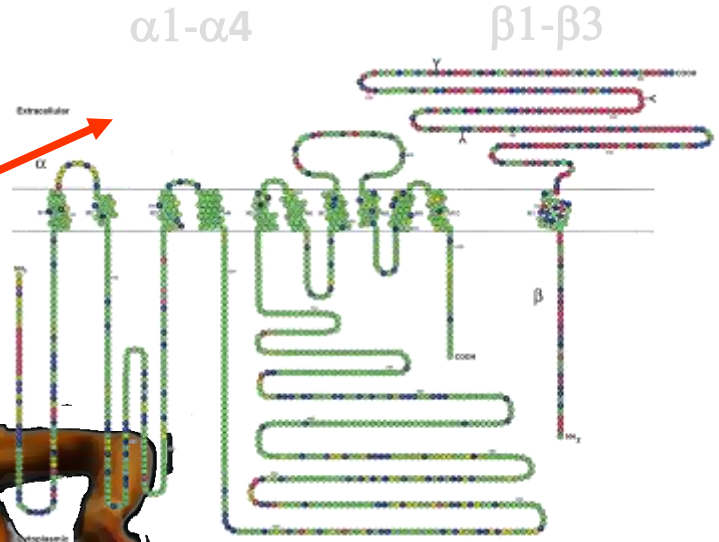
K^+ og vøddamøði

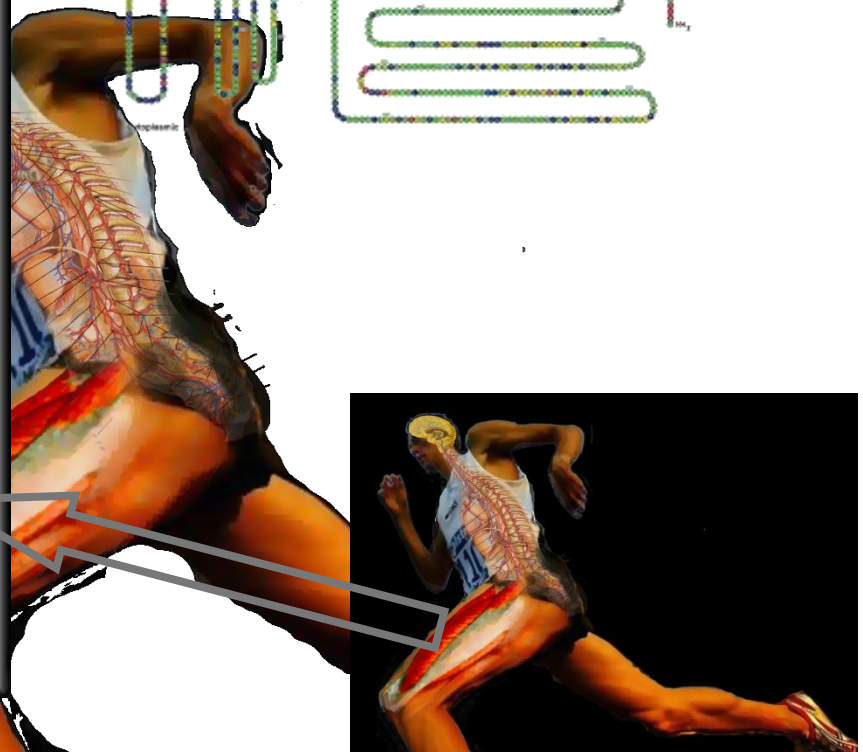



pH
ATP
α2
K_{ATP}
K^+
β_1
α_{1-2}
β_1
Na^+
K^+
K^+
Na^+
Capillary

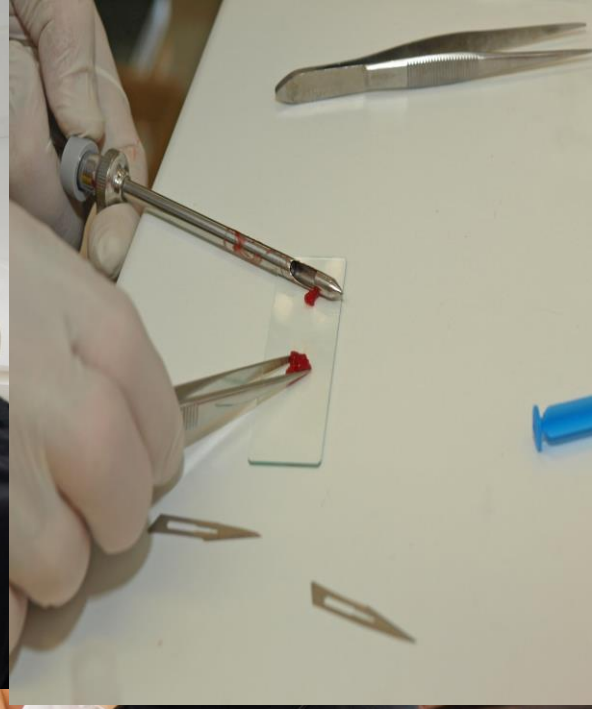
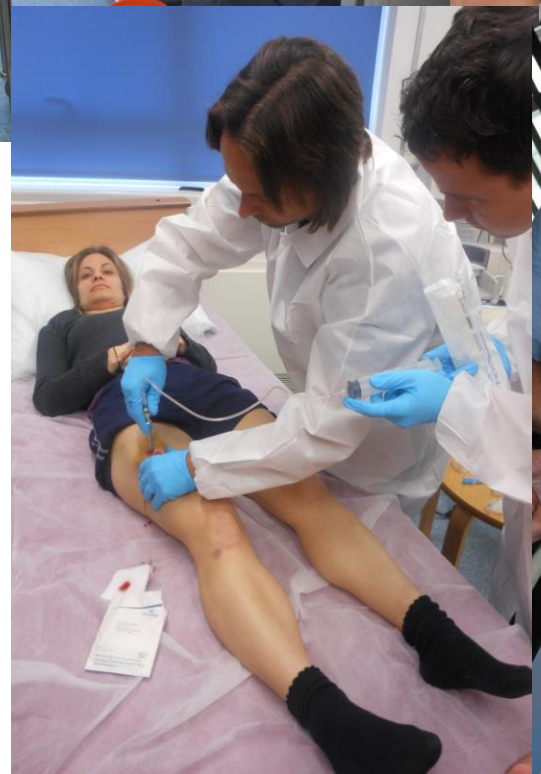
Venjing og vøddamøði



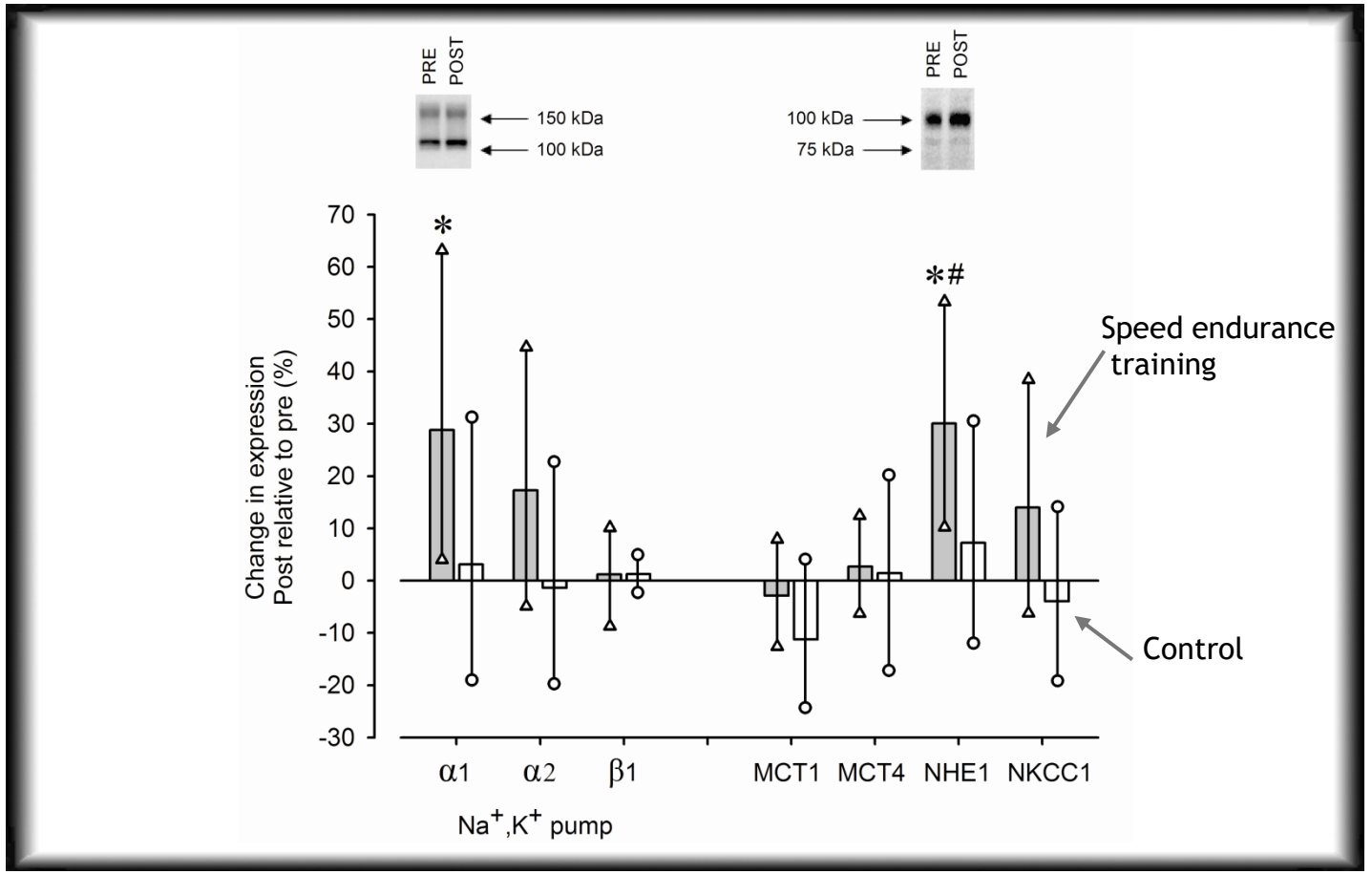






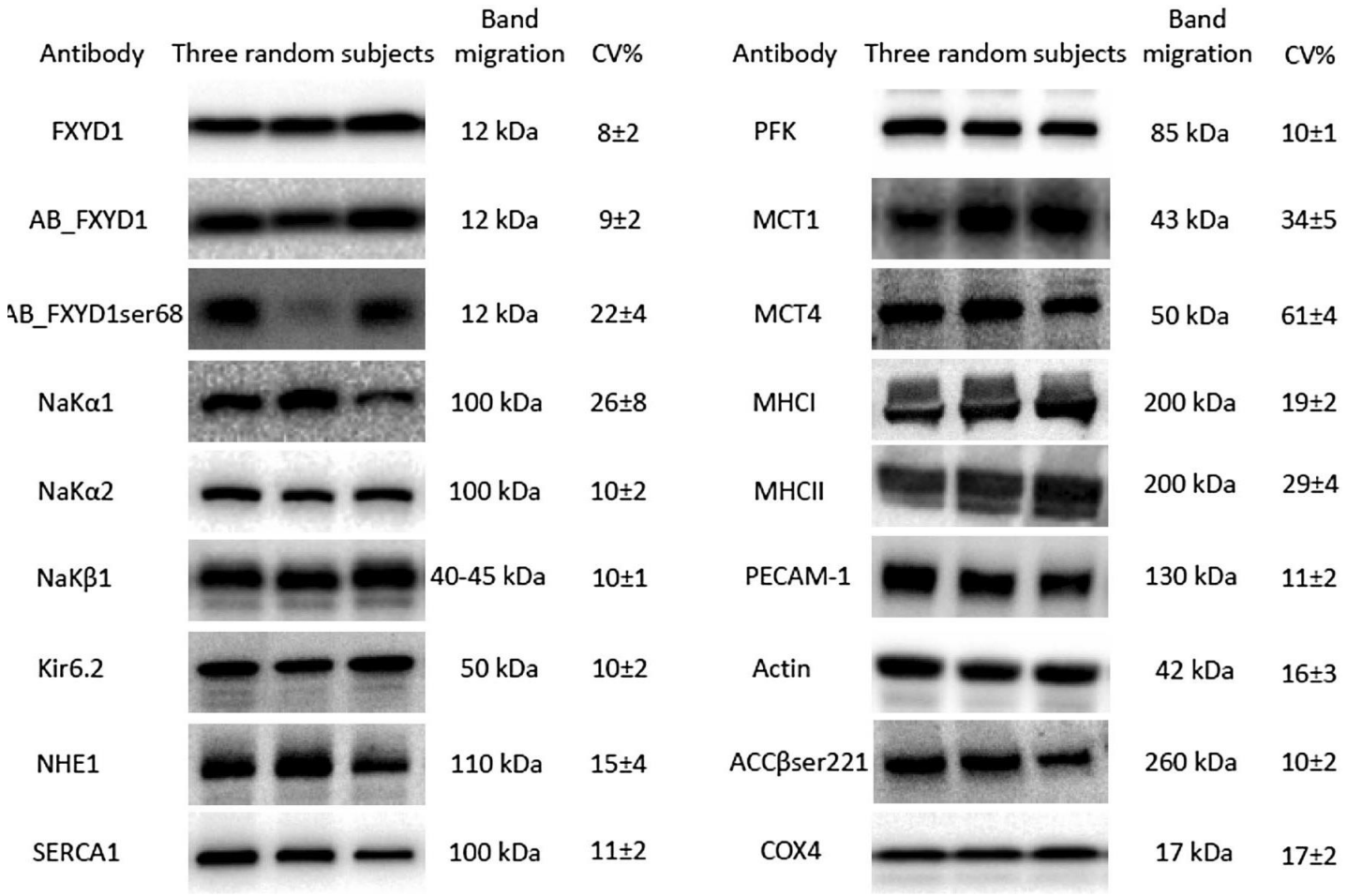
Membrane ion transport proteins before and after the speed endurance training period



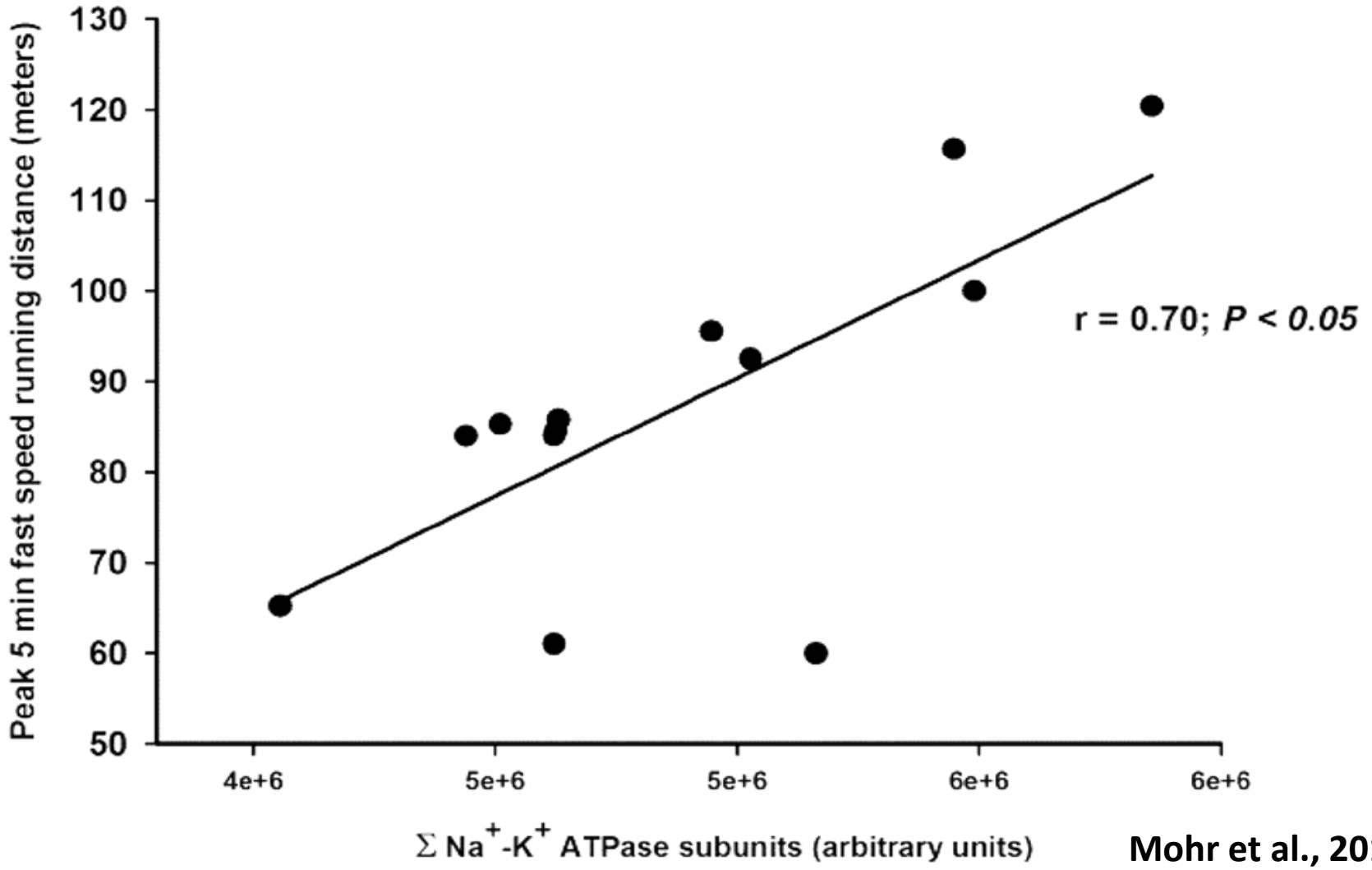
Change to speed endurance training increases Na^+/H^+ exchanger isoform 1 (NHE1) and Na^+,K^+ pump α1-isoform protein expressions

* $P<0.05$, Significant difference from 0 (Pre-training level)

Vøddin fysiologiskt “link” til kropslig avrik

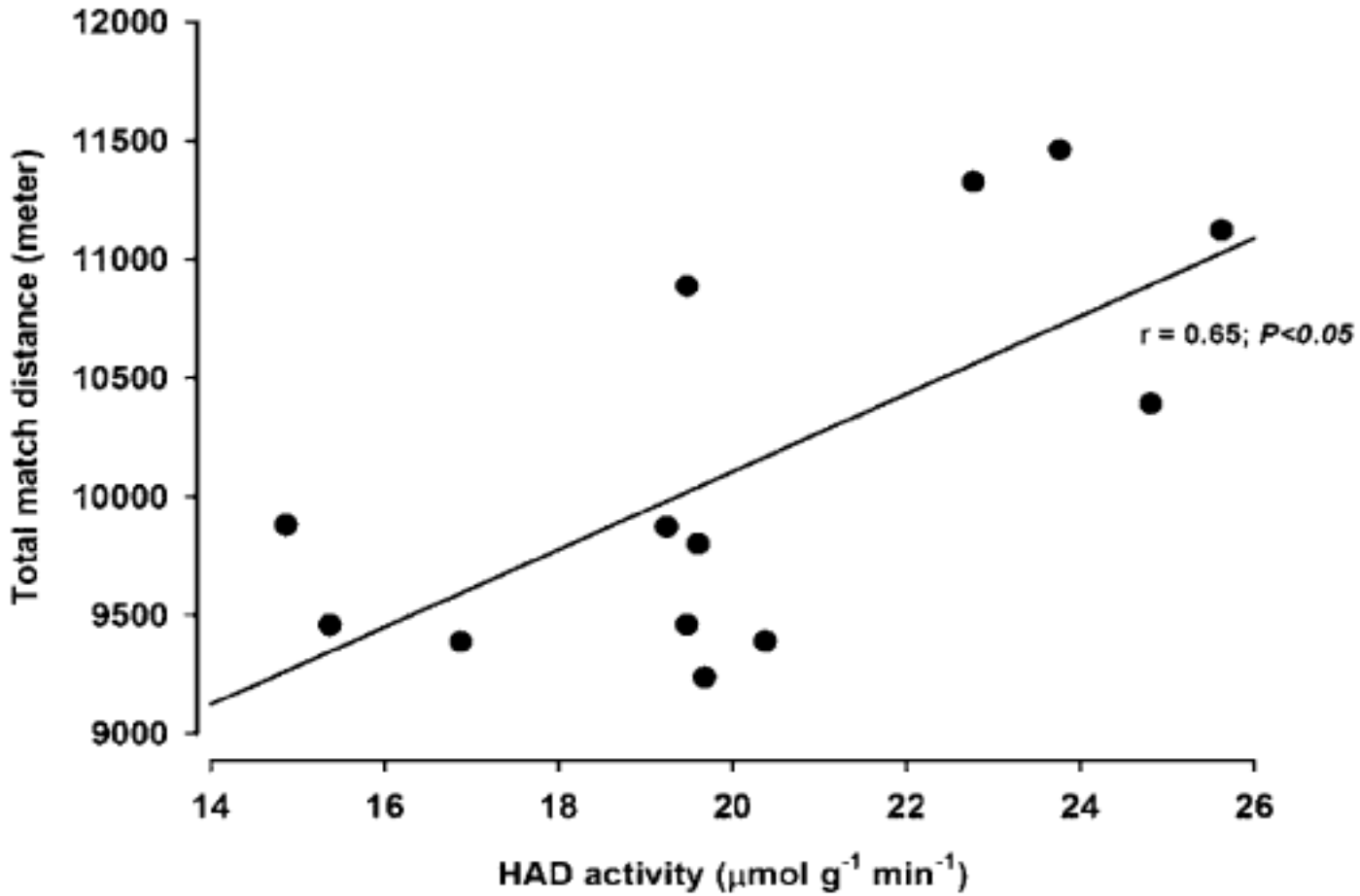


Skjót renning í fótbóltsdysti og vødda Na+-K+ ATPase protein expresssion



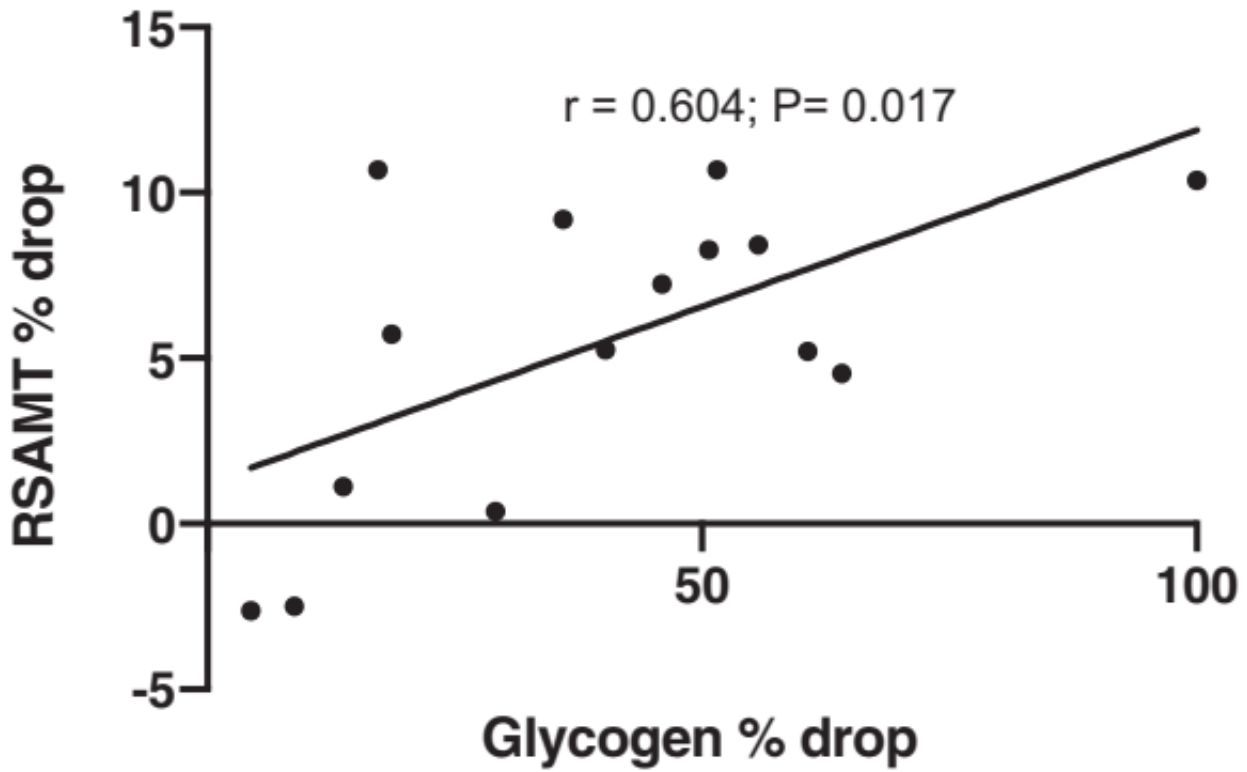
Mohr et al., 2016

Úthaldni og maksimal enzymvirkni í HAD



Mohr et al., 2016

Tøming av vøddaglykogenlagrunum og vøddamøði



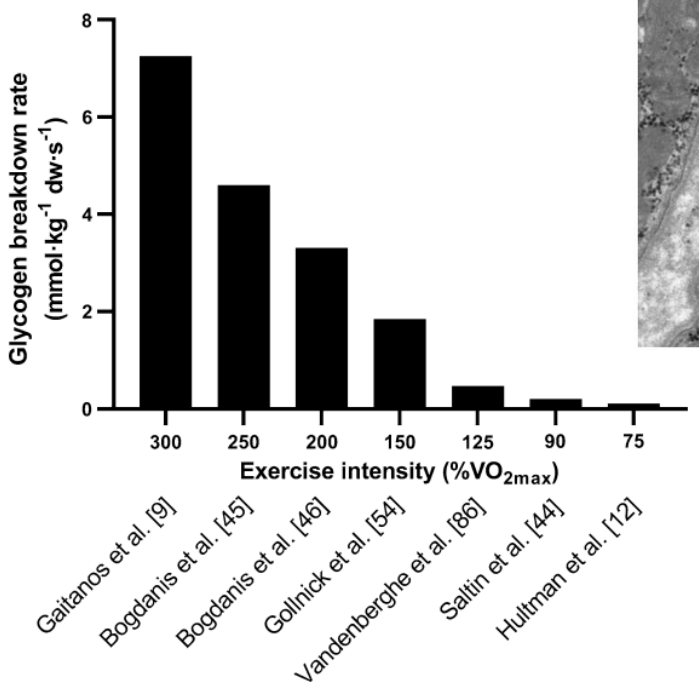
Krustrup et al., 2022

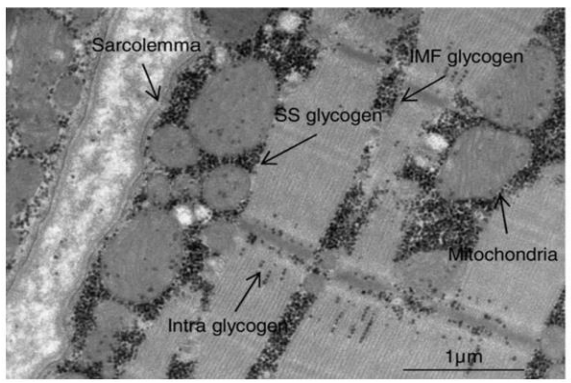
Sports Medicine
https://doi.org/10.1007/s40279-021-01475-0

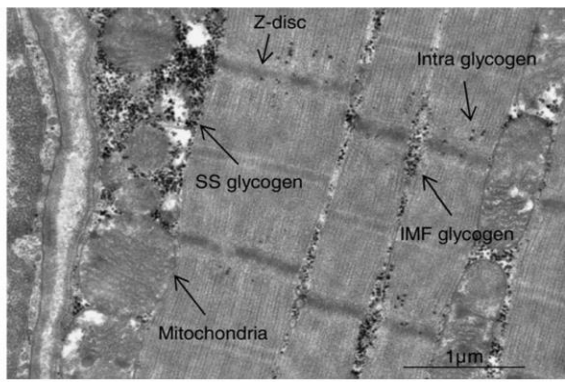
REVIEW ARTICLE

Muscle Glycogen Metabolism and High-Intensity Exercise Performance: A Narrative Review

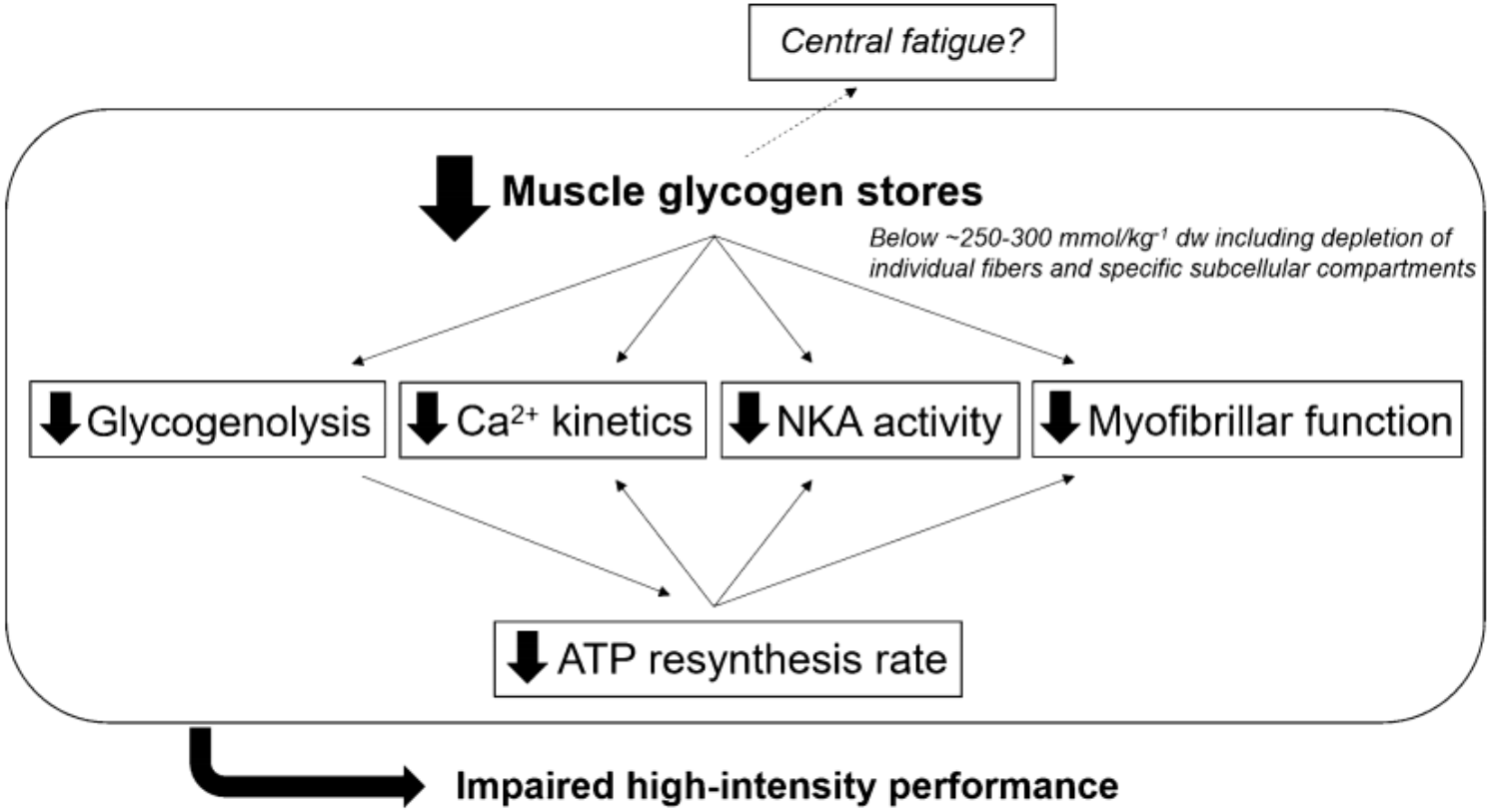
Jeppe F. Vigh-Larsen[1] · Niels Ørtenblad[2] · Lawrence L. Spriet[3] · Kristian Overgaard[1] · Magni Mohr[2,4]







Møðuligu mekanismurnar aftanfyri lágt vøddaglykogen og møði



Vigh-Larsen et al., 2021

Fyrsta vísindaliga verk um møði, La Fatica, kemur í 1891

Mosso setur fram ástøði um, at vødda-møði kemur av órógv í javnvágini ella homeostastuni í heilanum, nervaskipanini og vøddunum.

Mosso hevur inntil víðari havt rætt – hvussu nógv meira vita vit í dag.....

FRÓÐSKAPARSETUR FØROYA

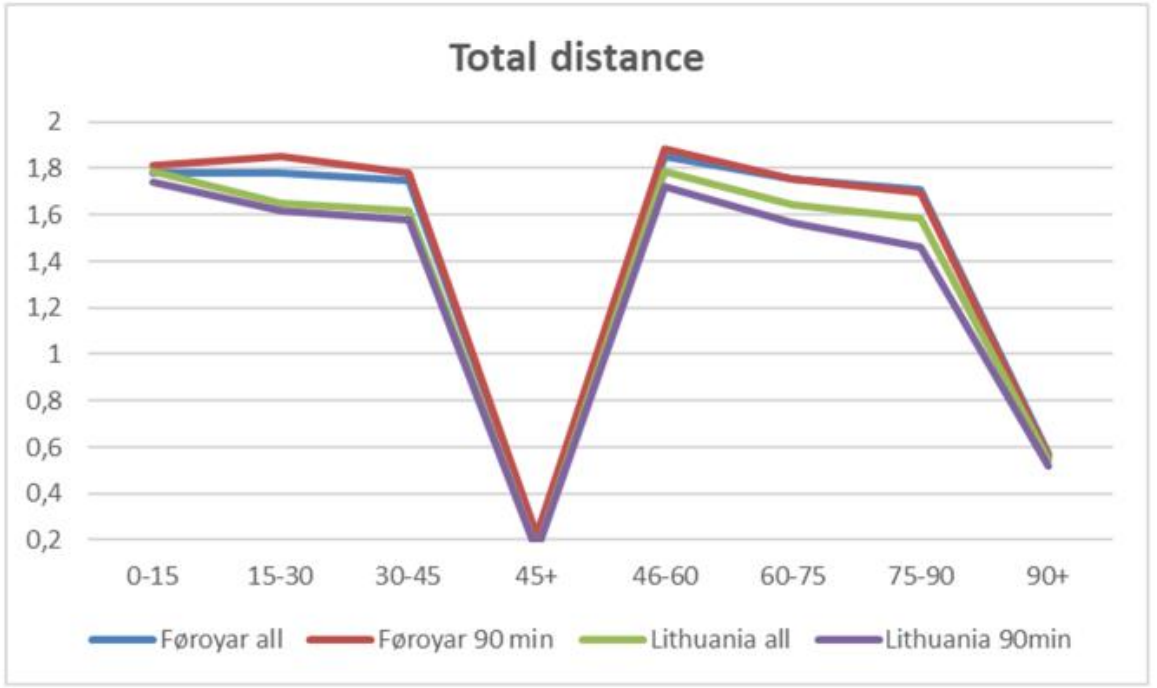
Møði eitt samantvinnað fyribrigdi

- “Jú meira vit vita, jú meira vita vit, hvat vit ikki vita”!

- Sokrates

FRÓÐSKAPARSETUR FØROYA

Føroyar vs Litavia í gjár.....



Takk fyri

FRÓÐSKAPARSETUR
FØROYA