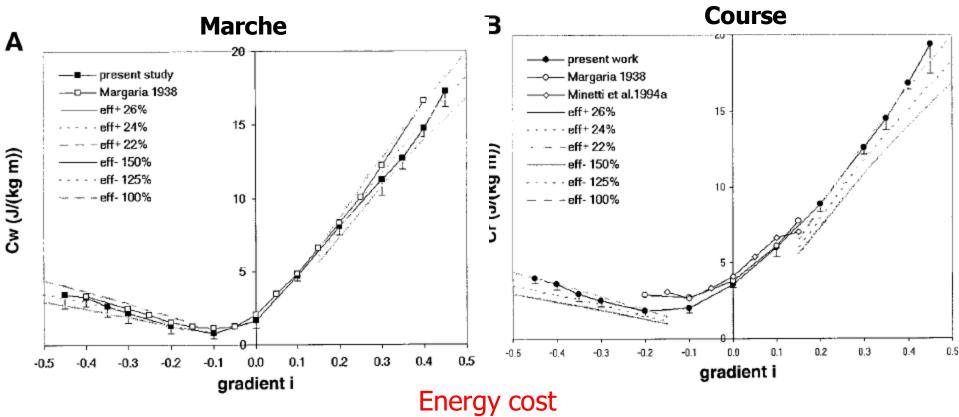
Running – effect of slope

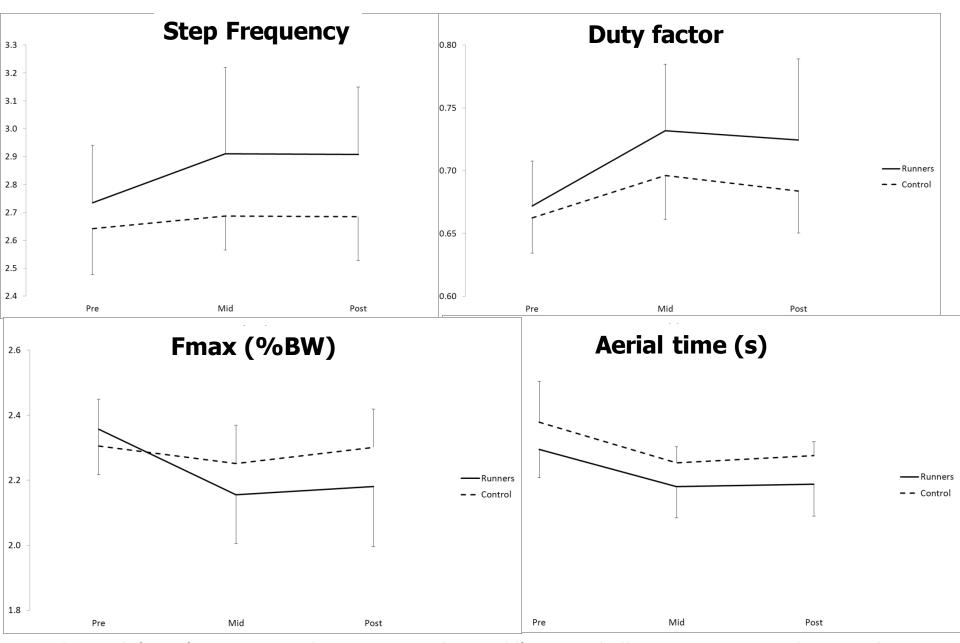


uphill: energy cost proportional to the slope > 15%, efficiency is 22-24% (id. cycling

Downhill: energy cost lower at slope -20%

Minetti AE, Moia C, Roi GS, Susta D, Ferretti G. Energy cost of walking and running at extreme uphill and downhill slopes. Journal of Applied Physiology. 2002 Sep;93(3):1039-46.

Ultra-Trail, Tor des Géants, 330 km, D+ 24000 m



Degache et al. (2016) Running Mechanics During the World's Most Challenging Mountain Ultramarathon.