

## muscle physiology lecture 11

specificity of adaptation  $\rightarrow$  biomechanics. running barefoot? minimalist shoes allow the foot to act as if it were barefoot but it is also protected from being damaged by the environment. adolf dassler - father of modern running shoe (adidas). his brother made puma and they had a rivalry. the minimalist movement, going from specificity of adaptation, to biomechanics and framing it in a narrative to make the information clear. born to run by christopher mcdougall. "naked to 6 manifesto" - barefoot ken bob "persistence hunting" our ancestors have been running. best marathon runners (selective pressure for genetic adaptation) not many animals can beat a human in a marathon. mcdougall believes that shoes cause runners injury, but in a new study that looked @ the injury risk of minimalist footwear, they found that both partial & full minimalist footwear resulted in a greater risk of injury. partial minimalist had greater overall injury rate and the full minimalist had greater shin and calf pain being reported. minimal shoes are not safe for everyone in every situation - most people are adapted to shoes, so if they suddenly run without shoes, it may not be safe and can result in injury. the physical outcome of the body depends on the shoe and the wearer's state and conditions. flip flops are not minimal because we have to grip onto them with our toes, which changes our normal pathways and can lead to a wrong gait or hammer toes. exercises to improve function and performance - linear is likely to be better. pronation: when foot rolls inward, shin rotated towards leg, leg towards midline. unchallenged capacities vanish just like unstressed cells. ex: balance