



The Biomechanics of Running

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Introduction

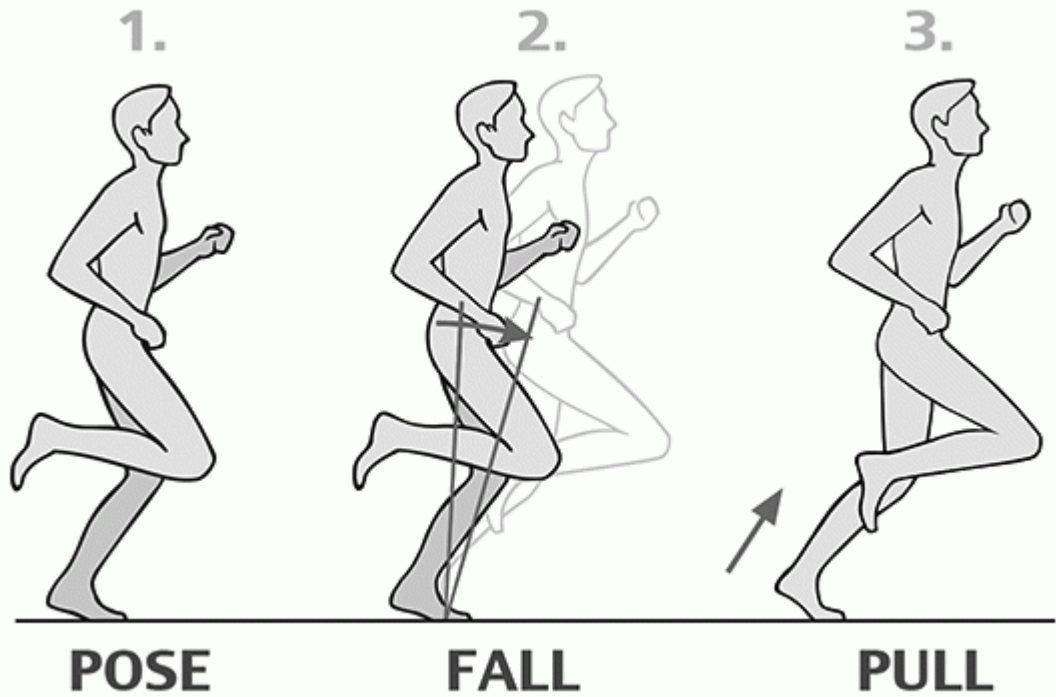
Run·ning

- /'rʌniŋg/
- Verb
- A pace faster than walking. One foot in front of the other, moving from Point A to Point B

Biomechanical Definition

- The demarcation between walking and running occurs when periods of double support during the stance phase of the gait cycle (both feet are simultaneously in contact with the ground) give way to two periods of double float at the beginning and the end of the swing phase of gait (neither foot is touching the ground). Generally as speed increases further, initial contact changes from being on the hind-foot to the forefoot.

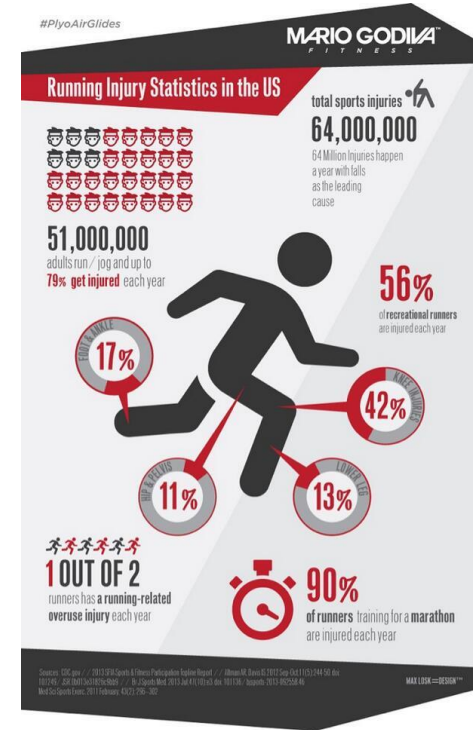
The POSE Method





Impact

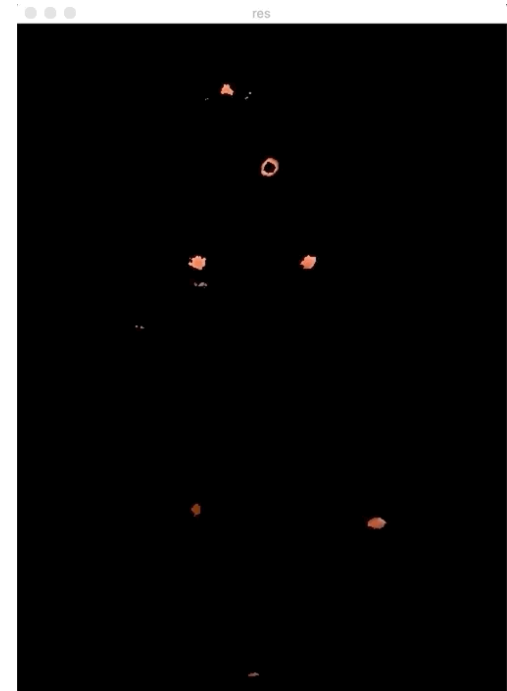
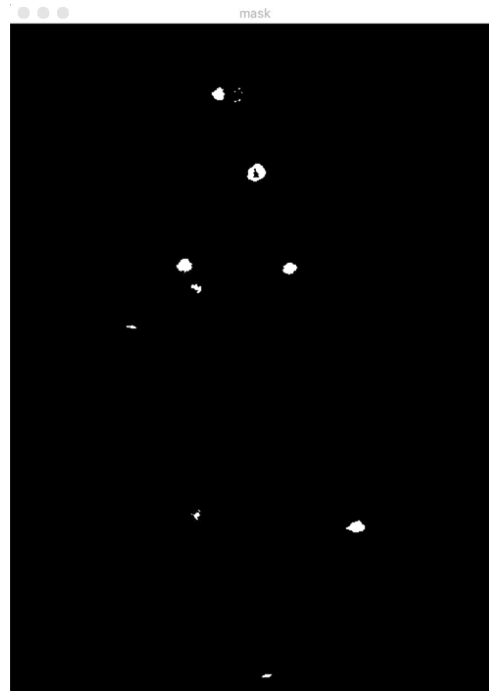
- \$300 million/year in lost duty time in BASIC training
 - Dr. Joseph Knapik
- 30% to 75% of runners are hurt annually
 - Harvard Medical School



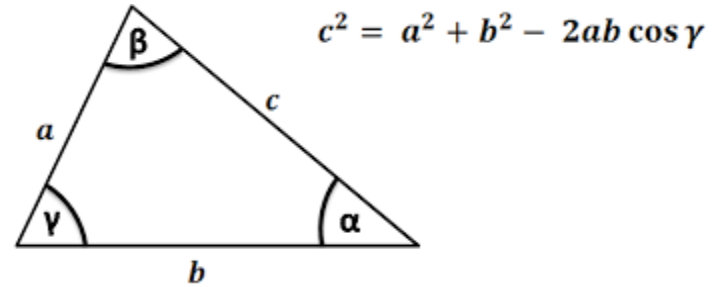
Running Analyzer



Methodology



Arm Angle



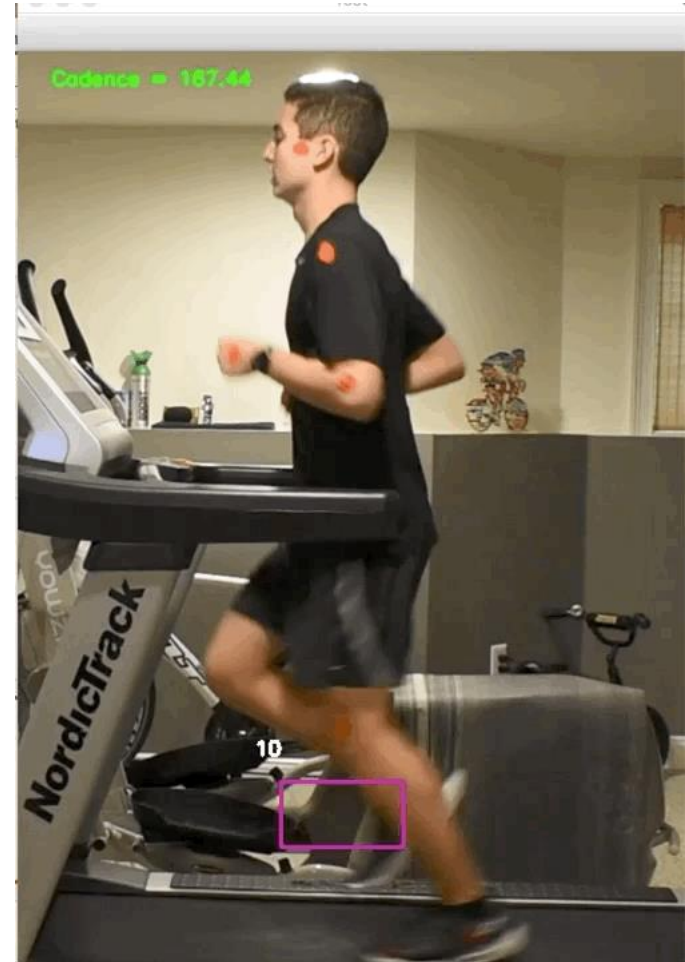
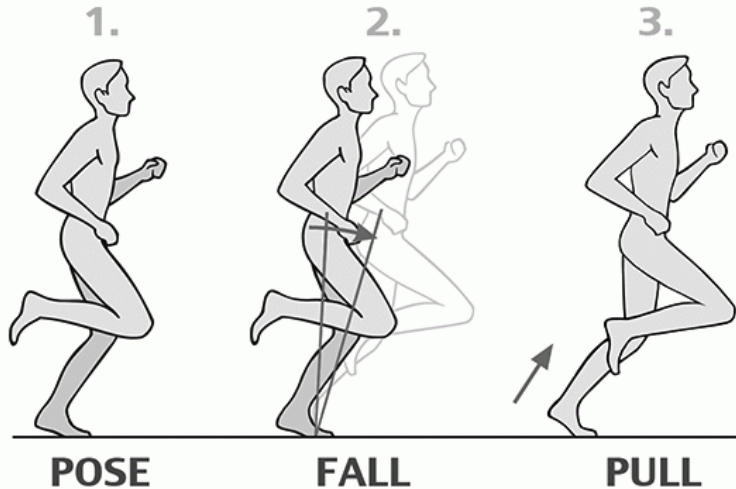
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Measurement of steps per minute

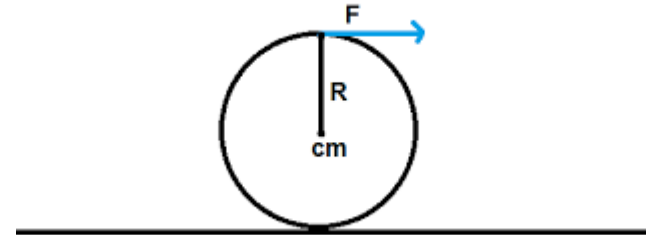
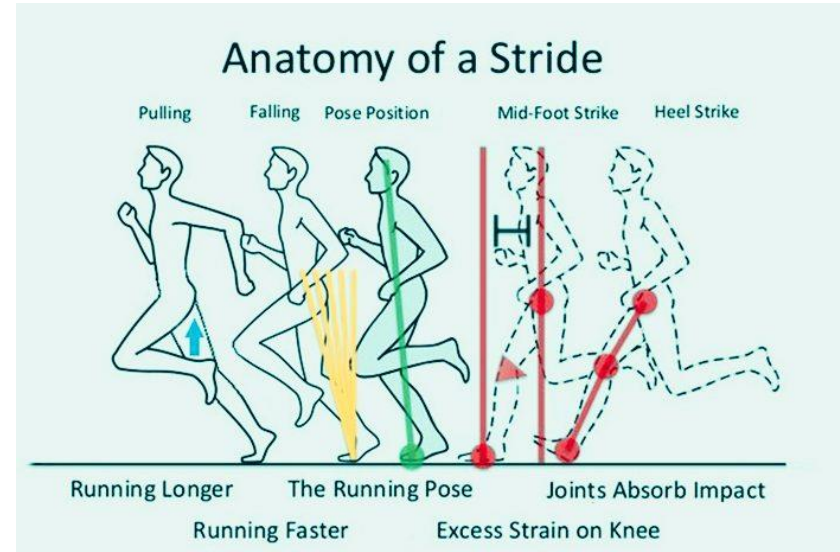
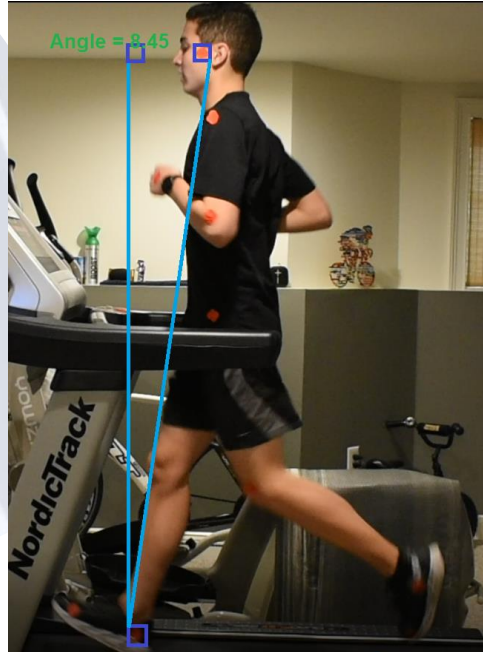
- Ideal range between 175 - 185 spm

Computer processing slows video down

Count frames at 60fps to calculate elapsed time



Falling Angle



Resources/ Citations



- Romanov, Nicholas S., and John Robson. *Dr. Nicholas Romanov's Pose Method of Running: a New Paradigm of Running*. PoseTech, 2004.
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