## SHOULDERS

Avoid slouching. Pull your shoulders slightly back to open your chest. However, stay relaxed and avoid shrugging your shoulders upward - especially after you start to fatigue.

## HANDS

Keep your hands closed but relaxed, as though you were holding a baby bird. Your thumbs should point upward. Do not let your hands cross the midline.

## BREATHING

Think about initiating "breathing from your belly," and not your upper chest. Also, inhalation and exhalation are usually triggered by ground strike. To maintain symmetry, strive for an odd-numbered breathing pattern with more strides of exhales than inhales. i.e., a 5 -foot strike breathing cycle would be: In, In, Out, Out, Out.

## STEP WIDTH

Avoid excessively narrow gaits. Imagine that you are trying to avoid stepping on the "centerline" directly beneath you.

## SHOES

Running shoes should be replaced every 300-500 miles.

## HEAD

Make your neck tall, so your ears are in line with your shoulders. Hold your gaze on the road at least 20 feet in front of you, but not over the horizon. (\# NoTreadmillTV)


#### Abstract

ARMS Your arm swing determines your cadence. Hold your arms close to your sides. Make sure you keep your elbows bent at 90 degrees so that your hands stay between your waist and chest. Your elbows should move cyclically behind and in front of your torso, like a locomotive.


## TORSO

Lean slightly forward without bending at the waist. Imagine that your body is your gas pedal; the more you lean forward, the faster you will move. (i.e., walking vs. jogging vs. sprinting)

## PACE/STRIDE

Avoid over-striding. Your feet should land directly beneath your torso, not significantly in front of you. Take short quick steps as though you were running on a hot surface. Try to maintain a cadence of 180 steps/ minute.

## FOOT STRIKE

For running, midfoot strikes are generally more efficient and safe as compared to landing on your heels. Think about landing on the ball of your foot with your shin perpendicular to the ground. Your feet should be alive and "springy", moving backward at the instant of strike, not slapping the ground.

