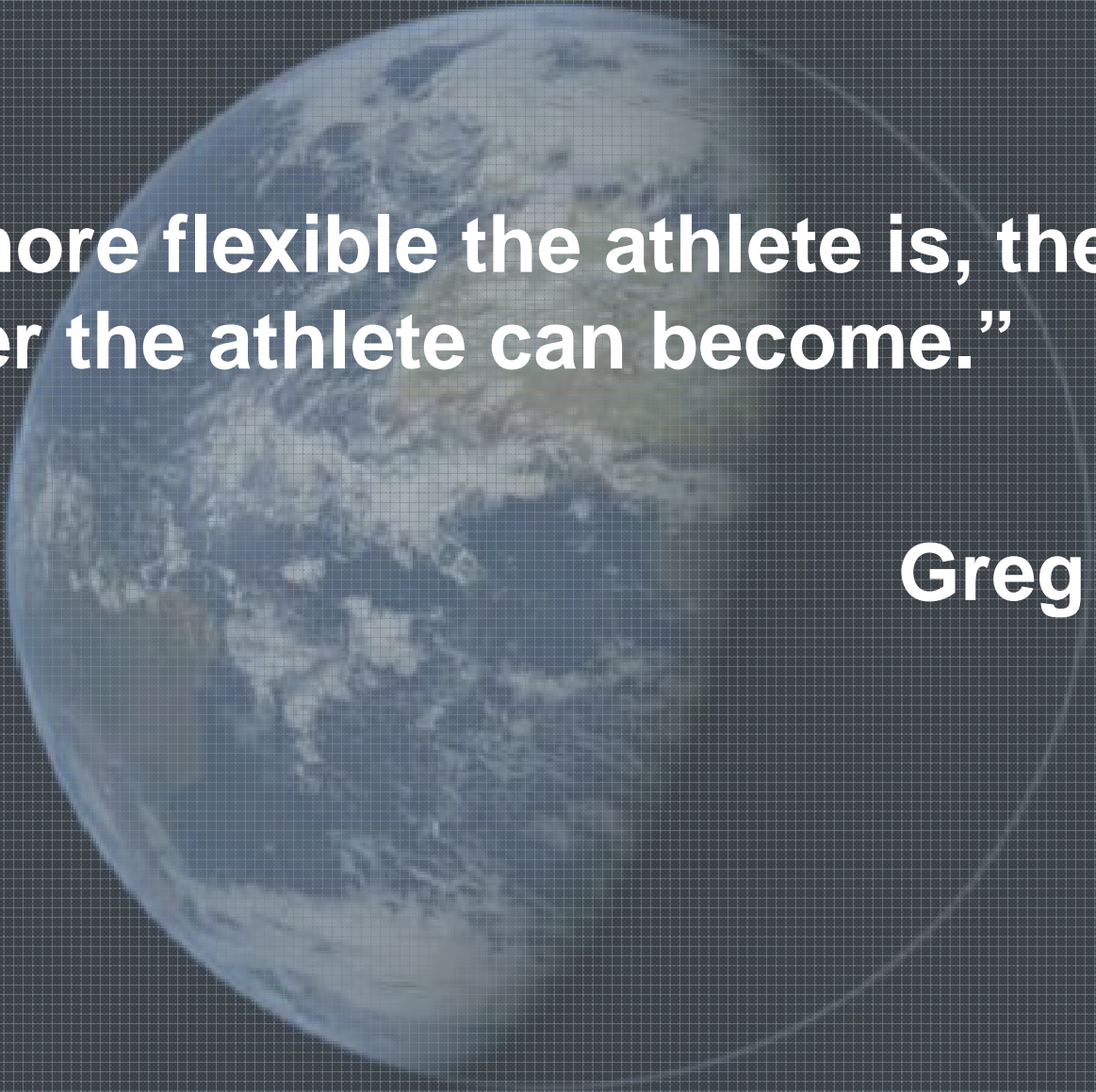




# Flexibility for Runners

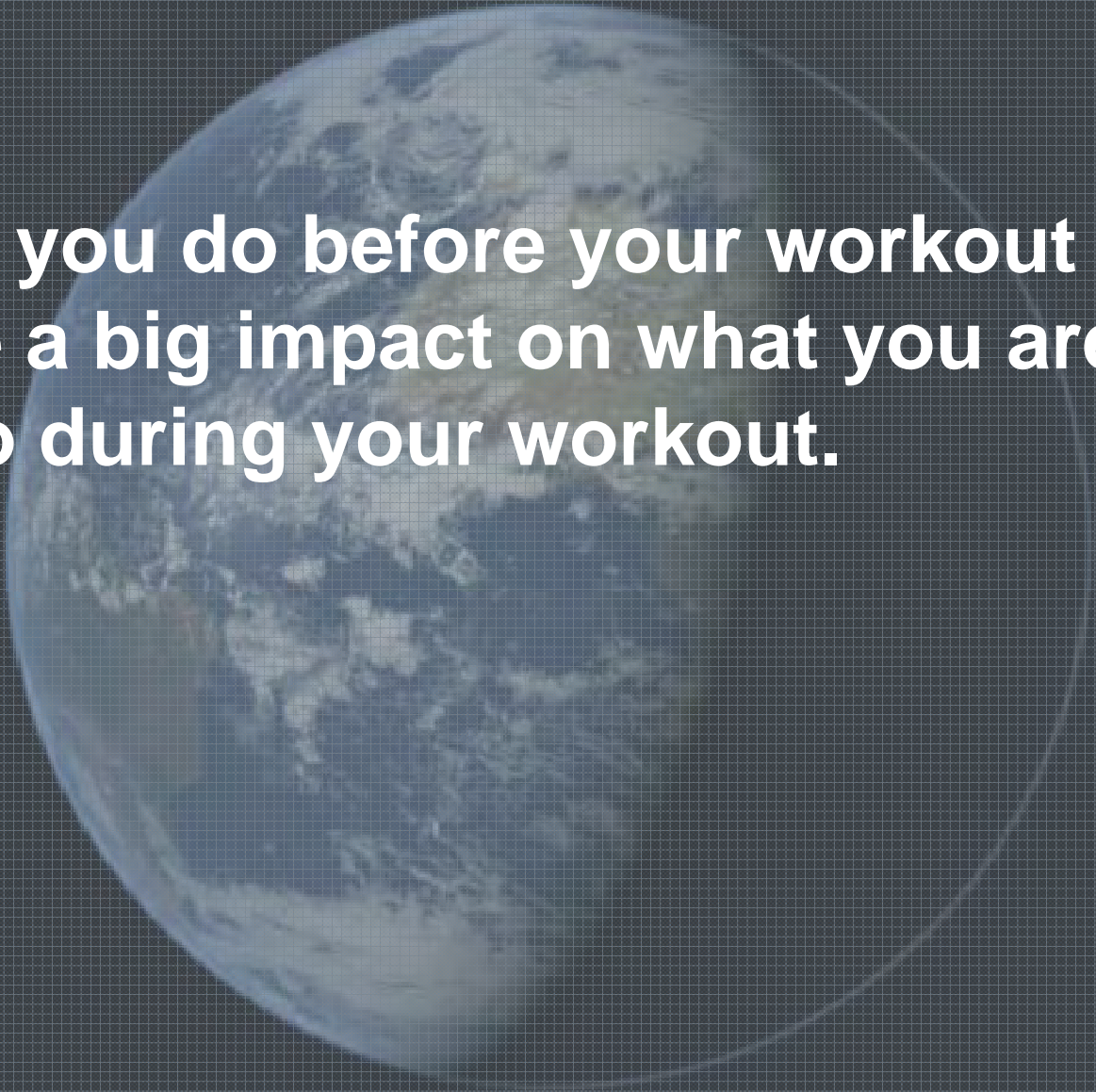
FURMAN INSTITUTE OF RUNNING & SCIENTIFIC TRAINING

FIRST



**“The more flexible the athlete is, the better the athlete can become.”**

**Greg Welch**



**What you do before your workout can have a big impact on what you are able to do during your workout.**

# Flexibility



**Flexibility is defined as the ability of a joint to move freely through its full range of motion.**

**Flexibility is...**

- **joint specific**
- **not a general trait**

# Importance of Flexibility Training

- ✓ **Improve Range of Motion**
- ✓ **May Improve Performance**
- ✓ **May Decrease Risk of Musculoskeletal Injury**
- ✓ **May Decrease Muscular Tension (not soreness)**
- ✓ **Restores Muscle Length After Exercise**
- ✓ **May Improve Body Alignment, Help Stabilize Joints**
- ✓ **Promotes relaxation**

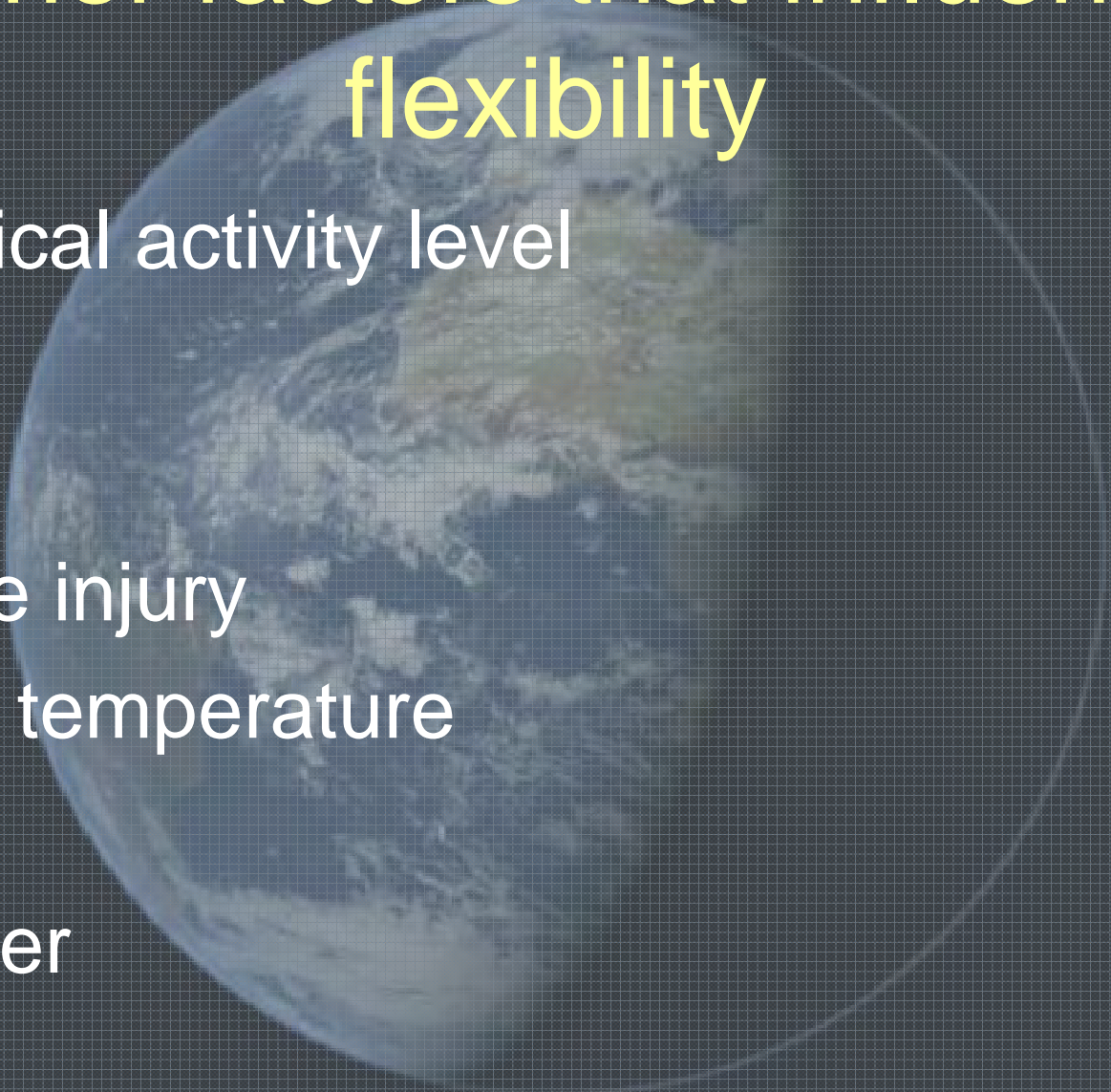
Flexibility exercises help stretch muscles, protect against injury and allow the maximum range of motion for joints



# What Determines Flexibility?

- Joint structure
- Muscle elasticity and length
- Connective tissue is most important part of muscle tissue for flexibility
- Nervous system activity

# Other factors that influence flexibility



- physical activity level
- skin
- fat
- tissue injury
- body temperature
- age
- gender

# Problems associated with a lack of flexibility

- low back dysfunction
- postural problems
- reduction in physical performance in leisure and work activities



# To improve flexibility...

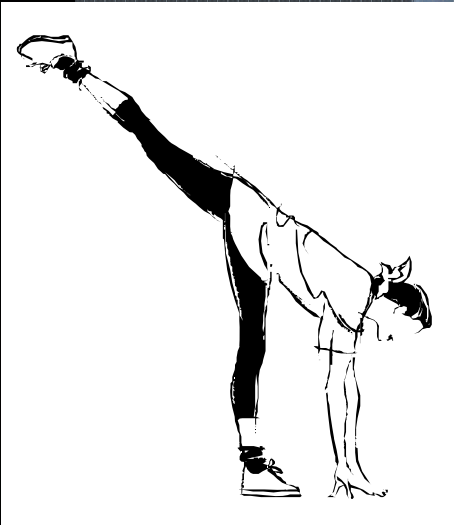
- muscle elongation is required.
- the overload principle must be applied.
- muscles must be stretched beyond their normal range of motion.

# Stretching Techniques

- **Static stretching**
  - each muscle is gradually stretched and held for 10-30 seconds

**Static (non-moving) stretching does not prepare your body to move quickly and efficiently**

- **Dynamic Mobility stretching**
  - stretching in a bouncing movement
  - NOT recommended for non-athletes
- **Proprioceptive neuromuscular facilitation (PNF)**
  - muscle is contracted, then stretched
  - causes soreness, requires partner



# When should I stretch?

- Warm-up
- Dynamic Mobility Stretching
- Workout
- Cool-Down
- Static Stretching



# Dynamic Mobility



- raises your body temperature, increases blood flow to your muscles, activates your nervous system, and prepares you fully for your mobility exercises.

# Dynamic Mobility



Your whole body functions as a unit - a 'chain' of interrelated parts.

For example, if your shoulders are stiff, you won't have a quick, fluid arm swing when you are running. If you don't have proper arm swing, your legs will slow down and your workout quality will drop.

# Dynamic Mobility



- Upper Body Mobility
- Neck Mobility
- Trunk And Shoulder-Girdle Movements
- Lower Body Mobility

# Dynamic Mobility



- **Upper Body Mobility**

## **ARM SWINGS (Two movement)**

- 1. Overhead/Down and Back - Swing both arms continuously to an overhead position and then forward, down, and backwards. Repeat for six to 10 repetitions .**
- 2. Side/Front Crossover - Swing both arms out to your sides and then cross them in front of your chest. Repeat for six to 10 repetitions.**

# Dynamic Mobility

- **Neck Mobility (Three movements)**
  - 1. Flexion/Extension - Tuck your chin into your chest, and then lift your chin upward as far as possible. Repeat for six to 10 reps.**
  - 2. Lateral Flexion - Lower your left ear toward your left shoulder and then your right ear to your right shoulder. Six to 10 reps.**
  - 3. Rotation - Turn your chin laterally toward your left shoulder and then rotate it toward your right shoulder for six to 10 reps.**



# Dynamic Mobility

- **Trunk And Shoulder-Girdle Movements  
(Three movements)**

**1. Flexion/Extension - Slump (protract) shoulders, tuck your chin toward your chest, and drop your chest forward slightly. Then, pull your shoulders back (retraction), raise your chin up, and lift your chest while arching your back slightly. Six to 10 reps.**

**2. Lateral Flexion - With your arms at your sides, bend sideways at the waist to your left, and then bend sideways to the right. Repeat for six to 10 repetitions on each side.**

**3. Rotation - With hands in front of your chest and elbows out to the sides, twist at your waist to the left, and then back to the right. Six to 10 reps.**

# Dynamic Mobility

- **Lower Body Mobility**
- **Hip Circles and Twists (Two Movement)**
  1. **Circles** - With your hands on your hips and feet spread apart wider than your shoulder, make circles with your hips in a clockwise direction for 10 to 12 repetitions. Then repeat the circles in a counterclockwise direction for 10 to 12 repetitions.
  2. **Twists** - Extend your arms out to your sides, and twist your torso and hips to the left, shifting your weight on to the left foot. Then twist your torso to the right while shifting your weight to the right foot. 10 to 12 reps on each side.

# Dynamic Mobility

- Lower Body Mobility
- Leg Swings (Two Movements)
  1. Flexion/Extension - With your weight on your left leg and your right hand on a support for balance, swing your right leg forward and backward for 10 to 12 repetitions. Repeat with the left leg for 10 to 12 reps.
  2. Cross-Body Flexion/Abduction - Leaning slightly forward with your hands on a wall and your weight on your left leg, swing your right leg to the left in front of your body, pointing your toes upward as your foot reaches its farthest point of motion. Then swing the right leg back to the right as far as comfortably possible, again pointing your toes up as your foot reaches its final point of movement. Repeat this overall motion 10 to 12 times before performing 10 to 12 reps with the left leg.

# Dynamic Mobility

- Lower Body Mobility

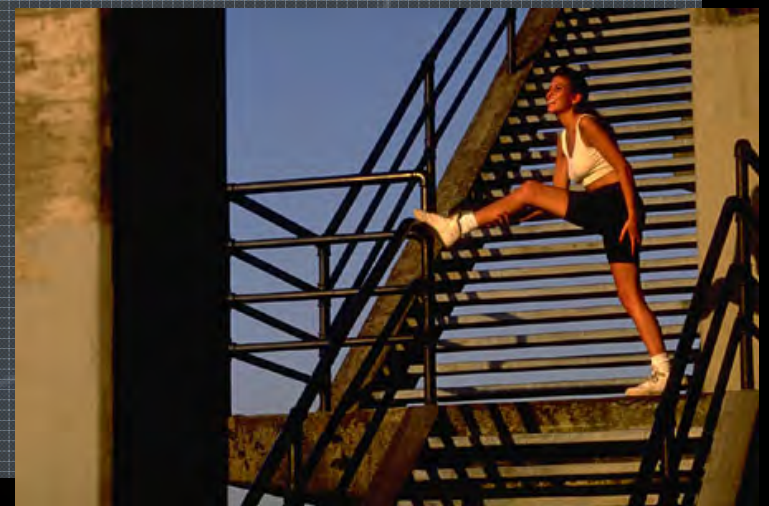
- Ankle Bounce (Two Movements)

1. Double-Leg Bounce - Leaning forward with your hands on the wall and your weight on your toes, raise and lower both heels rapidly (bounce). Each time, lift your heels one to two inches from the ground while maintaining ground contact with the balls of your feet. 12-16 reps.

2. Single-Leg Bounce - Leaning forward with your hands on a wall and all your weight on your left foot, raise the right knee forward while pushing the left heel towards the ground. Then lower the right foot to the floor while raising the left heel one to two inches. Repeat in a rapid, bouncy fashion for 12 to 16 repetitions before carrying out 12-16 reps with the opposite side.

# Types of Flexibility

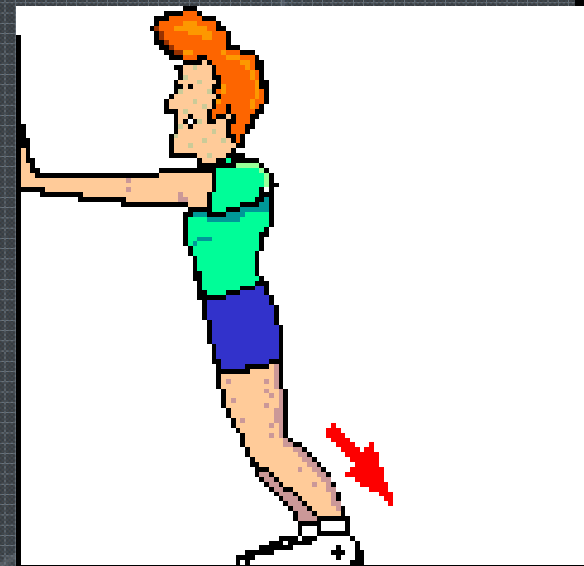
- **Static/ Dynamic Stretching**
  - Slow and controlled movements
  - Most commonly used and most practical
- **Dynamic Mobility**
  - Rapid and forceful movements
  - Initiates stretch reflex
- **PNF Stretching**
  - Contract/ relax
  - Requires props or partner



# Post Run Stretches

## Wall Pushup #1

Stand about three feet from a wall, feet at shoulder width and flat on the ground. Put your hands on the wall with your arms straight for support. Lean your hips forward and bend your knees slightly to stretch your calves

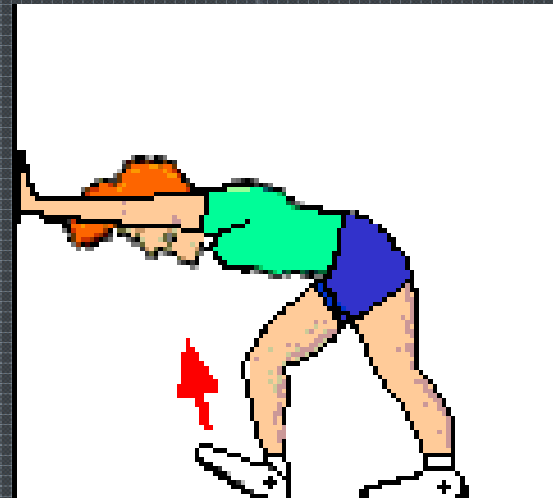


Source of stretches: [www.coolrunning.com](http://www.coolrunning.com)

# Post Run Stretches

## Wall Pushup #2

From the previous position, bend forward to lower your body to waist height. Bring one foot forward with your knee slightly bent. Lift the toes of the front foot to stretch the muscle under the calf. Stretch both legs.

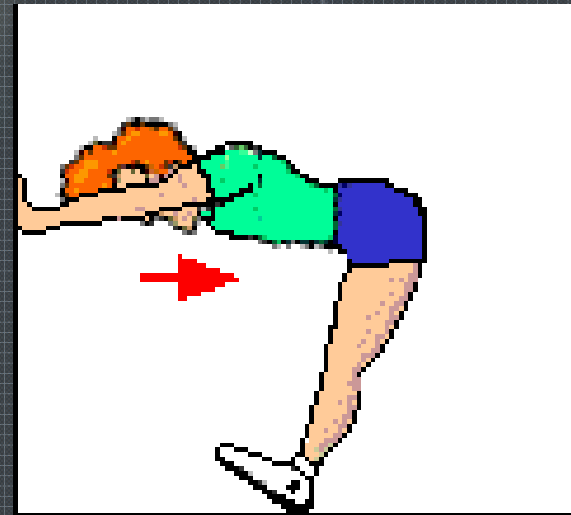


Source of stretches: [www.coolrunning.com](http://www.coolrunning.com)

# Post Run Stretches

## Wall Pushup #3

Put your feet together, rocking back on your heels with your hands on the wall and your arms straight to form a jackknife with your body. This stretches your hips, shoulders, and lower back.



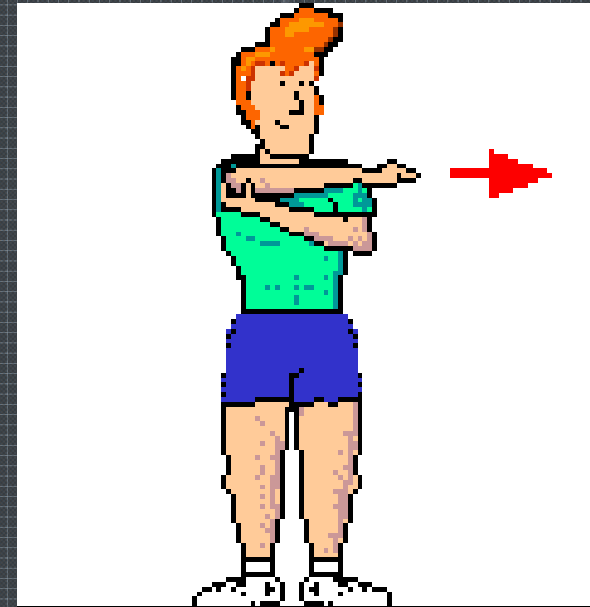
Source of stretches: [www.coolrunning.com](http://www.coolrunning.com)



# Post Run Stretches

## Back Scratch

Grab your elbow with the opposite hand and gently push the elbow up and across your body until your hand reaches down to "scratch" your back. Gently push on your elbow to guide your hand down your back as far as it will comfortably go, stretching your triceps and shoulders. Stretch both arms.

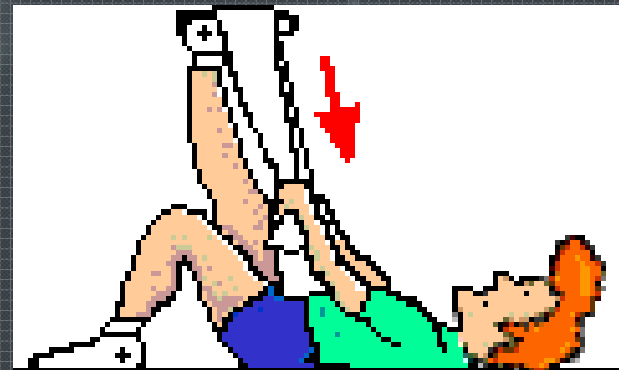


Source of stretches: [www.coolrunning.com](http://www.coolrunning.com)

# Post Run Stretches

## Hamstring Stretch

Lie down with one leg straight up in the air, the other bent with foot flat on the ground. Loop a towel over the arch of the lifted foot, and gently pull on the towel as you push against it with your foot. Push only to the point where your muscles contract. Stretch both legs.

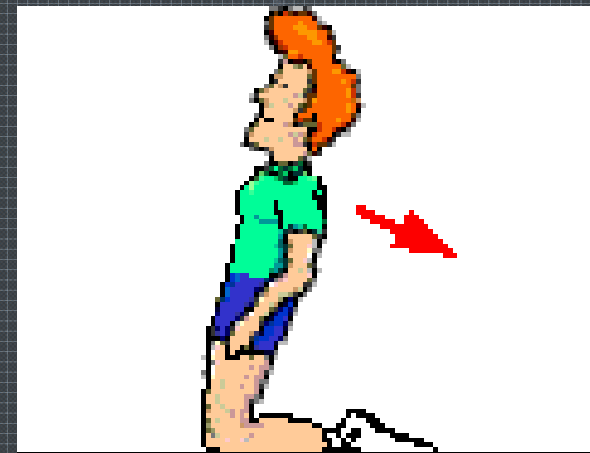


Source of stretches: [www.coolrunning.com](http://www.coolrunning.com)

# Post Run Stretches

## Quadriceps Stretch

Kneel on your knees (without resting back on your heels). Lean back with your body erect and your arms to the side. Hold for 15 seconds.

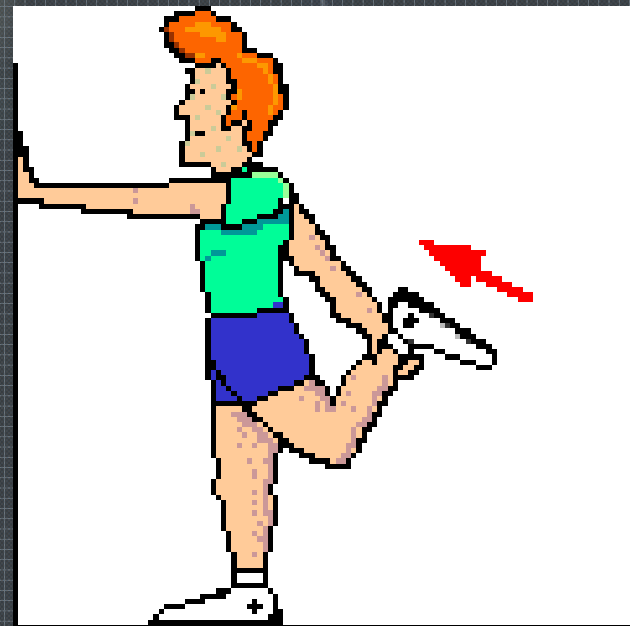


Source of stretches: [www.coolrunning.com](http://www.coolrunning.com)

# Post Run Stretches

## Heel To Buttock

Stand on one foot, with one hand on a wall for balance. Hold the other foot with the opposite hand and raise the heel of the lifted foot to the buttocks (or as close as comfortably possible), stretching your quadriceps. Keep your body upright throughout. Change legs and repeat.

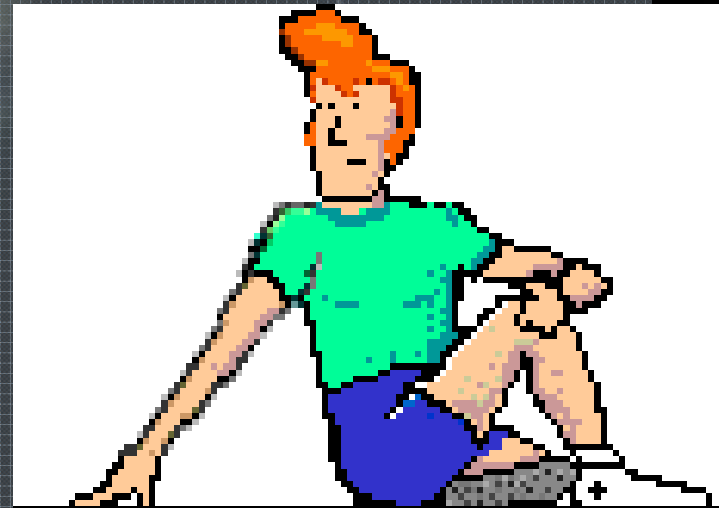


Source of stretches: [www.coolrunning.com](http://www.coolrunning.com)

# Post Run Stretches

## Hip & Lower Back Stretch

Sit on the ground with your legs crossed. Lift your right leg and cross it over the left, which should remain bent. Hug the right leg to your chest and twist the trunk of your body to look over your right shoulder. Change legs and repeat (i.e. looking over your left shoulder).

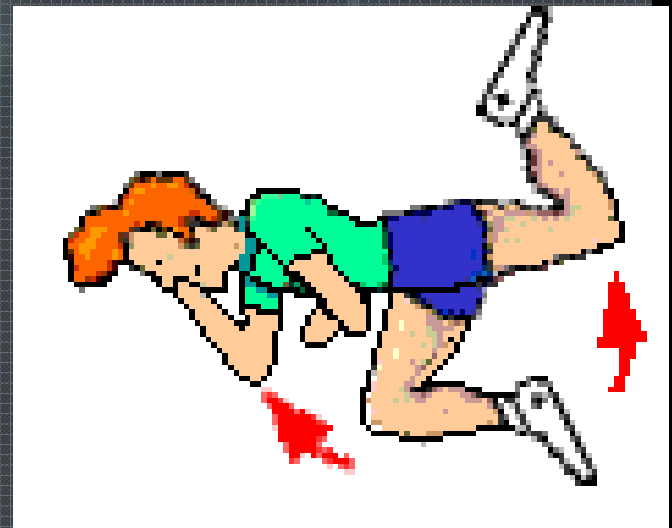


Source of stretches: [www.coolrunning.com](http://www.coolrunning.com)

# Post Run Stretches

## Iliotibial Band Stretch

Lie on your side with both legs bent in running position. Bring the bottom leg toward your chest and then bring the top one back toward your buttocks, so that the running position of your legs is exaggerated as possible. Hold for 30 seconds then flip sides and repeat.

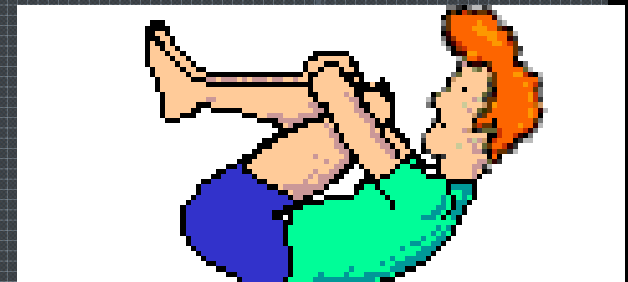


Source of stretches: [www.coolrunning.com](http://www.coolrunning.com)

# Post Run Stretches

## Hamstring & Back Stretch

Lie on your back with your knees bent. Hug your shins to your chest to stretch your hamstrings and lower back.

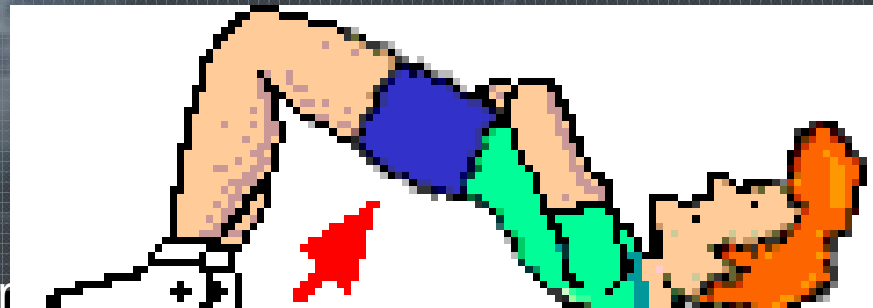


Source of stretches: [www.coolrunning.com](http://www.coolrunning.com)

# Post Run Stretches

## Bridge

Lie on your back and, with your feet flat on the ground, lift your hips up until your body forms a flat plane. Repeat this one ten times for 30 seconds each to stretch your quads and lower back

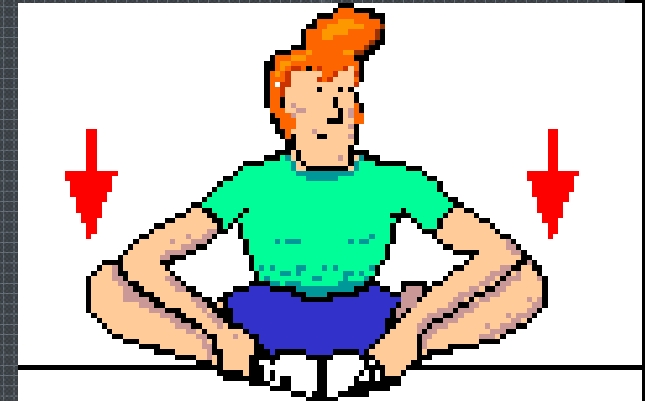




# Post Run Stretches

## Groin Stretch

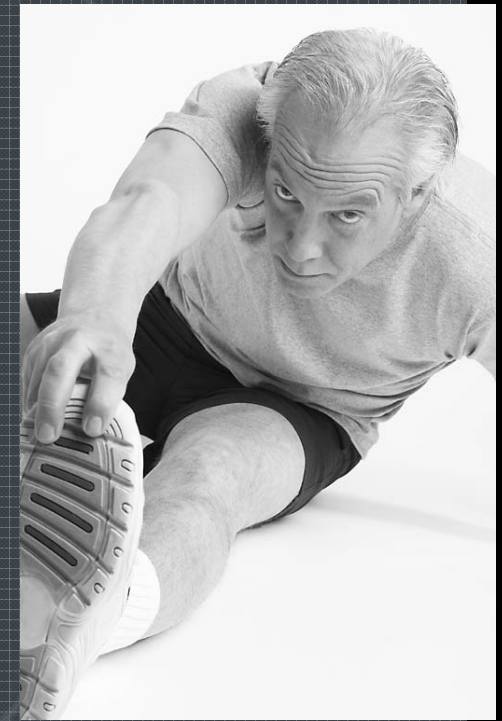
Seated, put the soles of your feet together. With your elbows on the inside of your knees, gradually lean forward and gently press your knees toward the ground.



Source of stretches: [www.coolrunning.com](http://www.coolrunning.com)

# Common Mistakes Made When Stretching

- Stretching prior to warm-up
- Overstretching to the point of pain
- Performing stretches incorrectly
- Inadequate program of stretching



# When should I stretch?

- Warm-up
- Dynamic Mobility Stretching
- Workout
- Cool-Down
- Static Stretching

