

# Why **STRETCHING** is important...

Stretching is often ignored with exercise. What many people do not realize, however, is that stretching is an essential component of exercise. Stretching helps our bodies maintain proper balance between muscle strength and muscle flexibility.

## Why Stretch ???

- Any cardiovascular routine or strengthening regimen requires your muscles to contract and relax (just think of all the work your muscles do during exercise)
- Rather than allow you muscles to tighten up following activity, stretching is effective to promote flexibility and joint motion, and is best to perform when your muscles are warm and receptive to stretching<sup>1</sup>
- Stretching is very important to perform **AFTER** exercise
- Stretching is also important **BEFORE** exercise, however, a 5-10 minute low intensity warm-up with walking, jogging, or riding a stationary bike is sufficient to warm-up muscles and reduce the risk of injury during exercise<sup>1</sup>
- Even if you do not exercise regularly, stretching 3 times per week may be beneficial after a proper warm-up to promote flexibility<sup>1</sup>

## Indications for Stretching<sup>2</sup>

- Range of Motion (ROM) in the joint is limited because soft tissues have lost their extensibility as a result of contractures, adhesions, or scar tissue formation, causing functional limitations or disabilities
- Restricted motion may lead to structural deformities that are otherwise preventable
- May be part of a total fitness program designed to prevent musculoskeletal injuries
- May be used prior to and after vigorous exercise potentially to minimize post-exercise muscle soreness

## Benefits of Stretching:

- Increased FLEXIBILITY
- Improved JOINT RANGE OF MOTION
- Improved CIRCULATION
- Decreased STRESS

## Stretching Should Be...

- Slow and controlled (NOT bouncy)
- Held to a point of mild tension (NOT pain)
- Held at least 15 seconds<sup>3-5</sup>
- Performed in major muscle groups you use often
  - Calves, thighs, shoulders, low back, etc.
- Relaxed → be sure you breathe during stretches

Please Visit Mayo Clinic Website for Slide Show on Stretching Major Muscle Groups:  
<http://www.mayoclinic.com/health/stretching/sm00043>

## Precautions for Stretching<sup>2</sup>

- ❖ Do not force a joint past its normal ROM
  - Remember, "normal" varies among individuals
  - In adults, women have greater flexibility than men
- ❖ Caution must be used in individuals with osteoporosis or prolonged steroid use
- ❖ Gradually progress the intensity, duration, OR frequency of stretching to minimize soft tissue trauma and post-exercise muscle soreness
- ❖ Avoid overstretching weak muscles
- ❖ Be sure alignment is correct and you feel a stretch in the targeted muscle
  - Stretching with improper posture may result in injury

## Summary of Article in Support of Stretching

Title: The Effects of Static Stretch Duration on the Flexibility of Hamstring Muscles<sup>5</sup>  
<http://www.bioline.org.br/request?md05014>

This article compares the effects of static stretching on the hamstrings of 60 subjects with hamstring tightness and without a history of low back pain or any lower extremity dysfunction. Subjects were randomly assigned to either 1 of 5 experimental groups (15, 30, 60, 90, and 120 second stretching groups) or the control group (no intervention). Stretches were performed every other day for 6 consecutive weeks. Knee extension deficit (KED) was the test used to measure hamstring tightness. Analysis of data revealed that statistically stretching the hamstring muscle group for ANY duration between 15 and 120 seconds would significantly increase its flexibility.

## STRETCHING MAJOR MUSCLE GROUPS

### Stretch Hamstring - Stand



HIP / KNEE - 39 Stretching: Hamstring  
(Standing)

Place one foot on stool.  
Slowly lean forward, keeping back straight  
and hips facing forwards.  
Stretch is felt in back of thigh.  
Hold 20-30 seconds.  
1 set of 3-5

### Stretch Gastroc - Standing



HIP / KNEE - 41 Stretching: Gastroc

Stand with one foot back, leg straight,  
forward leg bent. Keeping heel on floor,  
turned slightly out, lean  
into wall until stretch  
is felt in calf.  
Hold 20-30 seconds..  
1 set of 3-5

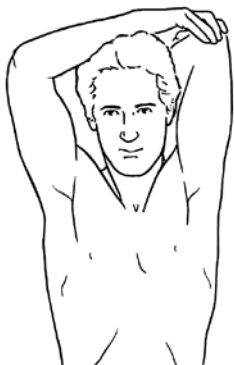
### Stretch Quad - Stand



HIP / KNEE - 37 Stretching: Quadriceps  
(Standing)

Pull one heel toward buttock until stretch is  
felt in front of thigh.  
Hold 20-30 seconds.  
  
1 set of 3-5

### Stretch - Inferior Capsule



SHOULDER - 71 ROM

Gently pull on one raised elbow with other  
hand until stretch is felt  
in shoulder.  
Hold 20-30 seconds.  
  
1 set of 3-5

### Stretch - Deltoid



SHOULDER - 72 ROM: Posterior Capsule Stretch

Gently pull on one forward  
elbow with other hand until  
stretch is felt in shoulder.  
Hold 20-30 seconds.  
1 set of 3-5

### Flexibility Upper Trapezius Stretch



CERVICAL SPINE - 23 Flexibility: Upper Trapezius Stretch

Gently grasp one side of head while  
reaching behind back with other hand. Tilt  
head away until a gentle stretch is felt.  
Hold 15-20 seconds.  
1 set of 3-5

## References

- 1 Mayo Clinic Staff. <http://www.mayoclinic.com/health/stretching/hq01447>. Updated February 21, 2009. Accessed January 12, 2010.
- 2 Cipriani D, Abel B, Purwitz D. A comparison of two stretching protocols on hip range of motion: implications for total daily stretch duration. *J Strength Cond Res.* 2003;17:274-278.
- 3 Kisner C, Colby LA. *Therapeutic Exercise Foundations and Techniques*. 5<sup>th</sup> ed. Philadelphia, PA: F.A. Davis Company; 2007.
- 4 Roberts JM, Wilson K. Effect of Stretching duration on active and passive range of motion in the lower extremity. *Br J Sports Med.* 1999;33:259-263.
- 5 Odunaiya NA, Hamzat TK, Ajayi OF. The effects of static stretch duration on the flexibility of hamstring muscles. *Afr J Biomed Res.* 2005;8(2):79-82.