

# Static Stretching & Dynamic Warm-ups

WHEN TO APPLY BOTH

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# The Shoulder

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Unique – allows multiple planes of motion

Inherently unstable

Stability is provided by

- Ligamentous Structures
- Surrounding Musculature
- Neuromuscular Feedback Mechanisms

Swimmers Want Stable Shoulders!

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# The Swimmer

Tend to be naturally selected to their sport

Can possess loose connective tissue



# The Stroke

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Underwater Videography Confirms: Not One of the 4 competitive strokes requires excessive range of motion

Hence, there is no reason to stretch beyond physiological means

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# Static Stretching

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Has been found to negatively impact performance when completed before activity

In other words...it may cause performance deficits!



# Static Stretching Before Activity

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Decreases Muscle Strength  
Reduces Power  
Impacts Balance  
Impacts Reaction  
Impacts Sprint Performance

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## Let's put it together!

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Inherently loose jointed  
We want to maintain shoulder stability  
Static Stretching before activity negatively impacts performance  
Some static stretches may negatively impact shoulder stability



## Discontinue



## Dynamic Warm-Up

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An Excellent Alternative!

Prepares the Body for Performance

## Dynamic Warm-Up

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Improves Muscle Temperature

Enhances Nervous System Function

Improves Power and Agility

Improves Sprinting Performance

Improves Vertical Jump



## Shoulder Dynamic Warm-Up

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The following dynamic warm-up is excellent:

- Before workout
- Before competition
- Between races when no warm-up pool is available

A handout is offered to share with the team

# Shoulder Dynamic Warm-Up #1

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[Show Video](#)



# Shoulder Dynamic Warm-Up #2

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[Show Video](#)



## Shoulder Dynamic Warm-Up #3

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## Shoulder Dynamic Warm-Up #4

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# Shoulder Dynamic Warm-Up #5

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Show Video



## There is a Role for Static Stretching

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In the course of a swim season, observationally, the following muscle groups tend to shorten:

- Upper Trapezius / Levator Scapula
- Pectoralis Group
- Latissimus Dorsi

# When to Apply Static Stretching

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At a time unrelated to workout and competition

Not after practice!

- Fatigued muscles do not like to be stretched
- Stretching fatigued muscles tends to facilitate muscle spindle and inhibit GTO firing

General guidelines for stretching include completing a specific static stretch that targets muscle tissue 1-3 times for 15-30 seconds each, approximately 5 days a week

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## Static Stretching Suggestions

### Pectoralis Group

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## Static Stretching Suggestions

### Latissimus Dorsi

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## Static Stretching Suggestions

### Upper Trapezius / Levator Scapulae

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## On-Deck Shoulder Screen

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To help coaches identify members on the team that may be inherently tight.

Please review handout.



## ½ Sit Wall Screen

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Assesses mobility of the Scapulo-thoracic joint as well as the Glenohumeral Joint

Assess length of the Latissimus Dorsi



## ½ Sit Wall Screen

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## 90/90 Screen

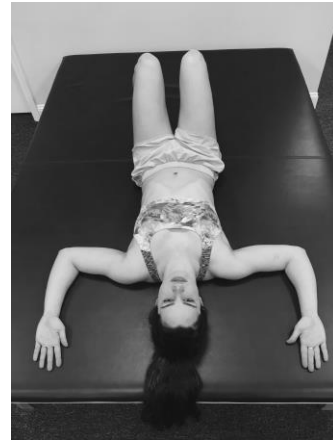
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Assesses mobility of the inferior and anterior glenohumeral joint capsule as well as the blended anterior band of the inferior glenohumeral and the middle glenohumeral ligaments

Assesses length of the Pectoralis Group

## 90/90 Screen

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## 45 Screen

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This position specifically assesses the length of the subscapularis.

A competitive swimmer needs to be able to achieve this position with 45° of external rotation while keeping the humerus in an adducted position.

## 45 Screen

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## Summary

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Discontinue Static Stretches that Negatively Impact the Stabilizing Structures of the Shoulder

Incorporate a Dynamic Warm-Up before Workout, Competition, and Between Events

Apply Static Stretching, When Applicable, at a time unrelated to Workout or Competition

Do Not Static Stretch Fatigued Muscles

# The Mechanics of Swimming: Treating Swimmers with Painful Shoulders

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New on-line course for healthcare providers, coaches, swimmers and parents.

Proceeds from the course are donated to the USA Swimming Foundation.

[www.educata.com](http://www.educata.com)



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Questions?

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