



FLEXIBILITY IN SWIMMERS

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WHAT IS FLEXIBILITY

- The body's ability to move freely around its joints or range of movement.
- Dependent on tissue makeup (genetics), activity (swimming, school etc.), previous injuries and the amount of stretching and mobility work completed



WHY IS FLEXIBILITY IMPORTANT

- Helps prevent injuries
- Assists recovery
- Improved performance
 - **better catch position**
 - **improved body position**
 - **more efficient stroke**
 - **less fatigue**
 - **less time missed due to injury**



HYPERMOBILE SWIMMER

More joint range of motion

Improved catch position

Require greater muscle strength and control



STIFF BUT STRONG SWIMMERS

Poor mobility and flexibility

Adopt compensation strategies to gain range

Strong and Powerful – stable base



HOW TO IMPROVE FLEXIBILITY



- Stretching exercises
- Foam rolling
- Massage ball
- Physiotherapy
- Massage

TYPES OF STRETCHING

- Static stretching

- **Used primarily after training or for tight trouble areas**
- **Hold 30 seconds**

- Dynamic

- **Primarily used prior to training**
- **Slowly increase range with repetitions**

- PNF / “Contract – Relax”



WHAT HAPPENS WHEN WE STRETCH?

- Lengthens out muscle
- Increases short term elasticity (altered nerve interaction)
- Loosens tight connective tissue
- Improved blood flow as part of warm up
- Breaks down scar tissue

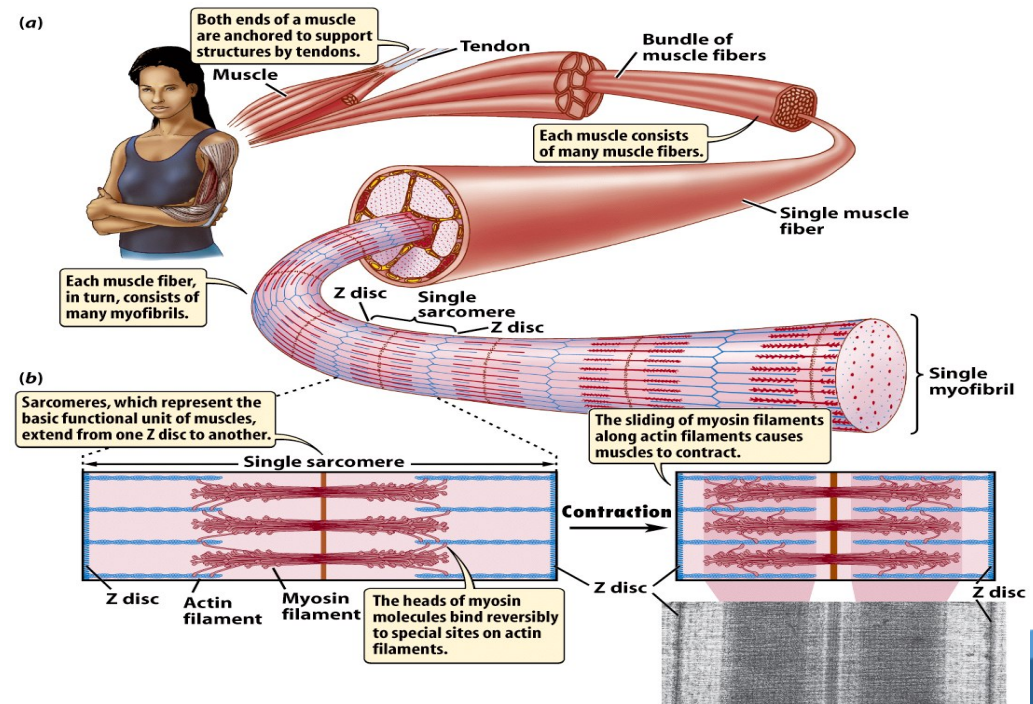


Figure 27-9 Discover Biology 3/e
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STREAMLINE STRETCH

- Improved streamline, catch and body position
- Reduced drag
- Improved mechanics
- Decreased risk of shoulder injuries

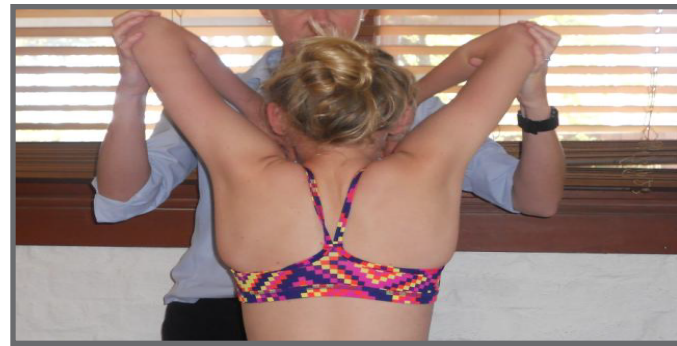


THORACIC EXTENSION ON A FOAM ROLLER



LAT STRETCH

- Improved recovery
- Improved streamline and high strong catch position



TRICEPS STRETCH



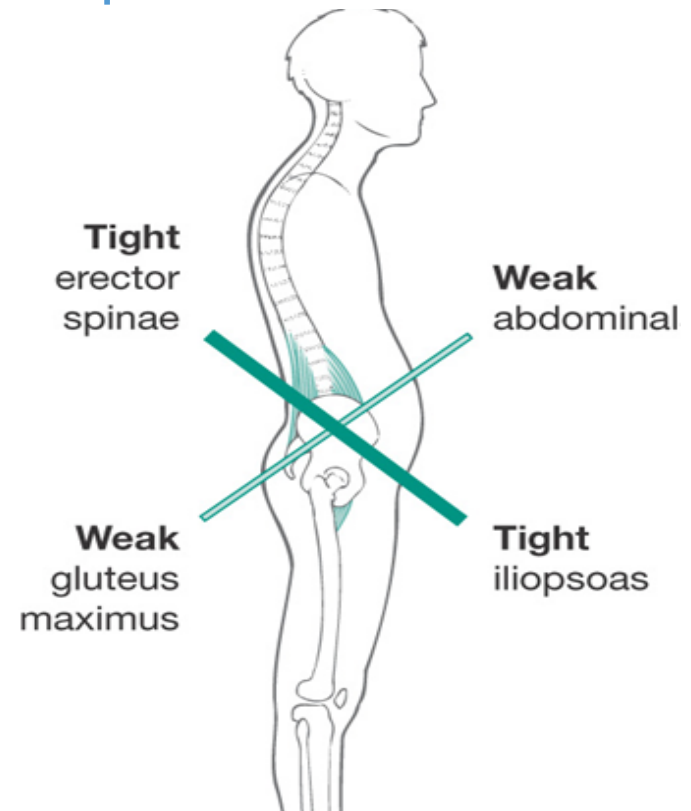
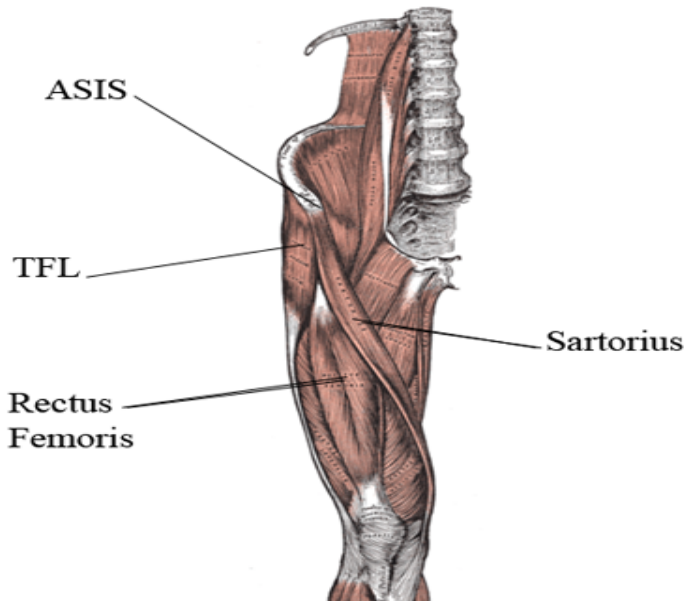
THORACIC ROTATION

- Improved rotation in water
- Most important indicator of increased risk of injury
- Significantly impacts upon body position and catch in the water
- Compensatory strategies



HIP FLEXORS

- Important for body position of hips and spine
- If tight can alter posture and tighten the lower back

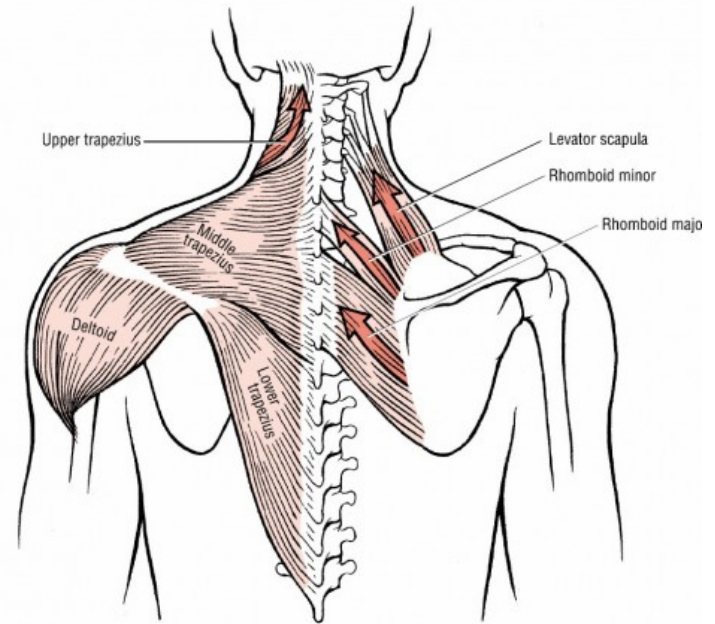


HIP FLEXOR STRETCHES



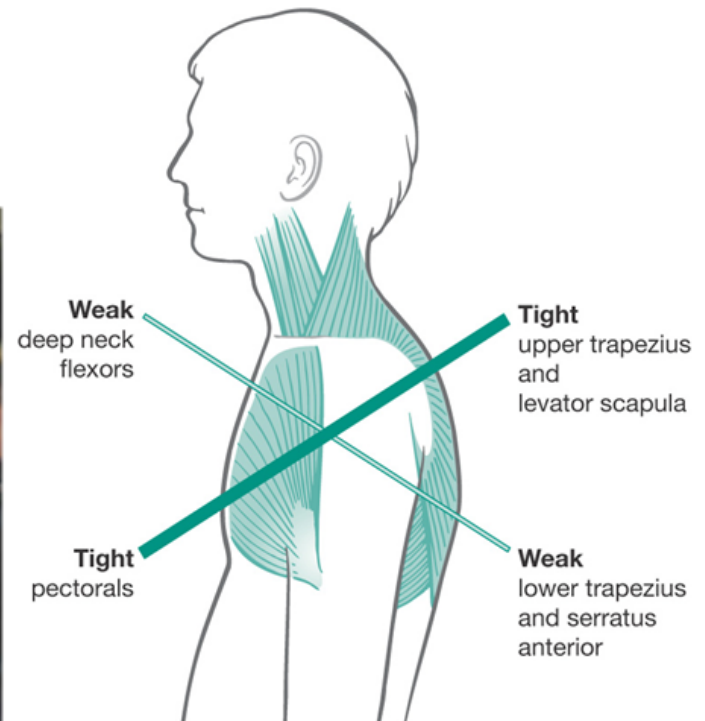
UPPER TRAP STRETCH

- Improves recovery and very important for streamline and shoulder mechanics and reducing risk of neck and shoulder injuries



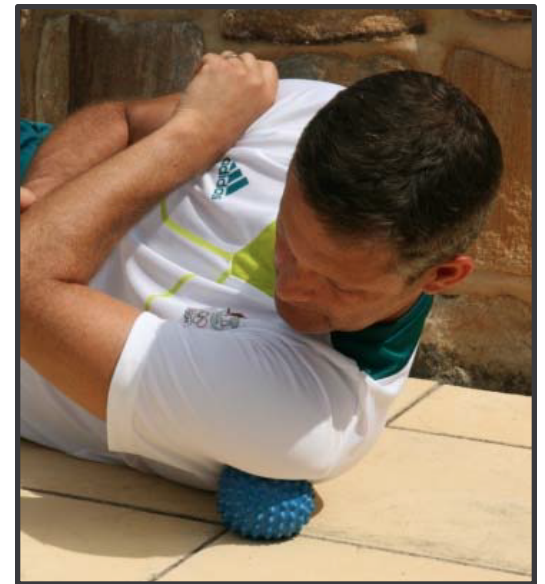
PEC STRETCH

- Important for recovery, thoracic mobility and adequate range of movement
- If tight contributes to poor posture



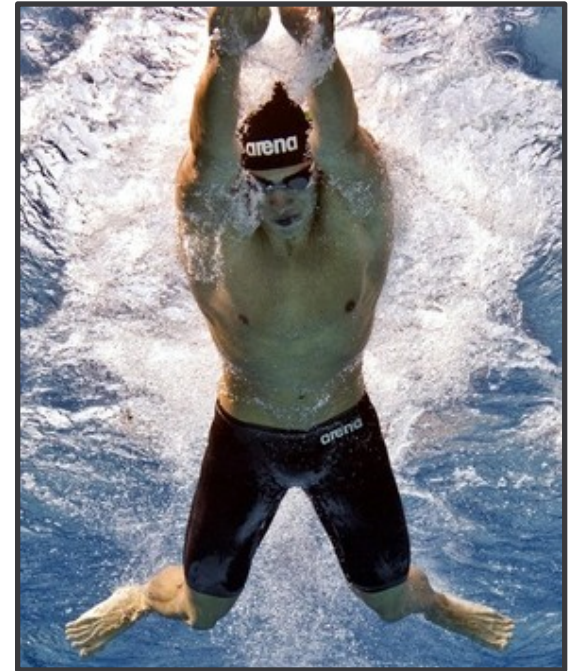
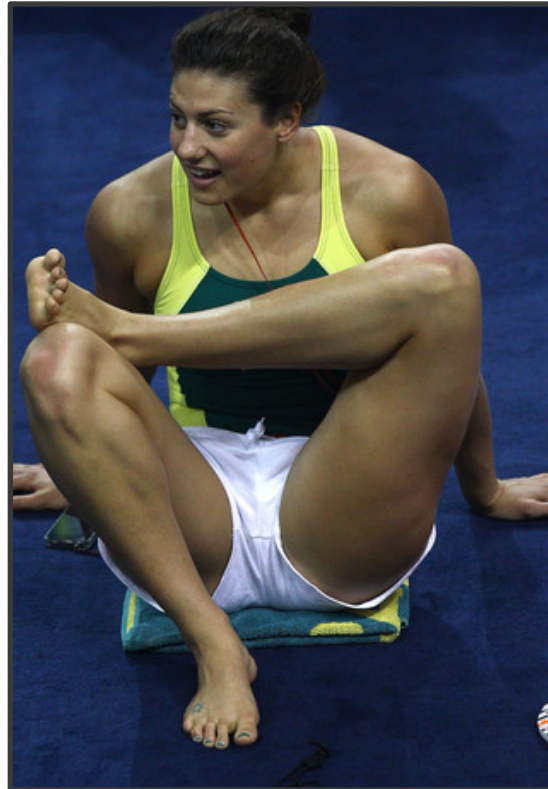
ROTATOR CUFF STRETCH

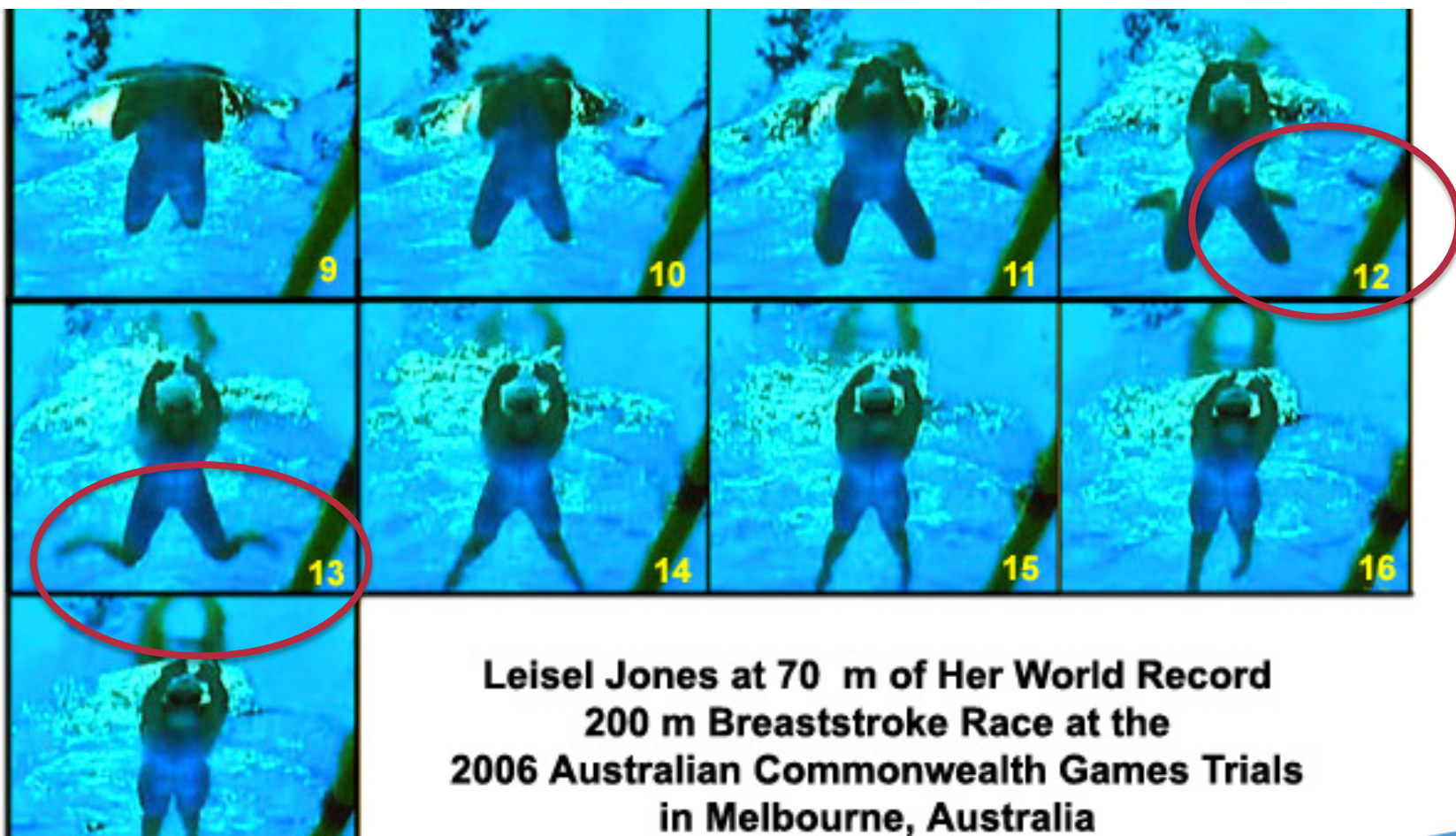
- Improves recovery, catch position and reduces risk of injury



GLUT STRETCHES

- Hip Internal Rotation important for an efficient kick
- Main limiting factor is tight glutes





**Leisel Jones at 70 m of Her World Record
200 m Breaststroke Race at the
2006 Australian Commonwealth Games Trials
in Melbourne, Australia**

THIGH STRETCHES

Quadriceps,
Hamstrings,
Groin/adductor



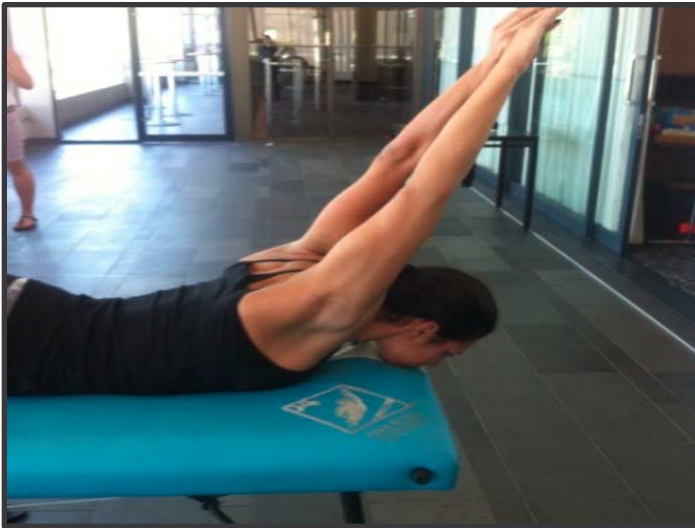
LOWER LEG STRETCHES

- Improves recovery, improves kick and reduces risk of ankle injuries



HOW FLEXIBLE ARE YOU

- Feeling and ability to move in the water
- Feedback from coach
- Screening
 - **Very accurate measures used to find strengths and weaknesses**
 - **Specific program create to address weak areas**



SCREENING RESULTS

	Abduction Humeral Angle		Combined ext	Shoulder External Rotation		Shoulder Internal Rotation		Hip Flexor Angle		Hamstring Femoral Angle		Hip Internal Rotation		Ankle Plantar Flexion		Trunk Rotation	
	Right	Left		Right	Left	Right	Left	Right	Left	Right	Left	Right	Left	Right	Left	Right	Left
Girls	152.0	152.5	-3.4	49.3	41.6	10.9	17.5	-5.0	-7.0	102.0	101.1	45.0	45.5	169.5	170.5	64.8	65.5
Boys	133.5	135.3	-7.8	100.5	99.3	32.3	37.3	1.8	2.3	74.0	74.5	37.8	40.3	167.5	165.0	75.8	77.8

PUTTING IT TOGETHER

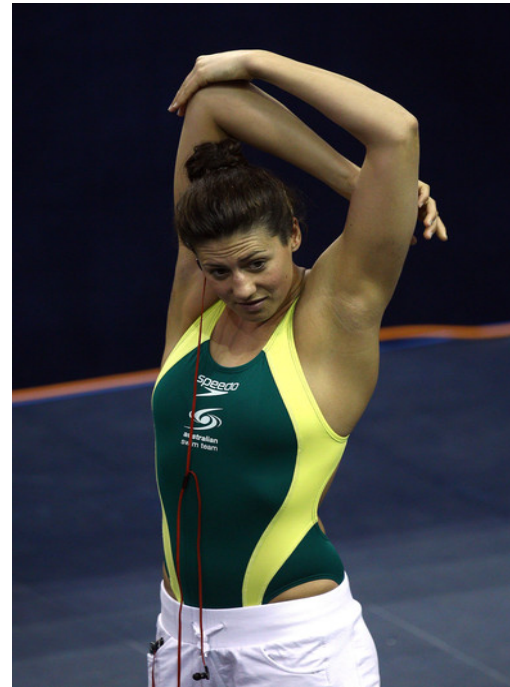
GOAL IS TO PREPARE FOR TRAINING/ WARM UP

- **Active warm up exercises**

- * BUILD FROM SLOW TO MORE VIGOROUS ACTIVITIES
- * ALTERNATE BETWEEN BODY PARTS TO IMPROVE BLOOD FLOW
- Resistance Band work
- Squats
- Core
- Skipping
- Push ups
- Arm and leg swings

- **Specific stretching exercises**

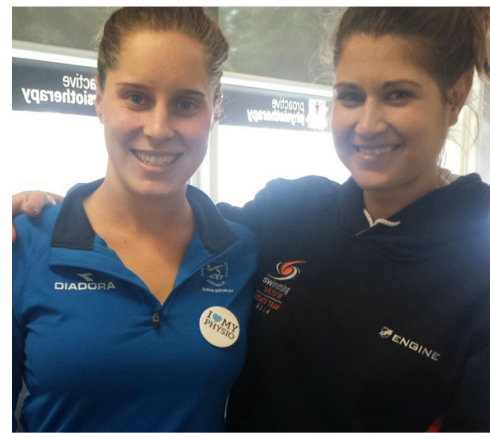
- Streamline
- Lats
- Triceps
- Chest
- Neck
- Thoracic extension and rotation
- Lumbar spine
- Hips
- Thighs and feet





QUESTIONS

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♥ 92 likes
bindyhocking I love my physio day at @physiohealth!
Thanks @cara_lee for being an awesome physio!
#ilovemyphysio #somethingalwaysurts

