

The background of the entire slide is a photograph of two swimmers in a pool. One swimmer in the foreground is wearing a dark blue cap and is captured in a powerful stroke, creating a splash of white water. Another swimmer in the background is wearing a yellow cap. The pool lanes are marked with blue and white lane lines.

MUNI
SPORT

COMPETITION SWIMMING

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WHAT IS COMPETITION SWIMMING?

- ▶ Swimming is an individual or team racing sport that requires the use of one's entire body to move through water. The sport takes place in pools or open water.
- ▶ Competitive swimming is one of the most popular Olympic sports, with varied distance events in butterfly, backstroke, breaststroke, freestyle, and individual medley.

BENEFITS OF SWIMMING

- ▶ Increase conditioning and physical endurance
- ▶ Builds endurance, muscle strength and cardiovascular fitness.
- ▶ Helps you maintain a healthy weight, healthy heart and lungs.
- ▶ Tones muscles and builds strength



WHAT ARE THE GOALS?

- ▶ **Outcome goals:** ultimate, big-picture goals
 - “Qualify for the national team”
- ▶ **Performance goals:** the benchmark goals you set that will ultimately lead you to your outcome goals.
 - “Consistently complete a 50 fly with 25 strokes or less”
- ▶ **Process goals:** specific, day-to-day actionable steps you need to implement that build up to your performance and outcome goals.
 - “Attend every practice, including both the morning and afternoon sessions”

DETERMINANTS OF SUCCESS

▶ The key to setting goals at each of these levels is to keep it **SMART**:

(S)pecific. 'Swim faster' shouldn't be your only goal.

(M)easurable. Have a criteria for success so you can track your progress.

(A)ttainable. Is your goal something you can reasonably accomplish given where you are today?

(R)ealistic.

(T)ime-bound



THE FOUR MAIN SWIMMING STROKES

Freestylers



Butterflyers



Breaststrokero



Backstrokers



FACTORS INFLUENCING SWIMMING PERFORMANCE

▶ **Sex differences:**

- Males tend to swim faster than females

▶ **Strength:**

- Swimming power and especially upper body strength have been demonstrated to be crucial to success in sprint swimming

▶ **Swimming Performance:**

- Dynamic strength is an important determinant of swimming performance.
- Studies have found that upper-body muscular strength and/or power output correlate highly with swim velocity over distances ranging from 23 to 400m.

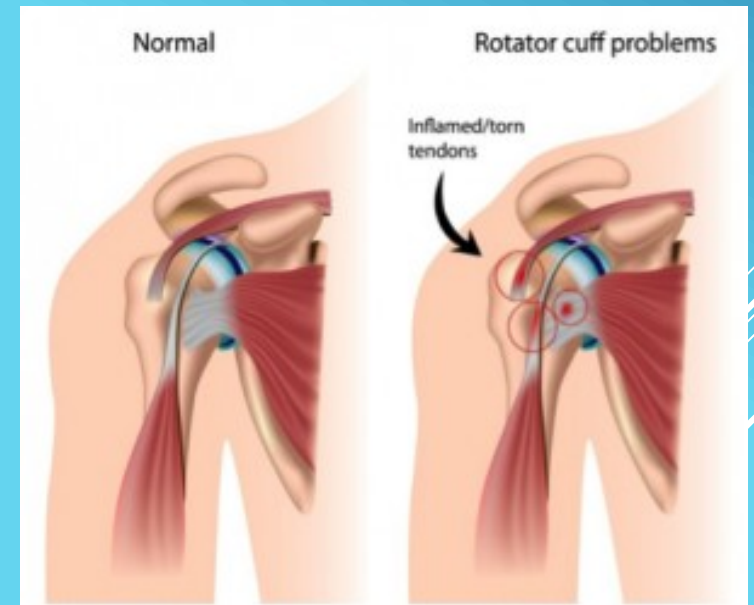
▶ **Energy Generation**

- The amount of energy required to swim is related to the intensity and strokes used.
- The demand for energy is reduced proportionally with the skill of the swimmer.

COMMON SWIMMING INJURIES

Neck and shoulder injuries are among the most common injuries that swimmers face

- ▶ Irritation and inflammation in the shoulders
- ▶ Rotator cuff tendonitis or tears
- ▶ Shoulder impingement syndrome, which is a result of pressure on the rotator cuff muscles from part of the shoulder blade when the arm is lifted overhead
- ▶ Tears in the cartilage around the shoulder socket
- ▶ Neck and low back pain
- ▶ Bicep tendonitis




Swimmers might also experience knee injuries. Stress on the knees can result in pain under or around the kneecap or at the inside of the knee.

CAUSES OF SWIMMING INJURIES

- ▶ Overtraining
- ▶ Not enough rest periods
- ▶ Poor stroke mechanics
- ▶ Poor breathing technique
- ▶ Poor flexibility or range of motion
- ▶ Decreased rotator cuff or shoulder blade (scapular muscle) strength
- ▶ Poor core strength or stability
- ▶ Decreased hip muscle strength



HOW TO PREVENT THESE INJURIES

- ▶ Warm up properly before swimming, and take part in preseason and in-season strengthening and conditioning programs.
 - ▶ Use proper techniques
 - ▶ Work out all your muscle groups not just the muscles you think you'll use in the water
 - ▶ Gradually increase the intensity and length of swims to avoid overtraining.
 - ▶ Vary your training program
 - ▶ Allow the body proper rest periods between competitions and training sessions.
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WARM UP BEFORE SWIMMING

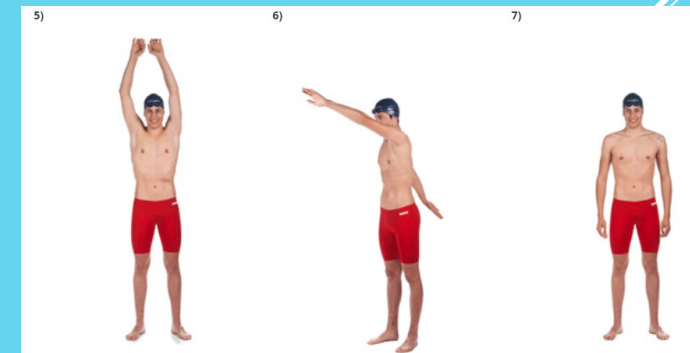
SHOULDERS: The shoulder is the most intricate joint in the entire body, so you must warm up properly by performing a series of rotations to really extend them

- ▶ **1)** Forward shoulder rotation with one arm only
- ▶ **2)** Backward shoulder rotation with one arm only
- ▶ **3)** Forward rotation using both arms
- ▶ **4)** Backward rotation using both arms



ARMS: After starting work on the shoulders, it makes sense to also focus on the arms.

- ▶ **5)** Lateral arm raises
- ▶ **6)** Alternating arm raises moving one arm forwards and one arm backwards
- ▶ **7)** Lateral arm raises finishing with the movement with straight arms



REST OF THE BODY: Upper body and hamstrings



EXERCISES SUITABLE FROM STRENGTH TRAINING TO SWIMMING TRAINING

- ▶ **Back muscles:** lat pulldown, 3-way back
- ▶ **Triceps:** Alternate D/B bench press
- ▶ **Biceps:** single arm seated row, chin ups (+weight), lying cable pullover
- ▶ **Pectoral muscles:** single arm seated row, Alternate D/B bench press, lying cable pullover
- ▶ **Quadriceps:** Single-leg press
- ▶ **Gluteus muscles and hamstrings:** twisty machine, reverse back extension, med ball kickback, leg press
- ▶ **Core:**
 - ▶ single arm seated row, twisty machine, woodchopper
 - ▶ swiss ball: crunches, russian twist, leg tucks, lateral roll
 - ▶ med ball: side pass, 45 degree sit, overhead throws, twists

TRAINING FOR COMPETITIVE SWIMMERS

When designing a resistance training program for competitive swimmers the following must be considered:

- Goal of the program—hypertrophy, maximum strength, maximum power, strength endurance.
- Number of reps, sets and rest —depends on goals
- Choice of exercise
- Order of exercise.

Type	Reps	Sets	Intensity (%)	Rest
Power	1-3	3-4	90-100	3-5 min
Maximum strength	1-6	3-4	85-100	2-5 min
Strength endurance	>12	3-6	40-65	30-90 sec
Hypertrophy	8-12	3-6	65-80	30-90 sec

Session 1	Set 1	Set 2	Set 3	Set 4	Set 5
Lat pulldowns	8	8	8	6	6
Single leg press	6	6	6	4	4
Alternate D/B bench press	8	8	8	6	6
Single arm seated row	8	8	6	6	
Rotator cuff	8	8	8	8	
Twisty machine	8	8	8	8 each side	
Abdominals (See below)					

Session 2	Set 1	Set 2	Set 3	Set 4	Set 5
Chin ups	8	8	8	6	6
Reverse back extension	8	8	6	6	4
Single leg squat	6	6	4	4	4
3- way back	8	8	8	6	
Med ball kickback	6	6	6	6 each arm	
Woodchopper	8	8	8	6	6
Abdominals (see below)					

Session 3	Set 1	Set 2	Set 3	Set 4	Set 5
Chin ups + weight	6	6	6	4	4
Leg press	6	6	6	4	4
Alternate D/B bench press	8	8	6	6	6
Lying cable pullover	8	8	6	6	
Twisty machine	8	8	8	8 each side	
Single-arm seated row	8	6	6	6	8

Abdominal session	
Abdominals	200 reps from below

Swiss ball	
Crunches	2 x 20
Russian twist	2 x 20
Leg tucks	2 x 20
Lateral roll	2 x 20

Med Ball	
Side pass	2 x 10 each side
45 degree sit	2 x 30
Overhead throws	2 x 20
Twists	2 x 20

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**THANK YOU FOR THE
ATTENTION**



**AND FOR NOT ASKING
QUESTIONS!**