

WARM-UP AND STRETCHING EXERCISES FOR SWIMMERS



Warm-Up and Stretching Exercises

Most athletes (swimmers included) use a combination of controlled movement exercises and specific joint/muscle stretching to improve performance potential. The proposed benefits of pre-training (or competition) warm-up and stretching activities include:

- Increased blood flow to the active muscles, heart-rate is increased during the warm-up activity.
- Decreased "stiffness" due to increased stretch tolerance of the nerve receptors in the muscle. This allows for a increased range of motion.
- Decrease in reflex inhibition of opposing muscles or muscle groups (once again -- this improves range of motion).
- A combination of the above affects that may reduce the risk of muscle or joint injury when more vigorous physical activity begins.

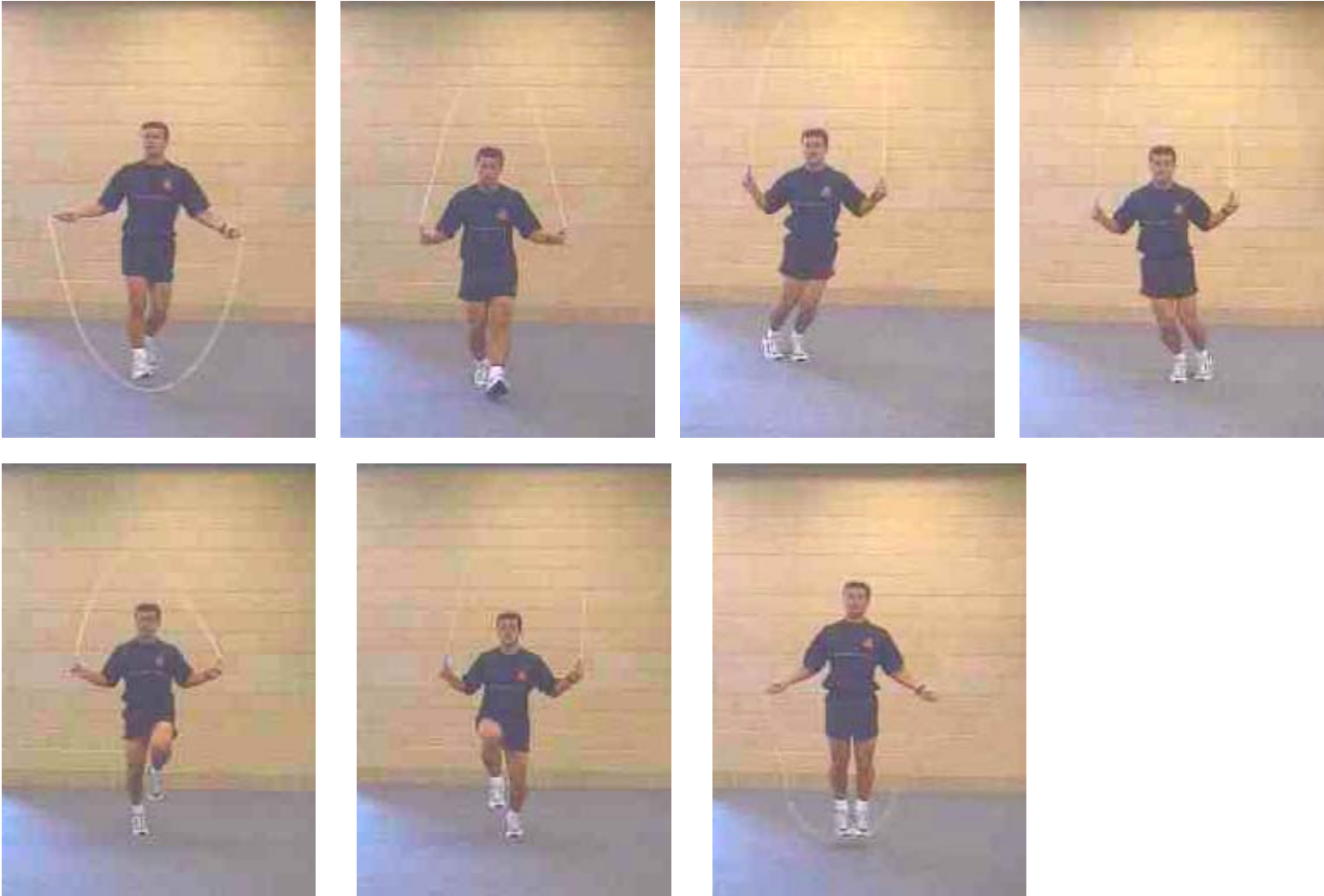
General Guidelines

Active warm-up exercises are most beneficial when performed prior to more specific muscle/joint stretching exercises. Movements should always start in a slow and controlled pattern, but may progress to more rapid and vigorous activities. Exercises are performed as a series of repetitions, each exercise may last 30 seconds to several minutes. Rest between exercises is usually kept to a minimum (only a few seconds). Alternating exercises that focus on different body parts (i.e. an arm exercise followed by a leg exercise) will help to stimulate blood flow and increase body temperature. After several minutes of warm-up exercises (the total time will depend upon the individual and his/her capabilities) the athlete should progress to specific stretching exercises and finally to the full sporting activity (i.e. swimming, running, etc.).

The athlete's goal is to prepare the body to accept more demanding physical activities -- work within your limits to maintain control and precision during all warm-up and stretching exercises.

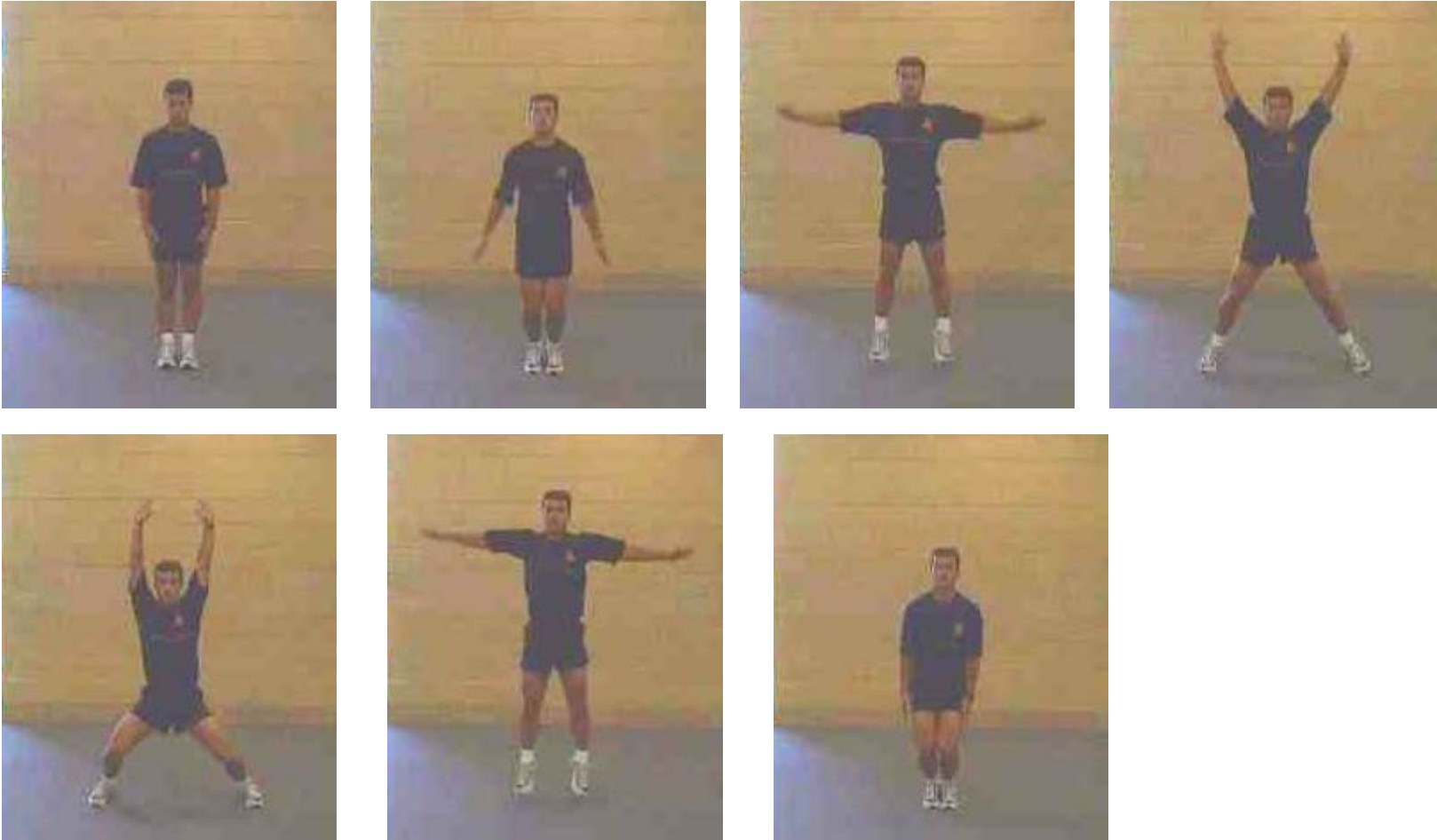
WARM-UP EXERCISES

ROPE SKIPPING



Rope skipping offers many movement variations, pictured above are \Rightarrow left-leg and then right-leg leading "skips"; side-to-side double-leg "jumps"; high knee lift single-leg "hopping" and double-leg "jumps" (many other variations are possible)

JUMPING JACKS



Starting Position → standing, feet together and arms at the sides

Action ⇒ bend the knees slightly as arms swing out and up (perform a small jump to separate the legs); feet strike the ground and knees continue to bend as arms extend overhead; arms swing down (perform a second small jump to bring the legs together) -- knees bend to start another exercise repeat

DOUBLE ARM ROTATION



Starting Position → standing, arms at the sides

Action ⇒ keeping the arms relaxed and straight -- lift both arms (turn palms out) to a position above the shoulders then continue to rotate the arms back and down to the starting position -- repeat the rotation several times, starting slowly and gradually adding speed to the movement (do not swing arms so fast as to lose control), then reverse the direction of the arm rotation

DOUBLE ARM SWING "SKIING" (with forward trunk flexion)



Starting Position → bent forward position with back straight to involve abdominal muscles

Action ⇒ swing the arms back, then forward through a full range of motion

OPPOSITE ARM SWINGS



Starting Position → feet at shoulder width and knees slightly bent; trunk bent forward; arms hanging below the shoulders (maintain body position with abdominal muscle control)

Action ⇒ right-arm swings forward as left-arm swings back through maximum range of movement -- reverse arm positions (i.e. left-arm back and right-arm forward)

ARM-SWINGS WITH TRUNK ROTATION



Starting Position → feet at shoulder width (or wider) and knees slightly bent; trunk bent forward (maintain body position with abdominal muscle control)

Action ⇒ keeping the arms relaxed, rotate the shoulders and arms to the left and then to the right

ARM SWINGS WITH LATISSIMUS STRETCH



Starting Position → standing

Action ⇒ rotate one arm up (bending the elbow) to reach behind the back as the other arm swings across the front of the body (finishing under the opposite shoulder) -- reverse the swing to the other side

LATERAL ARM SWINGS (without trunk rotation)



Starting Position → feet at shoulder width (or wider) and knees slightly bent; trunk bent forward (maintain body position with abdominal muscle control)

Action ⇒ lift the arms out and up to their highest point, then swing both arms down (keep arms straight, yet relaxed) and across the body

SQUATS



SQUAT JUMPS



Starting Position → standing, feet at shoulder width; hands behind the head

Action ⇒ bend at the knee (heels on the floor) and lower the trunk while keeping the back straight -- add a "jump" to the upward movement

SPLIT LEG LUNGE



Starting Position → standing with feet together and back straight; extend arms overhead

Action ⇒ step forward with one leg (right angle at the knee) to lower bodyweight while keeping the back straight -- return to start

SQUAT THRUSTS "Burpees"

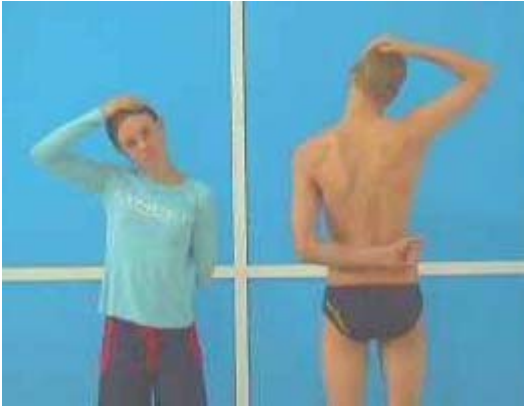


Starting Position → standing

Action ⇒ bend first from the knees (and then from the hips) to drop hands to the floor; balance bodyweight on the hands as legs are thrust back to push-up position; legs return to full-squat position; arms thrust up as legs extend to full jump position; return to starting position

STRETCHING

UPPER TRAPEZIUS STRETCH



Gently grasp the side of the head with one hand and tilt the head in that direction -- without putting any pressure on the neck -- then try to press the shoulder down.

LOWER BACK STRETCH



Stand upright with feet close together about 1m from a wall. Place both hands against the wall and keep the lower-back flat while gently pushing down the upper-back.

BRACHIAL PLEXUS STRETCH



Place one hand on a wall with fingers pointed down, the elbow is slightly flexed. Move the head away from the wall and straighten the elbow until the stretch is felt down the arm. This is a nerve stretch and should be very gentle.

HIP FLEXOR STRETCH



Start in an upright kneeling position with one leg forward (knee at right angle). Hold the abdominal muscles tight and tilt the trunk forward. The stretch should be felt through the front of the thigh.

PIRIFORMIS STRETCH



One leg straight, cross the other over, place elbow (same side as straight leg) outside bent knee. Gently push the knee across the body.

ADDUCTOR STRETCH



Sit with knees bent so the soles of the feet are together. Hands rest on the ankles, use the elbows to push down against the inside of the knees.

HAMSTRING STRETCH



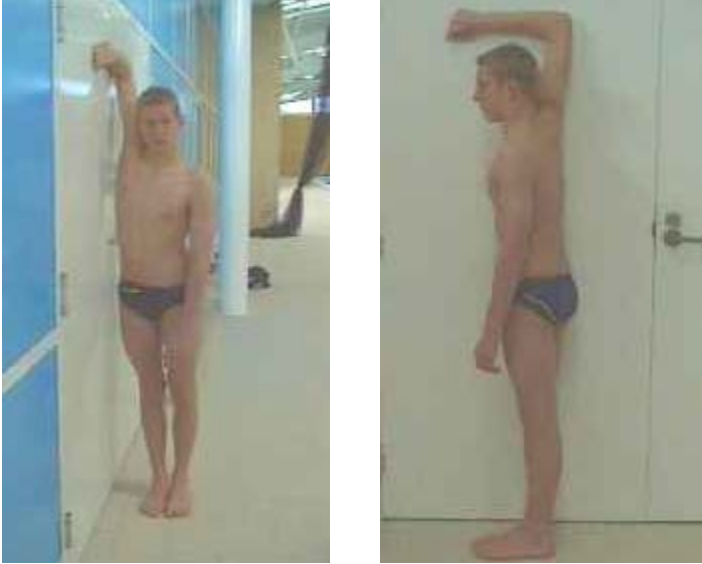
Sit with one leg extended and the other leg flexed so the foot rests on the inside of the thigh. Lean forward with the trunk and slide hands down the extended leg.

LOWER BACK AND HAMSTRING STRETCH



Sit with legs extended and ankles dorsi-flexed so the toes point up. Bend forward from the waist and reach past the feet with both hands. Note the difference in the curvature of the spine between the two subjects. This reflects the relative flexibility of the hamstring muscles and the muscles of the lower-back.

COMBINED INTERNAL ROTATION AND ELEVATION



Stand side-on to a wall and lift the elbow up, forearm resting against the wall at a right angle. Gently lean toward the wall and feel the stretch under the arm.

PECTORALIS STRETCH



Stand side-on to a wall or post with elbow at a right angle. Gently press the body forward and away from the bent arm.

TERES STRETCH



Raise one arm to shoulder height and flex the arm across the body (hand past the opposite shoulder). Grasp the elbow and gently pull the arm across the body.

SINGLE-LEG BREASTSTROKE STRETCH



Sit with one leg bent and the other extended. Lean diagonally back, resting bodyweight on the forearms.



DOUBLE-LEG BREASTSTROKE STRETCH



Sit with knees at hip width and feet turned outward. Hold the position with back straight and stomach pulled in.

SHOULDER ROTATION



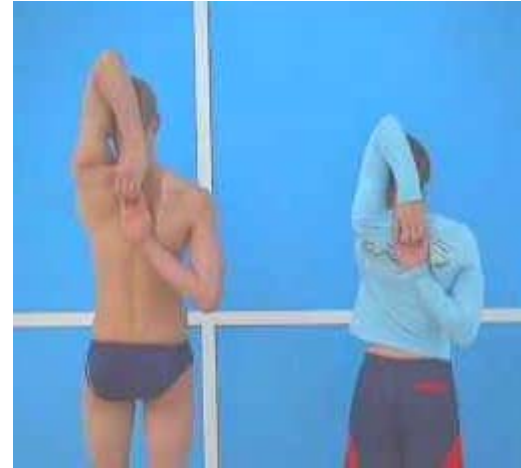
Stand holding a pole or towel (hands outside shoulder width). Slowly raise the arms overhead, keeping them straight.

SHOULDER EXTERNAL ROTATION



Stand with one-arm reaching across the back. Grasp the elbow with the other hand and pull toward the midline of the back.

SHOULDER INTERNAL ROTATION



Stand with one-arm reaching behind the back (elbow pointing up). Reach back with the other hand and lock your fingers together. Pull the bottom-hand up and pull the top-hand down.

BACK EXTENSION



From a prone position push the trunk up with both

QUADRICEPTS STRETCH



From a standing position lift one foot up toward the

arms while stretching the lower back. Subjects with a flexible lower back can position hands close to trunk.

buttock by flexing the knee. Hold the foot in place and feel the stretch in the front of the thigh.

GLUTEAL STRETCH



From a supine position cross one leg over the other (ankle resting over the knee). Lift the foot off the ground and pull the knee toward the head. At the same time lift the head slightly and tighten the abdominal muscles.

LOWER BACK AND HIPS



From a supine position flex one knee and bring it over the extended leg, allowing the trunk to twist (use one hand to hold the knee down).

LOWER BACK AND GLUTEAL



From a supine position (both knees bent) cross one knee over the other and press down.

HAMSTRING STRETCH



From a supine position lift one knee and hold with both hands. Gently pull the thigh toward the head and straighten the leg.



CALF STRETCH



Stand in front of a wall, move one leg back (keep heel down and leg straight), feel the stretch in the calf (straight leg).

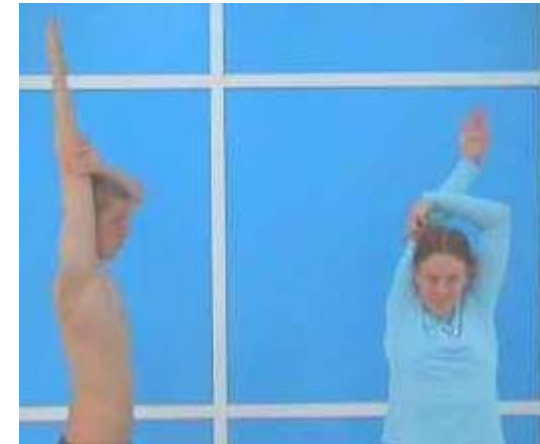
TRICEPS STRETCH



Raise one arm and bend the elbow (placing the palm of the hand in the middle of the back). Place the other hand on top of the bent elbow and gently pull toward the midline of the body.



LATISSIMUS STRETCH



Raise one arm and reach across with the other to grasp around the elbow joint. Gently pull the extended arm toward the midline of the body.

Credits

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consent of the author.

Warm-UP exercises are demonstrated by Peter Hannent of the Arena
Joondalup (Western Australia) Sports Centre and stretching exercises
are demonstrated by swimmers Brendon Johnson and Rachel Williams.

Production, edit, and text provided by Dr Ralph Richards of the Western
Australian Institute of Sport (Swimming Coach).

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