

HOW TO WARM UP AND COOL DOWN FOR EXERCISE

Appropriate warm-up and cool-down periods are an important part of any exercise programme that aims to develop and maintain fitness.

THE WARM-UP

Why warm up?

A pre-exercise warm-up:

- warms your muscles by increasing the movement of blood through your tissues, making the muscles more supple;
- increases delivery of oxygen and nutrients to your muscles by increasing the blood flow to them;
- prepares your muscles for stretching;
- prepares your heart for an increase in activity;
- prepares you mentally for the upcoming exercise; and
- primes your nerve-to-muscle pathways to be ready for exercise.

The warm-up is widely viewed as a simple measure to help prevent injury during exercise. While scientific studies are ongoing to define the best warm-up techniques to gain this injury-prevention advantage, the warm-up in general is firmly established as a key to exercising safely and effectively.

Ensuring an effective warm up

To make your warm up effective, you need to do movements that increase your heart rate and breathing, and slightly increase the temperature of your muscle tissue. A good indication is warming up to the point where you have raised a light sweat.

If you're exercising for general fitness, for example a run round the block to improve stamina, allow 5 to 10 minutes for your pre-exercise warm-up (or slightly longer in cold weather).

If you are exercising at a higher level than for general fitness, to play football or perform football training, you will need a longer warm-up, and one that is designed specifically for football.

Warm-up options

1. **General warm-up.** To begin your warm-up do 5 minutes of light (low intensity) physical activity such as walking, jogging on the spot. Pump your arms or make large but controlled circular movements with your arms to help warm the muscles of your upper body.
2. **Football-specific warm-up.** One of the best ways to warm up is to perform the upcoming exercise at a slow pace. This will allow you to simulate at low intensity the movements you are about to perform at higher intensity during your chosen activity. Examples include kicking a ball LIGHTLY, dancing on the ball, dribbling and making turns, side-stepping and jogging. Your football-specific warm-up is designed by your coach, and should be followed to the best of your ability.
3. **Stretching.** Any stretching is best performed after your muscles are warm, so only stretch after your general warm-up. Stretching muscles when they are cold may lead to a tear. Static stretching (stretching a muscle and holding it in this position without discomfort for 10-30 seconds) is considered the safest method of stretching.

Perform a light static stretching routine at the end of your warm up by stretching each of the muscle groups you will be using in your chosen activity. A static stretch should be held at the point where you can feel the stretch but do not experience any discomfort. If you feel discomfort, ease back on the stretch. Remember not to bounce when holding the stretch. Don't spend so long doing your stretches that your muscles cool down and your heart rate returns to normal. Keep your feet moving, (walk on the spot), to keep your blood pressure and heart rate up.

Recent studies comparing a warm-up that includes static stretching with a warm-up that does not include static stretching have shown that, pre-exercise static stretching does improve flexibility.

Apart from static stretching, other methods of stretching include ballistic, dynamic and PNF (proprioceptive neuromuscular facilitation) stretching, each of which is best done under instruction from your coach, who is trained to perform these stretches safely.

THE COOL-DOWN

Why cool down?

The practice of cooling down after exercise means slowing down your level of activity gradually. Cooling down:

- helps your heart rate and breathing to return towards normal gradually;
- helps avoid fainting or dizziness, which can result from blood pooling in the large muscles of the legs when vigorous activity is stopped suddenly;
- helps prepare your muscles for the next exercise session, whether it's the next day or in a few days' time; and
- helps to remove waste products from your muscles, such as lactic acid, which can build up during vigorous activity.

You may see conflicting advice as to whether cooling down prevents post-exercise muscle soreness, also known as delayed-onset muscle soreness (DOMS). However, even if cooling down doesn't prevent DOMS, the other benefits of cooling down mean that you should always make it a part of your exercise session.

Ensuring an effective cool-down

For an effective cool-down:

- perform low intensity exercise for a minimum of 5 to 10 minutes; and
- follow this with a stretching routine.

Cool-down options

1. **Continuing your chosen exercise while gradually slowing its intensity.** Gradually slowing down the pace and exertion of your activity over several minutes can seem a natural progression, as well as fulfilling the need to include a cool-down period at the end of your exercise.
2. **Slow jogging or brisk walking.** Another option is to jog or walk briskly for a few minutes after your exercise, making sure that this activity is lower in intensity than the exercise you have just performed.

Stretching after your cool-down

The best time to stretch is after your cool-down, as at this time your muscles are still warm and most likely to respond favourably and there is a low risk of injury. Stretching helps to relax your muscles and restore them to their resting length, and improve flexibility (the range of movement about your joints). As a guide, allow 10 minutes of post-exercise stretching for every one hour of exercise. Make these post-exercise stretches more thorough than your pre-exercise stretches. Ensure that you stretch all the major muscle groups that you have used during your exercise. Stretch each muscle group for 20 to 30 seconds, 2 to 3 times.