

WARMING UP AND COOL DOWN:

WARMING-UP

Warming up is a set of exercises previously conducted before any physical activity or sport.

First, some general exercises targeting the whole body and after them more specific ones in terms of later activity. The objective of these exercises is to start every organic system of the athlete.

WARMING-UP TARGETS

The aims of warming up **performance** are mainly to prevent **injuries** and to prepare the athlete physically (muscles and joints), mentally (nervous and concentration) and physiologically (increase heart and breathe rate, amount circulatory blood and oxygen increased, and specific metabolism procedures), for the beginning of any physical activity, as would be a training or higher **effort** if competition.

WHY DO WE WARMING UP?

1. From a physiological point of view (body function)

- a) Body temperature raise: a correct warming-up produces an increase in body temperature. This causes an increase in muscle elasticity, a decrease in joint stiffness and an increase in oxygen uptake by muscle fibres. This help prevent injuries: it helps all body parts prepare for further effort, so the risk of injury decreases.
- b) Heart rate increase: the heart accelerates with increasing frequency, and cardiac output in proportion to exercise intensity (it will cause a smaller deficit of oxygen to start the activity with a previous supply).
- c) Increased blood pressure.
- d) Increased blood volume: a heart rate increase sends more blood to the organs and systems that are involved. In this happens by driving more substrates and oxygen to the muscle metabolism and greater removal of waste products.
- e) Respiratory rate increase: Due to an increase in demand for oxygen by the muscles, the body accelerates the breathing rate, increasing the uptake of air, and therefore oxygen.
- f) Neuromuscular processes improvement: Warming-up prepares the nerve endings to function properly at the right time and the chains forming the transmission of sensations from the muscles to the brain. Warming up favors situations in advance in sports and facilitates neuromuscular coordination between agonist and antagonists.

2. From a psychologist point of view.

Warming-up helps us start the activity with motivation to achieve the aims. It induces to a state of mental alert and an optimum excitation level of the nervous system. Among other benefits we highlight:

- a. It decreases anxiety exercise as it increases motivation and self-confidence in pursuing the goal.
- b. It promotes concentration and motivation: warming-up introduces the person progressively in the exercise to be performed. Any physical activity requires perfect coordination between the mind and the body of the person.

NOW YOU!!! Which of these aspects do you think that are the most important? Justify your answer.

WARMING UP TYPES:

- **Dynamic:** the person who is doing the exercise is moving.
- **Static:** the person doing the exercises remains in a particular place, there is no scroll
- **Mixed:** both combined

May you put examples about it? It might be possible that you will have to answer this question in the exam.

WARMING-UP PARTS:

a. **General warming up:** With general warming-up we are looking for the **involvement** of large muscle groups. In General, warming-up will plan general activities aimed at medium intensity to revolve so that large muscles and joints can be properly prepared for their function; its goal is the launching of the whole organism. From 5 to 10 minutes may be enough.

1ª **Activation:** exercises and / or games involving the whole body. Its aim is the overall stimulation of the body with moderate intensity exercise, involving as many muscle groups as possible. (Run slowly 3-4 minutes)

2ª **Joint and muscular mobility:** static and dynamic exercises and / or games aimed at the specific mobility of each body segment. (See de picture below)

3ª **Stretching** is aimed to a muscular groups, which are being used later.

4^a **Explosive movements:** high intensive exercise, it should be done progressively, for example increasing speed in a short race.

b. **Specific Warming up:** focused on muscle groups, skilled **coordination** and specific **skills** for further activities. In the specific warming up we will plan exercises and movements directly related to the main activity of the session, for example, if we are going to play basketball, make lay-outs to the basket or play ten passes game in small groups. From 5 to 10 minutes.

NOW YOU!!! Select a sport and design a warming up to practice it. You should include general and specific activities. You can describe the exercises and include pictures of them.

FACTORS AFFECTING ALL WARMING-UP

- **Age:** In children and adolescents, the characteristics of their bodies require more gentle and longer warming-up.
- **Time of day:** morning body stiffness is produced by night inactivity, so it is recommended a more detailed warming-up.
- **Fitness level:** the best prepared people need more intense and longer warming-up to reach that optimum. A warming-up for prepared athlete may exhaust those who are unprepared.
- **Post injuries zones:** those body parts that have come out of an injury need a more careful and intense specific treatment in order to facilitate its local metabolism.
- **Later activity:** it does not require the same warming up for a gymnastic competition as for swimming, but both must include a general warming-up.
- **Weather:** if we want to warm when the outside temperature is lower, the warming-up should be longer and more intense.
- **Time up to the activity start:** warming-up profits disappear around 6 to 10 minutes after finish it. You should start the main activity within this period, if you want to maintain the warming up effects.

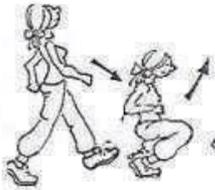
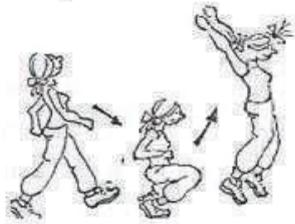
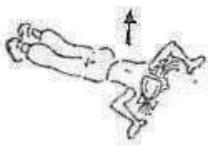
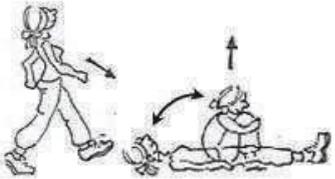
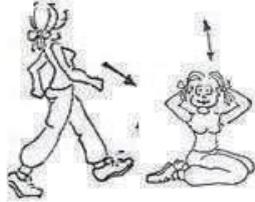
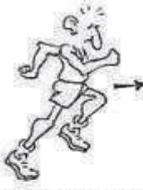
COOLING DOWN

Cooling down is a group of exercises that, opposite to the warming-up, try to soften the abrupt change from activity to rest. Like warming-up, there are two phases:

1. **Active phase:** light activities; usually jogging for two or three minutes, is enough to help the body remove completely waste products accumulated during the last phase of the exercise. This should be soft not to continue accumulating them.
2. **Passive phase:** mainly composed of stretching exercises. These are carried out to help the muscle recover its resting length, due to after the exercise the muscle is shortened. This help prevent muscle injuries and contractures. Besides, this passive phase may contain exercises and muscle relaxation massage or body discharge the major muscle groups, carried out independently or with the help of a partner.

THE GENERAL WARM UP

The following table lists the 20 warm-up exercises shown in the illustrations:

				
RUN FORWARDS	RUN BACKWARDS	RUN SIDWAYS	SWING THE ARMS FORWARDS AND BACKWARDS AT SHOULDERS HEIGHT	SWING THE ARMS IN CIRCLES
				
WALK AND TOUCH THE INSIDE PART OF YOUR FEET	WALK AND TOUCH THE OUTER PART OF YOUR FEET	RUN RAISING THE KNEES	RUN AND BRING THE HEELS TO YOUR BUTTOCKS	
				
SQUAT EVERY THREE STEPS	SQUAT AND JUMP EVERY THREE STEPS	RUN ON YOUR TIPTOES	RUN ON YOUR HEELS	
				
TOP ON ONE LEG	DO FIVE PUSH-UPS	LIE DOWN AND STAND UP EVERY THREE STEPS	LIE DOWN WITH YOUR FACE DOWN EVERY THREE STEPS	
				
BEND YOUR TRUNK FORWARDS	RUN INCREASING SPEED	RUN DECREASING SPEED		

NOW DO THE STRETCHES FOR THE MUSCLES. NO MORE THAN 20" EACH