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► Role of HSP for recovery after exercise

When subjected to high intensity physical exercise or increased environmental temperature the body has several natural forms of defense such as a group of highly conserved proteins called heat shock proteins (HSP) or stress proteins.

High intensity training sessions for the professional athlete or low-intensity practices for the casual weekend athletes are responsible for muscle and cell damages that can be quite severe (protein alteration, fatigue, muscle and joint pain, repeated traumatism, apoptosis). Recovery time is therefore necessary to avoid the consequences of over training.

► HSP

HSP (heat shock proteins) are a group of highly conserved proteins present in the cells of all living organisms. Their role is to protect the cell structure by preventing and limiting protein degradation. Discovered 40 years ago they are naturally produced by cells when they are exposed to a temperature a few degrees above body temperature.

The raise in body temperature can be the result for example of physical activity (high intensity or prolonged exercise) during practices or competitions or exposure to stressful event (lack of oxygen, high altitude, cold...).

► Role of HSPs

The role of HSP is to protect the cell proteins. Proteins are the body building blocks for muscles and tissues and play an important role in practically every chemical reactions in the body. Under stress, threat of disease or extreme environmental conditions regular cell proteins can literally become undone by unfolding their structure and amino acids.

The primary functions of HSPs are:

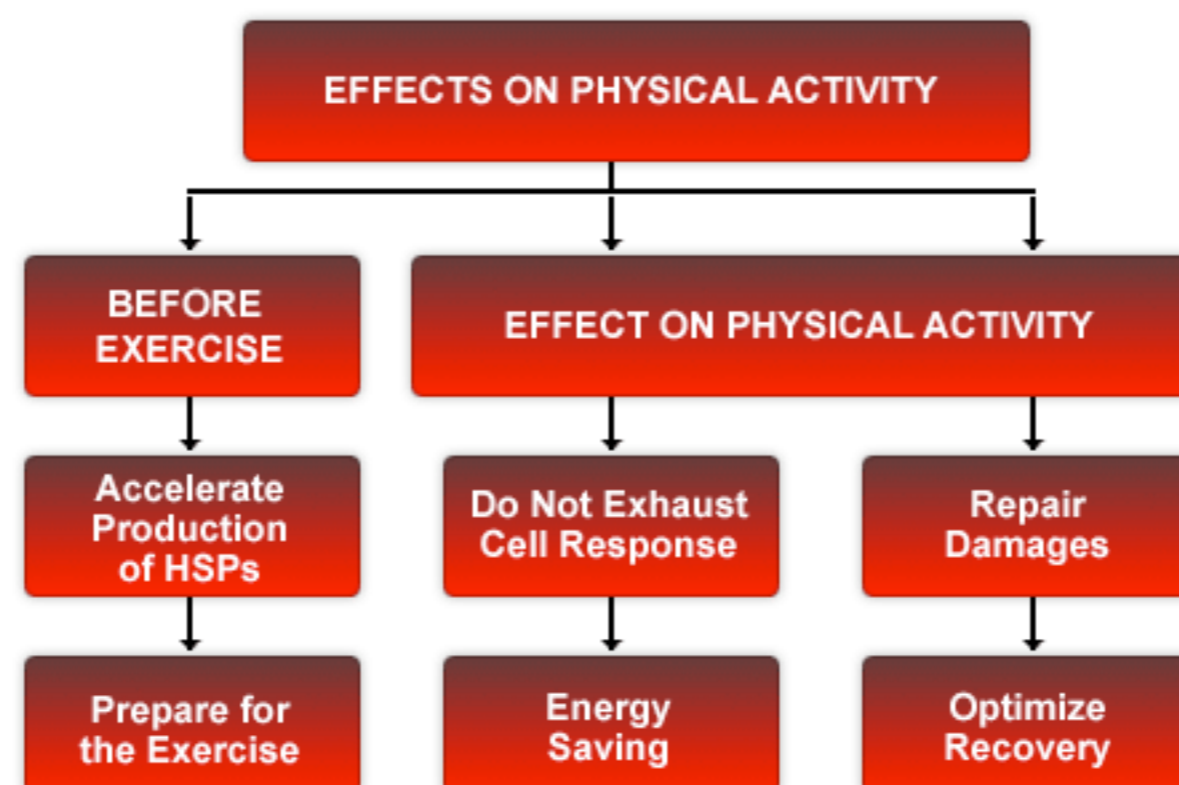
- To interact with naive and denatured proteins to prevent the aggregation of aberrantly folded proteins.
- To facilitate the folding of naive proteins.
- To facilitate the refolding of denatured proteins.
- To aid in intracellular protein trafficking.
- To protect the nuclear and matrix proteins.
- To facilitate the elimination of damaged proteins.

► Preconditioning: PRS-Sport Innovation

With PRS-Sport, the body is getting ready before the physical activity to allow damage repairs before they appear without interfering with the natural physiological process. A natural food supplement containing extracts of *Opuntia ficus indica*, PRS-Sport enables the body to accelerate the production of HSPs, prepares the body for an early response to physical activity and protects the cells.

Pre-conditioning with PRS-Sport improves resistance to physical stress leading to a much more comfortable recovery the days following the exercise.

► PRS-Sport



By optimizing the recovery process PRS-Sport prepares the body for repair of cellular damages induced by exercise (fatigue, muscle pain and soreness ...) and reduces significantly the time necessary for recovery of athletes. .