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Matric No: 16/ MHS01/230

Department: Physiology

Course: PHS 402(Sports and Aviation Physiology)

Discuss how six principles of sports physiology training can be applied to improve athletes’ performance during International competition.

**Specificity Principle**

The specificity principle states that [sports training](https://www.verywellfit.com/athletes-checklist-10-tips-for-better-training-3120817) should be relevant and appropriate to the sport for which the individual is training in order to produce the desired effect.

According to this principle, adaptations are specific to the muscles trained, the intensity of the exercise performed, the metabolic demands of the exercise and the joint angle trained.

This means that the selected exercises should train the specific muscles recruited during performance in order to properly optimize the transfer of strength from the weight room to the field of play.

By doing this, when an athlete is ready to compete, he is fully prepared and at an advantage.

**Overload Principle**

The overload principle states that to make fitness gains, the body must be progressively overloaded. This means that for training adaptations to occur, the muscle or physiological component being trained must be exercised at a level that it is not normally accustomed to.

The overload principle is similar to and works in hand with the progression principle.

This means that for an athlete to improve, he needs to work harder by increasing the frequency, volume, duration and intensity of exercise.

**Progression principle**

The principle of progression states that overload should be increased using frequency, intensity, duration and type of exercise when the athlete adapts to their current routine.

The principle implies that there is an optimal level of overload that should be achieved, as well as an optimal time frame for this overload to occur.

Therefore, the workload of an athlete should increase over time but not too slowly or else improvement is unlikely to occur and not too rapidly or else injury may occur.

**Individuality principle**

This principle states that any training program must take into account the specific needs and abilities of the individual for whom it is designed. It is the concept that people respond differently to the same training stimulus.

The response to training may vary due to pretraining status, genetic predisposition and gender.

For an athlete to excel in international competitions, he has to avoid comparing himself with his opponents and focus more on building his own strengths by training within his capacity. Female athlete should avoid pushing to achieve set goals of male athletes and athletes with special conditions should work within their limit to avoid injury.

**Principle of Diminishing returns**

This principle states that performance gains are related to the level of training experience of the individual.

In novice athletes, after a relatively short period of training, significant strength gains will be noticed. But in pre-trained athletes who have strength trained for years, only a small strength gain will be noticed after a long period of training.

In pre-trained athletes who compete internationally, it is usually very difficult to achieve any more strength gains because constant training has caused the athlete to reach a **plateau or genetic ceiling.** It is in this situation that practical significance precedes statistical significance because even the smallest amount of improvement can differentiate between a win and a loss.

**Principle of Reversibility**

When the training stimulus is removed or reduced, the ability of an athlete to maintain performance at a particular level is also reduced and eventually the gains that were made from the training program will revert.

When the stimulus is removed or reduced for an extended duration, the athlete is said to be **detraining**.

Strength and power performances also decline during periods of detraining. The magnitude of the decline may depend on the training background, length of the training background, length of the training period before detraining and specific muscle group.