



THE PRINCIPLES OF PHYSICAL TRAINING IN FUTSAL

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Abstract

A theory is useful if it can have practical applications. After research and experimentation, sports science has established six principles of fitness training that are practical and can be used as guidelines for conditioning both the energy production systems and the muscular systems. Whatever path is chosen in establishing a training program, these rules of action will enhance the probability of success and it can be applied to everyone at all levels of physical training, from world calibre professional players to the weekend amateurs.

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JEL classification: *I10, I19.*

1. Introduction

One of the misconceptions in the sports world is that playing the game will get you in shape. Playing the game will teach you the skills, technical and tactical, but it will not make you faster, stronger and more agile. Many players in the world can kick a ball exactly where they want it to go or keep an attacker from moving past them, but only some of them have the sport specific skills and the level of conditioning to perform those skills from the first minute of a game till the last one. If you are aiming at taking your game to the next level and achieving your genetic potential by increasing strength, power, speed, agility and endurance, then conditioning program are the only way to doing it by putting yourself under a certain amount of adaptive body stress without the risk of causing damage to the body.

Futsal involves a combination of a number of athletic skills which are quite demanding for the body, therefore it is very important that fitness training be personalized because each player has different individual phases of development and adapts in a different way to training.

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2. Building the foundation

The components of a good futsal conditioning program refers to:

Flexibility

Flexibility is a basic need for the futsal athlete. Flexibility means having a generous range of motion in a joint. Players achieve flexibility by increasing the elasticity of the muscle or the connective tissue associated with that joint. Players need a certain amount of flexibility to perform certain movements correctly. Making slide tackles, kicking long volleys and jumping correctly require the athlete to be flexible. Flexibility also reduces the chance for injury when the body is placed in awkward positions, such as landing on the ground following contact.

Strength

The ability of muscles to contract and overcome resistance is an exhibition of strength. Maximal strength is an all out effort to overcome a maximum resistance, independent of time. Strength, in general, is the means to achieve the optimal levels of power, endurance and speed. The development of strength is critical for laying the foundation to perform work specific to futsal. The athlete must develop adequate strength to attempt the type of training designed to increase speed, vertical jump and endurance.

Power

The combination of speed and strength is common to successful futsal and football players. Power is the term applied when speed and strength come together as unit. The development of a good strength base is the avenue for increasing power. Pure strength alone is too slow for the dynamic sport of futsal and top speed is momentary without being strong. The futsal player must strive to achieve the best combination of both.

Endurance

The endurance of a futsal player is more than just being able to run forever. A high level of endurance will allow the futsal athlete to maintain nearly perfect execution of skills at close to 100 per cent effort throughout a match. Speed endurance, strength endurance and power endurance are three important areas of fitness. Futsal players must have both a high level of running endurance and the ability to run repeatedly at top speeds without much rest. Changing speed and direction is also an example of speed endurance. The constant pushing and shoving during a match can sap the energy from a defender who lacks strength endurance. Frequent jumping, tackling and striking require a certain amount of power endurance if the athlete is to remain effective for the entire match.



Agility

The ability to adjust movement quickly based on a changing environment is agility. Because the situation develops so quickly in futsal, the athlete must improvise and swiftly change direction and speed. Making quick decisions and immediately acting on them while moving at game speed could be the difference between scoring or being scored on. The feet, eyes, legs and brain must be agile and work together if the futsal player expects to be successful.

Speed

When we speak of speed, typically, we think of running fast, but speed in futsal includes much more than this. Quickness, short bursts of movement, rapid movement in all directions, the ability to start and stop rapidly, speed of reaction time, speed of thinking, these are all examples of game speed.

3. Principles of fitness training

The six principles of fitness training in futsal are: warm up/cool down; overload; progression; specificity; individual response; reversibility.

Warm up/Cool down

The body has to adapt before engaging in vigorous activity. A warm up period is necessary in order to raise the heart and respiratory systems gradually. It also helps to raise the temperature in muscles, they work better at temperature of 40 degrees, it increases the blood flow and oxygen to the muscles, it increases the speed of nerve impulses, making you faster and it increases the range of motions at joints, reducing the risk of tearing the muscles and ligaments.

A proper warm up session is divided into two phases: general warm up (consisting of walking, building up the pace every 10 seconds or so before breaking into a gentle jog until the body is beginning to warm up) and stretching that will increase the range of motion at joints.

After a training session or a game the body needs to cool down. This is as important as warm up because it allows the body to adapt from its physically active state to a resting state. This is done with light aerobic activity such as jogging before slowing down to a brisk walk, reducing the speed every 10 seconds or so. After this the players should stretch all the major muscle groups lightly before they shower, have a sports recovery drink and rest.

Overload

The only way to bring about a change in the energy production and muscular systems is to apply stress to these systems. When we demand more of a body system, the system responds by reaching a higher state that can easily handle stress. Overload should not be increased too slowly because the systems will not respond; it should not be increased too fast, either, because it will result in damage. When the body has



adapted, after a certain time, the sessions which seemed hard initially will appear normal. So, fitness training needs to push you beyond your current limits, but this should be done in amounts that the body can handle. A beginner should start near threshold level and gradually move up.

There are four factors that we can manipulate to produce overload within an exercise: intensity, duration, frequency and recovery.

The principle of intensity states that a greater than normal stress or load or effort on the body is needed for adaptation to take place. The body will adapt to the stimulus. Once this happened, a different stimulus will be needed to continue the upward change.

Duration is the principle of how long a task should last. Increasing the duration of exercise can be used to enhance the aerobic energy production system and muscular endurance. This is relevant for a single training, session, sessions per week, per month, etc.

Frequency refers to the number of times (repetitions) you perform a task in a given period of time. As frequency increases, exercises shift from having a conditioning effect on the aerobic energy production system and muscular endurance to having a conditioning effect on the anaerobic energy production system and muscular power. These are standard principles regarding the number of times certain tasks should be completed in any given week.

The rest period between bouts of exercise, during which a muscle or muscle group is moderately inactive to inactive, is the recovery period. Continual stress on the body and constant overload will result in exhaustion and injury. If you do not give yourself the proper rest, you will be led to overtraining and a great deal of physical and psychological damage will result.

Progression

The overload principle must be applied in progressive stages. You start with an exercise intensity that your body can handle, allowing time to recovery before you proceed to an increased work level. By doing this the body will adapt, if not, the body will break down.

Specificity

To optimize the benefits of a training program it must be developed with the specific physiological requirements of futsal. This argument is based on the principle that the training will not only condition the appropriate muscles when you go out and play, in terms of physical and biochemical properties, but will also and equally importantly train the appropriate neuromuscular pathways of the main activity.

Training should simulate as closely as possible to what actually happens in futsal games. Specificity also relates to the level of a player's involvement in modes of training; specific training brings specific results.

The specificity principle also states that, for these reasons, training must go from highly general training to highly specific training.



Individual response

Every player's response to exercise is different for reasons such as:

- hereditary: physique, muscle fiber characteristics, heart and lung size
- sensomotoric: sight, touch, reaction, joint and muscle sense
- maturity: more mature bodies can handle more training
- gender: women generally need more recovery time than men
- nutrition: nutritional needs vary according to age, sex and body type
- rest: some players may be fatigued because they need additional rest or sleep
- fitness: unfit players fatigue easily and are more prone to injury
- environment: emotional stress or factors such as heat, altitude and so on
- motivation: players who are motivated will work harder and progress further

All these factors will come into play during a player's training routine. A proper training session should take into account individual differences. Experienced trainers are aware of these differences and do not expect all players to perform the exact same routines. The toughest challenge is designing effective drills that meet the demands of the individual player in a team context. Evaluate each player relative to the following parameters: work capacity, strength and power, speed, coordination and skills, flexibility, body composition.

Reversibility

It is not enough to reach a certain level of fitness and expect to keep it by just playing the game. Peak physical fitness is hard to attain and easy to lose, this is why a maintenance program is needed and necessary to prevent the conditioning benefits from being lost.

4. Futsal demands

Drills and conditioning should meet the specific demands in futsal. Futsal is a game that requires quick starts and quick stops executed in a state of fatigue. The game calls for a constant interplay of force production and force reduction. Most of the injuries and performance occurs during the force reduction phase of stopping and kicking. Consequently, drills that emphasize speed, speed endurance and power production are most effective for soccer players.

Skill level in a skill dominant sport, such as futsal, will obviously have a significant impact on ability to play the game. Without mastery of skill, all aspects of conditioning are for naught. At the same time, deficiency in any component of conditioning will cause skill to erode quickly. A proper conditioning base will create a favourable environment, which will enable players to attain a higher level of skill development.



5. Conclusions

As with most sports, the futsal competition schedule determines the plan for training. Physical training should be part of daily training throughout the year. The various components of training should be distributed throughout each training week and should meet the following three primary objectives:

- *injury prevention*
- *performance enhancement*
- *education*

To accomplish these objectives, the coach must emphasize three key concept:

- *Warm up and play. Do not play and warm up.*
- *Condition the body to kick and run. Do not kick and run to condition.*
- *Condition and prepare the whole body using the kinetic chain concept.*

Failure to understand and use these concepts will predispose players to injury and obstruct their skill development. The body is a linked system in which all parts together to produce efficient movement.

All aspects of an effective futsal physical training program must meet the "3M" criteria (Foran, B., 2001). Everything must be *manageable*. Can it be accomplished given the facilities, equipment and personnel available? Facilities and equipment should not be limiting factors. All training should be done on the court, any activities off the court are supplemental. The result must be *measurable*. Can the work and progress be quantified? The program must be *motivational*. The player and coach must understand the reason for training and be able to relate it to greater success as a futsal player.

REFERENCES

1. Burns, T., 2004 – *Holistic futsal*. Lulu Publishing.
2. Foran, B., 2001 – *High performance sports conditioning*. Human kinetics.
3. Goncalves, J.T., 1998 – *The principles of brasilian soccer*. Reedswain Inc.
4. Hermans, Vic-Engler, Rainer, 2003 – *Futsal technique, tactics, training*. Meyer&Meyer Sport.
5. Kresta, Jan, 2009 – *Futsal*. Grada publishing.
6. Lozano, Javier&hermans, Vic, 2003 – *Futsal – trainer*. FIFA, Zurich.
7. Mănescu, C.O., 2010 – *Futsal*. Editura ASE, București.
8. Mănescu, D.C., 2008 – *Dezvoltare fizică și musculară*. Editura ASE, București.