Fitness coaching for an elite futsal team

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• The AFC is today strongly interested in the development of futsal
• 3 Asian teams are part of the top 20 countries in men’s futsal # no Asian team is among the top 20 in men football
• The AFC is therefore multiplying the futsal coaching diplomas

As Lebanon representative, my proposal is the following

First, let’s define fitness
According to Pradet (1996), physical fitness is the optimal state of balance established between the different physical qualities of an individual. It also contributes to the best possible adaptation of his organism to the effort.

What are the different physical qualities?

According to Weineck (1992), there are 5 basic physical qualities:
- Strength
- Speed
- Endurance
- Flexibility
- Coordination

In many sports, these physical qualities cannot be separated.

So by doing the product of these different physical qualities:
- Strength x Speed = Power
- Strength x Endurance = Muscular endurance
- Endurance x speed x strength = Anaerobic endurance
- Speed x flexibility = Agility

We have identified 9 physical qualities:
- Aerobic endurance
- Anaerobic endurance
- Muscular endurance
- Strength
- Speed
- Flexibility
- Agility
- Power
- Coordination
What are the physical qualities required in futsal?

According to Kievits-Boucher (2006), the predominant physical qualities in futsal are mainly endurance, speed and flexibility.

Through the nine qualities listed, we will attempt to give a more detailed explanation of the types of endurance, speed and flexibility a futsal player needs.

We will also see how they could be applied on an elite futsal team, given that the suggested period for off-season preparation is 6 weeks and that considering their semi-professional status, futsal players will have one training session a day, 5 days a week + preparation game.

Aerobic endurance: It is the capacity to produce the longest effort possible using the maximum oxygen consumption called VO2 Max (Extremely needed in sport disciplines like the 5000M, 10000M and Marathon).

Because of the unlimited number of substitutions, this quality does not have a direct impact on futsal, but it develops the recovery capacity that is indispensable in such an intense sport.

Because it is time consuming, to be worked the first 2 weeks of the off-season
3 times per week, ex: 5000 M in the best timing possible.

This quality will be conserved later with futsal specific training and competitions.

NOTHING REPLACES THE COMPETITION!

The pressure to achieve a result and the aggressiveness of the opposition will create conditions that will challenge players' bodies much more than during training.
II- Anaerobic endurance:

During anaerobic effort, the body is working so hard that the demands for O2 exceed supply and the muscles have to work without O2. Because of its intensity, this effort is naturally short (maximum 3 minutes).

This type of effort creates lactic acid in the body, responsible for the tiredness of the muscles.

Anaerobic endurance is the capacity to resist to the production of this lactic acid.

This quality is predominant in futsal, where players have to quickly recover from very intense efforts.

It is preferable to have the training in anaerobic endurance (interval training, ex. TABATHA) begin in weeks 3 and 4 of the off-season period when players would have start developing their aerobic endurance, which is essential for recovery capacity.

Anaerobic training must be done 3x per week in weeks 3 and 4 and at least once a week for the rest of the season.

It is important to know that anaerobic endurance will be maintained and even developed with futsal specific training, off-season games and more importantly season games.

III- Muscular endurance:

It is the capacity of a muscle or group of muscles to sustain repeated contractions against a resistance for an extended period of time.

This quality is very important in futsal, where the muscles of the legs and the back have to make long efforts (defensive position, running, shooting, tackle) in training and games.

Muscular endurance is strongly correlated with aerobic endurance (weeks 1 and 2 of the off-season).

High number of repetitions, short recovery time

Will be maintained later with specific training and competition.

IV- Strength: It is the capacity to move for one repetition (1MR) the highest amount of weight into a certain distance.

It does not intervene directly in futsal, but it strengthens the muscles and joints and therefore reduces the risk of injury.

It also contributes to the development of power, which is indispensable for the duels.

Development of strength can be done in the following way:

Pyramidal training
4 sets:
- 12 reps of 50 to 60% of the 1MR
- 10 reps of 60 to 70% of the 1MR
- 8 reps of 70 to 80% of the 1MR
- 6 reps of 80 to 90% of the 1MR

3 minutes rest between each set.

Except in the case of injury, conduct functional exercises regrouping several muscles.
Because it is not directly related to the specificities of futsal, strength training can be done in weeks 1 and 2 of the off-season in the days where the players are not working on their endurance.

For players sustaining chronic injuries, train the local muscles all season long.

Strength will be maintained and developed later in the season with training for power.

In speed training, recovery time must be at least 10 x higher than work time.

Speed of gesture and speed of reaction have a considerable importance in futsal because players must think, move in different angles, pass, control and shoot the ball as fast as possible. It is through specific futsal training and competition that these two qualities are developed.

Speed can, because of the high recovery time, and must be worked on all season.

V- Speed: It is the capacity to cover a distance in the shortest amount of time. There are “3 kinds” of speed:

- Natural speed, related to the Fast-Twitch fibres of the muscles.
- Speed of gesture, capacity to do a specific gesture in the shortest amount of time. This quality is more dependent on the technique and coordination of the athlete than on his natural speed.
- Speed of reaction, capacity of the muscles to response to an external stimulus in the shortest amount of time. This quality is also more related to the athlete’s coordination.

VI- Flexibility: Capacity to stretch muscles and joints to the highest amplitude.

In futsal, it is mainly developed with static and dynamic stretching mainly in the muscles of the trunks, pelvis and legs.

Flexibility reduces injury risk and develop agility.

Stretching must be done before and after training.

VII- Agility (Flexibility x speed):

Capacity of the muscles and joints to extend to the highest amplitude in the shortest amount of time.

Agility has a major role in the complex technical gestures.

Agility improves with the development of flexibility and speed of gesture.

Since it is related to speed, it can be worked on all season.

VIII- Power (Strength x Speed):

It is the capacity to move the highest amount of weight (strength) in the shortest amount of time (speed).

Power is very important in futsal for the shoots, duels and sprints.

Power training must be done 2x per week in weeks 3 and 4 (after having started to work on strength) once a week for the rest of the season.
**POWER EXERCISES**

**IX- Coordination:**
Complex quality, link between the nerve system and the muscles
Allows athletes to quickly adapt to new technical gestures
All the exercises with the ball develop coordination

**Coordination** develops speed of gesture and speed of reaction
The most talented players have great coordination

**Off season periodization**

<table>
<thead>
<tr>
<th>Weeks 1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>Start of the season</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aerobic endurance</td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td>Anaerobic endurance</td>
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<tr>
<td>Muscular endurance</td>
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<td></td>
<td>Power</td>
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<tr>
<td>Strength</td>
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<td>Speed, flexibility, agility, coordination</td>
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</tbody>
</table>

**Challenges**
Futsal is a complex sport mixing directly or indirectly all the different physical qualities
A Futsal fitness coach must manage the time to develop these qualities without wasting the time needed by the head coach to develop technique and tactics
To avoid the waste of time, the fitness coach must develop what is commonly called integrated training where he will work on the physical, technical and tactical qualities in the same exercise.

He must apply his program according to the background of the players that he is coaching (level of fitness, years of competition, training habits…)

He must also consider the social status of elite futsal players that are for the most semi-professionals and come to practice after a long day of work.

Fitness coach must often reduce the planned workload due to the fact that the players arrive to their training physically and mentally tired especially during the season.

CONCLUSION

Theoretical knowledge given in coaching courses has an undoubtable value.

But it takes years of experience for a fitness coach to know how to coordinate fitness fundamentals with the tactical needs of the head coach, reality of the competition and the socio-psychological characteristics of elite athletes.

Waiting for your questions/comments/suggestions.