



THREE OF A KIND

Course 01: Coach Ettore Messina

Lesson 22: Physical Conditioning 2

Language: English

PHYSICAL CONDITIONING 2

3. PHYSICAL CONDITIONING AND BASKETBALL

Basketball is a sport that requires aerobic-anaerobic work. Numerous studies have tried to find whether the aerobic component is used more often than the anaerobic and whether this has a lactic or alactic inclination; or also whether players need to be better prepared to provide power or resistance. We are interested in strength development because we believe this has a primary importance. We believe that it is possible to coach players in aerobic and anaerobic training **through the game of basketball**. It is possible to improve specific resistance and skills aspects which are vital when developing strength or speed. The physical attributes of a player are easily coached and can be tested using a number of common tests that are well known by many. On the contrary it is difficult to accurately test the technical ability of a player. In the not too distant past team sports have been coached in a similar way to individual sports, working on physical conditioning separately from tactics – this has been a big mistake – looking to divide the practice calendar up as if the team were a 100m runner or a swimmer: athletes who have to reach their optimum fitness in a very specific part of the year, generally for few months.

Improving the physical condition of the players will not necessarily result in an improvement in the quality of play, which can be improved more easily when the players have a better understanding of the technical fundamentals and they have a better grasp of the tactics applied by the coach. Some players, in order to maintain their physical conditioning or to maintain it over time, do not work as hard in the technical and tactical part of their game, and for that reason often fall from high level sport.

4. STRENGTH TRAINING IN BASKETBALL

Until recently many coaches believed that strength training had a negative effect on skill, with the example most often given being the jump shot. We do not believe this is the case: for a long time we have included strength training in practice, immediately followed by shooting drills (close to 200 attempts).

Following a pyramidal series of 12/10/8/6/4/12 or numerous reps between 75% and 90% of the maximum, we have not observed any deterioration in players shot mechanics, particularly after the first 15-20 shots which is how long it takes the majority of players to then shoot their regular percentages.

Therefore is strength a vital part of a basketball players preparation? How much strength? What type of strength?

In response to the first question we are not in a position to answer it because over the years we have seen some great players who have been incredibly strong, as well as other equally great players who only had sufficient strength to lift their food to their mouth.

It is obvious that strength training must be part of any players training routine, but we maintain that it is not necessary to look for the specific methodology or a precise division of time that is excessively detailed.

How much strength must a basketball player have? That will be proportional to their characteristics, their game and their intrinsic sensibility: no more and no less.

We have seen that when a player has a significant improvement (7+cm) in their CMJ test it does not necessarily correspond to an improvement in their rebounding or their one stop jump shot. The player does not use this improvement because first of all he needs to modify his own hand-eye coordination when shooting the ball. The reality is that even if we have continuously worked hard and developed reactive strength, the player will continue to shoot using the strength and reactive strength that he is accustomed to from before his physical improvement.

Attempts by us to introduce a new hand-eye coordination were very difficult to implement and did not cause any significant technical improvement.

Having expressed our theory, I hope that no European team at the national or international level use traditional strength training methods. With reference to the evaluation and comparisons of our testing compared to the norm a problem persists: some of our players regularly bench press 115kg to 140kg.

In the CMJ test all of our players improve their results over the course of the season, reaching numbers that fluctuate between around 37cm and 67cm. Their body fat percentage in our opinion is optimal, however they are different to that of a marathon runner. Are our figures high? Can they improve, and if so to what extent? Most important of all, in which percentage, probably minimal, does an increase in strength training affect technique, once a certain improvement has been reached or surpassed?

Keeping in mind that the values above refer to a professional, high level team competing internationally, it seems logical to organize practice relevant to the competition; the lack of reference tables recommend modulating strength training based upon the wishes of the head coach and the athletic trainer, renouncing going after any record.

5. SEASON CALENDAR

At the start of the season the players are submitted to a number of standard tests. These are used as a reference to observe players improvement or deterioration during the course of the year: they do not offer us any other value.

From the first days of preseason we are looking to build strength, a vital quality for the development of explosive and reactive strength, as well as speed.

At this time of year we use both traditional gym machines as well as free weights. We prefer the second of these because we believe that they cause players to reproduce some of the specific movements made in basketball.

These exercises help muscular coordination, body control, the synchronization of movements. We often use the "clean and jerk", because we believe it develops strength, explosiveness, coordination and balance in general because during the exercise, the player finds himself in numerous positions that he will find himself on the court, both on offense and on defense (legs flexed and feet set on the floor, back leaning slightly forwards, eyes looking ahead and head straight up).

We look to improve strength using different training regimes of muscular tension, isotonic or isometric, with series of one then the other, and also with different tension levels in each series. We always like to "play" with different strength regimes and have noticed that all of this specifically helps improvement, in the same amount of time using varied exercises that are more enjoyable for the players.

For the development of explosive strength and the reactive capacity of the extensor muscles of the inferior articulations, we use the classic method which can be expressed as: a rapid extension of the isolated articulations with small jumps of 50cm, holding weights of 16-35kg. We complete 3 or 4 series of 6 to 8 repetitions, with a rest time of 3 to 4 minutes. We use other variations, such as the squat with similar body angles to certain defensive and offensive positions, lifting 80-85% of the maximum, divided in 3 to 4 series of 3 to 4 repetitions, with rest time of 3 to 4 minutes. We follow these squats with a series of jumps as described before. We almost never use plyometrics such as depth jumps or box jumps, and if our players have difficulties in performing any of these exercises, it is a sign that we are hardly working explosive strength.

To work on this last type of strength we prefer to work using a variety of jumps, which tend to increase power through the specific energy of the muscle at the eccentric-concentric phase.

Short jumps improve a player's acceleration, long jumps improve the maximum speed and the resistance speed. If there is no other physical conditioning to work on then these exercises are performed two or three times a week. They are individual exercises that have the goal to improve the characteristics of each player and it is vital to point out that international games (Euroleague) or national games (league or cup) should not interrupt the strength training over the course of the season. Our players share the importance of this type of work, with the goal of always maintaining their neuromuscular "machine" at a high level, something vital to play at the highest possible technical level, and we have never had any problems due to overloads in the course of a game.