

## FOOTBALL TRAINING PROPOSAL TO IMPROVE ATHLETES' PHYSICAL PERFORMANCE

DOMENICO TAFURI, VINCENZO RAIOLA, LORENZO DONINI  
Parthenope University - Naples, Italy

### ABSTRACT

*Football is subject to many variables depending on the opponents, the field, the teammates and the presence of the ball. In fact this is a situational sport. For this sport, the aspects that concern significantly training are the technical-tactical ones and conditional or organic-muscular. The study is based on the theory of periodization, which consists in dividing the training year into time intervals with clearly defined goals to be achieved in each period.*

*The study was carried out on 2 male football player belonging to a senior football club, through the use of the Cooper test, the Maximum Strength test, the endurance test and the psychometric and body circumferences detection which determined the assessment and performance improvements in the different periodization phases.*

*The research objective is to assess the conditional improvements after the training period, and the evaluation of the moment of peak performance during the competitive period under evaluation.*

**Keywords:** Football, Training Methodologies, Periodization, Sport.

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### Introduction

Team sports activity consists of the conditional or organic-muscular and technical-tactical aspects of the performance, and takes advantage of periodization to implement educational strategies, methods and didactics to develop the individual and group skills with the aim of achieving the highest goals.

Periodization includes the division of the training year into particular periods of time with clearly defined goals. This planning model was developed in the Soviet context by with Matveev, who used it for the Olympic athletes.

In periodization there must be<sup>(1-8)</sup>:

- Individual and team improvement needs
- Development of work in the long, medium and short term
  - Alternation of loading and unloading phases
  - Improvement of cognitive and motor skills simultaneously
  - Achievement of the best mental and physical condition in the agonistic moment identified.

At this regard, the study focuses on the collection of data obtained following the typical scheme of a training session with the methodology of periodization. Periodization was originally proposed by Tudor Bomba and constitutes a methodological approach aimed at achieving the training objectives necessary for pre-determined agonistic levels. Periodization is governed by the principle of progressivity of load and of physiological adaptation. The exercises proposed in strength training aim at reproducing the real motor execution model of football that needs to be performed repeatedly, so as to enhance learning according to the cognitive approach with prescriptive teaching based on specific orders. The imitation of the technical skills involves the muscle chain, just like that used in the real technical performance of sports skills.

So the training exercises and methods must aim at reproducing movements and conditions just like in a match, so that the same discharges in motoneurons are reproduced to express the same athletic gestures with high power and speed.

### **Football training proposal**

The football training methodology proposed in this research work involves a subdivision of the work into various phases in order to achieve specific objectives in each interval and then obtain a general improvement. The phases are as follows (1, 3, 9-16):

- Introductory period or preseason training with strong organic and muscular value for retrieving the overall efficiency. Suitable for middle and lower level young and adult athletes, top athletes should not fall below a certain performance level.

- Fundamental or loading period, in which the volume of the workload prevails on its intensity. It needs to be predicted during breaks in the championship or in conjunction with matches of secondary importance.

- The acquisition of technical skills may be more difficult for any condition of weariness. The main objective of this phase is to develop the highest possible level of strength. Most sports disciplines require power, muscular strength or both them. For each of these types of strength the maximum strength level is of key importance, because power cannot increase without it.

- Special or change period for the increase of the workload intensity and the development of growing technical work. It coincides with matches of medium importance before the topical moments, the play off. The primary purpose of this phase is to convert or transform the results achieved thanks to the training for the maximum strength into those specific technical abilities useful for the match. Depending on the characteristics of a given discipline, the maximum strength (MS) must be converted into power (P) or muscular endurance (ME), or in both abilities, just like it happens in football. This goal is reached gradually over 6-8 weeks.

- Agonistic period: it is the period when the best physical fitness for the major matches is achieved and maintained. The peak performance cannot be maintained for long periods of time, and therefore it will need maximum precision by the trainers in programming the achievement of this phase. In this phase, the main goal of strength training is to keep the acquired standard at earlier stages.

- Transition period: it coincides with the long break between one agonistic season and the other to regenerate the body.

The objective of the study is to assess the conditional improvements after the training period, and evaluate the moment of peak performance during the time being evaluated.

### **The conditions of the application phase of the training methodology**

Team sports activity consists of the conditional or organic-muscular and technical-tactical aspects of the performance; these 3 aspects have been improved during the various performance phases in accordance with the principle of the progressive increase of the load regarding the conditional aspect, and that of the complexity of the technical-tactical exercises proposed, making the latter start from cognitive exercises (step by step) up to synthetic exercises that aim to reproduce the match context by providing for the different variables that may arise, thus obtaining improvements regarding the reaction time with the aim to respond better to different stimuli arising during the match, and therefore improving the performance of both the individual and the group. In football, namely in the disciplines based on power and speed and that also provide for fast actions and explosive movements, many power and maximal loads (greater than 80% of the 1RM) training exercises put pressure on the nervous system, in order to cause its adaptation. A nervous adaptation of the strength training improves the power and speed of muscles contraction, while avoiding the increase in the muscular mass<sup>(17-20)</sup>.

The training exercises and methods aim at movements reproduced exactly during a match, so as to increase the discharge in motoneurons and cause the muscles to perform athletic movements with high power and speed. These methodologies were proposed to the football senior team that has allowed for the development of this study. To detect improvements in the various periodization phases different athletic tests were carried out; they were carried out: at the beginning of the preparatory period, at the end of the loading period, and finally at the end of the transformation period which coincides with the beginning of the agonistic period.

They were carried out on 2 players who had to experience progressive improvements from the muscular organic and conditional point of view, reaching the peak performance at the beginning of the agonistic period. The tests carried out were (17, 18, 21-27):

- Plicometry according to the Pollock method.
- Measurement of body circumferences.
- Resistance and strength test (abdominal curl-ups, upper limbs push-ups, and lower limbs MS test).
- VO2 MAX estimation test (Cooper test).

## Results, observations and conclusions

Data collected during the research will then be subjected to a statistical study, which will have to show the trend of performance in the different training periods during the year, showing how the planning of training with the periodization method allows to reach the peak performance in the pre-established period that, in football, is usually represented by the most important match of the year and that is part of the agonistic period.

Therefore, important is the principle of load progressivity and that of the proposed exercises complexity which allow the nervous system to adapt gradually to the acknowledgement of the improvements from the quantitative/qualitative point of view.

The gradual increase of the load is also important in preventing the athlete from injury. Once assessed the improvements from the quantitative/qualitative point of view, new training methods will be applied, which do not involve a separation between quantitative (increased strength in expressiveness: maximum, fast and long-lasting) and qualitative (technical - tactical and strategic) training, but that are combined in a holistic whole of training sessions and exercises, adopting the methodologies applied by José Mourinho (coach of several professional teams) and his staff that combines periodization with conditional and organic-muscular effects and those of the so-called technical-tactical and strategic periodization<sup>(1, 3, 9, 17, 18, 27)</sup>.

The intent of subsequent studies is to gather scientific quantitative/qualitative data by carrying out also new tests, in order to show the improvements resulting from the application of the periodization methodology in the overall football didactics.

## References

- 1) Bompa, T. (1994). *Theory and methodology of training: the key to athletic performance*. Dubuque, IA: Kendall Hunt Publishing Company.
- 2) Rosa, R., Ascione, A., & Di Palma, D. (2019). Biodanza laboratory and experimental pedagogy. *Journal of Human Sport and Exercise*, 14(2proc), S169-S177. ISSN: 1988-5202. doi:<https://doi.org/10.14198/jhse.2019.14.Proc2.03>.
- 3) Di Palma, D., Rosa, R., & Ascione, A. (2019). Experimental pedagogy: New technologies. *Journal of Human Sport and Exercise*, 14(2proc), S149-S158. doi:<https://doi.org/10.14198/jhse.2019.14.Proc2.01>
- 4) Montesano, P. (2014). Improvement of the coordination skills in disabled athletes Special Olympics. *Journal of Physical Education and Sport*, 14(2), 301.
- 5) Ascione, A., Di Palma, D., & Rosa, R. (2019). Innovative educational methodologies and corporeity factor. *Journal of Human Sport and Exercise*, 14(2proc), S159-S168. doi:<https://doi.org/10.14198/jhse.2019.14.Proc2.02>.
- 6) Montesano, P., & Mazzeo, F. (2018). Pilates improvement the individual basics of service and smash in volleyball. *Sport Mont*, 16(3), 25-30.
- 7) Montesano, P. (2018). Monitoring and upgrading of coordinative and conditional capacities of young athletes practicing handball. *Journal of Physical Education and Sport*, 18, 465-468.
- 8) Montesano, P. (2016). Goalkeeper in soccer: performance and explosive strength. *Journal of Physical Education and Sport*, 16(1), 230.
- 9) Fox, E. (1984). *Sport physiology*. New York: CBS college.
- 10) Napolitano, S., Ascione, A., & Di Palma, D. (2018). Pilot study in youth volleyball: Video analysis as a didactic tool. *Sport Science 1*, pp. 47-51.
- 11) Altavilla, G., et al. (2014). Some aspects on teaching and learning by physical activity. *Sport Science*, 7 (1), pp. 7-9.
- 12) Maiuri, G. (2014). *Un diverso modo di pensare calcio: l'approccio sistemico e la periodizzazione tattica*. Youcanprint.
- 13) Ascione, A., Di Palma, D., & Napolitano, S. SOCIAL INCLUSION AND EDUCATION THROUGH SPORT AND TECHNOLOGY. *Sport Science 11* (2018) 1: 52-56.
- 14) Mazzeo, F., & Volpe, R. A. (2016). From gene doping to athlete biological passport. *Sport Science*, 9(2), 97-103.
- 15) Mazzeo, F., Monda, V., Santamaria, S., (...), Messina, A., Messina, G. (2018). Antidoping program promotes: an important factor in the promotion and protection of the integrity of sport and athlete's health. *The Journal of sports medicine and physical fitness*.
- 16) Di Palma, D., Ascione, A., & Napolitano, S. (2018). Education to school inclusion through sport. *Sport Science 11* (2018) Suppl 1: 42-46
- 17) Campos, G. E., Luecke, T. J., Wendeln, H. K., Toma, K., Hagerman, F. C., Murray, T. F., ... & Staron, R. S. (2002). Muscular adaptations in response to three different resistance-training regimens: specificity of repetition maximum training zones. *European journal of applied physiology*, 88(1), 50-60.
- 18) Costill, D. (1979). Adaptations in skeletal muscle following strength training. *Journal of applied physiology*, 46: 96-99.
- 19) Mazzeo, F. (2016). Current concept of obesity. *Sport Science*, 9(2), 42-48.
- 20) Mazzeo, F., & Raiola, G. (2018). An investigation of drugs abuse in sport performance. *Journal of Human Sport and Exercise* 13, pp. S309-S319.
- 21) Costill, D. (1979). Adaptations in skeletal muscle following strength training. *Journal of applied physiology*, 46: 96-99.
- 22) Mazzeo, F. (2018). Anabolic steroid use in sports and in physical activity: overview and analysis. *Sport Mont*, 16(3), 113-118.
- 23) Montesano, P., & Mazzeo, F. (2019). Improvement in soccer learning and methodology for young athletes. *Journal of Physical Education and Sport*, 19, 795. Russell, M., Sparkes, W., Northeast, J., Cook, C.J., Love,

- T.D., Bracken, R.M., Kilduff, L.P. (2014). Changes in acceleration and deceleration capacity throughout professional soccer match-play. *J Strength Cond Res.*
- 24) Bosco, C., & Komi (1989). Influence of counter movement amplitude in potentiation of muscular performance.
- 25) Napolitano, S., Ascione, A., & Di Palma, D. (2018). ANALYSIS OF POSTURE AND ITS IMPACT ON PERFORMANCE IN WOMEN'S WATER POLO. *Sport Science 11 (2018) Suppl 1: 85-91.*
- 26) Montesano, P., & Mazzeo, F. (2019). Sports Activities in Obese Teenagers Improve Social Inclusion and Health. *Sport Mont, 17(1), pp. 55-60.*
- 27) Mazzeo, F., Santamaria, S., & Montesano, P. (2019). Gender Difference, Nutritional Supplements and Drug use in Sport to Enhancing Performance: an Italian Revision over the Last Decade. *Sport Mont, 17(1), pp. 69-73.*

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*Corresponding Author:*

DOMENICO TAFURI

Email: domenico.tafuri@uniparthenope.it

Parthenope University

Naples

(Italy)