Practice of BAPNE FIT to Improve Cardiorespiratory Fitness

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Abstract. Body percussion in the sciences of physical activity and sport has a specific and exclusive program through the Bapne method in which it unifies motor, rhythmic and cognitive tasks in a parallel way called Bapne FIT. In this article we propose a case study with the aim of studying a subject by means of ergo-spirometry tests performing the exclusive activities of this methodology. For this purpose, respiratory, cardiovascular and metabolic tests will be performed, with the aim of analyzing oxygen consumption and carbon dioxide production in order to obtain data on the muscular metabolic system in relation to Bapne Fit activities.

1. Introduction

Body percussion in physical activity and sport sciences requires an exclusive program that differs from the rest of the subjects because it seeks very specific objectives. Through the Bapne method with its exclusive program for sport, it provides a whole protocol of activities that not only help coordination, dissociation and laterality, but also cardiorespiratory endurance. Activities within the Bapne Fit program, using step, elastic bands, ankle and wrist weights along with the Kangoo Boots require an increased oxygen uptake. Endurance or cardiorespiratory fitness tells us a lot about a person's overall physical health because it gives us information about the functioning of one's heart, lungs and muscles during the performed exercise.

Through the activities of the Bapne Fit program there is an increase in cardiorespiratory endurance, thus possibly improving an oxygen uptake in the lungs and heart. Cardiorespiratory endurance in Bapne Fit activities involves moderate tasks where large muscle masses must be engaged for prolonged periods of time. For this reason, the focus is on the functional capacity of the circulatory and respiratory apparatus, which must adjust and recover from the effects of muscular exercise. This is why Bapne's method aims to measure how the body absorbs and uses oxygen during specific physical activity as well as the activity of the heart during its execution. For all the data obtained, the physiological responses depend on the muscle groups used, the percentage of muscle mass involved, the position of the body and how it must support the weight.

The Bapne Fit program has unique characteristics as it unifies both motor coordination activities at a high level, along with activities linked to cognitive functions and especially

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executive functions. All these activities are marked within a concept called neuromotricity where the dual task is always present [1]

There is an abundant literature demonstrating the benefits of dual-task with its various paradigms [2-9]. There are three classic paradigms in dual-task work: motor-motor, cognitive-cognitive and motor-cognitive [10-20]. Recent publications by Korean researchers provide a fourth paradigm, called rhythmic-motor [21-28]. On the other hand, in the BAPNE method we propose a possible fifth paradigm, called rhythmic-motor-cognitive [29-52].

2. Development

Body percussion in the sciences of physical activity and sport requires studies and above all a specific evaluation for it. That is the reason why ergospirometry could be one of the most relevant tests. This technique, which consists of a stress test with gas analysis, is usually the test of choice for the assessment of performance in athletes. It allows us to know the relationship between the respiratory, cardiovascular and metabolic apparatus. For this purpose, a conventional stress test is performed by associating a gas analyzer that measures an oxygen consumption and carbon dioxide production in relation to the response of the muscular metabolic system.

The aim of this article is to show a research protocol in the form of a case study, in which an ergospirometry test subject is evaluated by exclusively performing activities of the Bapne method, which belong to the program for athletes called Bapne Fit.

2.1. Variables to be measured in the BAPNE FIT pilot study. Case study.

The tests were performed on a 43-year-old male who does very little physical exercise. The following actions were taken through this case study:

Variables such as maximum consumption (VO2 max) or maximum peak consumption (VO2 peak) were taken into an account, which indicate the MAXIMUM POWER of the aerobic system, essential for endurance sports [53].

Both parameters will indicate the POWER data in WATTS (W) or in MAXIMUM AEROBIC SPEED (km/h). All this is evaluated together with the data provided by: Aerobic and anaerobic UMBRAL; related to AEROBIC CAPACITY. The results obtained are basic and unique for the planning and prescription of training loads in endurance sports [54, 55].

These are determined through the dynamics of gases through pulmonary ventilation and measured breath by breath. With all of the above we can determine the aerobic threshold (AT and respiratory compensation point (RCP) or anaerobic threshold.

First of all, activities were carried out with the step board, elastic bands and other objects as shown below (Figure 1).

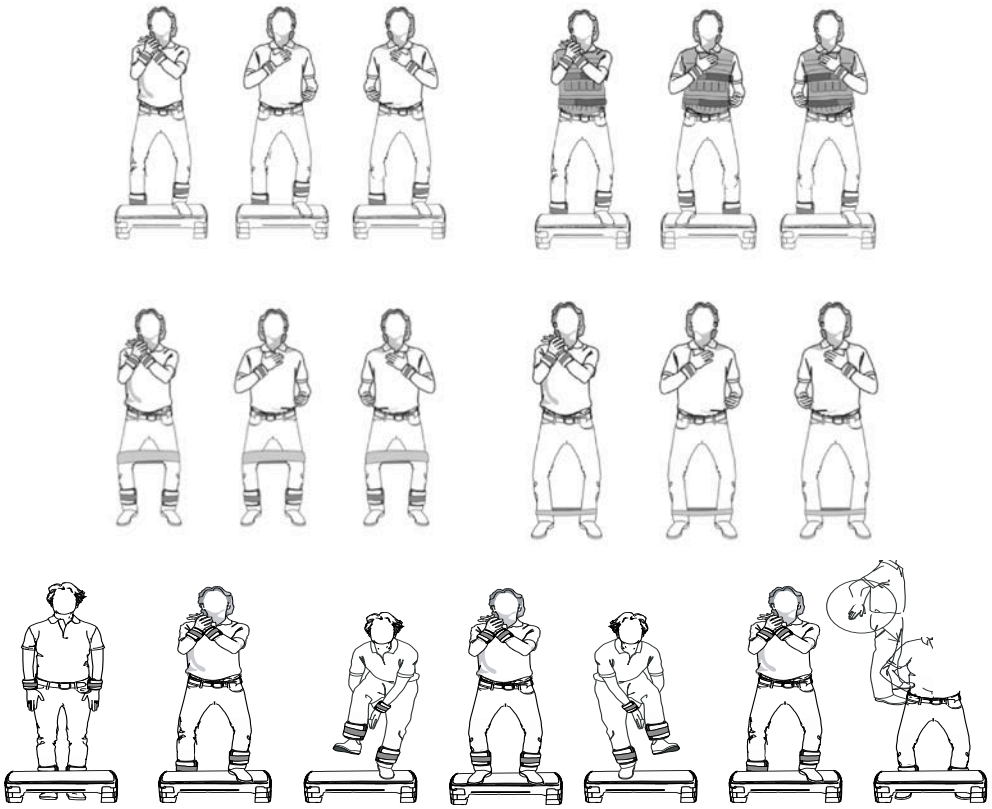

Fig. 1. BAPNE FIT program activities

High intensity activities were performed in the BAPNE program with specific boots called Kangoo Boots. These boots are excellent for cushioning the jump, do not damage the knee and ankle joints and combine body percussion for the upper extremity. These activities were performed together with a dual task in which the subject is continuously responding to specific questions as we have discussed in other articles related to the program BAPNE Fit (Figure 2).

Fig. 2. BAPNE FIT with Kangoo Boots.

3. Conclusion

To conclude, a body percussion in physical activity sciences based on neuromotricity not only requires an exclusive program of activities according to the subject, but it must also be measurable in relation to the parameters sought to be evaluated. Therefore, an ergospirometry provides us with important data allowing us to obtain a performance profile of the activities of the Bapne Fit program.

The tests with gas analysis where both the measurements of the respiratory, cardiovascular and metabolic system provide us with information of high value, in relation to oxygen consumption and the production of carbon dioxide linked to the response of the muscular metabolic system. This case study is the prelude to a later article where we will provide the results of the study performed.

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