National Pedagogical University

Faculty of Education Physics

Mastery in Sports Science and Activity Physics

Consent informed to participate in a research study

Study title: Effects of polarized and threshold intensity distribution models on race time and body composition in recreational runners aged 20 to 45 years: a randomized controlled trial.

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The purpose of this document is to help you make an informed decision about whether or not to participate in the study. Please read this form carefully and ask any questions you may have to ensure you understand the study procedures, risks, and benefits so you can voluntarily decide whether or not to participate. If you have any questions after reading this document, please ask the researcher to explain. Feel free to ask about anything that might help clarify your doubts.

Once you understand the study and if you wish to participate, please sign this consent form. will receive a copy Signed and dated.

1. Study purposes: to determine the effects of training intensity distribution models on recreational level athletes, in order to provide tools to both athletes and coaches that allow them to make decisions about the design, execution and evaluation of training programs based on scientific evidence, understanding the needs and objectives of this type of population, creating active lifestyles, conscious and responsible participation in athletic activities.

1.1. Inclusion Criteria: Recreational runners between 20 and 45 years old. Runners must have approximately 1 to 3 years of running experience. Participants must have a 5-kilometer race time within the following parameters: (men between 25:00 and 40:00 minutes) and (women between 28:00 and 43:00 minutes). Participants must reside in Bogotá or surrounding municipalities at an altitude of 2,640 meters above sea level. All participants must own a GPS device (Garmin, Polar, Apple).

1.2. Exclusion criteria: Runners suffering from chronic non-communicable diseases such as cardiovascular disease, hypertension, diabetes, asthma, smokers, drinkers, or who have a musculoskeletal injury will be excluded.

2. of the study and/or that have any injury that prevents compliance with the programs.

Justification: Long-distance running, across its various lengths, has become increasingly popular, leading to a growing number of recreational runners. These runners often have specific goals, such as achieving personal bests, improving their health, and enhancing their quality of life. Therefore, it is crucial for this population to develop a systematic endurance training plan that fits their daily routines. One of the most discussed aspects of training planning is intensity distribution models. However, the scientific evidence is limited, with inconclusive results due to a lack of consensus on the methods used to quantify intensity in recreational athletes. This underscores the importance of providing athletes and coaches with useful tools to design appropriate training programs for this population.

3. Objectives: To compare the effects of polarized and threshold training intensity distribution (TID) models over 12 weeks on 5 km running time and body composition in recreational runners aged 20-45 years.

4. Procedures: A 12-week intervention will be carried out, where the two models of intensity distribution of polarized and threshold training will be evidenced.

4.1. Polarized model: the intensity distribution was as follows; zone 1 (80%), zone 2 (5%) and zone 3 (15%) in the three-zone model according to Skinner and McLellan (1980) and this will be controlled by means of theoretical heart rate of Tanaka, Monahan and Seals (2001).

4.2. Threshold Model: the intensity distribution was as follows; zone 1 (50%), zone 2 (40%), and zone 3 (10%) in the three-zone model according to Skinner and McLellan (1980), and this will be controlled by means of theoretical heart rate from Tanaka, Monahan, and Seals (2001).

4.3. Load Distribution: The training periodization for TID models was designed using a 3:1 weekly load block structure, meaning three weeks of training followed by one week of recovery. The weekly training frequency will consist of four running sessions, including running technique drills as part of the warm-up, and two strength training sessions.

4.4. 5KM Test: the test will be carried out in mode This is a group activity . Participants must wear lightweight, breathable, and comfortable athletic clothing, as well as appropriate footwear, which must remain consistent throughout both the initial and final assessments to control for potential biases related to equipment. Subjects will be instructed to maintain their usual breakfast and refrain from physical activity for 24 hours prior to the measurement.

Additionally, a minimum consumption of two liters of water per day will be recommended during the week preceding the test to ensure optimal hydration.

4.5. Body composition test: An InBody H20 segmental multifrequency bioelectrical impedance analyzer, portable and validated in various populations, will be used. Participants will be asked to arrive having fasted for at least 3 hours, having refrained from strenuous exercise in the 24 hours prior to the test, and having emptied their bladder before the measurement, following the control guidelines proposed by Kim J. et al. (2018). Assessments will always be performed at the same time (± 30 minutes) to reduce diurnal variability. Subjects will stand barefoot on the plantar electrodes and hold the hand electrodes according to the manufacturer's instructions.

5. Scientific, social, or individual benefits: Upon completion of the research, participants are expected to strengthen their understanding of the physiological, psychological, and methodological variables that affect performance and health.

5.1. Scientific Benefits: Based on an evidence-based approach, the aim is to promote safer, more conscious, and self-care-oriented training practices. Furthermore, the goal is for athletes to understand the importance of proper training load planning and management, along with regular assessments of their physical condition, to optimize performance and prevent injuries.

5.2. Social and Individual Benefits: This training process transcends the sporting sphere, as it fosters the development of sustainable habits that integrate body, mind, and well-being, promoting responsible, balanced, and fully conscious practice. For their part, associated sports institutions, such as clubs or recreational running teams, will have access to proven tools and methodologies that will allow them to optimize the planning, monitoring, and evaluation of their training processes, improving the performance and well-being of their athletes.

6. Risks associated with the study: This research is guided by the following ethical aspects.

6.1. This research is classified, according to Article 11 of Resolution 8430 of 1993 from the Ministry of Health, as a minimal-risk study involving maximal exercise for healthy volunteers. The participants in the interventions have experience in physical training programs and are therefore well-adapted to the planned activities. Furthermore, they are in good health, which allows their participation in this research to be considered safe.

6.2. At the same time, this research will be governed by Article 5 of Resolution 1642 of 2018 of the National Pedagogical University, which establishes the principles to guide the ethics of research projects at the university, ensuring respect for the rights of everyone, without jeopardizing their well-being and individual differences above all else. It will also be an

objective investigation through methodological and transparent work, demonstrating original content without plagiarism or conflicts of interest that modify the results for personal or institutional benefit.

7. Confidentiality and storage of information: The data obtained in this research will be processed in accordance with the principles of privacy and informed consent of the participants. Participants will be duly informed about the public use of the information, always ensuring confidentiality.

8. Protection of identity: Only researchers will have access to the files, which will be stored on restricted-access systems. Personally identifiable information (such as ID number, address, and phone number) will be deleted, and each participant will be assigned a unique code. No information that could compromise privacy will be disclosed, and the data will only be used until the study results are published.

NOTE: We will not disclose any of your information. When the research results are published or discussed at scientific conferences, no information that could reveal your identity will be included. Any disclosure of the information obtained will be for scientific and/or educational purposes.

I, _____, holder of National Identity Card No. _____ of _____, declare that I have been informed of the objectives and procedures of the study and the type of participation. I certify that I have carefully read this form and freely agree to participate. I give my consent with full knowledge of the nature and purpose of the procedures, the benefits that can be expected, and any discomfort or risks that may arise during the study. I authorize the use and disclosure of my information to the entities mentioned in this Informed Consent for the purposes described above. I give this consent voluntarily and understand that I am free to withdraw from the study at any time, for any reason, without any negative consequences.

Participant's Signature _____Date_____

For any questions you may have during the research process, you can contact Jesus Martinez by phone at +573123433815 or by email at jgmartinezm@upn.edu.co