



## DETERMINATION OF THE ABILITY OF BOXERS TO WORK THROUGH PULSE OXIMETER AND CHRONOMETRY DURING BOXING

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**Annotation:** Psychological emotional training, general physical, special physical, technical and tactical training of highly qualified boxers remains one of the most pressing issues. Boxing, which is one of the types of martial arts, requires research to improve the effectiveness of the training system for specific competitors.

**Keywords:** sports, boxing, physical training, technical and tactical training, qualified boxers.

**Introduction:** We must focus on solving these pressing problems, using different methods of fighting, and developing efficiency in the training system. In boxing qualifying fights, we will now turn to the analysis of boxers' data during the official boxing fights. From the start of the fight to the end, there is a change in heart rate for participants in the final of the Surkhandarya regional boxing championship among adults [1, 2]. First, we will analyze the pulse rate indicators before the start of the battle, (Pre-start period). So, for example, the pulses of a sportsman varied from 90-146 bpm / minute before the fight, and from 102 to 120 bpm / min in the first discharge [3, 4]. They have an average heart rate of  $111 \pm 4.4$  beats / min in the first athlete in the final 4 fights, and  $110 \pm 2.2$  beats / min in the second athlete. However, although the mean pulse frequency is almost the same in both and here, the variance of this level is much higher (11.37%) than for the first athlete (5.73%). This means that the pulse frequency for the first shooter is much more stable before each battle, which means that the amount of change is much smaller than that of the sportsman [5, 6, 7]. For all participants in the middle finals (8 people), the heart rate before the ring is  $109 \pm 3.1$  beats / minute (96 to 126), and the variance of the range is 8.05% (12.13 to 3.62). up to).

An analysis of the heart rate data obtained in terms of their dependence from the first battle to the final battle (4 fights by each of the finalists) showed that the pulse increase was almost directly related to the sequence of the battle. For example; For all finalists before the first fight, the average pulse rate was 105 beats per minute, 107 before the second battle, 110 before the third fight, and so on [8, 9, 10]. These indicators rose to their highest point of 114 bpm / min thus the general tendency is to increase the pulse rate when the boxer passes the fight.

A slight drop in the end of the pulse is due to the fact that the results of this fight do not affect the final distribution of the seats, so athletes have a very low emotional tension. Here's a look at the finalists' heart rate after the fight. The biggest obsolescence of pulse was recorded by the first grader Alisher Alimov (student of Olympic School in Surkhandarya region) (186 bpm). It was the difference between the pre-fight (102) and the post-180 (180) degrees. The second battle difference is 78 beats / min. The smallest range of differences was revealed in the final battle (96-108), which increased to just 16 shots [11, 12].

For all the finalists, the average level of heart rate (heart rate) increases by 55 shots in combat. We will compare comparisons of heart rate in two of the strongest boxers in Termez, Surkhandarya region (Fazliddin Kattakulov, weightlifter 56 kg in Uzbekistan 2019 and Akmurod Gafforov, 75 kg weight champion in Uzbekistan). The data was obtained by the 2019 Battle of the Surkhandarya Region

Boxing Championships. The competitions were held in the Olympic system. In the qualifying rounds, the average pre-fight and home-based pulse frequency during the qualifying rounds are characterized by typical shifts (F. Kattakulov-112-170 beats per minute, A. Gafforov-108-176 bpm). That is, the rate of pulse increases by 51.7% in one boxer and by 62.9% in comparison with the previous one. The absolute pulse rate in F. Kattakulov is 174 bpm, and at the end of the battle it was 198 z / m. Difference 24 bpm / min. This indicator increased by only 13.7%. Even less change in the same second battle was A. It was recorded in Gafforov, where the heart rate increased from 180 to 198 beats / min, which is 18 beats / min. It was also noted that the pulse rate before the third body was recorded at 174 beats / min, and finally 198 beats / min. was at the level. This is explained by small pauses of rest between the fights, which are regulated by the rules of the competition. In sports, these pauses are even smaller, especially between the first and the second battles, which means that when the first battle is over, the pendulum will soon begin. Of course, in such a system of combat the pulse is only partially recovered from the prefight level, with a very high pulse frequency of 162 beats / min to 186 beats per minute, which results in a relatively small difference in the pressure and end of the fights. Nevertheless, these fights are generally the same as the intensity of the movement. Such a load is a bit different to an athlete's body.

As a result of this fight (especially in the third round of the fight), it causes a high impact of the cardiovascular system. Result and Discussion: The analysis of the final fights by F. Kattakulov showed typical squeezes of the heart rate before and after the fights. The average difference between these levels is 52 beats per minute. Data from two of the strongest boxers in Termez (recordings of heart rate) allow us to stress that the use of a combined system of competitions puts the athlete's high expectations. It basically starts with a more functional and emotional (emotional) level than the athlete's battle with rounds.

In order to have a better idea of the pulse rate shifts in high-skilled boxers before and after the fights, this research paper highlights the intensity of pulse rates after the end of various important fights for Uzbek boxers, in particular with the return of results from training sessions; Record the Pulse Frequency of the Official Tournament Fights in October 2019 in Tashkent before the Boxing Adult Boxing Championships in Tashkent. Seven athletes were included in the observation, including the Olympic, World and Uzbekistan champions. Competition fights were analyzed during the official tournaments - three rounds were held for control, with the lowest average pulse rate of the squad members recovered from the individual exercises in combat (up to 165 blows / min at 141). Battles for Protocol 4 (148 to 168 bpm / min) of the training sessions, with the results of the severity considered.

The highest average pulse frequency was recorded in the first competition fights (151 to 179 beats per minute). The frequency of shrinkage after the third fight was no different (even slightly lower) than the results of the competition fights with the transcript. The low level of pulse in this battle is explained by the fact that it does not matter to the team. The fact is that the first and second battles of the competition have practically solved this problem, and the third fight will not do anything, hence the low intensity and mental tension in these fights. Results of observations of pulse frequency by members of the national team of Uzbekistan in conducting various important battles have shown that pulse acceleration depends to some extent on combat functions. This is clearly illustrated by the fact that each participant is given a moderate pulse rate after a number of different fights (the first martial arts criteria were used as the criterion for tournament fights). also depends on the This is especially true in boxing fights, where the high intensity of movement is accompanied by emotional excitement.

What is interesting is that the training fights, the results of which are repeated in the protocol, are responsible for their intensity and intensity, and the competition fights. This conclusion should be considered by the boxer when individually planning the training load.

**Conclusion:** Competition fights impose higher demands on boxers' cardiovascular systems. Specifically, it was found that in individual fights, boxers have an absentee heart rate of 190 or more blows per minute, which corresponds to the pulse rate of athletics and swimming. The difference between the pulse rate at the start of the fight and the pulse rate after the end of the brawl varies from

40 to 60 bumps / min. by 100% or more. There will be significant individual changes in heart rate for heavyweight boxers before and after the fight during training and tournament fights.

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