

# DEVELOPMENT OF CIRCUIT TRAINING EXERCISES IN THE GENERAL TRAINING PROCESS OF QUALIFIED BOXERS

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## Abstract

This article discusses the effectiveness and usefulness of circuit training for improving the overall physical fitness of qualified boxers . Circuit training is a type of training aimed at maximally loading the body and developing each muscle group by performing various exercises in sequence. Taking the above into account, the article has developed a set of circuit exercises and outlined the necessary instructions.

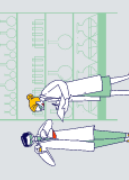
**Keywords:** Skilled boxers, general physical training, exercise, circuit training, strength, speed, agility, endurance.

## Introduction

Under our authority boxing sports type was e ' attention height and our president by creating given wide opportunities and your athletes by record mature high results this sports of the type importance high because it is evidence gives . Uzbekistan Republic President's decree dated 29.04.2021 PQ -5099- No. " Boxing " further develop measure events " about " [ 1] decisions our word proof as brought our transition possible . Boxing sport is not only physical power and speed , maybe the movement management , strategic thinking and psychological preparation also demand to do complicated sports type . Boxers own their successes only physical preparation through not, maybe methodical , tactical and psychological in terms of also perfect preparation through in hand they enter . In this regard, circuit training occupies a special place in boxing training programs. This system of exercises is an effective tool for developing boxers not only physical endurance, but also strength, speed, flexibility and balance, which increases their tactical and technical success on the field.

Circuit training exercises are aimed at improving the overall physical condition of the athlete's body by combining several different physical exercises in a row. This training method allows, on the one hand, to effectively use muscle groups, and on the other hand, to increase the endurance of the cardiorespiratory system. Circuit training also speeds up the athlete's reactions, maximally activates the energy production system , and develops anaerobic endurance. As a result, boxers have the opportunity to simultaneously develop all the physical skills necessary to take their performance to a higher level .

Circuit training exercises are characterized by high intensity and duration. Performing these exercises effectively engages the athlete's motor and energy systems, as well as shortening their metabolic reaction time. In boxing, these systems are important not only for high-speed



reactions , but also for controlling force for a long time and maintaining maximum physical condition.

Studying the role of circuit training and its effectiveness in boxing training plays an important role in improving the physical and psychological readiness of athletes. A full understanding of this methodology and Proper use of the drug allows boxers to achieve high results, as well as helps to harmonize all the components necessary to ensure professional success in sports.

**Purpose of the study:** To improve the general physical training processes of skilled boxers using circuit training exercises.

**The task of the study:**

- Develop circuit training exercises.
- Putting the developed methodology into practice.
- To determine the effectiveness of circuit training exercises introduced into practice.

**Research methods:** Analysis of scientific and methodological literature, pedagogical observation, pedagogical testing.

**Research Results and Discussion:** Scientific studies and studies aimed at studying the effectiveness of circuit training and general physical training for boxers have been carried out in many areas. Their goal is to study how circuit training can be used to improve the physical and psychological performance of athletes and to evaluate the results. Below I will give some important information about such studies and practical studies:

Several scientific studies and experiments have been conducted to investigate how circuit training affects the overall physical fitness of boxers. These studies have often been conducted in the following areas:

- **Build strength and endurance:** Circuit training can help improve the physical fitness of boxers by combining exercises that require a variety of strength and endurance. One study found that circuit training increased boxers' anaerobic power and aerobic endurance [2]. Athletes who performed the exercises at maximum intensity significantly improved their endurance and strength levels.
- **Speed and agility development:** Plyometric exercises and rapid movements (e.g., jump squats, burpees) have been shown to improve speed and agility in boxers. Several studies have confirmed the effectiveness of plyometric exercises in physical training, as they increase the ability of muscles to contract and stretch rapidly [4].
- **Coordination and balance:** During circuit training, all parts of the body are forced to work in sync, which helps improve coordination and balance in boxers. For example, the Russian twist or exercises such as planks are effective in helping boxers deflect high-velocity counterattacks or maintain body stability during combat [10].

Studies have confirmed how circuit training improves the overall physical fitness of athletes.

For example:

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- Anaerobic and aerobic endurance: A study by I. Mujica and S. Padilla [7] showed that boxers improved their anaerobic and aerobic endurance by 10-15% through circuit training . This helps improve the physical condition of athletes by working at high intensity, as well as by performing continuous exercises.

- Increased impact power: Studies have also shown that circuit training can increase impact power. Plyometric exercises, such as jump squats and Kettlebell swings have been shown to be effective in improving punching and maintaining proper stance [8]. These exercises are particularly useful in optimizing muscle speed and punching power in boxers.

- psychological and physical endurance: Circuit training not only develops physical endurance, but also psychological endurance. Improving mental stability in athletes and allowing them to work continuously during intense training is one of the main benefits of circuit training [9]. It is important for boxers to increase their mental toughness and stress resistance during fights.

1. Exercise Selection: Taking into account the above, the exercises selected for circuit training should be aimed at developing all the important physical characteristics of the boxer . These include:

Strength: Barbell press, squats, deadlift, push-ups, pull-ups, kettlebell exercises.

Endurance: Sprints, interval running, stationary cycling, boxing drills. Speed and agility:

Jumps, plyometrics, multi-step speed drills. Flexibility : Yoga or stretching exercises. Balance: Weight-bearing exercises and techniques.

2. Circuit exercises : When doing a circuit, perform each exercise for 30-60 seconds, rest for a few seconds, and then move on to the next exercise. After completing each exercise, take a short break (10-20 seconds) and then move on to the next exercise.

3. Duration and intensity of circuit training

Circuit training is organized in two main ways:

- High-intensity : This type of training is performed at maximum strength and speed for a short period of time (10-15 minutes) . This increases the boxer's speed and endurance.

- Moderate intensity : Exercises are performed for 20-40 minutes, with several exercises performed at moderate intensity. This increases overall physical fitness.

It is important to vary your circuit training routine regularly. This will provide new stimuli and help to continue muscle development. For example, changing the number of exercises, the load or the time, or adding new exercises can be helpful .

**Table 1. Circuit training exercises for skilled boxers**

T/r	Exercise name	Duration	Vacation	Repetition	Intensity
1	Kettlebell swings	30 seconds	20 seconds	3-4 times	120-140
2	Push-ups	30 seconds	20 seconds	3-4 times	120-130
3	Jump squats	30 seconds	20 seconds	3-4 times	120-140
4	Plank	30 seconds	20 seconds	3-4 times	140-460
5	Burpees	30 seconds	20 seconds	3-4 times	160-170
6	Skipping rope	30 seconds	20 seconds	3-4 times	160-170
7	Russian twists	30 soniya	20 soniya	3-4 marta	120-140

The first exercise in the circuit training set developed by us is Kettlebell Swings, which is a very effective exercise for developing strength, speed and agility. This exercise mainly strengthens the muscles of the legs and shoulders, as well as the back muscles. In boxers, this exercise is used to increase the strength of the shoulders and legs, maintain the correct position and effectively apply force when striking. The application of the exercise The kettlebell swing exercise for boxers helps in striking and moving at variable speeds. Through this exercise, the boxer increases the ability to combine the strength of the whole body and deliver accurate strikes. The duration of the exercise is 30 seconds, the repetition rate is 3-4 times, the rest time is 20 seconds, and the intensity zone is 120-140 strokes (see Table 1).

Our next circuit exercise Push-ups (Handstands in a supine position). This exercise increases the strength of the arm, shoulder, chest and abdominal muscles. This exercise can develop stability and balance by using the upper body. Push-ups are often used by boxers, because the upper body (chest , shoulders, arms) must be strong during punches. This exercise provides the boxer with strength and stability during punches. The duration of this exercise is 30 seconds, with a rest period of 20 seconds. The repetition rate should be 3-4 times and the intensity zone in this exercise should be 120-130.

Jump Squats are used to strengthen the leg muscles and increase agility. They require a lot of energy because of the high speed of the jump and the high force. Jump squats allow boxers to strengthen their legs, increase speed, and maintain a high position in fights.

Plank (Supine Abdominal Muscle Strengthening) Exercise. This exercise helps strengthen the abdominal and back muscles. During this exercise, the muscles in the middle of the body (abdominal and lower back) are constantly strengthened, which helps boxers increase stability and endurance during long fights. For boxers, the plank exercise helps strengthen the center of the body (core), which is needed when striking or defending. Regularly performing the plank increases the boxer's endurance when fighting at high speed or in long fights. According to the order of execution of this exercise, the duration is 30 seconds, the rest period is 20 seconds, and the intensity zone is 140-160 beats (see Table 1).

The next exercise in our circuit training program is the Burpees (Extended Jump and Press Exercise). This is a high-intensity exercise that uses the entire body. During the exercise, all muscle groups of the body are worked, especially the legs, chest , arms and abdominal muscles. This exercise combines aerobics and strength. For boxers, burpees are very effective in developing speed and power. This exercise helps boxers quickly change positions, evade their opponents and deliver powerful punches. The burpee exercise increases the boxer's speed and energy in the fight. In this exercise, the intensity zone reaches 140-160 beats, and the repetition rate of the exercise is 3-4 times.

Skipping Rope is an effective exercise for boxers to improve endurance, coordination, and speed. It strengthens the heart, improves leg agility, and helps muscles function more efficiently. Boxers regularly do skipping rope because it improves speed and coordination. Practicing skipping rope helps a boxer execute punches and moves quickly and accurately.

Russian Twists ( Midbody Twists) This exercise helps strengthen the abdominal and back muscles. It especially develops strength in the central part of the body (core). In boxers, this

exercise develops the integral connection between the upper body and the lower body. When striking or defending, the strength of the middle of the body is needed . The Russian twists exercise makes boxers stronger and more stable. The duration of the exercise is 30 seconds, rest is 20 seconds, repetitions are 3-4 times and the intensity zone is 120-140 strokes (see Table 1).

The above exercises help increase overall physical fitness for boxers, resulting in improved physical condition and increased effectiveness in combat.

Circuit training in boxing is a great way to improve overall fitness for skilled boxers . Due to its dynamic and intense nature, circuit training helps develop all the physiological aspects boxers need, including strength, endurance, speed, agility, and balance. Here are some scientifically proven reasons why circuit training is beneficial for boxers :

Circuit training should be performed primarily at high intensity, which increases the boxer's anaerobic and aerobic endurance. It is important for boxers to have a high level of muscular and cardiovascular fitness in order to be able to punch and be strong in long bouts . An effective combination of circuit training (aerobic exercise with strength training) helps to achieve this goal, as the multi -joint exercises use multiple muscle groups in a consistent and intensive manner [3]. Performing the exercises with short rest periods ensures that the cardiovascular system works efficiently, which ultimately increases the boxer's overall physical endurance .

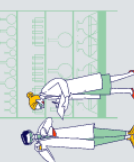
often includes plyometric and agility exercises, such as jump squats and burpees . These exercises promote neuromuscular adaptation , which increases a boxer's ability to move quickly and make quick decisions . From a physiological perspective, plyometric training improves the ability of muscles to contract and lengthen quickly , which allows them to adapt quickly to rapid changes in the punching or fighting environment [5]. Circuit training also creates the physical changes necessary to optimize punching and agility .

Circuit training helps develop coordination and balance by using all muscle groups of the body in a synchronous manner . It is important for a boxer to quickly switch between the upper and lower body when striking , as well as to effectively counter punches . Core strength exercises in circuit training , such as planks or Russian twists, improve the boxer's body balance and allow him to deliver more powerful and accurate punches [6].

Circuit training, in this case, optimizes the level of physical fitness of boxers and serves to improve overall physical condition. The combination of aerobic and anaerobic exercises leads to a decrease in body fat, muscle strengthening and an increase in specific strength that helps with punching. This helps to strengthen the cardiovascular system and ensures adaptation to prolonged and intense movements in fights.

### Conclusion

Circuit training, as a type of training that involves high intensity, short rest periods, and a variety of exercises, is very effective for boxers in developing not only physical endurance, but also speed, agility, strength, and balance. Combining exercises and performing them at the right intensity develops all the physical and psychological aspects of a boxer, while also increasing





his effectiveness in combat. These workouts are an ideal tool for improving the overall fitness of boxers and achieving a high level of competitiveness.

The circuit training exercises we have prepared should be used in a balanced manner, meaning that they should develop strength, speed, endurance, and agility at the same time. If you only gain strength in one area, you may experience weakness in other areas.

It is important to continually increase the complexity and intensity of your exercises. This will help develop muscles and increase your overall physical fitness.

**Rest and Recovery** While increasing the intensity and duration of your workouts, it's important to remember the importance of recovery. Adequate rest and recovery after each workout will ensure muscle growth.

The above-developed exercises are of great importance in increasing the overall physical fitness of boxers. Various studies and practical work have shown that circuit training helps boxers not only physically, but also psychologically. The use of circuit training in the development of physical endurance, strength, speed, agility and coordination significantly increases the physical condition of boxers and their effectiveness in fights.

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