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Effects of Intermittent Exercise on Rat Skeletal Muscle Gene Cells and Related Factors

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Abstract: Skeletal muscle is vital for humans and animals, and it is an important source of movement system. Intermittent exercise is a training method that can cause skeletal muscles to adapt quickly. Therefore, it is necessary to actively carry out research on the effect of intermittent exercise on skeletal muscle gene cells and related factors in rats. The purpose of this article is to explore the effect of intermittent exercise on skeletal muscle gene cells of rats, and to analyze in detail the mechanism and related problems of intermittent exercise on skeletal muscle gene cells of rats by experimental methods. The effects and detailed processes of intermittent exercise on the proliferation, differentiation and apoptosis of skeletal muscle gene cells were studied in depth, and the differences in the expression of related genes and some differences in their physiological processes were investigated and studied in detail. The results show that it is feasible to use intermittent exercise to promote the recovery and improvement of skeletal muscle gene cells, which can effectively prevent skeletal muscle damage. Moreover, exercise training has a certain relief and prevention effect on skeletal muscle aging injury, regulates the early skeletal muscle susceptibility to apoptosis, reduces the skeletal muscle injury rate of rats by 45%, and increases the skeletal muscle by 28% gene cell expression.

1. Introduction

The integrity of the genome is constantly challenged by the external environment and cell metabolism. They can induce different types of damage, from single base changes to large spiral distortions. The characteristics of the damage depend on the type and characteristics of the induction. Sex can affect the faithfulness of replication and transcription, leading to mutations in gene sequences encoding important proteins. This mutated protein can affect different biological processes, leading to increased genomic instability. In order to maintain the stability of the genome,

the body has a complete repair system for damage, including recovery repair, excision repair or recombination repair after replication. Exercise as a stressor can also regulate gene expression, but the body also has another repair system, that is, some genes stop the cell division cycle or promote its apoptosis, which can be done in mitotic tissues. But in the tissue after mitosis, when the accumulation of oxidative damage reaches a certain level, genes are the most important. Under the stimulation of damage, they can promote the transcription of many apoptotic genes. Exercise can reduce the level of oxidative stress in skeletal muscles of aging bodies.

Intermittent exercise training not only has a significant and profound impact on skeletal muscles during aging, not only macroscopically but also microscopically. At the cellular level, intermittent exercise training can affect the level of oxidative stress of skeletal muscle fibers and enhance the defense system's defense against the body. Ability to reduce the damage to aging muscle fibers, skeletal muscle function has been significantly improved [1]. Exercise can reduce the damage of skeletal muscle due to oxidative stress. Intermittent training may be a better exercise method from the perspective of improving mitochondrial function and preventing mitochondrial diseases [2]. Intermittent exercise training is also a time-saving exercise method. Therefore, exercise training may have a certain relief and prevention effect on skeletal muscle aging injury, regulating the early skeletal muscle susceptibility to apoptosis [3].

This article aims to explore the feasibility of the study on the effects of intermittent exercise on rat skeletal muscle gene cells and related factors. Among them, Wang gave a detailed introduction to intermittent exercise, analyzed the problems in the effect of intermittent exercise on skeletal muscle gene cells, and explained the importance of intermittent exercise [4]. In his article, Qian proposed the importance of intermittent exercise, and introduced the research significance and research status of rat skeletal muscle gene cells, and explained the effect of intermittent exercise on rat skeletal muscle genes. Intermittent exercise effectively increased the gene expression rate [5]. In the article, Shang elaborated on the impact of intermittent exercise on other related skeletal muscles, and pointed out the problems of other related factors, the use of intermittent exercise reduced the skeletal muscle injury rate [6]. Sakr proposed the importance of intermittent exercise, through intermittent exercise, it promotes the progress of medical research on skeletal muscle and increases the quality of athlete training [7].

The main research content of this article is the effect of intermittent exercise on rat skeletal muscle gene cells and related factors. Different from previous research, this paper has designed a new design for intermittent exercise based on the previous research results. A number of innovations: First of all, formulate different levels of intermittent exercise methods, effectively reducing the skeletal muscle damage of rats and increasing the gene expression rate. Secondly, in order to design a new institutional plan, this article took the lead in formulating an intermittent exercise method, and analyzed the effect of intermittent exercise on rat skeletal muscle gene cells and related factors. In addition, the intermittent exercise method can be used for the first time to prevent skeletal muscle damage more effectively, increase the speed and quality of exercise in rats, and prevent cell apoptosis.

2. Interval Exercise and Skeletal Muscle Genes

2.1. Interval Training

Intermittent training is a training mode often used by athletes in short distance speed events. It is effective for improving the performance of speed events. Intermittent training can improve the activity of skeletal muscle glycolytic enzymes and oxidases. Interval training is a time-economic training method that can cause muscles to adapt quickly. The intermittent training mode is mainly

used to simulate the training method of athletes in speed events. Skeletal muscle cell apoptosis and skeletal muscle cell proliferation jointly maintain the normal shape and function of skeletal muscle, and the apoptosis and motility of skeletal muscle cells during exercise [8]. There is a close relationship between fatigue and muscle damage caused by overtraining. In-depth exploration of the relationship between sports and apoptosis of skeletal muscle cells and related mechanisms can help to understand the mechanism of skeletal muscle fatigue during sports and adopt corresponding effective measures to eliminate fatigue. In different projects, due to the differences in the main types of muscle fibers used, different types of muscle fibers will cause different degrees of fatigue or damage. After long-term exercise training, the body's antioxidant capacity is quieter than untrained people. Whether long-term moderate-intensity training will reduce the rate of apoptosis of fast muscle fibers or slow muscle fibers after one exercise, and reduce muscle damage. Further research is still needed. For different muscle fibers when apoptosis occurs, whether the changes and mechanisms of genes or regulatory factors in different muscle fibers are the same, and the use of anti-apoptotic gene expression to inhibit the apoptosis of skeletal muscle cells during exercise will be exercise. Possibility of studying skeletal muscle cell apoptosis. Intermittent exercise reduces the level of skeletal muscle in rats, increases the endogenous expression of skeletal muscle, inhibits the expression of skeletal muscle phosphorylation, and then inhibits the activity of protein gene bodies, inhibits the degradation of skeletal muscle protein, and thus plays a protective role in skeletal muscle. Intermittent training leads to the down-regulation of enzyme protein, which may weaken the inhibition of sugar oxidation, which is beneficial to the rapid mobilization of glycogen. Which is a favorable metabolic adaptation for the intensity characteristics of intermittent sprint training. It may play a synergistic role in transcription activation in the nucleus, which is more significant in the intermittent sprint training group. This may also be a transcription activation pathway that further promotes the up-regulation of gene cell expression in exercise, making fatty acid membrane transport and intracellular flow through. Increase, provide a substrate for mitochondrial oxidation, at the same time, can fully mobilize peripheral tissues such as adipose tissue, liver stored fat, reduce tissue lipid content. Upregulation of gene cell expression may also increase the risk of cell lipid accumulation and induce insulin resistance. The maintenance of intracellular lipid homeostasis is closely related to the synergistic effects of fatty acid transmembrane transport, intracellular lipid synthesis, fatty acid oxidative metabolism and other links. Exercise can improve the expression of genes and proteins, intermittent exercise promotes the up-regulation of skeletal muscle lipid metabolism core action factors, maintains fatty acid transmembrane transport, intracellular synthesis and mitochondrial bio oxidation during high-fat feeding, and together maintains lipid homeostasis and energy balance. Exercise can Increase the expression of binding active genes and proteins, improve insulin resistance [9].

Intermittent training is likely to make the muscle fiber's anaerobic metabolism at rest already active. Endurance training, intermittent exercise training and hind limb suspension have no significant effect on resting skeletal muscle and activity, but intermittent sprint training results in increased activity. Faced with different physiological stimuli of skeletal muscle load reduction and increased load exercise, skeletal muscle cells may not have different response mechanisms. Intermittent exercise training has a much greater impact on the mitochondrial system than endurance training. Exercise training can cause skeletal muscle to produce a series of adaptive changes. The contractile activity of skeletal muscle is a powerful inducer of many transcription factors, which can initiate the activation of signal transduction kinase and promote the phosphorylation of transcription factors, resulting in increased binding and transcription activation or inhibition. So as to improve the metabolic efficiency of skeletal muscle [10].

2.2. Skeletal Muscle Gene Cells

The human genome contains 37 genes. There are usually many cell genes that can be expressed in the cell, and some new cell proteins can be produced. This is mainly due to the function of each gene encoded by the nucleus to regulate its expression. The vast majority of mitochondrial mononuclear proteins are encoded by genes in the nucleus. These proteins are sorted through the transcription of mononuclear genes, gene translation, and the mechanism of inhibiting transmembrane gene transfer into enzymes in mitochondria. Anchor delivery to a cell compartment located in the mitochondria, and assembled into an oxidase complex containing multiple subunits in the respiratory chain or multiple matrix centers. Finally, we realized the occurrence of mitochondrial molecular biology. The normal movement and adaptive function of mitochondria are controlled by the dual functions of nuclear white matter genes and other mitochondrial core genes. Long-term maintenance of the aerobic exercise effect can directly promote the biological reaction of mitochondrial fibers located in the muscles inside the skeleton and the change of mitochondrial fibers from type to type. This kind of human body's adaptive response can effectively improve the resistance of skeletal muscles to oxidation. And muscles anti-fatigue reaction ability. Repeated tension and contraction and relaxation, the height change response of substances and human energy re-metabolism is the most rapid and sensitive, and its high adaptability to mitochondrial tissue structure sex makes its change relatively lagging behind. Gene signaling cells and other related cell family activators of gene transcription coenzymes are regarded as important cell molecules that regulate the growth energy and material nutrition balance of gene cells. After cell activation, signal transcription can be synchronized with cells to induce and drive coordination. Cell expression of important genes related to the control of mitochondrial cell proliferation [11].

Skeletal muscle calcium hormone-regulated globulin gene-dependent enzyme activity kinase inhibition can activate cells by activating certain genes to start and initiate the expression of the gene. The nuclear-coded team can directly regulate the transcription and replication of the mitochondrial group, so that the mitochondrial biogenesis. Gene cell knockout rat-type muscle fiber mitochondrial content is reduced and mitochondrial breathing capacity is reduced, accompanied by a decline in exercise capacity and anti-fatigue ability. The nuclear-encoded factor queue can directly regulate the cell transcription of multiple mitochondrial factor groups simultaneously. Biological replication, thus preventing the secondary biological replication of mitochondria. Knock-out of the cell wall by the genome can significantly reduce the content of mitochondrial protein of rat-type lower limb muscles and the ability of fibrous mitochondria to perform respiratory exercise, and at the same time be accompanied by a significant decrease in the ability of the organism to exercise and the body's ability to resist fatigue. The induced differentiation of benign fibroblasts includes the adaptation to the benign growth of muscle cells and the adaptation to the metabolic adaptation ability of mitochondrial cells. Ultimately, it is possible to achieve unified physiological regulation between cell mitochondrial metabolism and cell growth at a high level of cellular gene fusion transcription in advance and maintains the steady state of multiple signal pathways and at the same time maintains the internal stability of cellular organisms. The environment has a very important leading role, and major changes in the exercise mode generated by energy metabolism will directly affect the normal steady-state physiological environment for normal cells to survive for a long time [12].

3. Scheme for Exploring Skeletal Muscle Gene Cells of Rats

3.1. Experimental Scheme

Thirty rats were randomly divided into two groups: quiet control group and exercise experiment

group. According to the different sampling time after exercise, they were divided into: immediately after exercise, 6-hour group, 12-hour group, 24-hour group, 48-hour group. There are 3 groups of 10 animals in each group and due to animal death, sample damage and other factors during the experiment, each group of flail or samples ranges from 6 to 10, and all animals perform 10 to 2 days before the formal experiment a 15-minute intermittent exercise with a speed of 10-12 m/min. During the formal experiment, all animals had a speed of 15 m/min. During the exercise, sound, light, and brush stimulation were used to keep the animal running continuously until exhaustion. Can't exercise at the same time to keep the chest and abdomen can't continue to move up and down quickly. When exercising, the upper limbs and abdomen of the two animal treadmill rats cannot be completely close to the two animal treadmills, and the limbs cannot fully support the body of the two animal rats. The other jumping animals cannot be taken out, the abdomen cannot be placed up, down, left and right, the rats cannot be turned upside down, left, right, mentally sluggish, and the reaction time of unresponsive animals is 3.4.5 hours, an average of 3 hours. Actin metabolism changes, as shown in Table 1.

Table 1. Changes in skeletal muscle genes in rats

Group	Quiet group	Sports group	Difference value
6	2321	3123	802
12	2213	3345	1132
24	2134	3543	1409
48	2067	3567	1500

It can be seen from the table that after intermittent exercise, the a-actin gene metabolism of rat skeletal muscle begins to increase, and the exercise group is significantly higher than the quiet group. Intermittent exercise can increase the expression of rat skeletal muscle gene.

3.2. Experiment Content

Rats in the long-term intermittent exercise training group and the one-time intermittent exercise group were weighed and injected intraperitoneal with ulna, hours after the last exercise. The injection should be performed after local anesthesia with standard weight measurement, and the tibias on both sides of the left hind limb were quickly cleaned and removed. The soleus muscle and the anterior muscle of the tibia joint of the right hind limb were quickly washed in white physiological phosphate water to remove arthropod hair and abdominal blood stains, and then all the water was quickly absorbed with black absorbent toilet paper. Divide the tibia and forefoot muscles of the rat into two large and small pieces and weigh them together. One piece can be used for the experimental detection of biochemical indicators, and the other can be used for other molecular biology experiments. The soleus muscle of the left muscle can also be used experimental detection of biochemical chemical indicate; the soleus muscle of the right muscle can also be used for other molecular biology experiments. After the tissue materials of all animals are taken out, they are transferred to a -75℃ ultra-low temperature refrigerator to be frozen and stored. Use a micropipette to absorb the above-mentioned amplified target gene product, then absorb the buffer solution, and add it to the sample well on the gel, and add the standard product to the edge of the sample well. Then plug in the power supply and adjust the voltage to, at this time you can see that it slowly moves from the negative electrode to the positive electrode, and you can observe it after about 1 hour. Due to the small amount of reagent added to each sample in the experiment, it may be smaller than the range of the smallest liquid container. In order to prevent too many liquids, the loss of some small and precious reagents is increased. When adding reagents, the number of reagents of multiple samples can be combined together, and then the amount of mixed reagent to be added to

each sample from this mixing tube is added to each sample tube. During the entire experiment, use the same set of liquid containers to prevent liquid containers. The error between them increases the error of the experimental results. The experimental data is used for statistical analysis. All data are expressed in mean standard deviations. The score data are expressed in terms of average percent standard deviation. A single group of multivariate analysis of variance was used for multiple comparisons. The accuracy difference between the accuracy of the speed test within the group was measured using a linear paired survey test. The results of the correlation survey were analyzed using the linear coefficient method for linear test. The significance test was positive and the level uniformity was positive. Values <0.05 the results of the data are expressed as A±S, and the comparison between groups is by one-way nova. Among them, the algorithm designed by single factor analysis of variance is shown in formulas 1 and 2.

$$AN = AN_C + AN_B \tag{1}$$

$$FS = NF / (E - 1) \tag{2}$$

Where: AN is the sum of mean squares deviation, FS is the sum of mean squares deviation.

3.3. Significance and Principle of the Experiment

Intermittent exercise training experiments have played an important role in improving cardiopulmonary function, protecting vascular function and improving skeletal muscle aerobic and anaerobic metabolism. Abnormal contraction of skeletal muscle, reduced cross-sectional area of muscle cells, mitochondrial dysfunction, exercise ability. The decline and inhibition of skeletal muscle cell apoptosis are important for reversing skeletal muscle loss and improving muscle function. Mitochondrial function activates the skeletal muscle gene pathway through transgenes, which can increase the quality of skeletal muscle in mice and improve functional exercise training can inhibit the apoptosis of skeletal muscle cells and maintain skeletal muscle quality. Therefore, it is believed that intermittent exercise to improve skeletal muscle atrophy in rats may be closely related to the activation of skeletal muscle gene cell pathways, promote the increase of skeletal muscle capillaries, and improve mitochondrial dysfunction. The intestinal muscle mass of rats is reduced, and the ratio of luminal bone length ratio cells is significantly smaller. Intermittent exercise can promote the increase of rat intestinal muscle mass, the ratio and the cross-sectional area of intestinal muscle cells, and reverse the skeletal muscle atrophy in rats. Gene cells are a contraction-induced muscle factor that can play an important role in suppressing antigenic cellular immune apoptosis, promoting skeletal muscle hypertrophy, cell regeneration, and anti-inflammatory immune processes. The researchers found that the expression of this gene in skeletal muscles of obese humans with dysfunctional nutrition or lack of vigorous exercise, severely injured rats and chena muscles, and malnourished obese mice can be detected is significantly higher than that of up-regulation, training after exercise. It can effectively promote the expression of human skeletal muscle tissue genes and skeletal proteins, and experiments have confirmed the important role of calcium in antagonizing inflammation, promoting the survival of muscular dystrophy mice and improving the function of human skeletal muscle tissue. Intermittent exercise is important for differentiated rats, due to the influence of skeletal muscle tissue genes and cellular proteins on cell expression. Intermittent exercise can mainly reverse the atrophy of rat skeletal muscle cells by inhibiting the function of differentiated rat muscle cells. Intermittent repetitive exercise technology can be used to activate the normal cell signaling pathways of rat skeletal muscle and genome. The gastrocnemius muscle of the rat is expressed in the cytoplasm, and intermittent exercise significantly increases the gene, protein and acidification level of the gastrocnemius muscle of

normal rats. Intermittent exercise significantly improves skeletal muscle atrophy in rats.

4. Influence of Interval Exercise on Skeletal Muscle - Related Factors in Rats

4.1. Analysis of Skeletal Muscle Protein in Rats with Intermittent Exercise

After intermittent exercise, the expression of quiet histone protein fluctuated up and down around the level of the control group, which was not significant compared with the quiet control group. There was almost no change in protein expression immediately after the quiet group, and the protein decreased after 5 hours; it increased again at 7 hours and 8 hours, and the difference was significant compared to 5 hours; the protein returned to the quiet level at 6 hours and 7 hours. After 8 hours of comparison, the difference is significant. After long-term intervention, the activity level of the protein in the simple quiet exercise group showed a significant upward and downward trend, which was significantly different from the quiet exercise in the protein expression at each moment of exercise. Immediately after exercise, the combined expression of key proteins increased again immediately, and again declined again at 6 hours and 7 hours, and compared with the individual histones immediately after exercise, the difference was more significant; for 8 hours after exercise. Reappeared again and again, and retreated at 7 hours. The difference should be more significant when compared with 6 hours and 7 hours. Because the expression of the key protein binding increased again 8 hours after exercise, it was different from each exercise time group. Comparing the key proteins (except immediately) is significant. The exercise group showed a continuous upward and downward trend in the degree of fluctuation of the protein after intervention, and there was a trend of protein fluctuations that began to rise and then continued to decline and then increased and then decreased. Compared with the quiet exercise group protein, except for 6 hours. The external differences are significant. Compared with the exercise group, the protein expression at the time point of the exercise group increased, and the difference was significant. The expression of skeletal muscle protein at 6 hours and 7 hours in the exercise group was higher than that in the quiet group, as shown in Table 2.

Table 2. Analysis of the effects of interval exercise on proteins

Time	A	E	AE
5	1.03±0.91	2.32±1.56	1.43±0.12
6	0.81±0.15	1.87±0.21	1.21±0.16
7	1.31±0.14	1.76±0.34	1.34±0.17
8	1.56±0.32	1.89±0.15	1.49±0.14

There was a downward trend 5 hours after exercise acupuncture; the protein expression was the lowest 6 hours after exercise acupuncture, and the difference was significant compared with each time point. Intermittent exercise affected the protein of skeletal muscle.

After the intermittent and post-exercise intervention, the time expression of the control protein in the exercise group increased significantly and decreased. Compared with the control protein in the quiet group, the time expression of the control protein at 5 hours, 6 hours, and 7 hours was obvious. The increase is significant, and the difference in time between the 5-hour and 6-hour control group proteins is more significant, and the 7-hour expression is also significantly higher than that of the group; the 8-hour expression of the group protein has a significant decrease and increase. The trend of the 7-hour and 8-hour control group proteins was significantly different in time compared to the 8-hour control group and the 6-hour control group. After long-term intervention, the activity level of nodal protein in the simple quiet exercise group showed a significant upward and downward trend. Compared with the quiet exercise histone, the time and nodal protein of each group were

uniform and significant. The expression rate of cells that synthesize protein immediately after simple aerobic exercise increased, and the protein peak appeared at about 8 hours, and the expression difference was significant compared to 5 hours, 6 hours, and 7 hours. Compared with 8 hours, the expression difference was significant. The time and expression of protein in the quiet exercise group showed an upward trend after intervention. Compared with the protein in the quiet control group, the difference in expression time was larger and significant. The expression of the protein in the control group immediately after quiet exercise increased immediately after exercise, and the expression in the 5 groups increased significantly. Compared with the protein in the quiet control group, the expression difference was significant and significant after the exercise of the control group. The expression after 6 hours showed a downward trend. The specific data is shown in Figure 1.

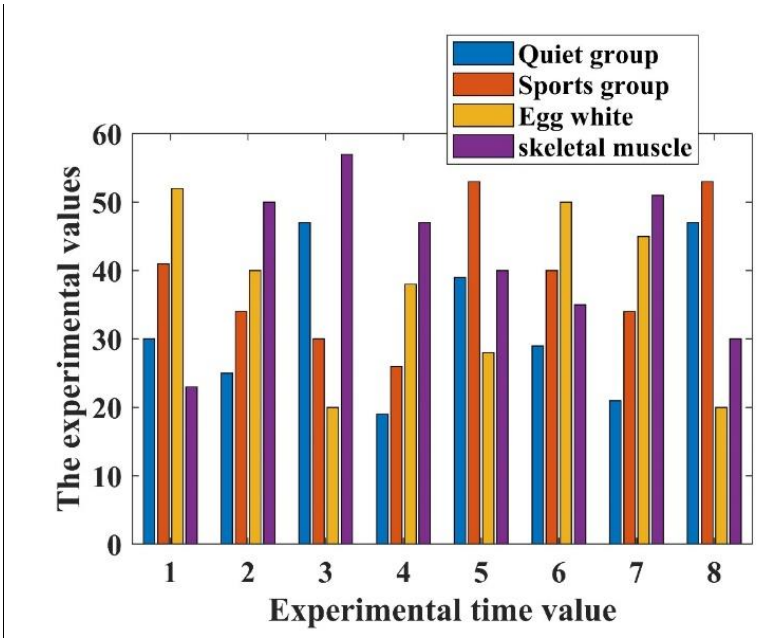

Figure 1. Skeletal muscle protein factor analysis diagram of intermittent exercise

From the data in Figure 1, it can be seen that intermittent exercise affects skeletal muscle protein factors. The difference in exercise time makes skeletal muscle protein more and more obvious, increasing the expression rate of skeletal muscle protein by 35%.

4.2. Analysis of Skeletal Muscle Fiber by Intermittent Exercise

The speed of the intermittent speed training group was 35 meters per minute on the first day of formal training, and then the speed was increased every day. The day before the training, most rats could not maintain the exercise intensity of the last group, and the frequency of stimulating the tail of the rats with brushes and electrical stimulation was more frequent, and the average was more than two times each. From week 6 to week 6, the exercise capacity improved, and the exercise situation improved. Some rats maintained the planned exercise intensity without stimulation. In the endurance training group, the rats can basically maintain the planned exercise intensity during the whole process. The percentage of each muscle fiber of the soleus muscle in the intermittent speed training group did not change significantly. Compared with the endurance group, the soleus muscle in the intermittent speed group decreased significantly and increased significantly, but the change is not obvious. This may be because the soleus muscle contains lower type fibers. The soleus muscle is less involved in interval speed training. Both interval speed training and endurance training can

cause changes in the percentage of muscle fiber aliens in skeletal muscle, as shown in Figure 2.

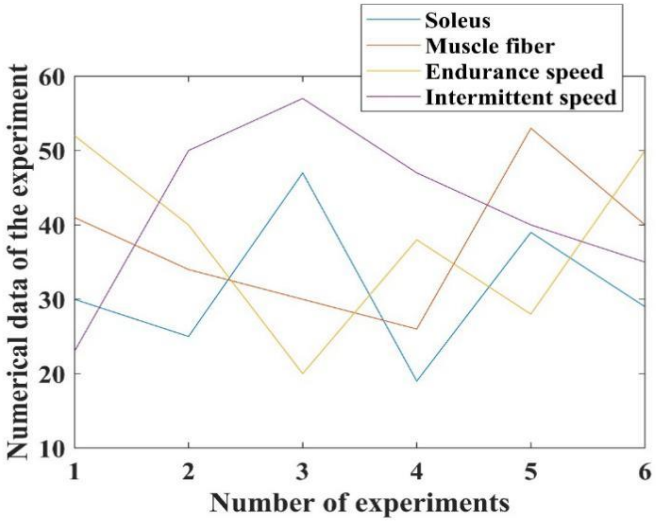

Figure 2. Analysis of the influence of intermittent exercise on skeletal muscle fibers

From the data in Figure 2, it can be seen that intermittent speed training can increase the muscle fiber activity of rats by 25%, and can cause the conversion of soleus muscle type 1 muscle fibers to type 2 muscle fibers.

5. Analysis of the Influence of Intermittent Exercise on Skeletal Muscle Gene Cells

5.1. Analysis of Skeletal Muscle Gene Cells in Intermittent Exercise Rats

The rats in the experimental study experienced intermittent exercise training and control group rats. In addition to the local mechanical load caused by exercise, the femur of the exercise group also suffered from hormone changes induced by exercise. Systemic regulation, blood samples were taken at the same time as the femoral bones were taken to determine the relevant indexes in the blood. It was found that the level of the intermittent exercise group was significantly higher than that of the control group at this time. Differential expression should be at least mechanical stimulation, one of the key regulators of gene cell-specific osteoblast expression, is an important osteogenic gene and functional osteoblast, and it is also important in the process of bone tissue formation and resorption. Gene and functional osteoblasts are derived from undifferentiated and multipotent mesenchymal stem cells. Under the interaction of multiple specific factors, mesenchymal stem cells differentiate into a variety of types including mesenchymal osteoblasts that activate specific genes through a complex genetic and molecular regulatory mechanism. The expression of osteoclasts promotes, prevents the formation and activation of osteoclasts, avoids contact with bone matrix, and effectively inhibits the absorption of bone tissue. After receiving information from some bone matrix, osteoblasts express functionally degraded collagen, and further express activated osteoclasts to initiate the process of bone formation cell resorption. The specific data is shown in Figure 3.

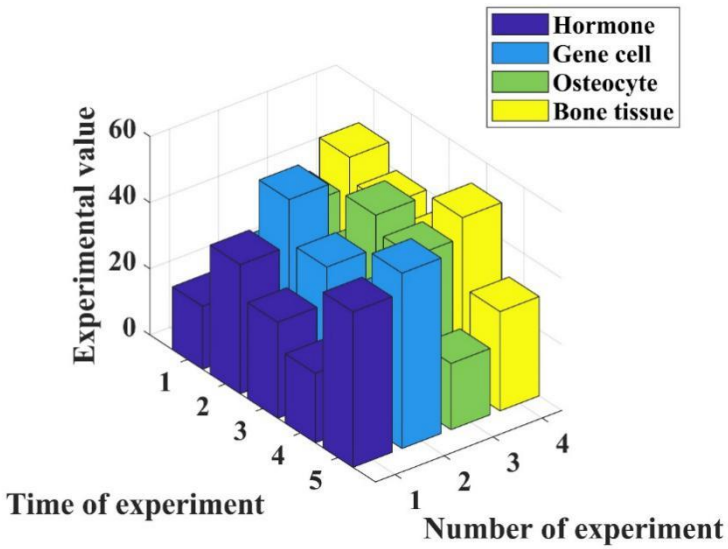

Figure 3. Analysis of intermittent exercise on skeletal muscle gene cells

Seen from Figure 3 in the table above. Gene cells are up-regulated, indicating that the number of exercise-forming bone cells increases or the activity increases, showing that exercise-forming bone cells play an important role in different stages of bone formation through the promotion of bone formation and the enhancement of bone resorption inhibition. The formation effect of the exercise group was greater than that of the control group, which reduced the ability of hydrolyzing collagen by 26%, thereby inhibiting the initiation of bone resorption.

5.2. Analysis of the Effects of Intermittent Exercise on MHC Gene Cells

The change trend of MHC gene expression in the quiet group is not obvious. This may be due to the longer recovery time of MHC gene expression. If the observation time is prolonged, a more obvious excess gene expression may be observed. But the change trend in the quiet group is more obvious. In the quiet group, although the MHC gene expression of different isoforms fluctuated at some time points, from the overall change trend, it was indeed seen that the acupuncture effect enhanced the MHC gene expression. The change trend of MHC gene expression of different isotypes after exercise is that MHC gene expression increases, MHC gene expression increases, this trend is strengthened by interval exercise training. After 6 hours and 8 hours of intermittent exercise, normal rats exercise compared with the quiet group, there is no significant difference in gene expression or protein transcription compared with the quiet group. It may be that the gene expression is more stable and produces a stress response to exercise. Different exercise types and methods will also lead to different experimental results. Training is very Significantly increased the level of gene transcription, but had no significant effect on its protein expression level. Acute exercise has no significant effect on gene expression at the gene transcription level or protein expression level. The specific data is shown in Figure 4.

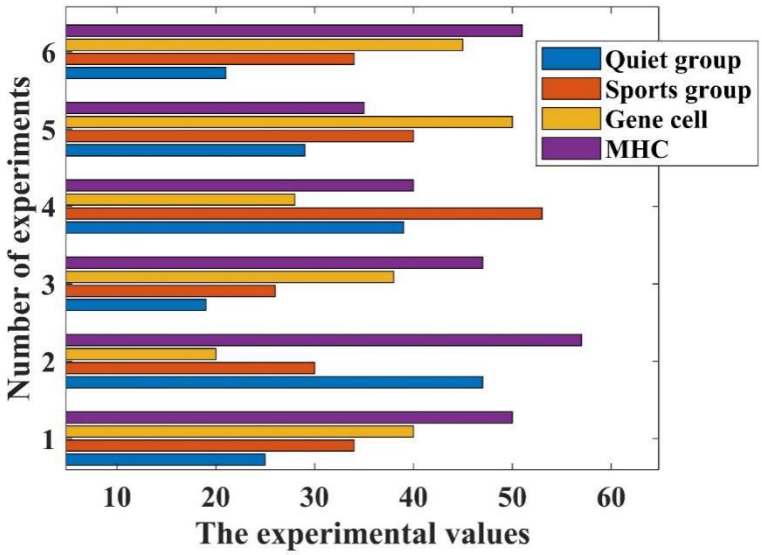

Figure 4. Analysis of the influence of interstitial exercise on MTC gene cells in skeletal muscle

It can be seen from Figure 4 that the time limit for the normal recovery of total MTC gene expression in the body after intermittent gene exercise is earlier than normal, and the recovery amplitude of excessive intermittent gene expression is 36% higher than normal.

6. Conclusion

(1) Intermittent exercise is very important, and the expression level of inhibiting injury is reduced, which reduces the susceptibility of skeletal muscle fibers to early apoptosis molecules during aging. Exercise affects energy metabolism pathways, some of which are beneficial to the recovery and health of the body. While some indicators of gene expression changes have no adverse environmental impact on the body after exercise, exercise mode, duration, exercise intensity and test rat's objective factors such as the current situation will affect the skeletal muscle gene status.

(2) The feasibility of intermittent exercise to study skeletal muscle gene cells and related factors of intermittent exercise in this paper is analyzed, the corresponding working principles and theoretical guidance are proposed, the superiority of intermittent exercise is explained, and intermittent exercise improves skeletal muscle gene. The expression rate promotes the recovery of skeletal muscle gene expression. Intermittent exercise significantly improves the atrophy of rat skeletal muscle; at the same time activates the normal and rat skeletal muscle signal pathways.

(3) Intermittent exercise plays a very important auxiliary role and reduces the skeletal muscle damage rate. Through the study of intermittent exercise on skeletal muscle gene cells and related effects, the results show that the use of intermittent exercise training method is feasible and effective prevention. In order to reduce the damage of skeletal muscle, exercise training has a certain relief and prevention effect on skeletal muscle ageing injury, regulates the susceptibility of early skeletal muscle to apoptosis, reduces the skeletal muscle injury rate of rats by 45%, and increases skeletal muscle 28% of gene cells.

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Data Availability

Data sharing is not applicable to this article as no new data were created or analysed in this study.

Conflict of Interest

The author states that this article has no conflict of interest.

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