

HORMONAL TRAINING: A NOVEL STRENGTH TRAINING METHOD TO AFFECT BODY COMPOSITION

Introduction

Body composition is an important factor in high performance sport. At our training centre we have collected data from high performance athletes clearly demonstrating that each person has an optimal strength to mass or power to mass ratio. If an athlete is either too big for his or her level of strength or does not possess adequate power relative to his or her size then performance will be adversely affected.

In combative sports body composition is also important as it is common for athletes, over the course of their sporting career, to move either up or down a weight category. This necessarily requires an increase or decrease in body mass. Ideally, increases in body mass will be a result of increased skeletal muscle mass and not fat mass. Body fat is rarely useful for improving competitive performance. Conversely, when athletes are required to lose body mass it is usually a decrease in fat mass that is sought.

Traditional methods to decrease body fat include adjusting caloric intake (i.e. dieting) and low intensity aerobic training. Low intensity aerobic activity has been considered the ideal “fat burning” activity. This is based on data collected during physiological testing which indicates that during low intensity aerobic activity fat is the primary substrate utilized for energy production. It is therefore quite common for coaches and trainers to prescribe long hours of aerobic activity for athletes who need to shed body fat.

While low intensity aerobic activity is important for recovery purposes and also for cardiovascular fitness it often has limited effects on improving body composition especially in the final stages of fat loss when an athlete is focused on dropping those last few percentage

points of body fat . Also, for athletes who are not accustomed to this volume of training, the long hours spent performing low intensity aerobic training can lead to overuse injuries, loss of skeletal muscle mass, and can cause the contractile properties of skeletal muscle to become slower which ultimately will result in a loss in movement speed.

High volume strength training with short rest intervals is an alternative method for losing body fat. I first learned about this training method from strength training expert Charles Poliquin. Since then I have used this method very successfully with many athletes who needed to improve their body composition. I have observed athletes who have used this method of training and dropped significant amounts of body fat with just four to five weeks of training. In the following sections I will elaborate on this training method.

Background

The main premise for the use of high volume strength training with short rest intervals is that this type of training induces a significant hormonal effect which in turn promotes fat loss. This type of training has been referred to as hormonal strength training.

The main objective with hormonal strength training is to increase the concentration of blood lactate. Lactate is a by-product of anaerobic glycolysis which is an energy system capable of producing large amounts of energy in a very short period of time. This energy system is very well suited for providing energy for activities requiring high power outputs for short periods of time. Examples of this type of activity are the 400 meter event in track and field, a shift in ice hockey or the 500 meter event in sprint speed skating. The energy that is required for a mixed martial artist to deliver a flurry of strikes at the end of a round in an attempt to knock out an opponent would also be primarily supplied by anaerobic glycolysis.

A consequence to anaerobic glycolysis is that certain metabolites accumulate in the muscle and this induces fatigue rather quickly. One such metabolite is lactic acid. During intense activity, as a greater amount of energy is supplied by anaerobic glycolysis, lactic acid begins to accumulate. Lactic acid is immediately broken down into hydrogen ions and lactate. The hydrogen ions accumulate in the muscle and as the environment becomes more acidic the pH begins to drop leaving the athlete feeling an uncomfortable burning sensation in the muscles being used. This is a feeling with which most are very familiar but just in case you are not, pay attention to how your arms feel the next time you do a 2 minute sprint on a heavy bag.

While an increase in blood lactate is associated with fatigue it also results in a significant increase in the concentration of growth hormone. Growth hormone is a well known hormone to many athletes as it is often used in conjunction with other illegal drugs such as derivatives of the steroid hormone testosterone to augment athletic performance, and its use is banned under the rules of the World Anti Doping Agency. One of the main effects of growth hormone on the body is lipolysis which is a sophisticated word for “fat-burning”. The prefix “lypo-” refers to fat and the suffix “-lysis” refers to break down.

The objective of hormonal training is to induce a sufficient increase in blood lactate to stimulate the release of growth hormone. This in turn results in the burning of fat. Other benefits to hormonal training are that the workout can be accomplished in as little as 45 minutes and skeletal muscle mass is augmented through the strength training process. An increase in skeletal muscle mass is desirable because it leads to an increased basal metabolic rate which means more energy is being burned throughout the day. This will have a very positive effect on body composition.

Training Prescription

Hormonal training is best accomplished with the use of upper and lower body supersets (See Table 1). This means the athlete will perform a lower body exercise and will then immediately perform an upper body exercise. Following the upper body set the athlete performs the lower body set again and repeats this for 3 sets per exercise. It is critical that the set duration be 45 to 60 seconds so the repetition scheme should be between 10 and 15 RM. To figure out the set duration calculate the number of seconds it takes to perform one repetition (i.e. lifting tempo) and multiply this by the number of repetitions. This will give the time under tension per set. For example, if you perform a back squat with a tempo of 3/0/3, for 10 repetitions, the time under tension per set would be 60 seconds which would satisfy the conditions necessary for hormonal training. The program should include a total of 6 to 8 exercises. This type of workout should be performed two to three times per week for 3 to 4 weeks. Make sure that you take at least 48 hours rest between workouts.

This type of training is very intense. Measurements done in our training centre have revealed that blood lactate levels can reach as high as 18-19 mmol/L following a hormonal training workout using the method described above. I realize that this number may be of little significance to most readers but let me assure you that this level of blood lactate will leave most individuals hugging the closest garbage can after a workout. In closing let me remind you that in addition to a good training regime body composition changes are best accomplished with training and diet modification. So, if you need to lean up, consult a qualified sport nutritionist to assist you with your diet. Finally, if you are not already performing regular weight training consult a physician before you start a program and contact your doctor if you feel discomfort, aggravation or pain while performing an exercise.

Table 1: A Sample Hormonal Training Workout

	Exercise Description	Sets	Reps	Tempo	Rest
1A	Dumb Bell Split Squat	3	10-12RM	3/0/3	NO REST
1B	Flat Dumb Bell Press	3	10-12RM	3/0/3	NO REST
2A	Full Depth Step Up	3	10-12RM	3/0/3	NO REST
2B	Neutral Grip Pull Up	3	10-12RM	3/0/3	NO REST
3A	Single Leg Press	3	10-12RM	3/0/3	NO REST
3B	Pronated Grip Seated Row	3	10-12RM	3/0/3	NO REST