

The 12-week Burst Bout Plan

The Burst Bout system uses a high intensity interval training (HIIT) model to provide muscular growth and development while simultaneously challenging the cardio-vascular system. HIIT programs are characterized by periods of exercise at an intensity that can only be maintained for a short period of time, followed by a rest or recovery period, which leads in to the next bout of activity. This style of training allows for highly efficient workouts that meet a wide array of needs in a relatively short amount of time. In order to provide the most diverse training benefit the burst bout program changes the training stimulus over the course of twelve weeks, this is called periodization.

The program will be remain challenging throughout and train different muscular characteristics by changing the following, along with the exercises themselves:

1. Workt:Rest ratio
2. Time under tension

Any given exercise can be classified as training one of the following properties of muscular performance.

1. Endurance
2. Strength
3. Power
4. Flexibility

Each property is important, serves a specific function and is trained in a different way. The Burst Bout system provides an elegant rotation that allows all four properties to be trained over the course of twelve weeks. To help simplify these concepts and better understand the training program here is a brief summary of each property:

1. **Endurance:** Simply put, endurance is how long a muscle can perform a certain task for. Endurance activities are performed at a low enough intensity that they can be maintained for longer periods of time, however this intensity varies from person to person. For example: a running pace that may be considered sustainable for 2 hours by an elite marathon runner may very well be considered an all-out sprint by the average untrained adult. Endurance training primarily affects a muscle

group by creating more structures within that muscle that can rely on fat for fuel. Fat is our body's most abundant source of energy and can be used while creating very little waste in the process. By completing endurance training we increase the level of exercise at which our bodies can rely on fat for fuel. This means that while burning more calories per minute we can also expect more of those calories to be coming from fat rather than stored sugar.

2. **Strength:** Simply put, strength is how much work a muscle can do. We can quantify this work in a number of ways but typically we measure it by how much weight a person can move using a specific group of muscles. A person's strength is largely influenced by how many muscle fibers are available to perform a given movement. People with more muscle can typically move more weight. Furthermore there are specific types of muscle fibers that are able to generate the most strength per fiber. Exercises designed to increase a person's strength create more of this kind of fiber.
3. **Power:** People often confuse power and strength, but there is a simple way to distinguish these properties. Power accounts for how long it takes to complete a movement. So if strength is how much weight you can move, power is how long it takes to move that same weight. Power production relies not only on the number of muscle fibers available, but also on their neurological ability to communicate with the central nervous system. The less time it takes between the brain telling a muscle to contract and the completion of that contraction the more power that muscle will produce. Exercises designed to increase a person's power output focus on developing a specific type of muscle fiber that is capable of quick and strong contractions.
4. **Flexibility:** This may be the property that people are most familiar with. Our muscles are elastic, but without regular flexibility training we lose the ability to move through a full range of motion (ROM). This process can be accelerated both by sedentary behavior (prolonged sitting) and by frequent exercise without stretching. The freedom to move through a full ROM is important for everyday functioning. Although researchers have yet to definitively demonstrate it, the prevailing belief is that flexibility training can reduce the risk of injury during exercise.

As previously stated, each of these properties is important and serves it's own purpose. The Burst Bout system is designed to train all of these properties to create a diverse and periodized program that allows your body to improve in every way possible. The twelve-week program is divided in to three cycles of four weeks, with a different focus for each cycle.

Work, Rest and Active Rest

It's generally accepted that more work equals more improvement, however when it comes to exercise there is a limit to this paradigm. It's true that in order to stimulate muscular growth we need to provide a stimulus that is high enough above baseline to challenge our body to adapt. It is also true that our body needs adequate rest to allow this adaptation to take place as insufficient rest can lead to poor performance and over-training. The key is to find a level of work and rest that allows for the most growth, with the least risk of injury, over-training, burnout and poor performance. This is true at all levels of the Burst Bout training program whether within a single circuit, week, or even within an entire cycle. But what do work, rest and active rest really mean?

Work: This can be described as time spent exercising. On a smaller level this can be thought of as the time under load (time during which muscles are actively engaged) during a specific exercise.

Rest: This is time during which your body is recovering. A "rest day" would be considered a day on which you do not exercise. On a smaller level this may be the time between specific exercises during a workout session.

Active Rest: Active rest is what allows the Burst Bout system to be so time-efficient. Active rest can best be described as rest for one muscle group while another group is exercising. For example if you were to perform a set of squats to fatigue, rather than ceasing exercise completely while your legs recover you can perform an exercise for a different muscle group during this time. This allows for more sets of exercise to be completed in a shorter period of time, and although the rotation allows muscles to rest it keeps an elevated demand on the cardio-vascular system.

A Changing Body

People have many different reasons for beginning an exercise program, and often they may find their goals changing as they progress.

Without a doubt weight loss and a desire to look more toned, muscular or athletic are among the most common goals for people who start a new routine. Exercise offers an almost unbelievable variety of health benefits- many of which can be realized without an ounce of weight or fat loss, but the aesthetic benefits of exercise training remain a powerful motivator for many.

HIIT and the Burst Bout program provide what is often referred to as "metabolic resistance training", which is to say that they provide the benefits of both traditional resistance training and the benefits of aerobic exercises. The metabolic effect of this training is two fold:

1. By moving between exercises quickly and taking advantage of active rest a person's heart rate and respiration (breathing) stay elevated, much as they would during traditional cardio-respiratory exercise (think running, cycling, swimming etc). This leads to a greater number of calories burned in a given session than during a session of traditional resistance training for the same amount of time. This training style can also facilitate improvements in cardio-respiratory fitness, which is important given that low cardio-respiratory fitness is the #1 predictor of early mortality.
2. Resistance training is known to increase muscle mass and increase efficiency of existing muscles. Resting metabolic rate (RMR) (how many calories your body burns per minute at rest) is largely influenced by how much muscle a person has in their body. So by building new muscle through exercise training we in turn increase the calories burned throughout the day, which helps create a calorie deficit, ultimately helping lead to weight loss. While at rest our bodies rely primarily on fat for energy, so when RMR increases it is, in fact, increasing the amount of FAT burned by your body throughout the day.

By combining these two effects the Burst Bout program is able to provide the benefit of cardio-respiratory exercise and traditional resistance training simultaneously, making it an efficient alternative to other programs. This dual benefit sets the stage for a

body that uses fat rather than storing it, making it possible to see muscles that would otherwise be hidden by layers of unused, stored fat.

The 12-Week Cycle:

Before beginning this program it is highly recommended that you consult your doctor regarding your ability to complete, and possible side effects of a high intensity exercise program. There is an appropriate level of exercise for every person, however this program is designed for individuals who already possess the ability to participate in moderate-vigorous aerobic exercise.

The Burst Bout system uses a rolling ratio of 20%/30%/50% emphasis on different muscle groups to provide a balanced total-body workout, while ensuring optimal active rest within the session and throughout the week. For example: If we were to split the entire body in to three groups (group 1, group 2 and group 3) and perform 20% of our exercises using group 1, 30% using group 2 and 50% using group 3 we would then rotate that emphasis on the following exercise day. The following chart illustrates this concept.

	Upper Body	Lower Body	Core
Day 1	20%	30%	50%
Day 2	50%	20%	30%
Day 3	30%	50%	20%
Day 4	20%	30%	50%

This table shows what percentage of a given workout is dedicated to each muscle group on a given day. It is recommended to complete 4 training sessions per week using the following schedule:

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
Rest	Day 1	Rest	Day 2	Rest	Day 3	Day 4

Each workout session consists of 10 exercises arranged in a circuit with complementary or unrelated muscle groups being used in succession. For example, a set of pushups may be followed by a set of rows, squats or lat pull-downs- none of which recruit the same prime-moving muscles as a pushup. This allows for active rest throughout the circuit. Additional rest, depending on the specific micro-cycle, may follow each exercise. This additional rest, or lack thereof, reflects the specific demands of each micro-cycle and helps the body prepare for the following circuit.

The cycle is broken in to three "micro-cycles", each with an increased emphasis on endurance, strength or power.

Week 1-4: Endurance

This micro-cycle focuses on finding and increasing the threshold at which an exercise can be performed for a long period of time. Exercises in this cycle are completed in sets of high repetitions (20+) with little to no rest between exercises, and a brief rest between circuits. This micro-cycle helps create a more efficient musculature than is better able to utilize stored fat for energy during exercise and rest.

Week 1

Exercise	Duration (s)	Rest (s)	Muscle Group
1	30	10	50%
2	30	10	20%
3	30	10	50%
4	30	10	30%
5	30	10	50%
6	30	10	20%
7	30	10	50%
8	30	10	30%
9	30	10	50%
10	30	10	30%

Repeat circuit 3x per session with a 1-minute rest between circuits. Total time: 23 minutes.

Week 2

Exercise	Duration (s)	Rest (s)	Muscle Group
1	40	10	50%
2	40	10	20%
3	40	10	50%
4	40	10	30%
5	40	10	50%
6	40	10	20%
7	40	10	50%
8	40	10	30%
9	40	10	50%
10	40	10	30%

Repeat circuit 3x per session with a 1-minute rest between circuits. Total time: 28 minutes.

Week 3

Exercise	Duration (s)	Rest (s)	Muscle Group
1	45	5	50%
2	45	5	20%
3	45	5	50%
4	45	5	30%
5	45	5	50%
6	45	5	20%
7	45	5	50%

8	45	5	30%
9	45	5	50%
10	45	5	30%

Repeat circuit 3x per session with a 1-minute rest between circuits. Total time: 28 minutes.

Week 4

Exercise	Duration (s)	Rest (s)	Muscle Group
1	50	0	50%
2	50	0	20%
3	50	0	50%
4	50	0	30%
5	50	0	50%
6	50	0	20%
7	50	0	50%
8	50	0	30%
9	50	0	50%
10	50	0	30%

Repeat circuit 3x per session with a 1-minute rest between circuits. Total time: 28 minutes.

Week 5-8: Strength/Hypertrophy

This micro-cycle focuses on increasing the amount of weight that can be moved with each muscle group. Exercises in this micro-cycle are completed in sets of lower, heavier repetitions (2-8) with a longer rest period between exercises, and between circuits. In addition to building strength this cycle is the most likely to produce hypertrophy. Hypertrophy is the increase in the size of an exercising muscle. Emphasizing the eccentric, or lengthening phase, of an exercise can maximize this effect. For example, during a squat one

could take 5 seconds to complete the descending phase and 1 second to complete the ascending phase- this would emphasize the lengthening phase of the exercise. This micro-cycle helps increase the resting metabolic rate by increasing the amount of lean mass in the body, while making the definition and contours of muscles more apparent.

Week 1

Exercise	Duration (s)	Rest (s)	Muscle Group
1	20	30	50%
2	20	30	20%
3	20	30	50%
4	20	30	30%
5	20	30	50%
6	20	30	20%
7	20	30	50%
8	20	30	30%
9	20	30	50%
10	20	30	30%

Repeat circuit 3x per session with a 2-minute rest between circuits. Total time: 31 minutes.

Week 2

Exercise	Duration (s)	Rest (s)	Muscle Group
1	25	30	50%
2	25	30	20%
3	25	30	50%
4	25	30	30%
5	25	30	50%
6	25	30	20%

7	25	30	50%
8	25	30	30%
9	25	30	50%
10	25	30	30%

Repeat circuit 3x per session with a 2-minute rest between circuits. Total time: 34 minutes.

Week 3

Exercise	Duration (s)	Rest (s)	Muscle Group
1	30	30	50%
2	30	30	20%
3	30	30	50%
4	30	30	30%
5	30	30	50%
6	30	30	20%
7	30	30	50%
8	30	30	30%
9	30	30	50%
10	30	30	30%

Repeat circuit 3x per session with a 2-minute rest between circuits. Total time: 36 minutes.

Week 4

Exercise	Duration (s)	Rest (s)	Muscle Group
1	30	25	50%
2	30	25	20%
3	30	25	50%

4	30	25	30%
5	30	25	50%
6	30	25	20%
7	30	25	50%
8	30	25	30%
9	30	25	50%
10	30	25	30%

Repeat circuit 3x per session with a 2-minute rest between circuits. Total time: 34 minutes.

Week 9-12: Power

This micro-cycle focuses on quick, explosive movements at maximal energy output. Given that the focus of this micro-cycle is the speed at which the muscles contract, the repetitions per set can have a wider range depending on an individual's preference (higher reps for and added endurance focus, heavier weight and lower reps for an increased strength focus). The rest periods for this cycle should be akin to the strength/hypertrophy micro-cycle.

Week 1

Exercise	Duration (s)	Rest (s)	Muscle Group
1	20	30	50%
2	20	30	20%
3	20	30	50%
4	20	30	30%
5	20	30	50%
6	20	30	20%
7	20	30	50%
8	20	30	30%

9	20	30	50%
10	20	30	30%

Repeat circuit 3x per session with a 2-minute rest between circuits. Total time: 31 minutes.

Week 2

Exercise	Duration (s)	Rest (s)	Muscle Group
1	25	30	50%
2	25	30	20%
3	25	30	50%
4	25	30	30%
5	25	30	50%
6	25	30	20%
7	25	30	50%
8	25	30	30%
9	25	30	50%
10	25	30	30%

Repeat circuit 3x per session with a 2-minute rest between circuits. Total time: 34 minutes.

Week 3

Exercise	Duration (s)	Rest (s)	Muscle Group
1	30	30	50%
2	30	30	20%
3	30	30	50%
4	30	30	30%
5	30	30	50%

6	30	30	20%
7	30	30	50%
8	30	30	30%
9	30	30	50%
10	30	30	30%

Repeat circuit 3x per session with a 2-minute rest between circuits. Total time: 36 minutes.

Week 4

Exercise	Duration (s)	Rest (s)	Muscle Group
1	30	25	50%
2	30	25	20%
3	30	25	50%
4	30	25	30%
5	30	25	50%
6	30	25	20%
7	30	25	50%
8	30	25	30%
9	30	25	50%
10	30	25	30%

Repeat circuit 3x per session with a 2-minute rest between circuits. Total time: 34 minutes.

In Summary:

This document has provided a brief overview of the physiological adaptations that can take place as a result of this type of training. The desire for a quick fix to the broken physiology and metabolism that has contributed to epidemic levels of

obesity in modern society has created high demand for time efficient exercise programs. The marketability of video-based HIIT training has already been demonstrated by the financial success of similar programs, as well as its undeniable prominence in the public mindset. By appealing to this rising trend and highlighting the tried and true periodization techniques and elegant rotation of muscle emphasis that makes this program unique, the Burst Bout system has many qualities that should lead to commercial success given the appropriate platform.