BODYBUILDING
From Heavy Duty to SuperSlow

Evolutionary Strategies for Building Maximum Muscle

Craig Cecil
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Thanks!

This book is dedicated to all those going on the journey, whether beginner or seasoned veteran. It’s you versus you and the ride of a lifetime.

Thanks also to those whose words and experiences educated and inspired me over the decades, including: Arnold, Joe, Franco, Frank, Lou, Larry, Dave, Mike, Lee, Chris, Stuart, Skip, Clarence, Dan and countless others. Some of you I’ve met and talked to personally—others, I hear your words still to this day.

Finally, thanks to Leslie and Mitch for helping with the editing of this book. This is a better book because of you.
Tell Me What You Think

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Preface

Millions of individuals across the world engage in weight training activities every day, many in the hope of building bigger, stronger and more muscular bodies. Many reach their goal—many do not. If you look at a cross-section of these individuals, they use various approaches to weight training. Which work? Which work best? Why do some train this way and others that?

This book presents over a dozen weight training systems developed over the past century. While most of these systems are geared towards bodybuilding, some have wider applicability to powerlifting and Olympic lifting. I make no overall judgments regarding each system—I leave it up to you to learn about each, try them for at least 6-8 weeks and then make your own decision as to their effectiveness, based on your body’s response and your goals. I will however, point out where various systems align or diverge, things to watch out for, and how they stack up against each other.

I hope after reading this book, you will have gained wider knowledge, application and appreciation for the vast possibilities in weight training and building muscle. Along the way, I’ll throw in a history lesson or two—the barbells and dumbbells you hold in your hands and the way you use them have stories to tell.

Remember, the journey and the relationships you build with yourself and others is the reward. Onward.
Introduction
Progressive resistance training and the systems developed for this activity date back over two thousand years, from the days of Milo, the five-time Olympic Games winner in ancient Greece, to the efforts of millions of individuals throughout gyms, schools and homes around the world.

Over time, numerous weight training systems have emerged and evolved—some birthing others, a few rejecting the past and boldly striking out on their own. However, all of these systems share a common goal: to maximize and overcome our bodies amazing ability to adapt and survive whatever we challenge it with.

Which concepts, methodology or systems should you use?

This book takes you through a historical tour, explaining the evolution and details of the most popular weight training systems developed over the past century, so you can make your own decision regarding which work best for you. Along the way, you’ll gain the basic knowledge and understanding of each in order to try them yourself. It’s extremely important to find the optimal workout methodology for your body, since the higher the quality of muscular work you can generate, the greater the effect on your body and the faster you will progress toward your goals. So, don’t be a lemming simply following the hordes in the gym—discover your options and chart your own course.

Here are the weight training systems on the journey we’ll take. You’ll get the most benefit from reading through them in order, since most build upon past discoveries—however; feel free to skip to ones that particularly interest you.

The 1930s
General Principles of Exercise

The 1950s
Volume Training

The 1960s
PHA Training
High Intensity Training (HIT)
Periodization

The 1970s
The Bulgarian Method
Pre-Exhaustion
Heavy Duty

The 1980s
The Weider System
Each of these weight training systems can be classified by two factors—**volume and intensity**.

*Volume* relates to how many sets and exercises you perform during a workout, as well as how often you work out during a week, month, or year. *Intensity* is defined as the amount of energy you expend or muscular activation you affect within a given period of time. If you can do more work in a shorter period of time, exhausting more muscle fibers, then your workout intensity will be higher than what you were previously doing. Of course, intensity is relative. What’s intense to one person may be a walk in the park to another.

Let’s take a look at where each system falls into place with volume and intensity.

**High-Volume, Low Intensity**
- Volume Training
- PHA Training
- Holistic Training

**High-Volume, High Intensity**
- The Bulgarian Method
- Pre-Exhaustion
- Power Factor Training
- Points of Flexion (POF)

**Low-Volume, High-Intensity**
- Heavy Duty
- High-Intensity Training (HIT)
- The Hardgainer Method
- SuperSlow
- Static Contraction Training

**All of the Above**
- Periodization
- The Weider System
Most individuals spend most of their time in the high-volume, low intensity world. The biggest changes come when you break into one of the other quadrants.

**Overload and Intensity**

Each of these weight training systems manipulates volume and intensity by adjusting one or more of the following variables:

- Exercise selection
- Performance technique
- Number of repetitions
- Amount of weight
- Repetition tempo
- Range of motion
- Rest intervals between sets
- Number of sets performed per muscle group
- Total number of sets performed during the workout
- Training frequency—number of training sessions per day and per week
- The amount of eccentric (lowering of the weight) work the muscles are required to perform

By increasing exercise intensity, you affect muscle overload. There are several general methods for overloading a muscle, each with distinct results:

- **Increase weight** = Muscular strength
- **Increase reps** = Muscular endurance
- **Increase movement speed** = Muscular power
- **Increase time under load** = Vascularity and muscular endurance
- **Increase number of maximum efforts (1RM)** = Strength and muscular endurance
- **Increase number of exercises per workout** = Cardiovascular and muscular endurance
- **Increase frequency of workouts** = Cardiovascular and muscular endurance
- **Decrease rest time between sets** = Cardiovascular and muscular endurance

Additionally, each of the weight training systems I’ll discuss manipulates the methods for increasing intensity and overload by taking sides on the following issues:

- Free weights vs. Machines
- Compound vs. Isolation Movements
- Few vs. Many Exercises
- High vs. Low Reps
- Single vs. Multiple Sets
- Long vs. Short Training Sessions
- Short vs. Long Rests between Sets
- Slow vs. Fast Tempos (Contraction Speed)
- Full vs. Partial Range of Motion
In the remainder of this book, you’ll learn how all of these factors are used to construct the basic tenets of each weight training system. But first, let’s look at the general principles of resistance training which are common to all of these systems.
General Principles

Before the turn of the 20th century, no formalized methods or principles of resistance training were recorded and generally accepted. Circus strongmen and travelling strength performers such as Donald Dinnie, John Grun, and Louis Cyr, closely guarded the “secrets” to their size and strength in order to protect their livelihood and enhance the spectacle. Lifting wagon wheels overhead was clearly not the norm, attracted large audiences and paid very well.

From left to right: Donald Dinnie, John Grun, and Louis Cyr

It wasn’t until the Hungarian endocrinologist, Dr. Hans Selye, finally published The Stress of Life in 1956 that the principles of progressive resistance were first formalized and accepted. Dr. Selye noted in his work that exercise was a primary form of stress—thus the floodgates were open. Selye began publishing his results in 1936, while at Canada’s McGill University—one Canadian in particular paid attention to this academic work and began laying the foundation for a layman’s interpretation that he could build upon, promote and sell to the world—Joe Weider.

Seyle identified several of the modern principles of progressive resistance training which are common throughout the various training systems presented in this book. Some of the systems recognize and model all of these principles, while others emphasize one or two of the principles specifically. Let’s look at each of the general principles.

The Principle of Individual Differences

Each trainer has different abilities, structures, lever attributes, and muscle fiber composition, and therefore responds somewhat differently to any given system of training. Consequently, consider these individual differences when selecting or performing within any given training system.

You’ve seen this in practice. Tall people generally have a harder time squatting or deadlifting. Individuals with barrel-shaped chests seem to be able to bench press effectively at will. Others with shallow
ribcages and wide clavicles feel most pressing movements in their shoulders, not their chest. Here, the kind and cruel duality of genetics largely dictates the potential size of your chest or the width of your shoulders.

**The Overcompensation Principle**
The body will overcompensate from stress on the muscles by growing bigger and stronger muscles. It really does boil down to this simplicity.

**The Overload Principle**
To make your body overcompensate, you must stress (overload) your muscles beyond what they have done before. [Milo](https://en.wikipedia.org/wiki/Milo_of_Croton), the 6th century Olympic wrestler, is the embodiment of this principle. As lore tells us, part of his training consisted of lifting and carrying a newborn bull, repeating the feat daily as the bull grew to maturity. Now, that’s progressive overload.

![Milo of Croton by Joseph-Benoit Suvee](https://upload.wikimedia.org/wikipedia/commons/thumb/9/98/Milo_of_Croton_by_Joseph-Benoit_Suvee.jpg/400px-Milo_of_Croton_by_Joseph-Benoit_Suvee.jpg)
What's not progressive overload is seeing the same person come into the gym and perform the same exercises, at the same pace, in the same order, with the same weight, and the same grip time after time. Their body doesn't change, because none of the underlying training variables changed in order to increase intensity and overload. Now, that’s a waste of time. Change something!

The SAID Principle
SAID is the acronym for Specific Adaptation to Imposed Demands. Stressing a muscle beyond normal limits will cause adaptation (growth response) to occur.

Here’s a simple example. Let’s say that the heaviest barbell that you routinely pick up and hold in your workout is 100 lbs. Now, if you start holding a 150 lb. barbell (just pick it off a rack slightly and hold it for a minute) every day for a couple months, what will happen? Your body will say, “Hey, I guess I’ve got to hold this really heavy barbell every day, so I might as well make my forearm muscles bigger so I can handle it easily because I don’t like to work this hard”. This is also the reason why your calves get bigger (yes, even a little) if you put on more body weight. You’re propelling a bigger you forward with each step. (I hate to say it—but some of the biggest calves you’ll ever see are on obese people. As their fat accumulated, their calves compensated.)

The Use/Disuse Principle
The muscles will hypertrophy (grow) with use and atrophy (shrink) if you don’t use them or use them infrequently. You’ve probably heard this referred to as “use it or lose it.”

The GAS Principle
GAS is the acronym for General Adaptation Syndrome. Selye formalized that since exercise is a form of stress, the body reacts to stress in three stages:

1. Alarm Stage
The body recognizes and begins to make changes to account for the stress factor (e.g., muscle overload). A temporary drop in performance due to stiffness and muscle soreness often characterizes this stage. In The Stress of Life, Selye notes, “the alarm response of the body is directly proportionate to the intensity of the aggression.” This core concept is the central tenet of the Heavy Duty system, as well as other permutations of high-intensity training I’ll discuss in subsequent sections.

2. Resistance Stage
The body adapts to the stress by making changes. For example, when you apply stress to a muscle through resistance training, the body adapts by increasing the size of the muscle to deal with increased weight loads.

3. Exhaustion Stage
You reach this when the body is overwhelmed by stress and can’t adapt in time. This causes over-training. As you’ll see, many of the systems in this book attempt to avoid this stage by manipulating the frequency of training. The key is to apply stress via exercise without overwhelming your body’s recovery ability and causing over-training. That’s why you shouldn’t work the same muscles every day. Therefore, for constant adaptation to occur, follow periods of high-intensity training with periods of low intensity
training (see *Cycle Training Principle* and *Periodization*). In reality, it’s often a razor’s edge you’ll walk between coaxing adaptation while avoiding exhaustion (or injury). Master this, and you’ll unlock the key to continual progress.

**The Specificity Principle**

The body gets stronger at a particular movement by continually performing that movement. For example, you will get stronger at squats by continually performing squats, over time. This principle holds true for any type of anaerobic or aerobic exercise. Several of the systems I’ll talk about use specificity as an advantage to making faster muscular gains by prescribing exercise selection.

**The Variability Principle**

The body is exceptionally good at adapting to change, therefore it’s beneficial to constantly vary at least one training criteria each time a muscle group is exercised in order to continue the body’s adaptation to stress and avoid plateaus. Here, you can see the association between variability and overload—some of the training systems discussed later use this association to great advantage.

That’s a good summary of the basic principles of resistance training. Now, let’s start our in-depth exploration by looking at one of the earliest weight training systems devised—it’s also the most popular.
**Volume Training**

Publication of *The Stress of Life*, along with the Weider magazines and the results from early practitioners, such as John Grimek, Clarence Ross and Armand Tanny, ushered in the era of volume training, or High-Volume Training (HVT) in the 1950s. Volume training consists of numerous amounts of sets performed for each muscle group, split routines and frequent training sessions—the most common type of training observed in gyms and fitness centers worldwide today. The volume of work subjected to the body is much greater with this type of training than with other systems that emphasize intensity over volume, such as Hardgainer, Heavy Duty, HIT, and SuperSlow.

Formal volume training systems recommend a certain amount of training based on experience level:

- **Beginner**: Less than one year training
- **Intermediate**: 1-2 years of training
- **Advanced**: 3 or more years of training

Here are typical amounts of work recommended for each muscle group, based on those experience levels. (Note: these are working sets and do not include warm-up sets.)

**Beginners** (38-47 total working sets)

- **Abs**: 3 sets
- **Back**: 4-5 sets
- **Biceps**: 3-4 sets
- **Calves**: 4 sets
- **Chest**: 4-5 sets
- **Forearms**: 2 sets
- **Hamstrings**: 2-3 sets
- **Quadriceps**: 4-5 sets
- **Shoulders**: 3-4 sets
- **Traps**: 2-3 sets
- **Triceps**: 4-5 sets

**Intermediates** (56-71 total working sets)

- **Abs**: 4-5 sets
- **Back**: 6-8 sets
- **Biceps**: 4-5 sets
- **Calves**: 5-6 sets
- **Chest**: 6-8 sets
- **Forearms**: 3 sets
- **Hamstrings**: 3-4 sets
- **Quadriceps**: 6-8 sets
- **Shoulders**: 4-5 sets
Traps: 3-4 sets
Triceps: 5-6 sets

**Advanced** (83-99 total working sets)

- Abs: 6-7 sets
- Back: 10-12 sets
- Biceps: 5-6 sets
- Calves: 6-8 sets
- Chest: 10-12 sets
- Forearms: 4 sets
- Hamstrings: 5-6 sets
- Quadriceps: 10-12 sets
- Shoulders: 6-7 sets
- Traps: 5-6 sets
- Triceps: 6-7 sets

**German Volume Training**
One specific type of volume training is German Volume Training, popularized in the 1970s by the German National Weightlifting Team and advocated by Vince Gironda in the United States during the 1950s and 1960s.

The goal of German Volume Training is to complete ten sets of ten reps with the same weight on a basic compound movement, with constant rest intervals. Typically, a traditional German Volume Training workout will consist of one or two main exercises, each performed for ten sets of ten reps, along with several other isolation exercises performed for three sets per exercise.

The suggested starting weight for this type of training is 60% of your 1RM in that exercise. For example, if you can squat 300 pounds for one rep, then your starting weight would be 180 pounds for ten reps (300 x 0.6 = 180). Use the same weight on each successive set while maintaining ten reps per set. As the muscle fatigue accumulates as each set is completed, the temptation to take longer rests between sets rises—however, German Volume Training explicitly enforces a constant rest interval between sets, thus increasing the intensity through both the rest interval and increasing loads. In isolation, watching someone perform one or two sets of an exercise at their 60% 1RM level may seem relatively easy—but keep watching—it’s the constant, unrelenting pounding that tells the whole story.

Here’s an example of a chest workout using the German Volume Training system:

**Barbell Bench Press:** 10 sets of 10 reps (3 min rest between sets)
**Incline Dumbbell Press:** 3 sets of 6-8 reps (1.5 min rest)
**Incline Dumbbell Flys:** 3 sets of 10-12 reps (1 min rest)

Here’s an example of a leg workout using the German Volume Training system:
Barbell Squats: 10 sets of 10 reps (3 min rest between sets)
Lying Leg Curls: 10 sets of 10 reps (1.5 min rest)
Seated Calf Raises: 3 sets of 15-20 reps (1 min rest)
Standing Calf Raises: 3 sets of 12-15 reps (1 min rest)

German Volume Training does not use forced reps, negatives, partials or any of the other typical intensity techniques. However, there is no rule stating that you cannot combine this training system with any other type of intensity technique, as long as your recovery system can handle the increased stress without going into a state of exhaustion (over-training).

Variations of the standard German Volume Training system incorporate differing rep schemes per workout, while continuing with ten sets of the target exercise.

For example, the six-week training routine for chest, listed below, keeps you at 10 sets, but uses differing rep schemes each chest workout in order to increase strength on the bench press:

- **Week 1**: 10 sets of 8 reps
- **Week 2**: 10 sets of 7 reps
- **Week 3**: 10 sets of 6 reps
- **Week 4**: 10 sets of 5 reps
- **Week 5**: 10 sets of 4 reps
- **Week 6**: 10 sets of 10 reps

Try to increase the weight each week by approximately 5%.

So, the 1950s ushered in the era of volume training, where performing lots of sets for each body part became popular. The next decade would introduce another variation on this approach.
Peripheral Heart Action (PHA) Training

Chuck Coker, inventor of the *Universal™* multi-station exercise machines, developed the Peripheral Heart Action (PHA) training system in the early 1960s as a system for developing overall fitness. It’s a form of volume training, so get ready to perform lots of sets. The difference here is the minimal rest (if any) between sets, and the ordering of the exercises you select.

The main concept of PHA is to force blood flow up and down the body by working every major muscle group while maintaining an elevated heart rate. This is accomplished by alternating upper body and lower body exercises—as muscles in the upper body are worked, the muscles in the lower body can rest, and vice-versa. The goal of this training system is improved strength, muscle size, cardiovascular efficiency and flexibility. Think of PHA Training as carefully crafted circuit training for your muscles. It’s no coincidence that Chuck’s *Universal™* machines were optimized for these types of workouts. Today, many gyms have circuits of machines set up this way, and the Curves™ chain of women’s fitness centers include this approach. But don’t think it’s just for women—PHA Training, done correctly with challenging weights, can be brutal and will definitely improve muscular endurance.

The PHA philosophy is:

**Work all major muscle groups in alternating sequences**

**Work at a fast pace in order to maintain an elevated heart rate (220-Age x 0.8)**

Typically, PHA training uses a series of sequences, where each sequence consists of a group of exercises to be performed non-stop for a prescribed number of reps. Each sequence is repeated for two or more times, then the next sequence is started. Take rest between sequences only if necessary.

The target heart rate (THR) for PHA training is 220 minus your age, multiplied by 0.8. Accelerate or slow down your training pace, based on your target heart rate.

**PHA Target Heart Rate = (220-age) x 0.8**

For example, if you are 30 years old, your heart rate should stay around 150 for most of your workout.

Here’s some PHA Target Heart Rates for other ages for quick reference:

- 20 years old = 160 bpm (beats per minute)
- 25 years old = 155 bpm
- 30 years old = 150 bpm
- 35 years old = 148 bpm
- 40 years old = 144 bpm
- 45 years old = 140 bpm
- 50 years old = 136 bpm
- 55 years old = 132 bpm
- 60 years old = 128 bpm

Let’s look at a typical PHA training program:
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