

FROM THE TRENCHES

A COMPLETE TRAINING HANDBOOK
FOR NOVICE-INTERMEDIATE LIFTERS AND NEW TRAINERS

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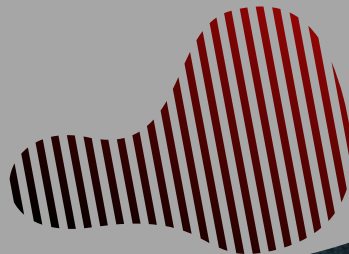
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ABOUT THIS BOOK



**This E-BOOK serves
to do three primary things:**

- To introduce and explain foundational training concepts like progressive overload, volume, intensity, frequency, tempo, and MANY more.
- To illustrate HOW and WHY lifters should integrate proper sleep, nutrition, and stress management for health and success in the gym.
- To share valuable insights from my years coaching REAL people, both in-person and online, as straightforwardly and concisely possible.



REASONS TO RESISTANCE TRAIN

Cardio is no longer king...



While cardiovascular fitness is an essential part of a healthy lifestyle, resistance training is as, if not more, significant.

Resistance training has been shown to help regulate hormone levels [1], improve sleep [2], improve mental health [3], and even improve longevity [4].

These four things alone are reason enough to make resistance training a large part of your fitness and wellness routine.

Beyond the more obvious long-term benefits, resistance training can have some pretty incredible short term perks. It can increase strength, improve muscle size and physical appearance. These three things combined can boost confidence and kickstart even more healthy habits down the line.

NOT A BAD LIST ...



**WHEN IT COMES TO
RESISTANCE
TRAINING, THERE ARE
TWO PRIMARY
GOALS/MODALITIES
MOST PEOPLE ARE
AFTER:**

- 1. STRENGTH GAINS**
- 2. MUSCLE GAINS**

Training to achieve either of these outcomes will undoubtedly have some crossover with the other. This is to say that training exclusively for strength will certainly build muscle, and practice with the primary goal of gaining muscle will make elicit some form of strength gains. Small modifications to exercise variables (covered later) can tilt the scale in favor of one adaptation or the other.

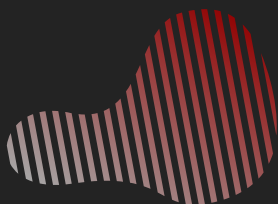
Regardless of your goal, the central tenant that **DRIVES** resistance training adaptation is called progressive overload.

The best way I have found to explain this is with a story...



MILO OF CROTON

The guy who accidentally figured out progressive overload...



Allow me to tell you the story of a Greek hero . Milo of Croton. Milo was tasked with carrying a bull from the bottom of a hill where it would eat, to the top where it would sleep. Day after day of eating made the cow bigger, and the task more arduous for Milo, whose body responded by becoming increasingly stronger and more muscular. The cow never seemed heavier. Milo was experiencing gradual progressive overload.

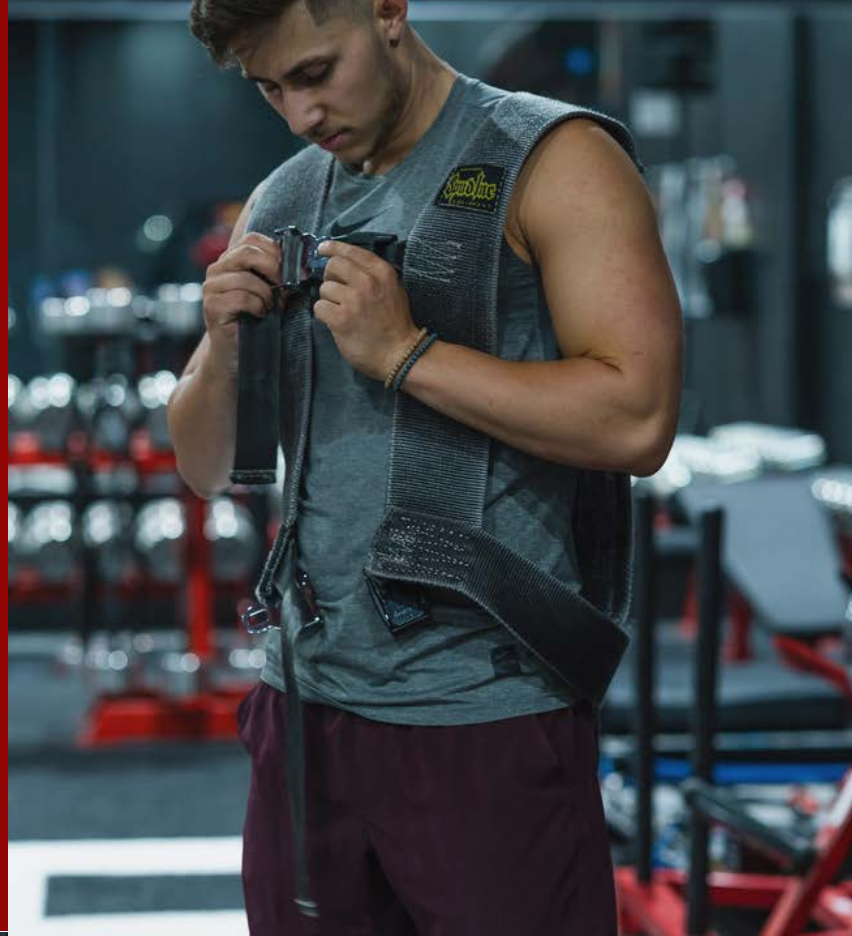
The law of specificity, the SAID principle, and even Wolf's law all point to the body being a mechanism of incredible adaptive potential. But adaptive for what? SURVIVAL. If you recurrently lift the SAME weights for the SAME number of reps at the SAME intensities, your body will stay, you guessed it, the SAME. Introducing small and incremental bouts of training beyond your current potential (overloading) will yield positive adaptation.

To put it succinctly, if you expose the body to systematically increased training demand, be that in the form or load, intensity, volume, or even the occasional novel stimuli - it will elicit a response. If those stimuli are recurrent enough and send a message to the tune of "whoa, this is harder than I'm used to, I'm going to need to put on more muscle/increase strength to survive" then your body will likely do just that.

SO YOU WANT TO GET BIG AND STRONG

■ ■ ■

Resistance training has a variety of variables . . .



Depending on your goals (more strength or more muscle) there are a few PRIMARY variables to manipulate when it comes to training:

Intensity (the relative load used for a given set).

Volume (the relative amount of work done, expressed in the equation [sets] x [reps] x [load]).

Frequency (the number of times/week a muscle group or movement is trained).

Rest periods/recovery (the amount of time allowed in between sets for energy systems to recover).

Examples:

Lifting 90% of your one rep max is more **intense** than lifting 80% (for the same number of reps).

Lifting the same weight for more sets or reps increases **volume**.

Increasing the number of times you deadlift from two to three increases the **frequency**.

Lowering the **rest period** can bias an endurance adaptation over a strength adaptation.



Example One: **STRENGTH**

When a lifter's goal is **maximal strength output**, a program will prioritize a gradual **increase** in **intensity** over each subsequent block.

As **intensity goes up**, the **volume will almost always go down**.

Rest periods will increase to allow the energy systems required for heavy lifting to recuperate for the next set.

Frequency is often used as a tool, specifically when training particular lifts, to increase a lifter's skill and allow them to spread volume out over more sessions - which may improve session to session **recoverability**.

Example Two: **MUSCLE GAIN**

When a lifter's goal is **maximal muscle gain**, a program will prioritize a gradual **increase in volume** over time. It may incorporate fatigue accumulation techniques (i.e. dropsets). It is also important that sets are taken relatively **close to failure** as there seems to be a connection to proximity to failure and growth potential.

Rest periods will often be **shorter** than when training for maximal strength as these energy systems can recover more quickly.

Frequency is often used as a tool to **increase the number of opportunities in a given week that a muscle is stimulated**. The current scientific consensus is aligned with **2-3 training sessions per week** per muscle group being superior (in most cases) to only training a body part one time per week.

Example Three: **HYBRID**

When a lifter's goal is to make quality muscle and strength gains **simultaneously**, they must be realistic. **Neither adaptation will happen as fast** as if the lifter exclusively focused on one or the other. This, however, does not mean it cannot be done.

Exercises/lifts done earlier in training sessions should be **compound movements reserved for expressing maximal strength at high intensities**. This gives the lifter the best chance to lift heavy when they are "**fresh**". The subsequent exercises/lifts can be more hypertrophy (muscle gain) biased.

- **EXAMPLE: (push-day)**
- **Bench Press 3x3 @ 90% 1RM**
- **Overhead Press 4x3 @ 90% 1RM**

Higher intensity, lower volume (more designated strength work)

- 
- **Bodyweight Dips 3 x FAILURE**
 - **Cable Fly 3x8-12 (2 RIR)**
 - **Lateral Raise 3x8-12 2(RIR)**

Lower intensity (load), high proximity to failure, semi-isolated movements where mind-muscle connection is present.



COMPOUND VS. ISOLATION

When selecting actual exercises, options can be divided into two primary categories: Compound exercises and isolation exercises. Compound exercises or movements will use no less than two joints at any time, sometimes more. Examples of multi-joint compound lifts are the squat, bench press, and deadlift. Isolation movements primarily use just one joint and isolate one muscle in particular. Examples of isolation lifts are the biceps curl, leg extension, and the lateral raise.

Both compounds and isolation lifts have their place in a lifter's routine, and each has goals/adaptations they are particularly well suited for

For Example:



Compound lifts are great for:

- Maximal force production
- Developing inter-muscular coordination
- Making the most of your time
- Training motor patterns over training muscles

Isolation lifts are great for:

- Creating the most tension possible in a specific muscle.
- Creating a local/isolated stress on a tissue
- Minimizing total tonnage placed on the body
- A way to add volume without adding as much overall stress.

Expanding Upon The Basics



Now that we have covered the fundamental, "big rocks," as I like to call them in resistance training - we can take a deeper dive.

There are other variables beyond volume, intensity, rest periods, and frequency that can play a role in driving specific adaptations in our muscular and nervous systems.

IT IS IMPORTANT TO NOTE THAT WITHOUT ADEQUATELY APPLYING THE FUNDAMENTAL PRINCIPLE OF PROGRESSIVE OVERLOAD, EVEN THE MOST STRATEGIC IMPLEMENTATION OF THESE VARIABLES WILL BE LIMITED IN ITS EFFECTIVENESS.

A GOOD PROGRAM WILL BLEND AND INCORPORATE MANY ELEMENTS, BUT IT DOES NOT NEED TO INCLUDE THEM ALL. SOME OF THE BEST, MOST EFFECTIVE PROGRAMS I EVER DEPLOYED WITH CLIENTS ONLY FOCUSED ON MANIPULATING JUST TWO TO THREE VARIABLES AT A TIME. MORE OFTEN THAN NOT, IN THE SEARCH FOR GAINS, PEOPLE MISS THE FOREST FOR THE TREES.

OTHER TECHNIQUES, FACTORS, + VARIABLES

1 Time Under Tension

This describes the amount of time a muscle spends under active tension throughout a set.

2 Repetition Velocity/Tempo

This describes speed of each rep being performed. It also includes tempo for each contractile portion of a lift.

3 Mind-Muscle-Connection

This describes the ability for the lifter to FEEL sensation in the desired muscle.

4 Intensity Techniques

This describes the use of things including, but not limited to: dropsets, supersets, compound sets.

5 Proximity to Failure

This describes how close a set is to failure. The closer, the greater potential for growth (recovery being equated).

6 Pre-Exhaust

This describes fatiguing a particular muscle in isolation prior to including it in a compound movement.

7 Exercise Order

This describes the order in which exercises are structured within a program.

8 Exercise Selection (practical)

This describes selecting exercises you like in place of those you do not.

9 Exercise Selection (mechanical)

This describes selecting exercises that work best with your body and how it's put together.

10 Matching Resistance Profiles and Strength Curves

This describes selecting exercises that line up well with how joints and tissues are naturally loaded.

11 Varying Positions

This describes training muscles in their fully lengthened positions, the mid-range, and the end-range.

12 Execution

Training with good form and contracting the right muscles at the right time will yield more bang for your buck on a rep to rep basis.



A NOTE ON TECHNIQUE



Execution and form are often the missing link in people's progress. I would argue that reps performed with the proper technique, cueing, and intent are MUCH more effective than those performed in a sloppy manner.

Take charge of your sessions. Be patient. Lift like it is a skill, not a race. You and your gains can thank me later.



A NOTE ON TEMPO



The tempo of your weight training can generally be broken down into **FOUR** specific phases.

- **Eccentric:** lowering the weight (muscle is lengthening)
- **End Range:** the point where the muscle is fully lengthened.
- **Concentric:** lifting the weight back to the starting point (shortening of the muscle)
- **Pause:** The beginning point of the movement (weight usually feels lightest here)

Many coaches and lifters follow just the first three parts.

Tempos are often denoted as either **E-ER-C** or **E-ER-C-P**



A NOTE RPE/RIR and PROXIMITY TO FAILURE



The actual "difficulty" of a set, or proximity to failure is often expressed as either an "RPE" (rating of perceived exertion) or an "RIR" (repetitions in reserve).

"RIR" describes how many "reps are left in the tank" an RIR of two would denote stopping two reps short of muscle failure.

"RPE" is most commonly graded on a 10 point scale, shown here:

RPE Scale Based On Repetitions In Reserve	
10	Could not do more reps or load
9.5	Could not do more reps, could do slightly more load
9	Could do 1 more repetition
8.5	Could definitely do 1 more repetition, chance at 2
8	Could do 2 more repetitions
7.5	Could definitely do 2 more repetitions, chance at 3
7	Could do 3 more repetitions
5-6	Could do 4 to 6 more repetitions
1-4	Very light to light effort

MUSCLEANDSTRENGTHPYRAMIDS.COM

Table from "Muscle and Strength Pyramids" By Eric Helms.

For most people these two (RPE and RIR) are entirely interchangeable

NUTRITIONAL REQUIREMENTS FOR RESISTANCE TRAINING



Resistance training has some unique nutritional requirements for optimal performance. Protein plays the chief role. The JISSN recommends 1.4-2.0 grams/kg as a minimum range for protein consumption amongst athletes [5]. In America, you will often hear about lifters needing to eat 0.7-1/0 grams of protein to optimize muscle protein synthesis.

This is not to say some people won't do better with more, and others may need less. These are just ranges.

"PROTEIN PLAYS THE CHIEF ROLE".

Carbohydrates are vital for recovery and managing the stress of training. They can also improve workout quality by providing energy to perform glycolytic work.

Fats, or lipids, are vital for maintaining many key systems within the body. Beyond being integral for the health of our brain and cell membranes, they play an integral role in the production of hormones like testosterone and estrogen - just to name a few.

When designing a diet for optimal gains, protein must be adequate. The remainder of dietary calories can come from a blend of carbohydrates and fats.

These concepts are covered in greater detail in the "nutritional fundamentals" E-Book I have written.



The not so "sexy" stuff...

In my time coaching, I have trained many lifters. I've worked with people looking to gain muscle, compete in powerlifting, lose bodyfat, play collegiate sports - to name a few. One of the single most overlooked parts of any fitness journey is the importance of maintaining the best health possible.

Many fitness endeavors are inherently stressful and even unhealthy. For example, preparing for a bodybuilding show includes weeks of rigorous training while being in a calorie deficit. This is NOT healthy long-term.

It is unrealistic to assume people are going to be perfect all the time. Merely doing what you can to maintain the best health possible at all times can be incredibly beneficial. A good bill of health will help by expediting the rate at which you make gains but also help to ensure you can keep and build upon them without sacrificing longevity. Intense focus on training deserves to be met with intense focus on health and wellness.

5 things to do to improve your overall health instantly:

- Aim for 8 hours of unbroken sleep per night.
- Program stress management time as you would your workouts.
- Eat local, in season, organic foods (when possible).
- Minimize processed foods when possible.
- Minimize alcohol consumption.

SLEEP, better than steroids?

I refused to write an E-Book that did not include a picture of a puppy. In all seriousness, any book about maximizing resistance training adaptations is criminally incomplete without addressing sleep (even a little). So here we are.

I'll make it really simple, missing sleep (getting less than 8 hours/night) is NOT good. Poor sleep has been linked to:

- Lower levels of testosterone [6]
- Impaired ability to maintain a calorie deficit [7]
- Lower levels of growth hormone [8]
- Lowered maximal strength levels [9]

Optimizing sleep if you are chronically sleep deprived is the closest thing I have found to a natural steroid when working with general population clients.

If you really care about your training you will make the time to get as much sleep as possible. Put your phone away, turn the TV off, and commit to sleep the same way you commit to training and eating.





TWO IMPERATIVES FOR PROGRESS

1

RECOVERY

You only make progress when you recover from training PERIOD. When we train, we are creating stress. Don't get it twisted, while training might be your "stress-reliever/escape," your body doesn't interpret it as such. It is a stressor. All stressors drive adaptation. The greater the stressor, the higher the opportunity for adaptation - AND the higher the need for recovery. Recovery is a multi-factorial notion that includes:

- **Sleep (8 hours minimum)**
- **Nutrition (goal specific)**
- **Peri-workout nutrition (workout specific)**
- **Supplementation (goal/training stimulus specific)**
- **Cardiovascular health (the better this is, the better we recover)**
- **Taking days off (you should aim for AT LEAST one of these/week)**

Your gains are only as good as your recovery.

An A+ workout with C+ recovery will = C+ results.

An A+ workout with A+ recovery will = A+ results.

TRAIN HARD - RECOVER HARDER

2

STRESS MANAGEMENT

Traditional western society has us more stressed than ever. This "rat-race" can stress our immune system, digestive system, and impair our ability to recover. This stress can create things like depression and anxiety - just to name a few things. Taking time to manage stress can be HUGE for optimizing health, performance, and aesthetics. Here are a few things you can do to manage acute stress:

- **Meditate**
- **Take a day or two off from training**
- **Increase sleep**
- **Deload from training (lowered volume + intensity in training)**
- **Schedule daily time for something relaxing you enjoy**



SUPPLEMENTS

Supplements are a huge part of the fitness industry. The two are inextricably linked. As of 2016, supplements represented a whopping 120+ billion dollar industry. To put this in perspective, in the same year, the health club industry was valued at only 80 billion.

In my opinion, 85-90% of supplements are unnecessary. Those that I have found to be truly worth taking that are supported by both scientific data and reputable anecdotes are listed below:

- **Vitamin D3 ***
- **Creatine Monohydrate***
- **EPA/DHA (fish oil)***
- **Protein Supplements or Essential Amino Acid Supplements (not BCAA)***

- **Magnesium***
- **Vitamin C***
- **Highly Branched Cyclic Dextrin (intra-workout carbohydrate)***
- **Ashwaghandha***
- **Caffeine***
- **Beta Alanine***

***Dosages will vary based on individual's goals and nutritional needs.**



ABOUT COACH DANNY

Academia meets application . . .

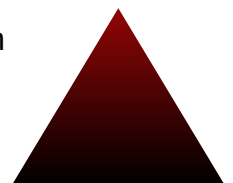
Danny has been personal training in-person and online since 2013. After his high school athletic career ended, he continued to pursue his passion for health and human movement. He worked as a personal trainer the entirety of his tenure at university, where he achieved his Bachelor's Degree in kinesiology.

He holds over 15 certifications and specializations, including the NSCA's prestigious CSCS. Having trained over 10,000 individual sessions and worked internationally with clients online, Danny has bridged the gap between academia and application. It's one thing to be some guy on instagram who posts workouts, it's a whole different thing entirely to be an "in-the-trenches-coach".

He now spends a great deal of his time educating trainers online and in person at various workshops - all while remaining extremely involved in his in-person and online coaching business.

If you are interested in working with coach danny, both his 1 on 1 coaching and online programs can be found at:

www.coachdannymatranga.com





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I thank you for taking the time to read the ideas inside this E-Book and wish you the best in your fitness endeavors.

Sincerely,

Coach Danny Matranga, CSCS

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