

BE FIT AND STRONG

WORKOUT PRINCIPLES

MIRZA BESLAGIC

CONTENTS



- 02 ABOUT ME
- 03 INTRODUCTION
- 04 UNDERSTAND MUSCLE GROWTH
- 09 MANIPULATE VOLUME, INTENSITY AND FREQUENCY
- 12 SHORTLIST BEST EXERCISES FOR EACH MUSCLE GROUP
- 18 MEN AND WOMEN SHOULD HAVE DIFFERENT WORKOUT PROGRAMS
- 20 AUTO REGULATE YOUR PROGRESSION
- 23 CONCLUSION

ABOUT ME

First of all, I want to say that I am glad that you decided to go ahead and download my book of principles on fitness, and how to master it to achieve your goals.

When I started my fitness journey back in 2003, I had absolutely no clue where to go. I just followed what others did in the gym at that time. Fortunately, I was always curious enough to dig deep and learn more about exercise and nutrition, after which I decided to help others as well many years later.



I believe in sustainable approach, which is why my philosophy is to be flexible with my clients to match their lifestyle, genetics and goals,. This way we can create habits that can stick around for a very long time.

I have worked for a very long time in the finance industry, which is why I understand the impact of stress and this lifestyle on exercise and nutrition, and how hard it is to follow everything.

This is why I have written this free e-book as a guide for you to be able to create your own plan for workout and nutrition, based on your own parameters.

Good luck.

WORKOUT PRINCIPLES

INTRODUCTION

I often see people seeking for the ultimate workout or diet to help them achieve their goal in the shortest amount of time. Everyone is looking for the shortcuts and the magic silver bullet. The perfect formula. To lose fat in 4 weeks or to build muscle in 8 weeks. People want things happening instantly. However, dynamics and complexity makes it impossible to make a simple formula for achieving your fitness goals.

One of the main reasons why I decided to write my principles of how to achieve your goals is to help you ditch that black and white thinking. I want to help you understand that there is no perfect chest exercise, and that there is no magical number of sets that make you exponentially grow, or the best way to lose fat. Instead, there are many options and variables to play with and this is what we are going to uncover in this guide book.

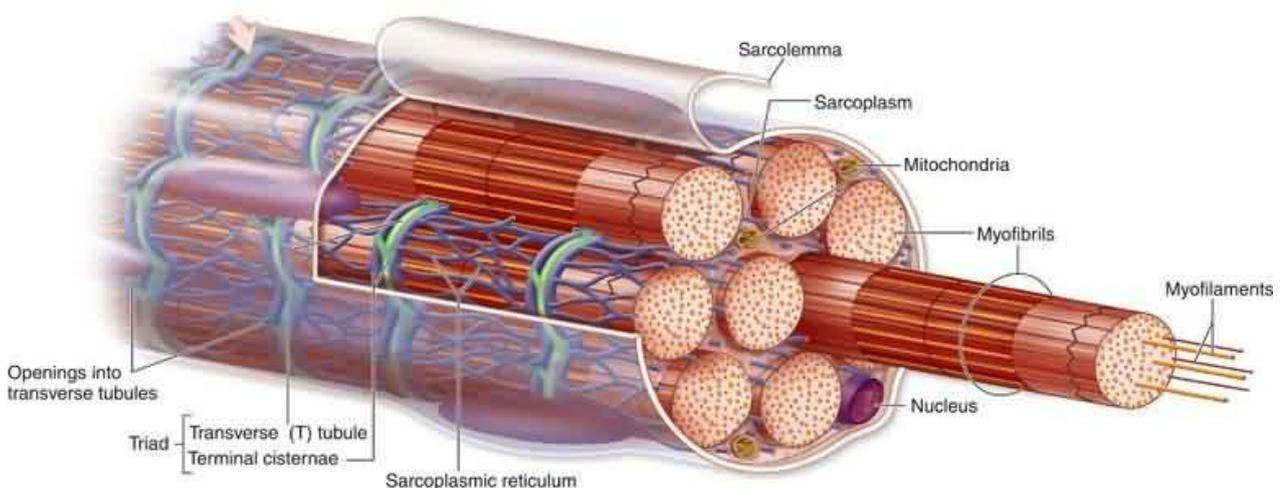
After reading this book, you will be able to create your own customized program based on your training age, genetics, goals, gender and lifestyle. You will understand basic set of principles that can help you get your physique to the next level and stay there. If you are a beginner, you will learn where to start and how to create a plan that will maximize your progress while also keeping you away from over reaching. If you are an intermediate lifter, you will understand all the mistakes you have been making that kept you away from progressing to the next level. Even advanced lifters can benefit from this guide as I do not believe that there is a true natural limit of muscle growth.

1.UNDERSTAND HOW MUSCLES GROW

We have more than 600 muscles in our body. They help us move and lift objects in this world. To understand how to maximize muscle growth, you need to have a basic understanding of how the body adapts to physical stress. We will go over the basic structure of the muscle and its functions.

Muscle structure is highly complex and it is surrounded by layers of connective tissue. The outer layer covering the muscle is called epimysium (see the photo below) and inside of it are the small bundles of fiber called fasciculi. If we zoom even further, we would see hundreds of thousands of myofibrils, that have 2 primary protein fillaments called actin and myosin. ,These 2 fillaments are responsible for muscle contraction.

Hypertrophy is, by definition, an increase in muscle tissue by adding sarcomeres. There are also 2 types of hypertrophy, in series, and in parallel. Most of the hypertrophy occurs through parallel.

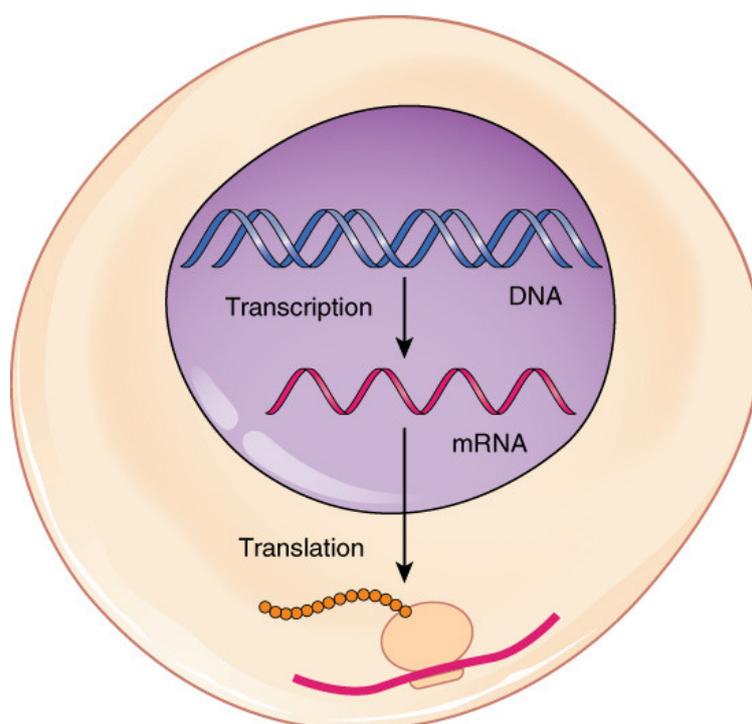


It is believed that there are three ways we can achieve muscle hypertrophy. Mechanical tension, metabolic stress and muscle damage. Let's see which one of these can offer us the greatest benefit for muscle hypertrophy.

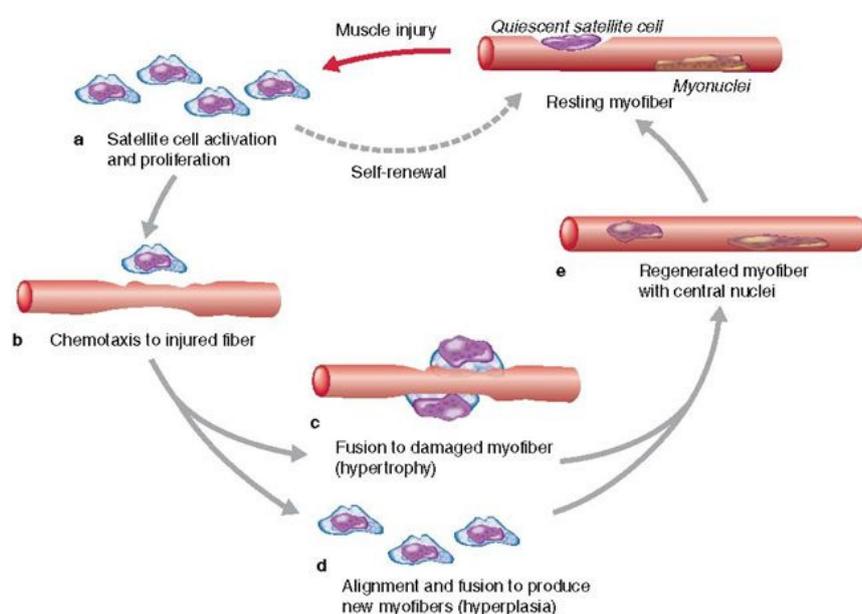
Mechanical tension

For nerdy types this part will be very interesting, however if you are not interested in specific details of muscle growth you can skip this part and go directly to key takeaways.

When muscle contracts under a heavy load it triggers a chemical reaction called mechanotransduction. Muscle fibers release hormones, including insulin like growth factor and interleukine 6. Resistance training increases interleukine by up to 100 times. This is a signal for the repair, and inside your muscle cells lies DNA, which is the blueprint for your whole body. mTOR (master enzyme that regulates muscle growth, energy status, oxygen levels and amino acid levels) regulates muscle growth by sending the "copied" information from the DNA through mRNA (messenger ribonucleic acid), which is then sent to the ribosomes outside the cell nucleus to produce proteins for muscle repair and building.



Stem cells also assist in this process since the nuclei in muscle has a limit when it comes to the region of the cell it can control. Once this limit has been reached, stem cells are activated for continued muscle growth. As you can see in the image below, stem cells attach to the damaged muscle fibers and donate new nuclei to the fiber. New nuclei stays in the muscle cells permanently, which is why we have a phenomenon called muscle memory. This simply means when you lose muscle you can get it back easily because of the greater numbers of nuclei in you muscles.



Reprinted, by permission, from T.J. Hawke and D.J. Garry, 2001, "Myogenic satellite cells: Physiology to molecular biology," *Journal of Applied Physiology* 91: 534-551.



Key takeaways

As a summary, the primary mechanism of muscle growth is the prolonged mechanical tension on the muscle, basically lifting anything heavy enough for a certain amount of time (we will go in the specifics of this later in this guide). Due to the stress imposed, the muscle adapts to it by triggering a cascade of chemical reactions to super compensate (more muscle mass), that way we can produce even greater force next time.

Most of the muscle growth occurs through mechanical tension, which is why progressive overload (increasing weight on your exercises every week) works so well for building muscle and strength.

Metabolic stress

Often described as burning sensation in the muscle, or "the pump", it is considered to be one of the ways muscle growth can be achieved. This is usually achieved by performing 8+ repetitions per set, and preferably 12+ reps. That burning sensation is a byproduct of metabolic waste accumulated in the muscle, mainly lactate, phosphate, and hydrogen ion. However there is no direct evidence that metabolic stress plays a significant part of muscle growth. Anecdotally, from my own experience, you can get some increase in muscle, but most of it is simply muscle cell swelling, which goes away pretty quickly.



Key takeaways



Metabolic stress should not be the primary way of trying to achieve muscle hypertrophy.

Muscle damage

Muscle damage is related to the muscle soreness you feel the next day (sometimes even the day after) and is usually believed that it is a good thing for muscle growth. However, what if I tell you that muscle damage is not correlated with muscle growth? There is also no relation with muscle soreness and muscle growth. You might have noticed that if you perform the same exercise for a longer period of time, the soreness would decrease, usually even completely disappear. This is because of the phenomenon called repeated bout effect, and it is the preferred state to be in when you want to achieve muscle hypertrophy. One of the reasons why it is often better to stick with the same exercise is because of that. Your body, more precisely your nervous system is learning the movement and getting better at performing it. As a result, you get stronger over time and your muscles grow as the volume also goes up.

Key takeaways

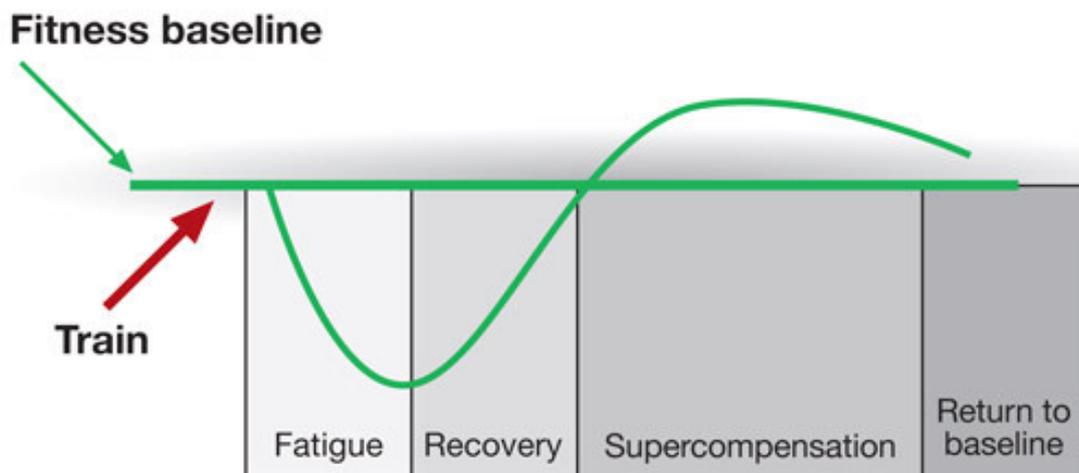
Muscle damage is simply a byproduct of exercising and sometimes it cannot be avoided. However, it should not be the aim of the workout and certainly not a benchmark for how well you worked out that session.

Chapter summary



Heavy loads cause muscles to contract hard enough to trigger chemical reactions in our body that trigger muscle repair followed by muscle growth. On top of this, metabolic stress causes an accumulation of metabolic waste in our muscles, causing muscle swelling effect. The way muscle adapts to stress can be explained through a concept called general adaptation syndrome created by Dr. Hans Selye. See the image below.

General Adaptation Syndrome and recovery to supercompensation



2.MANIPULATE VOLUME, INTENSITY AND FREQUENCY

Volume

Lets start off first by understanding what volume is. To simplify it we will count volume as number of sets per muscle group. For example if you perform 3 sets of bench press, and 3 sets of cable flies, it will count as 6 sets for chest. However, we only count hard sets that are 1-2 reps shy of failure, which means that warm-up sets are not included in this. You also want to count your number of sets on a weekly basis. For example if you are training chest on Tuesday with 6 sets and on Friday with 6 sets again, your total weekly volume would be 12.

Optimal volume for muscle growth

After clearing up what volume is, the next question is what is the optimal number of sets you should be doing on a weekly basis? If your number is too low you will not achieve maximum muscle growth, on the other hand if your volume number is too high, you might overtrain and get injured. Lets look at the numbers below.



Beginner

8-12 sets per muscle
group per week



Intermediate

12-16 sets per muscle
group per week



Advanced

14-25 sets per muscle
group per week

These numbers should give you a rough estimate and a starting point. You need to test it yourself and see how your body reacts to it. The best way to understand if you found your volume sweet spot is by tracking your weekly progress. If you are getting stronger every week you are on a right track. If you are stagnating with muscle strength and your sets are closer to 8 you need to increase your volume. If you are a beginner or intermediate, you should be able to increase the load on the exercise by 2.5% every week.

Intensity

Training intensity is a percentage of your one repetition max. It is the amount of load you are using for a specific exercise relative to your maximum load that you can only perform one repetition. For example lets say you can squat 100 kg for only one repetition. If you want to use 85% intensity you would reduce the weight to 85 kg and then be able to perform 5-6 reps before you fail.

Optimal intensity for muscle growth

Muscle growth can be achieved between 30% 1RM and 90%1RM as long as you take sets close to failure. In terms of repetition range, this means that you can perform sets of 3 and also sets of 30 and achieve hypertrophy. However, based on your training experience level, this can also be slightly adjusted.



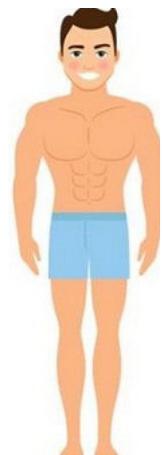
Beginners

30 - 60% 1RM
30 - 15 rep range



Intermediates

30 - 80% 1RM
30 - 8 rep range



Advanced

30 - 90% 1RM
30 - 4 rep range

Frequency

Frequency is the number of days in a week you train certain muscle group. For example, if you are training your back on Monday and Thursday, your training frequency is 2.

Training frequency is not nearly as important as volume and even training intensity, however, it does offer certain advantages to allocate the weekly volume according to your convenience.

Training frequency also offers an advantage of stimulating muscle protein synthesis multiple times in a week for the same muscle group.

Frequency should be used as a tool to properly distribute your volume. The higher the volume the higher the frequency in general. Below you can see general recommendations for frequency.



Beginners

1-2 times per week



Intermediates

2-3 times per week



Advanced

2-4 times per week

Beginners need more time to recover as their workouts produce significant amount of muscle damage initially. This is why anybody who just starts working out experiences huge muscle soreness for days. As you get more experienced, number of days you need to recover decreases and volume requirements increase, meaning frequency needs to increase as well to distribute the volume.



Key takeaways

Volume is the primary driver of muscle growth, with intensity anywhere between 30 - 90 % of one repetition max. The amount of volume you should have depends on your training experience, genetics, stress level, lifestyle and sleep and should be adjusted accordingly. Frequency should be a minimum of 2 per week for most trainees, unless you are a complete beginner, where you can reduce it even to 1 time per week for the first month.

3. SHORTLIST BEST EXERCISES FOR EACH MUSCLE GROUP

Very often, you will hear that you should focus on compound movements and the big three lifts, especially if you are beginner or intermediate lifter. However, doing only compound movements over a long term, and especially when your volume requirements increase, can be very taxing to your joints and connective tissue, causing an overuse injuries. This is why power-lifters have many more injuries than bodybuilders.

You need to learn how to properly select your exercises based on a certain criteria. Once you learn this, you will be able to make a list of exercises for each muscle group and you can rotate them once every few months.

Limiting factor

Targeted muscle group should always be a limiting factor. If you are targeting biceps, and your grip gives out first, you have a problem because the grip strength is a limiting factor. In that case you would need to work on your grip strength, or switch to a different biceps exercise. The same rule applies for pull-ups, dead-lifts and rows.

Range of motion

Muscle activation level depends on the range of motion. As we are looking to maximize muscle growth we want to achieve full range of motion for all exercises that we perform. The greater the range of motion the better the exercise. I want you to think of ROM in degrees your joint moves instead of distance traveled.

Overloading muscles in their stretched position also contributes to hypertrophy which means that you should pick exercises that maximize ROM.

When it comes to the strength and explosiveness same story applies. Numerous studies compared exercises like bench press and squats with full and partial range of motion, and every time, full ROM group achieved better strength improvements along with more muscle growth.

Tissue stress

Every exercise will have some sort of tissue stress, whether it is on your ligaments, tendons, joints, or spine. If you train long enough and hard enough at some point you will start to feel this stress. To cope with this, you need to intelligently pick exercises with the least amount of stress. Problems like tennis elbow and golfers elbow often arise because of wrong exercise selection.

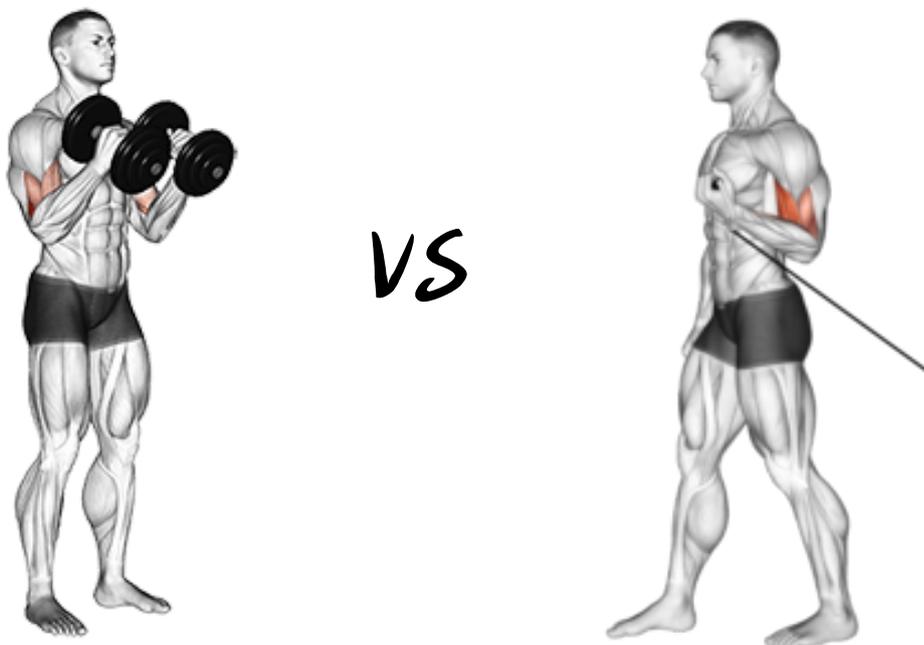
Contrary to the popular belief, machines have higher stress distribution than free weights. Machines limit your movement to one specific pattern, and because we are all built differently, for some of us that specific movement at that angle might not be ideal. This causes overuse injuries over time.

Dumbbells on average have best tissue stress distribution when performing an exercise but anecdotally they tend to be difficult during the set up for an exercise, especially when you get to the higher loads.

Closed chain exercises have better stress distribution than an open chain exercises. An example of a closed chain exercise would be push ups, squats, pull-ups and chin-ups. An example of an open chain exercises would be bench press, leg press, and pull down.

Machines vs free weights

While machines on average have higher stress distribution, we can still take advantage of some machines as they can offer other benefits like variable resistance curve and constant resistance. For any circular type of movement, like biceps curls, machines offer an advantage. Bicep curls with dumbbells offer no resistance at the bottom and the top of the movement while the same exercise with cables offers constant tension across the entire range of movement.



Hammer strength plate loaded machines have accommodating resistance curve, which completely eliminates the sticky point. This means that the machine provides you with less resistance in the weakest part of the movement. For example, when you are rowing on a machine. as you start reaching the end of the movement close to your chest, you become weaker because your muscles are in a mechanical disadvantage at this position.

However, if you have a machine that accommodates your resistance curve, you will be able to squeeze at the top of the movement without lowering the weight down.

Other exercises that have vertical range of motion like squats, dead lifts, bench press, and pull ups have a flat resistance curve.

If you want to match your strength curve with the resistance curve you can use bands and chains. If you have chains in your gym use them as they are a great tool to maximize your strength and gains.

Microloadability

One of the reasons why squats, dead lift and bench press are so great at building muscle is that they are easy to progressively overload. You can increase the weight by 1.25 kg on each side and slowly build up your strength this way. Over time, this will affect your muscle gain as well.

Below is a list of exercises that are great for building strength and muscle, but do not limit yourself to only this exercises, instead, use the principles you learned above to intelligently select your exercises

Pectoralis major

- Dumbbell bench press
(flat and inclined)
- Barbell bench press (flat
and inclined)
- Bayesian fly
- Dips
- Convergent press
machines
- Push up

Latissimus dorsi

- Pull-up
- Chin-up
- Pull down
- Unilateral pull down
- Lat prayers
- Pull over
- Bent over barbell row
- Bent over dumbbell row

Front deltoids

- Military press
- Seated barbell press
- Seated dumbbell press
- Arnold press seated
- Arnold press standing
- Front dumbbell rise

Lateral deltoids

- Military press
- Seated barbell press
- Seated dumbbell press
- Arnold press seated
- Arnold press standing
- Dumbbell lateral rise
- Cable lateral rise
(unilateral)
- Dumbbell upright row

Rear deltoids

- Face pulls
- High rows
- Reverse Bayesian fly
- Reverse pec dec

Upper trapezius

- Wide shrugs

Lower and middle trapezius

- Barbell bent over row
- Dumbbell bent over row
- Plate loaded machine row
- High rows
- Face pulls

Lower and middle trapezius

- Barbell bent over row
- Dumbbell bent over row
- Plate loaded machine row
- High rows
- Face pulls

Biceps

- Bayesian curl
- Dumbbell Curl
- Incline bench dumbbell
curl
- Preacher curl machine

Triceps

- Skull overs
- Cable push down
- Cable overhead extension
- Dips

Quadriceps

- Barbell squats
- Split squats
- Hack squats
- Smith machine squats
- Reverse lunges
- Leg extension

Glutes

- Hip thrusts
- Kick backs
- Pull throughs
- Hip abduction
-

Rectus abdominis

- Decline bench crunches
- Bossu Ball crunches
- Leg rises with straps
- Reverse crunches

Hamstrings

- Romanian dead lifts
- Leg curls
- Glute-ham rise
- 45 degree hip extension
- Good mornings
- Pull throughs

Calves

- Standing calf rises
- Seated calf rises

4. MEN AND WOMEN SHOULD HAVE DIFFERENT WORKOUT PROGRAMS

Fitness differences between men and women differ on many levels, and because of these differences, workout programs should also be different to maximize progress. First of all, the muscle fiber distribution is different between trained men and women. Men tend to have more fast twitch type II fibers, while women tend to have slow twitch type I fibers. Slow twitch fibers are really good for endurance as their are structured to produce force over a longer period of time.



Type I fiber dominant



Type II fiber dominant

- | | |
|---|---|
| <ul style="list-style-type: none">• Greater endurance capacity• More resistant to fatigue• Estrogen offers anti catabolic advantage | <ul style="list-style-type: none">• Can tolerate more volume• Poorer neuromuscular control• Less metabolic stress |
|---|---|

- | |
|--|
| <ul style="list-style-type: none">• Greater power and strength• More efficient nervous system |
|--|

This makes women more resistant to fatigue than men, which is why workouts need to be adjusted accordingly. To take advantage of this, the number of repetitions per set should be increased for women, generally in the 12 - 15 rep range.

Women also have less neuromuscular fatigue which makes them better suited for a higher rep range. Compared to men, women can perform more repetitions at the same relative intensity. This specifically applies to lower intensities (lower weight). Another advantage is that women have more estrogen, which is responsible for less protein breakdown during the exercise. This prevents muscle loss during workouts.

Lower arterial blood pressure makes it easier to get more blood into the muscles. This makes women more resistant to metabolic stress (the burning sensation in your muscles when you are performing high reps).

However, on the other side of the spectrum, during high intensity exercises (with high loads), women do not cope as well as men. This is mainly due to poorer neuromuscular motor coordination. This makes men more powerful and efficient when it comes to high intensities.

Key takeaways

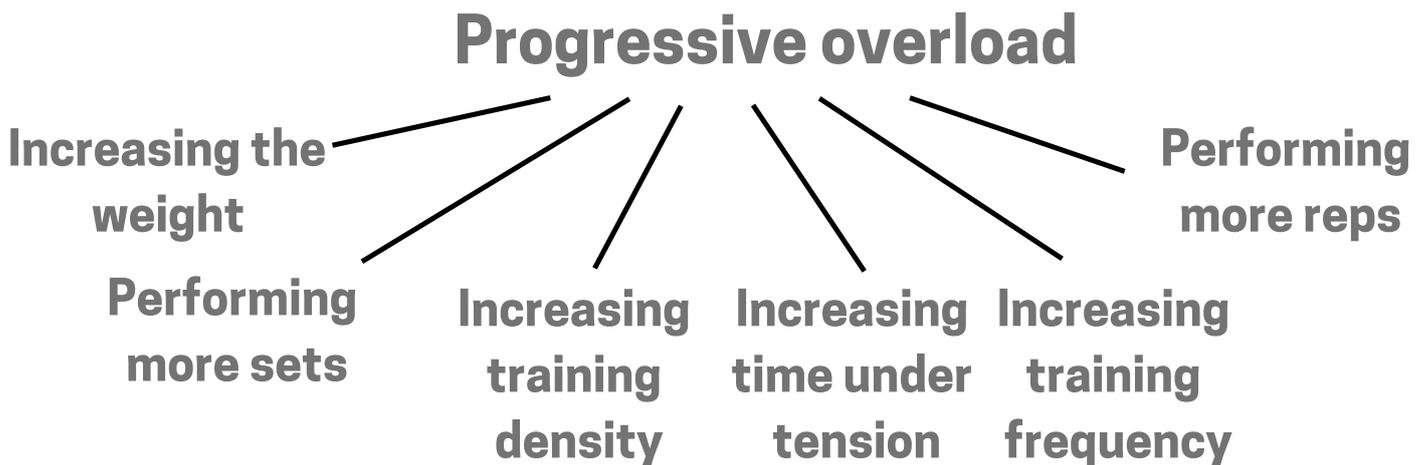


Women should aim for higher reps with lower intensities to make use of their advantages over men. This means women should generally aim for more than 10 repetitions per set, with higher frequency due to higher recovery capacity, and more volume as women can tolerate more volume on a weekly basis. The exact figures depend on many different factors as sleep quality, stress level, training age and genetics.

5. AUTO REGULATE YOUR PROGRESSION

To make your muscles grow you need to put them under stress which is mechanical tension. Following the general adaptation system, after this stress has been imposed, muscles go through the recovery phase, and then super-compensation phase, where you get stronger. This has been explained in the first principle of how muscles grow. However, when muscles adapt to the same stress, it simply stops growing as there is no need for further super-compensation. At this point you need to introduce a new stress.

The best way to keep introducing new stress is to progressively overload your exercise. This can be done in several ways illustrated below.



You can use a combination of all six ways, however focusing on strength development by increasing the weight on the bar is the best way to make progression. Reason is simple, all other ways are unsustainable over the long term period of time. You can only do so many sets before you over-train and you can only rest for so much between sets before it becomes too much. However, increasing the weight, especially on a compound movements can give you years of progression. To give you an idea, when I started bench pressing, I was doing sets with 30 kg. Years later, I am doing sets with 120 kg. This kind of strength progression cannot be achieved in one or two years naturally. You need a long period of time.

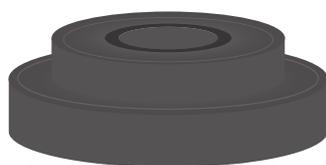
So the main question is how do you apply this to your program? The best way to do it is to auto regulate your progression. If you are a beginner or intermediate lifter, your strength progression from workout to workout on a same exercise should be 2.5%. For a beginner, that should be an absolute minimum, as they can progress even faster than that.

You simply increase the weight by 2.5% each workout and aim for the same amount of reps. If you cant increase the weight by 2.5% simply because you do not have such small increments, you need to rely on rep progression scheme. A rep progression is when you increase the amount of repetitions per set until you reach your rep goal, for example 12. After you reach 12 on your first set, you will simply increase the weight next workout and start again.



Workout 1:

Biceps curls 3 sets
Rep goal: 12
Set 1: 11
Set 2: 11
Set 3: 10



Workout 2:

Biceps curls 3 sets
Rep goal: 12
Set 1: 12
Set 2: 10
Set 3: 9



Workout 3:

Biceps curls 3 sets
Rep goal: 12
Set 1: 10
Set 2: 9
Set 3: 9

Rep range progression

Your first set is the benchmark set while you auto-regulate your second and third set to control the volume you are doing and not to overreach. This can also help you with injury prevention. If your strength is not progressing you need to look back at your diet and see if it is optimized. Also lack of sleep can sabotage your progress, and finally the amount of volume you are doing. If you are following the volume guidelines from this book, you should be able to progress in strength / repetitions from workout to workout.

6. DEVELOP A HABIT OF CONSISTENTLY GOING TO THE GYM

For many, this is the hardest part, especially if you are not genetically predisposed for exercise (yes, genetics play a heavy role in whether you are feeling like exercising and playing sports or not). So how do you motivate yourself to go to the gym week in week out?

By changing your mindset, you can develop a habit of going to the gym every day or every other day without skipping. Instead of having goal oriented mindset, have a growth based mindset. Goals do not work very well for fitness simply because it takes a very long time to see results. There is no instant gratification and your brain becomes tired of it very quickly. Everyone can have a goal to lose 10-15 kg, but only a few really follow through.

If you have a growth based mindset, you do not really care about your goal, you care about becoming a better version of yourself every day. This is how you develop a habit. Bit by bit, you grow and you become better at fitness. You learn all the lifts and the correct form. You start to get stronger and stronger. You start to see results, six pack is starting to show and you feel really good. You have more energy to do other things and crush it at work or your social life. It is all connected and it touches every aspect of your life. It all started by building a habit of going to the gym and not even thinking about it.

Develop a system that makes things easy for you to follow them at the beginning. Book a gym that is close to you instead of booking the best gym in the city which is 1 hour away. Train at the time that is most convenient for you instead of training at the most optimal time for workouts. You can apply the same principle for exercise selection. There are so many good exercises to pick from, so avoid picking the exercise that you hate the most just because someone else said its a must do exercise.

This will help you build the habit and consistency which beats everything. Once you are at a certain level you can then fine tune your workouts and your diet.

CONCLUSION

By now you understand that there are no shortcuts to your fitness goals. Weather it is to lose fat, or to build muscle, you need to be doing right things over a consistent period of time. What you learned in this book can serve you as a compass that tells you which direction to go, that way you know you are not wasting your time. If you are stuck, this guide can help you understand what was holding you back and how to tweak your program to help you unlock the next level. If you are completely new, this guide will show you exactly what you need to do and what to expect in return. As I teach all my clients, if you are doing the right things it is just a mater of time before you start to see results. You just need patience then.

Good luck with your journey!

Mirza Beslagic