

# The Ultimate Guide to Muscle Growth

How to Get  
Bigger Muscles, Faster

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# Max Your Muscles

You don't work out at the gym multiple times a week for fun, right? You don't go there because you enjoy the sweaty atmosphere, or the brilliant conversation of your fellow bodybuilders. You go there because it is worth the pain, the struggle and the frustration if you can build a body you are proud of.

Unfortunately, many guys fail dismally at that. They put in the hours and the work. They try hard to motivate themselves, and they struggle to eat clean while their mates are downing beer and pizza. But somehow, they struggle to build muscle and get lean. Every extra pound of muscle is a massive effort. And gains often slip away quickly.

When that happens, it's frustrating for sure. But the good news is that it doesn't have to be like that. Poor results are usually a result of a poor understanding of the basic techniques of building muscle. Getting big isn't about working harder...it's about working smarter. And that's what this guide is all about – showing you how to get maximum muscle-building results in the most efficient way possible.



# Be Ambitious...But Have Realistic Expectations



*You want to build an awesome body? That's fantastic. And it's certainly true that you need to aim high in order to get the best possible results. But when choosing role models to aspire to, we recommend a little caution. Here are a few things to bear in mind...*

## Genetics

While it is true that bodybuilding champions like Arnold Schwarzenegger, Dorian Yates, Ronnie Coleman and Phil Heath worked like dogs in the gym, that wasn't the only key to the amazing bodies they achieved. They were all also blessed with good genetics. That is, they had naturally large frames, with muscles that responded exceptionally well to the demands of weight training.

Your genetic make-up is something you are stuck with. Everyone can improve their looks, of course, but don't expect to end up with the same physique as the freaks who won the genetic lottery – it just ain't going to happen.



## Chemical Assistance

It's no accident that today's bodybuilding superstars are close to eighty pounds heavier than their counterparts from the old days. The reason is simple – most of these guys are walking chemical labs. The sheer volume of steroids, hormones and other chemicals that they pump into their system is extraordinary.

In most countries, the majority of these substances are banned, as well as being expensive and potentially dangerous. So we recommend you give them a very wide berth. Just be aware that without all this artificial muscle growth, most of these big guys would be a whole lot smaller. So set your goals accordingly.

## Photoshop

This is important to bear in mind when looking at photos in magazines or when checking out photos online. With a few clicks of the mouse, a good Photoshop operator can make a bodybuilding hero look much bigger, leaner and stronger. While they are at it, they can brush away the side effects that heavy drugs have on physical appearance, and drop in a nice healthy tan, too. You can't do that in real life...you have to sweat it the hard way!

## Go for Growth

Don't let any of the above deter you, however. You should have your eyes open, but you should also have a burning desire to build a truly awesome body. Get down to the gym and build it!

# Muscle Science 101

*Hold on a second...before you start bench pressing, we need to talk a little science. Building muscle is a purely biological exercise, and if you want to get the best results, you need to understand how muscles work. That is the key to figuring out how to work them efficiently for optimal results. So let's take a quick look at the things you really need to know about how your muscles work and grow.*

## Protein – the Building Blocks of Muscle

Like most tissues in your body, muscles are built primarily from proteins that are either derived from the food we eat, or synthesized by our own bodies. Proteins are built from amino acids, and as human beings we use 20 different amino acids to build all the proteins we need.

It's important to remember that your body has to balance two conflicting requirements. On the one hand, it needs to synthesize proteins in order to build muscle and other tissue. On the other hand, it often has to break down body proteins to release energy to keep our bodies functioning. Because of this, our bodies alternate between two different states. We are in an anabolic state when our bodies



are synthesizing proteins and building muscle, and in a catabolic state when proteins are being broken down.

You don't have to be Einstein to understand that as bodybuilders, we want our bodies to be in an anabolic state much more than a catabolic one. However, both are essential to our well being.



## Muscle Fiber Types

The other important concept to understand is the difference between the main types of muscle fiber. Our skeletal muscle tissue fibers fall into these categories:

### Type 1

These are 'slow twitch' fibers which are darker in color. They respond more slowly and are designed more for endurance than strength. If you train to run a marathon, it is largely your slow-twitch fibers that will grow as you train.

### Type 2

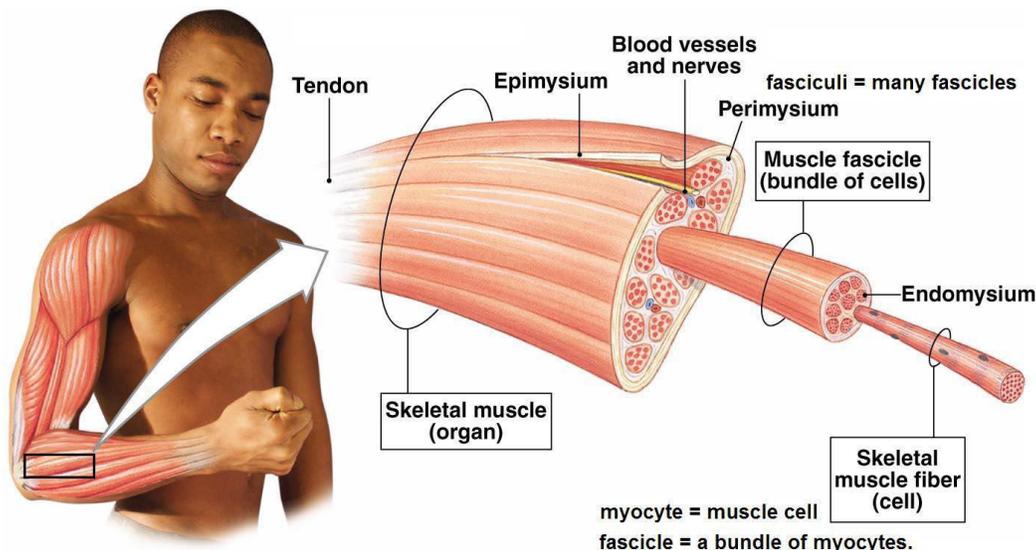
These are the white 'fast twitch' muscles that are mainly concerned with strength. When working with weights, you are primarily building these fibers.

The important fact to understand here is that in order to grow bigger muscles, you need to focus on working those Type 2 fast-twitch fibers. That is why lifting heavy weights with fewer reps works so well – you are focusing on getting a response from those all-important fast-twitch fibers.

## How Muscles Grow

Muscle fibers work like a light switch – either on or off, with no in-between. A fiber is either fully relaxed or fully contracted...it can't be half used. This means that in order to lift a heavier weight than you are used to, your body can't make the existing fibers work harder. Instead, it has to recruit additional muscle cells to help get the job done. That is why you need to keep pushing your limits in terms of the weights you use. You must force your body to recruit additional fibers to help cope with the over load.

However, it is essential to understand that your muscles don't grow while you are working out. Quite the reverse, in fact. As you work heavy weights, you cause damage to thousands of muscle fibers. But in the 24 hours after your workout, your body goes into repair mode to fix the damage. If you are pushing your limits, then the body will not only repair the muscle but build new fibers to help cope with the stress next time around.



# Body Recomposition Essentials

As a bodybuilder, you are trying to recompose your body. That is, you are trying to increase the amount of muscle mass, whilst at the same time trying to reduce the amount of body fat you carry.

The big problem is that these goals are contradictory. In order to burn fat, you need to put your body into a catabolic state. Yet to build muscle, you have to be anabolic. Hmm...tricky! Now it is true that there are some solutions to this, and you can balance the two reasonably well. But this situation is never optimal. You are always compromising on muscle gain in order to allow for fat loss.

The best solution, especially if you are new to bodybuilding, is to concentrate on getting lean first. Forget about building muscle in the early stages. Focus instead on a diet and exercise plan that gets your body fat down to an acceptable level. Once you have achieved that, switch into full-on muscle-building mode, and you will be amazed at the results you can achieve.





## Calorie Intake Management

If you want to build a truly awesome body, you are going to have to get used to counting calories. If you want to build muscle, you have to consume more calories than your body burns in daily life, in order to provide fuel for muscle growth. Yet at the same time, you don't want to consume too many calories, or the excess will be turned to fat.

That means we need to do some calculations. First of all, we need to work out your Total Daily Energy Expenditure (TDEE). That is, the number of calories your body typically burns in a day to fuel all your body processes.

To get that number, you need to start with your Basal Metabolic Rate (BMR) – the number of calories your body would burn if you sat around all day doing nothing. You can work this out using the [KatchMcArdle](#) formula.

Now seeing as you are not sitting on your butt doing nothing all day, you need to factor in the extra calories you burn in workouts and other activities. As a rough guide, you can take your BMR and multiply it as follows:

If you exercise 1-3 hours a week  
multiply your BMR by 1.2

If you exercise 4-6 hours a week  
multiply your BMR by 1.35

If you exercise over 6 hours a week  
multiply your BMR by 1.5

Do this calculation, and now you have your TDEE – the number of calories you burn every day. In order to build muscle, you ideally need to consume about 10% more calories than this in your daily diet. So multiply your TDEE by 1.1...and the result is the number of calories you should eat every day while bulking up.

Wow...I bet you didn't realize you had to do math to build muscles, right? But it really is worth taking the time to figure this out, because this will be the foundation of your whole muscle-building campaign. You can't build muscle without enough energy, and you will get fat if you eat too much. So it really is essential to get these numbers down before you hit the gym.

# Diet and Nutrition

OK, just one more subject to talk about before we start hitting the weights. In order to build muscle, you not only need to consume the right number of calories every day, you need to consume the right type. Bodybuilding doesn't start in the gym...it starts in the kitchen. So let's look at the fundamentals of what you need to eat.

## Macronutrients

The food we eat falls largely into three major groups, known as the macronutrients:

- *Protein*
- *Carbohydrates*
- *Fats*

We also need other nutrients such as vitamins and minerals in much smaller quantities.

Every bodybuilder knows that protein is essential to building muscle, as this is the raw material that muscles are made of. But filling yourself with high-protein foods isn't enough. Carbohydrates and fats both have vital roles to play in health and muscle growth, so we need to get the balance right. For a typical male bodybuilder, the ideal ratio will be close to:

Protein	30%
Fat	30%
Carbohydrates	40%



## Make the Right Choices

While bodybuilding nutrition is too complex to discuss fully here, we can talk about the general principles. To start with, you need to cut most of the junk out of your diet. Generally speaking, processed foods come loaded with excess sugar, fats and all kinds of unwanted additives. Where possible, stick to fresh food – it's nearly always going to be better for you. However, it is a good idea to allow yourself a treat meal or two at weekends. It will give you something to look forward to, and if you stay on track the rest of the time, they won't do you much harm.



## Protein

Protein is basically what you are made of, so it makes sense that you need to focus on eating the right proteins in the right volume. While supplements such as whey protein have their place, try to eat a good mix of natural protein – such as meat, eggs, soy, beans, tofu and seeds. It's a good idea to eat a mix of proteins in one meal. This can help your body synthesize proteins that you might otherwise miss out on.

You will have to experiment to find out what volume of protein is right for you. However, a good rule of thumb is to eat one gram of protein per day for each pound of bodyweight.

## Carbohydrates

Carbohydrates are the energy source that not only fuel your daily activities, but also fuel the process of muscle growth. So it is important that you get the right carbs at the right time. In particular, you need to consume carbs before a workout, to give you the energy to lift the weights. Similarly, you need some carbs immediately after a workout to help replenish your muscle's glycogen stores and make muscle growth and repair possible.

Carbs are divided into two groups – simple carbs and complex carbs. Simple carbs break down easily and quickly, so they are great for when you need an energy burst in a hurry. Complex carbs require more digestion, so they are perfect for providing a steady fuel source over many hours.

## Fat

Fat has been given a bad reputation which is not really deserved. While an excess of fat is clearly a bad thing, a shortage of fat is perhaps even worse. Current research shows that fats play a very important role in our metabolic processes, and we need to consume them in the right quantities. We now that fat plays a key role in managing the

hormones we need for muscle growth, so you don't want to cut back too far. The key thing is get the right balance. The only fat you really need to avoid is the 'trans fat' that is used in processed food to prolong shelf life. If you see a packet that refers to 'hydrogenated oils,' it's a safe bet that it has trans fat and is best avoided.



## When to Eat

Bodybuilders often drive themselves crazy trying to maintain strange eating schedules. The standard advice is to eat five or six small meals a day, rather than the three square meals that most people eat. The theory is that this provides a steady flow of nutrients to your body throughout the day, thus reducing the amount of time your body needs to spend in catabolic mode.

That's a great theory, but current research says it doesn't work so well in practice. For one thing some foods digest much faster than others. So if you are eating a mixed, balanced diet, the nutrients will be flowing through at different times naturally. Also, it seems the human body is very good at managing the nutrient flow, so as long as you eat several times a day, you should be fine.

The main thing is to work your meals around your schedule and your social life. If you are part of a

family that eats three meals a day, then you can eat with the family and not feel guilty. But if it suits you to eat several smaller meals, then go for it. Just make sure that those six small meals don't grow into six large meals that pack on too many calories.

However, there are some specific times when you really should eat. The first of these is first thing in the morning, when you haven't eaten for many hours. You need a good breakfast to switch your body back into anabolic mode, and to give you the fuel to get you through the morning.

The other critical time is pre-workout and post-workout. At these times, some simple carbs and fast-digesting protein (such as a whey protein shake) are important to top your body up with the right nutrients.

## Drink water

This is an important factor that is easily overlooked. Remember that your muscles are 79% water. So getting the right amount of water is at least as important as getting the right amount of protein. Drink plenty of fresh water throughout the day.

## Supplements

The array of supplements available to bodybuilders is bewildering. And the sad truth is that most of them do little or nothing to help you. So don't be tempted to spend hundreds of dollars a month on an army of supplements – most of them will just be a waste of money.



However, there are some supplements that can make a real difference:

### Whey Protein

Whey protein is the most popular supplement by far, and with good reason. If you want protein in concentrated form, whey is one of the best ways to get it. It has a very high bioavailability, which means that most of the protein can be used by your body. On top of that, it is absorbed quickly into the blood stream.

That's why whey protein shakes are a great way to top up with protein both before and after a workout. You get a quick boost of quality protein that the body can use in a hurry.

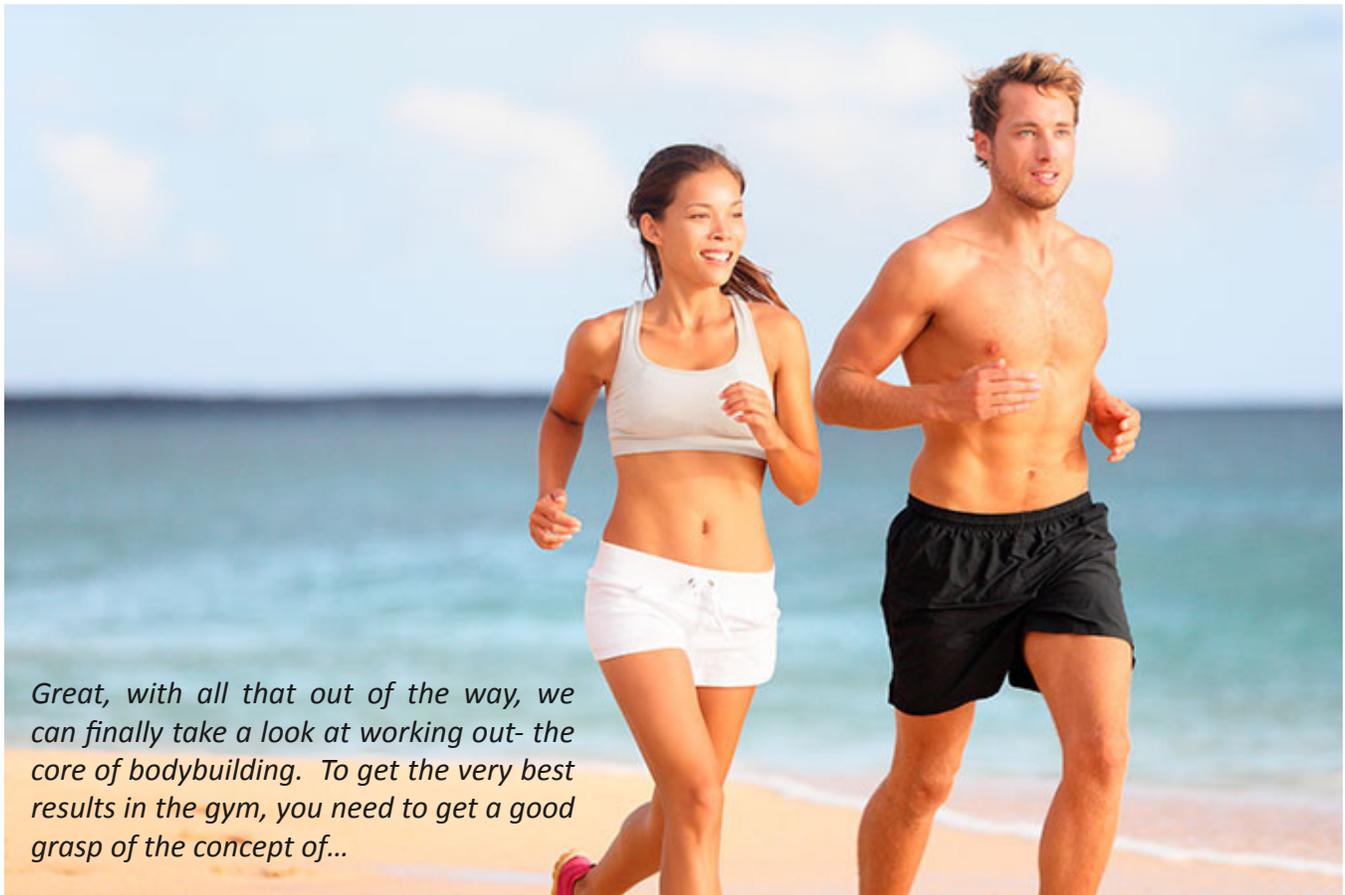
### Casein

Casein is a slower-acting protein that is also a good source of muscle-building material. Because it takes longer to be absorbed by the system, many bodybuilders take it last thing at night. This gives your body something to digest through your sleeping hours, to reduce the amount of time spent in a catabolic state.

### Creatine

Creatine is a chemical found naturally in the muscles. By topping up with creatine supplements, you are helping the whole muscle-building process to occur more efficiently, which leads to better muscle growth and development.

# Working Out



*Great, with all that out of the way, we can finally take a look at working out- the core of bodybuilding. To get the very best results in the gym, you need to get a good grasp of the concept of...*

## Progressive Overload

As we have already seen, you build muscles by forcing the 'fast twitch' fibers into a stressful situation where the existing fibers can't cope with the load. They need to recruit additional fibers to help take the strain. This is what building muscle is all about.

This is why weight training is not about doing endless reps, or giant sets, or working out for three hours at a time. All of that is a waste of time, achieving nothing except training your 'slow twitch' fibers for endurance. To build muscle, you need to lift heavier...and you need to progressively increase the resistance as your strength increases. That is, you lift heavier and heavier weights over time.

## One Rep Max

The starting point for a particular exercise is calculating your one-rep max. That is, the heaviest weight you can lift for as single repetition (rep) with good form. If you can manage two or three reps, you need to go heavier. Your one-rep max really needs to be pushing your limits.

## The Importance of Good Form Use Free Weights

Shifting the weight up any way you can is not good enough. Every rep must be done with good form – that is, using the correct, controlled movements to move the weight. If you find yourself squirming or twisting to get other body parts to help in an exercise, then your form is all wrong. At best you are wasting your time, at worst you could do yourself an injury. That's why it's good to have a personal trainer or a workout buddy to check your form and keep you on track.

Aim to work with weights that are around 80% of your one-rep max. You should then be able to do 4-6 reps, but no more. You need to train to failure, which is the point where you can't squeeze out even one more rep with good form. In this zone, you are really working your muscles and forcing those 'fast twitch' fibers to call for more help.



## Work the Big Muscle Groups

Once again, we are back to basic math. If you want to put on the greatest amount of muscle mass, you need to work the biggest muscles in your body. More than that, you need to use compound exercises that require several big muscle groups to co-operate.

That is why deadlifts, squats, bench presses and military presses produce astounding results – and why you should focus on these particular exercises. Isolation exercises have their place, but it is working the big, compound muscle groups that will make you grow the fastest.

It is tempting to think that the latest, hi-tech resistance machines must be better at working muscles than old-fashioned dumbbells and barbells. But surprisingly, this is far from the truth. While resistance machines certainly have their place, free weights win are your best bet for build both muscle and strength.

This is because when using free weights, your body gets no help from any machine. As well as pushing the weight itself, it also has to balance it and keep it moving in exactly the right direction. This not only works a wider range of muscle in the muscle group you are targeting, it also requires the use of additional stabilizer muscles to keep things where they should be. To put it simply, lifting a certain weight on a barbell is much harder than lifting the same weight in, say, a Smith machine. And because it is harder, you get much better muscle-building results.



## Vary Your Routine

Bodybuilders have traditionally been told to change their routine regularly in order to shock or confuse their muscles. While current research suggests that this is not necessary, there are still advantages to varying your routine perhaps every six to eight weeks.

First of all, there is the sheer boredom factor. If you keep turning up at the gym and doing exactly the same workout (apart from regularly increasing the weights, of course) every week, you will soon lose interest. Changing your routine gives you fresh challenges and keeps you interested. More importantly, a new routine allows you to work your muscles in a different way, so that you get a good all-round workout, rather than working some muscles at the expense of others.

## Avoid Overtraining

One of the biggest mistakes bodybuilders make is to assume that working harder, more often is going to be the best way to build muscle fast. In fact, it can actually have the opposite effect. After every workout, your body needs time to recover. When working challenging weights, you are actually causing tiny micro-tears in your muscle fibers. Muscle growth occurs when your body not only repairs these tears, but builds additional tissue to cope with the strain next time around.

It is essential to understand that muscle growth does not happen in the gym, but in the 24-48 hours after your workout. So you should never work the same muscle group twice on consecutive days. If you work your chest and your arms on Monday, don't be tempted to work those muscle groups again on Tuesday. Give them a day off to recover, and work your legs and your back instead. You should also include one complete rest day a week – no workouts, no cardio. Give your body a chance to become fully refreshed, so that you can start the next week fit and ready to go.

## Get Enough Sleep

A lot happens while you are sleeping, apart from your brain going on those crazy trips we call dreams. The whole point of sleep is to give your body time to recover from all the damage done during the day, including damage to muscle fibers. So you must get at least 7-9 hours sleep to ensure that all the required repair and growth has time to happen.

## Burn Fat through Cardio

While weights and resistance machines are great for building muscle, they are not ideal for burning fat. Of course, any exercise will burn calories, but you will burn a lot more doing cardio than doing bench presses. So to help you get the best body composition, with minimum fat and maximum muscle, be sure to include several sessions of cardio per week.

The best type of cardio by far is High Intensity Interval Training. This is a fancy name for a very simple procedure. All you do is alternate high intensity and low intensity bursts of cardio. So when using a treadmill, for example, you might do one minute of fast running, followed by two minutes of brisk walking.



Amazingly, this simple trick seems to fool our bodies into thinking we are running fast throughout the session, and we start burning fat like crazy to fuel the imagined demand. You can actually burn more fat in a 20-minute HIIT session than in a whole hour of running flat out. Crazy, but true!

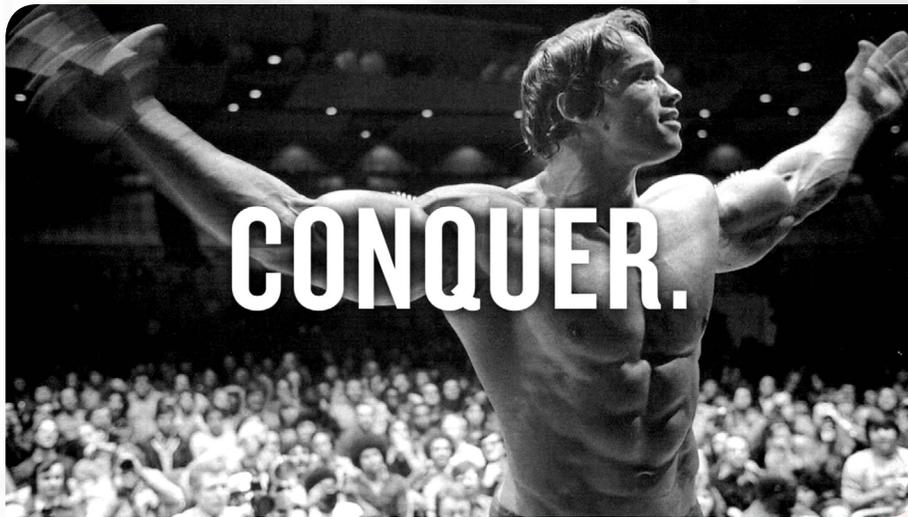
## Stretch Before and After Working Out

Some guys skip stretching altogether because it doesn't seem to be a very macho thing to do, and it cuts down on your workout time. Surely those precious minutes would be better spent bench pressing, right?

Wrong. Stretching not only helps you work out more effectively, it plays a big role in reducing the risk of injury. Before you start working out, you should warm up with a 5-10 minute dynamic stretching routine. That can be as simple as doing jumping jacks or running on the spot. After your workout, you should do static stretches to help keep your body supple and flexible.



# Motivation



I guess we've all been there. It's New Year's Day, and we start writing down resolutions that we absolutely going to keep this year. At the top of the list is working out at least three times a week. So in the first week of January, we join a gym and go five times a week. In February, we might manage three visits a week. By March, we have been distracted by some other shiny, new object...and we quit going altogether. But we keep paying the gym subscription, because we intend to get back to it one day, right?

Hmmm. That's a good way to empty your bank balance whilst piling on pounds of fat instead of pounds of muscle. To stay motivated, you really need to figure out why you are working out, and build a mental picture of what you will achieve. Promise yourself a worthwhile reward when you achieve it.

Make a commitment that is hard to back out of. Tell all your friends and family what you intend to do, and what you plan to achieve. Post your plan on Facebook. Tell your friends that if you start slacking, you want them to kick your butt until you get back into the gym. Better still, get a workout buddy so that you can motivate each other, and keep each other on track when you start to slide.

# Remember...You Can Do It!

When a poor farm boy from a small European country told his friends he wanted to go to America and become the bodybuilding champion of the world, they all laughed. But by the time Arnold Schwarzenegger had racked up more bodybuilding titles than anyone in history – and become Mr. Olympia no less than seven times - they weren't laughing so much.

Maybe you are not going to become a world-champion bodybuilder, but you can certainly build a body to be proud of. If you eat well and train regularly, it's a mathematical certainty. No-one can stand in your way, except you. You are very fortunate to live in an age where you have access to the latest scientific information on bodybuilding, plus the chance to work out in advanced hi-tech gyms.

**Make the most of the opportunity that life has given you. Go out and build those muscles, starting today!**

