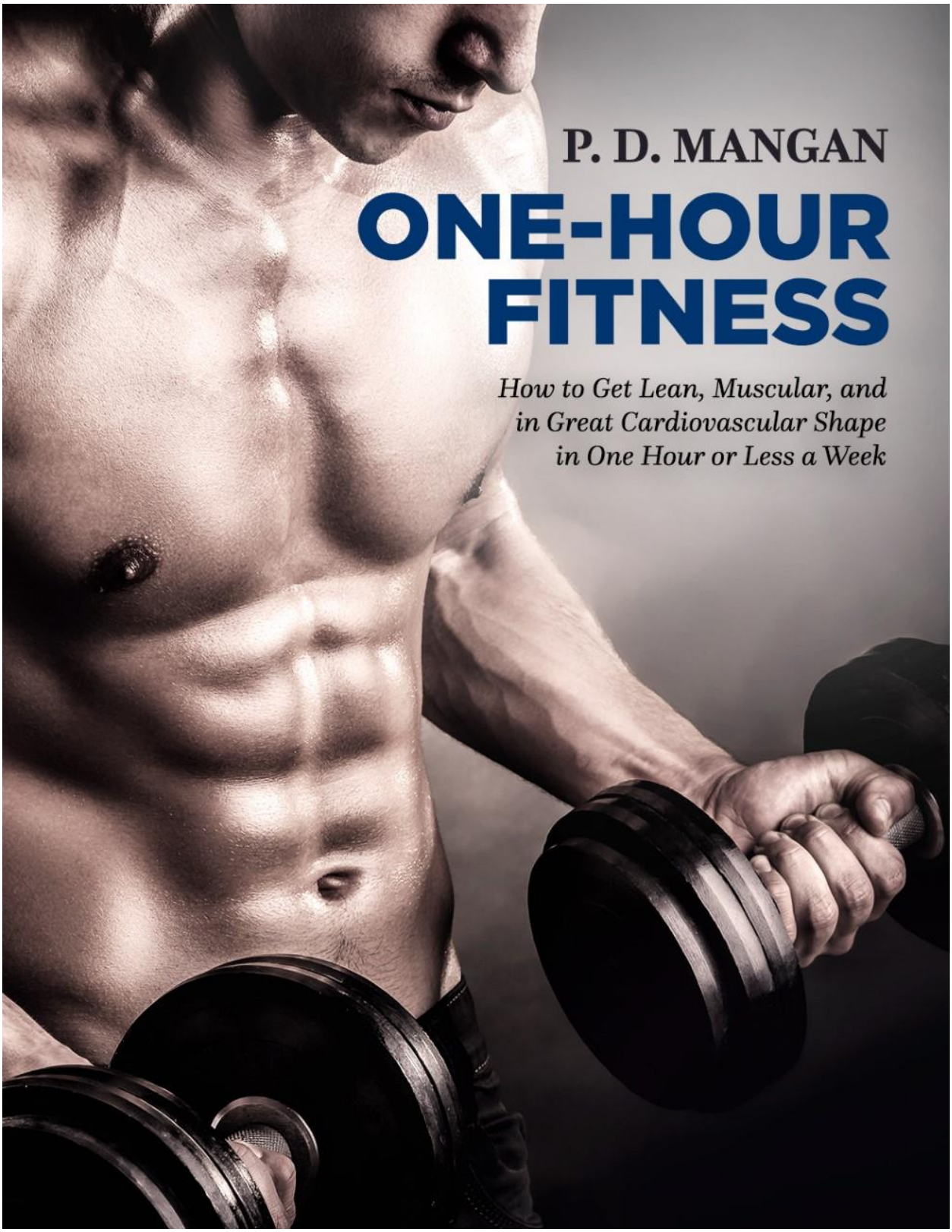
P. D. MANGAN
ONE-HOUR FITNESS
How to Get Lean, Muscular, and in Great Cardiovascular Shape in One Hour or Less a Week

# One-Hour Fitness

## How to Get Lean, Muscular, and in Great Cardiovascular Shape in One Hour or Less a Week

P. D. Mangan

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Before undertaking an exercise, nutrition, or fasting program, or taking any supplement, you should seek a doctor's advice.

Contents

# The Greatest Workout Ever

For most people who don't exercise, lack of time is the number one excuse.

That goes double for weight training, aka resistance training, weight lifting, or strength training.

Most people have the mistaken idea that getting into good shape, losing fat, and building muscle requires long hours in the gym, such as 3 to 4 or more weekly sessions of more than 1 hour each.

It does not.

I'll show you here how you can get in great shape in 2, one-half hour gym sessions weekly, for a total of one hour.

Furthermore, you don't need to any "cardio" either. The program I'll show you provides great cardiovascular conditioning without cardio.

## Who this program is for

This program is meant for two types of people:

1. Novice and wannabe trainees. If you know little about resistance training and are either just beginning or want to take it up, this book is for you. Many people walk into a gym without knowing *how* they should lift weights or do other resistance training, and unfortunately quality of instruction from the average gym employee isn't very good. As a result, they flail around, make little to no progress, and possibly quit because of that.
2. Veteran lifters who understand that conventional, high-volume training is not optimal. This realization does come to some experienced trainees – it happened to me.

## Resistance training vs aerobics

The mainstream has touted aerobic exercise (cardio) for the past several decades. While this was well-intentioned, aerobic exercise such as jogging or stair-step machines are not optimal, as they do next to nothing to build muscle.

As muscle loss is one of the prime symptoms of aging, you simply must do resistance training.

While health is of course extremely important, an attractive body, low in body fat and high in muscle, requires resistance training.

That applies to both men and women.

“Burning calories” via cardio doesn’t work, since it’s trivially easy to eat more than you burn. Your best shot at using exercise for fat loss and maintenance is to build muscle.

## Time requirement

While lots of people understand that strength training is an optimal exercise program, it’s much less well understood that this type of training does not require a large amount of time.

In fact, most people who train with weights are doing it wrong.

They spend long hours in the gym, doing multiple sets of each exercise several times a week.

This program will get you lean and ripped in far less time. You will do only one set of each exercise, and you will do each exercise only once or twice a week.

Note that this is not the same as exercising only one muscle group once or twice a week. In many cases, we'll be doing several different exercises for the same group of muscles, and some exercises overlap others in their effects on certain muscles.

## The Key: Momentary Muscular Failure

The key to low-frequency, low-volume, and low-time training is momentary muscular failure.

That means that on each exercise, you perform a set of repetitions until you cannot do another rep in good form, which is known as training to momentary muscular failure.

Most training programs use a fixed number of reps for each set, often 10 reps.

In this program, you choose a weight or resistance setting that allows you to do a number of repetitions, usually between 6 and 12 (although the exact number isn't important), until you simply cannot do another rep.

Choose a number of repetitions that will get you to muscular failure such that the entire set lasts between about 30 and 90 seconds. In this way, you will get good cardiovascular conditioning in addition to muscular growth.

When you go to muscular failure, you recruit the maximum number of muscle fibers and give muscles the maximum anabolic (muscle-growing) stimulus. Adding more sets (more volume) does little or nothing to increase anabolic stimulus, but does hinder recovery time. Diminishing returns.

Using momentary muscular failure in resistance training is known as "high-intensity resistance training", and was pioneered by Arthur Jones, inventor of Nautilus exercise machines, and notably championed by bodybuilders Mike Mentzer and Dorian Yates.

# Science-based weight training

Many bodybuilders and strength trainers recommend conventional, high-volume training, so let's look at what real science says about training for strength and muscle mass. Most of the following is adapted from "Evidence-Based Resistance Training Recommendations", by Fisher et al.[1]

## Intensity of Effort

When you lift weights, muscle fibers are "recruited", which means that as repetitions continue and become more difficult, the body demands that more muscle fibers come into play and perform work. At the final repetition, the point of failure, all muscle fibers possible are recruited, and this is the most important step in muscle growth (hypertrophy).

**Recommendation**: Train to momentary muscular failure in order to recruit all possible muscle fibers. Do not train to a fixed number of repetitions.

## Load and Repetition Range

If a set of repetitions is performed to failure, it makes little to no difference how much weight (load) you use. This comes with the caveat that there are certain limits to keep in mind; you can't build muscle by lifting a feather, no matter how many reps you do. For instance, if you choose a weight with which you can do 30 reps, or only 1 rep, these are unlikely to optimally recruit muscle fibers. But otherwise, studies have found little difference on muscle hypertrophy in lifting heavy weights (90% of max possible, or 90%RM), or lighter weights (30%RM), so long as the lift is done to failure.

**Recommendation**: Select a weight and do reps to failure, which is optimal for strength, muscular endurance, and muscle mass.

## Repetition Duration

Repetition duration refers to cadence, that is, the amount of time it takes to perform 1 rep, i.e. slow vs fast. Repetitions should be done at a slow enough pace that muscular tension is always maintained. Fast reps and using

momentum — jerking the weights around — do not maintain muscular tension.

**Recommendation**: Lift slowly enough to maintain muscular tension. I use a cadence of about 4 seconds up and 4 down.

**Rest Intervals**

This is the time spent between sets, and the preponderance of scientific evidence shows that it has little effect on strength gains.

For pure muscle growth, don't worry about rest intervals. Take as much or as little time as you like.

However, rest intervals may make a difference to cardiovascular conditioning. If you want to emphasize the cardiovascular aspect of training, short rest intervals are better.

**Recommendation**: Select your own rest interval for muscle growth. Use short rest intervals for cardiovascular conditioning.

Note that this rule applies mainly to conventional training, since in this program we will be doing one set per exercise.

**Volume and Frequency**

These refer to the number of sets and the frequency of training.

There's little evidence that performing more than 1 set of each exercise increases muscle growth, if that 1 set is done to failure.

There's little evidence to support any recommendation as to frequency. Some studies have reported no difference with a training frequency of once vs twice a week, other studies showing no difference between twice or three times a week. My own experience tells me that you can train *so long as you feel fully rested and recovered*.

**Recommendation**: Single set training is as effective as multiple sets for muscle growth. There's little scientific evidence for a recommendation as to frequency of training.

**Endurance Training and Lifting**

Some people worry that doing endurance training might hinder their lifting gains. There's no evidence that it does, so do endurance training also if that's what you want to do. However, additional training may hinder recovery time.

**Recommendation**: Endurance training doesn't hinder muscle growth.

### Range of Motion

Most trainers recommend you use a full range of motion for each rep in order to get the most growth. But a restricted range of motion appears to increase strength and size as much as full range.

**Recommendation**: Any range of motion promotes muscle growth and strength, so long as the lift is done to momentary muscular failure.

### Machines vs Free Weights

Another controversial area. Evidence directly comparing the two is meager, but machines do increase size and strength. A muscle doesn't know whether you're using a machine or a barbell.

Machines may make it easier to perform a lift to failure. For instance, trying to go to failure on a set of squats is asking for trouble, namely injury. Not a problem to do so on a leg press or hack squat machine.

Just about the only barbell exercise that I'm aware of that has no machine equivalent is the deadlift.

**Recommendation**: Use either machines or free weights as you wish.

### Training and Detraining

A mere 3 weeks of training is enough to produce muscle growth in untrained people.

And, 3 weeks of no training appears to have little to no effect on muscle strength. Most dedicated lifters don't ever take that much time off, but this shows that allowing adequate rest between training sessions, even of considerable length, will not hurt gains.

**Recommendation**: If you feel the need to take some time off, or just can't manage to get to the gym for a while, don't worry about it.

If you know anything about weight training, you can see that these recommendations differ sharply from standard training practice.

## Excessive exercise

Because exercise benefits health, many people have the mistaken idea that more exercise is always better.

The fitness industry – gyms, trainers, magazines, shoes and apparel – propagates this idea as a means to make more money.

The fact is, it is possible to exercise too much. In extreme cases (marathon running), it can damage health.

In most cases, excessive exercise will merely make you feel like crap all the time.

I've talked to numerous clients who exercised too much. They wondered why they felt so tired all the time.

Exercise requires recovery, and the more intense the exercise, the more recovery it requires. Walking doesn't require much if any recovery, while high-intensity exercise requires a lot.

You should *not* do high-intensity weight lifting daily.

This program gives you plenty of recovery time. You will work out a maximum of twice per week.

Older people typically require more recovery time than younger.

There's little evidence that training more often than this adds more muscle or gets you into better shape.

## Compound exercises

A very common strength training mistake is a focus on isolation exercises, such as biceps curls, leg extensions, calf raises, and triceps extensions.

Your main focus must be on compound exercises. (Some isolation exercises are acceptable and necessary, as I'll show you.)

Compound exercises are those that involve more than one set of joints. Examples are deadlifts, squats or leg press, overhead press, bench or chest press, pull-ups or lat pull-downs, dips, and rows.

This program focuses on compound exercises, which require the use of large amounts of muscle, and will get you in shape, grow muscle, and decrease body fat better than anything else in exercise.

Isolation exercises may do little in addition when you already do compound exercises. Nevertheless, adding some biceps curls to your routine won't hurt and might help some. Some muscle groups, such as the calves, can only be effectively exercised via an isolation exercise.

# The Program

The program consists of a two-way split. That means you will work half your muscle groups on one day, and half on another. There will be some overlap in muscles, however, as that is unavoidable and is not detrimental.

You will have at least 2 days rest and recovery in between each lifting session, although you can make it 3 days or more. Thus, there will be 2 sessions every six to eight days. Let's call it twice a week.

Each session will take you no longer than 30 minutes.

You can train at any time of day you deem appropriate. Afternoon training may provide slightly better results than morning training, while evening training sometimes causes lower quality sleep that night. But the most important aspect of time of day is that it should be convenient for you, so that you can work out regularly. So don't stress out what time of day to exercise.

## Attack your workout

When you're in the gym, it's time to get serious.

Put away your phone.

Don't socialize with gym pals.

Enter the gym as if you're entering a state of siege. You are there to build muscle and get in shape, not to mess around.

If you find lifting weights boring, change your attitude.

The gym is not for entertainment.

Doing resistance training to momentary muscular failure requires concentration and determination. If you stop just because you feel like it, or you find it boring, or you'd rather socialize, don't expect good results.

## Avoid injury

Most people consider an occasional injury to be an inherent part of lifting weights.

It is not.

Injuries are usually due to one or both of two things:

1. Using a weight that's too heavy, or
2. Using poor form to move the weight.

These two reasons are related.

When someone attempts to move a weight that's too heavy, poor form is often the result.

You should not use very heavy weights unless you are prepared and know what you're doing. You don't need heavy weights to build muscle.

In fact, you should not use a weight that feels awkward to control.

What weight should you use?

When you first start this program, choosing the right weight will require some trial and error. You should be able to perform at least a few reps relatively easily; ultimately, your aim should be for a weight that you can lift to momentary muscular failure in about 8 to 12 reps. Slightly more reps will not harm muscle growth and the fitness value of your workout; fewer reps may not provide enough time under load to get the most from your workout.

Leave the very heavy weights to the power lifters and serious bodybuilders.

You must also learn how to use good form.

Good form requires some experience and skill when using free weights such as barbells and dumbbells. If you're a beginner, be sure to learn good form and to start with weights light enough that will not get you injured.

Resistance training machines make good form easier and therefore pose a lower risk of getting injured. I urge beginners to use machines and transition,

if they want, to barbells and dumbbells after getting some experience and gaining some strength and muscle mass.

It's not strictly necessary to use barbells or dumbbells, ever. Most serious strength trainees do use them, however, and I use a mix of free weights and machines.

## Cadence

As mentioned, poor form while moving a weight is one of the main reasons people get injured in the gym.

And one of the main causes of bad form is the use of momentum, or jerking weights around with the whole body.

During each repetition, you must control the weight that you are moving in a steady manner.

The object of the repetition is to load the muscles with weight and move it through the distance you want.

The amount of loading of the muscles can be characterized by time under load, or time under tension.

For example, if you use a chest press machine to perform 10 reps of some weight, moving the weight until momentary muscular failure, and each rep took 8 seconds, your time under load was 80 seconds.

To avoid the use of momentum, and therefore to maintain good form, move the weight slowly.

Moving the weight slowly means a duration of around 4 seconds up or out, and 4 seconds down or back. Some trainers advocate as much as 10 seconds in either direction, known as “super slow”.

You need not do super slow, but 4 seconds should be considered a minimum.

Do not pause at a position that allows you to rest during a rep. For example, if you are performing a leg press, the fully-extended position allows you to rest

the muscles you're exercising. The movement should be a smooth one that keeps the muscles at work and under load at all times during the set.

## Warming up

Warming up before you lift weights may be a good idea, though it's overrated.

Warming up is mainly important if you're going to be lifting very heavy weights, but in this program, we won't be doing that. See above.

In my own workouts, I warm up carefully before doing deadlifts, because that exercise involves a barbell and your spine, and has a higher than average ability to injure you.

For all other exercises, I just jump in, with no warm-up.

A warm-up, should it be desired, can consist of the same exercises you are about to do, but with considerably lighter weight.

Light calisthenics, such as jumping rope or jumping jacks, also make for a decent warm-up.

Stretching is unimportant.

## Minimal rest time between sets

This program features minimal rest time between sets.

When you finish a set, you should move to the next one as quickly as possible, pausing only to break down equipment, rack weights, or to load weights for your next exercise.

In some cases, you will be so out of breath after a set that you simply must pause a short bit to catch it. This is often the case for me after a set of squats or a set of deadlifts.

But other than that, keep moving.

Minimal rest time between sets is another aspect of this program that differs from traditional strength training programs, which often feature long rest periods between sets.

In our case, we want to get good cardiovascular conditioning from our workouts in addition to muscular gains and fat loss.

In effect, we're performing high-intensity interval training (HIIT), but with weights.

If you rest too long between sets, you lose some of the cardiovascular aspect of this program.

Remember, attack your workout.

You can also add a metabolic finisher to the end of your workout, which ensures you didn't leave any cardiovascular gains on the table, and we'll discuss that later.

This program both increases muscular size and strength, and increases cardiovascular fitness, so keep that in mind. You don't need to do any other exercise if you work at this program properly.

## Cardio

You don't need to do cardio, or aerobic exercise, on this program.

That's because cardio is a highly overrated form of exercise that will do little to nothing to increase your fitness if you're working out using this program.

Cardio (aerobics) doesn't increase muscle mass or strength, and improving/maintaining those is one of the most important things any exercise routine can do.

With cardio, the only way to increase fitness is to perform the exercise for a longer duration, since cardio is by definition low to medium intensity, steady-state exercise.

In contrast, in this program we are always working up against our highest level of fitness, and therefore improving it.

Resistance training done in a high-intensity style increases heart and respiration rates, and robustly increases VO2max, a measure of overall cardiorespiratory fitness.[2]

As I've mentioned, we can also incorporate a metabolic finisher at the end of our workouts, to ensure that we've achieved an optimal cardiorespiratory workout.

Cardio can actually cause muscle loss, and it can lead to injuries, especially of hips, knees, and feet.

Don't waste your gym/workout time on cardio. You're in the gym to build muscle, workout at high intensity, and to have the most effective and efficient workout possible.

## Walking

While this program has you doing two workout sessions a week (or sometimes, one, depending on your goals), you should not be sedentary on rest days.

Being sedentary means worse health, even if you exercise at other times.

However, you do also need rest. Recovery from intense resistance training sessions is a must.

That's why you should walk on your off-gym days.

(Or do some other low-intensity exercise, such as leisurely bicycling.)

Walking improves your health robustly. It will increase insulin sensitivity, so you have an easier time controlling your body weight.

Keep in mind that walking won't increase your cardiorespiratory fitness, *if* you already do this program, since it is not an intense enough exercise to increase the fitness of someone who is already in good shape. (If it makes more sense, think of a cross-country skier who goes walking on off-training days. Walking will not increase his fitness.)

Walking prevents you from being sedentary, by definition.

How far should you walk?

Generally, you should walk for at least 30 minutes, and more is acceptable. (But don't do so much that it hinders your recovery time.)

You can also walk more than once a day, say in the morning and evening, if it suits you. I often do this.

Walking has other benefits too. Especially if your walk takes you into green and natural settings, it can clear your mind and improve your mood.

Walking in the sunshine is a great way to treat a depressed mood.

## Discipline

Many people have asked me how I stay in shape. I'm 63 years old, and while not a bodybuilder or an athlete, I'm probably in the top couple of percent of men my age in terms of shape. High muscle mass and low body fat.

The answer is discipline.

It's not that hard to be on top of the game.

Only 12% of Americans are metabolically healthy, which means 88% are overweight, obese, have impaired glucose tolerance, or some combination of these.

Just put some effort into your life and you can rise to the top.

The methods used in this program are simple. But for many, they are not easy.

The key is to have your routine on lock.

If you have a designated gym day, you should not miss it except for illness.

(By the way, if you have even a minor illness, such as a cold, don't work out. Your body is telling you to rest, and it's massively counterproductive to stress it when you're ill.)

Diet is important to being in shape, and we'll discuss that later in this program, but in terms of discipline, you simply should not eat just anything that's put in front of you.

It may be tempting to get into that box of donuts in the break room, or to have a plate of pasta when you're out at a restaurant, but you should resist the temptation.

Diet is an important example of discipline, since we eat several times daily. If you don't have the discipline to eat right, your program will quickly fall apart.

In diet, discipline is not a matter of resisting hunger but of making the right choices, since if you eat right, you won't be hungry except as appropriate.

Developing discipline requires changing bad habits.

At first it may be difficult, but after a while, it becomes a way of life.

Simply don't do things that hinder your progress, make you less fit, cause you to gain weight, etc.

Go to sleep at nearly the same time every night, and get an adequate amount of sleep.

If what others are doing conflicts with your gym and health goals, ignore them, or find a new social set.

Doing what average people do gets you average results, and in the U.S., the average person is overweight or obese, sedentary, and in poor health, living with chronic illness.

If that describes you, you must change to get better results. And you must change permanently.

So, get your routine on lock.

Make your new habits a way of life.

Many people have asked me questions like, "How can I ditch my sugar addiction?", or "How can I get motivated to go to the gym?"

You can only do these things yourself. I can show you the way forward, but you must put it into practice.

The only person who can make you quit sugar, or go to the gym, is you.

The workout program here lasts only 30 minutes or so at a time, but it's tough.

Personally, I enjoy it.

But if you don’t enjoy it, you may have difficulty adhering to it.

You could look at it as the gateway to better health, an attractive body, and greater enjoyment of life.

You can learn to enjoy it.

Resistance training, and other forms of exercise, raise levels of brain chemicals (such as BDNF and dopamine) and elevate your mood like nothing else.

Try it and you’ll see.

## The Split

This program features a two-way split.

Workout 1: back, chest, and arms.

Workout 2: legs, shoulders, traps.

Workout 1 consists of the following exercises:

- Deadlifts
- Rows
- Pull-ups or pull-downs
- Chest cable fly
- Bench or chest press
- Dips
- Biceps curls
- Triceps press down
- Metabolic finisher of your choice

Workout 2 consists of the following exercises:

- Leg extension
- Squats or leg press
- Calf raises
- Dumbbell lateral raise
- Overhead press, barbell or machine
- Shrugs, barbell or dumbbell
- Chin-ups, weighted
- Dips
- Overhead cable triceps extension
- Curls
- Metabolic finisher of your choice

Each exercise is one set to failure, or you may do them as a single drop set. (See below for drop sets.)

I often do some exercises on both split days, for example, curls, triceps extension, and dips.

Note that we're not doing any direct abdominal exercises. They're not necessary. Everyone has abs, they're just hidden by body fat, which has led to the true expression, "Abs are made in the kitchen, not in the gym."

Each session should not take more than 30 minutes, and in some cases can be done in much less time.

The sessions are intense, however.

You should leave the gym thinking you can't take any more.

Almost literally shaking.

These exercises are some of the most effective ones available. Don't spend your gym time with exercise balls, or treadmills, or ineffective strength training exercises. Do the exercises, like these, that give you the most bang for your buck.

On a few of these exercises, going to failure may be difficult or impossible. These are barbell exercises, namely deadlift, squat, and bench press.

You must take care in using good form on the deadlift, as with any exercise, so do not ever deviate from good form here. If your last rep means that it will make you lose good form, don't do it, just stop.

On the squat, you risk getting stuck in a down position if you can't complete your last rep. Some gyms have dedicated squat racks with safety bars that protect you from this problem, but not all do. Getting stuck in the down position in a squat is unsafe, so don't risk it.

The leg press using a machine is safer for going to failure than on a squat.

The same cautions apply to the bench press. Getting a loaded barbell stuck on your chest and being unable to remove it is an unpleasant and dangerous experience. Using a chest press machine to get to momentary muscular failure is much safer.

Is there anything to choose between different forms of exercise that work approximately the same muscles? For example, leg press vs squat, or chest press vs bench.

These exercise variations mainly represent a choice between free weights – barbells or dumbbells – or a machine.

While there are many barbell purists, I am not one of them.

The squat, for example, is a great compound exercise,  but it requires some skill to perform well, especially at higher weights, and it has a greater than average tendency to cause injury, since it loads the spine with weight. Many people who just want good health and reasonable muscle development will find that the leg press, done on a machine, gives them acceptable results, is easier to use with less skill involved, and is safer.

The same argument holds for bench press vs machine chest press. I don't do barbell bench press myself.

The only barbell exercise that doesn't have a close machine equivalent is the deadlift. Many dedicated gym trainees place a premium on deadlifting very heavy weight, but I have backed off from this practice myself. I prefer to deadlift at a weight that has less chance of injuring me, and do more reps instead. If you're a beginner, start light and concentrate on doing more reps.

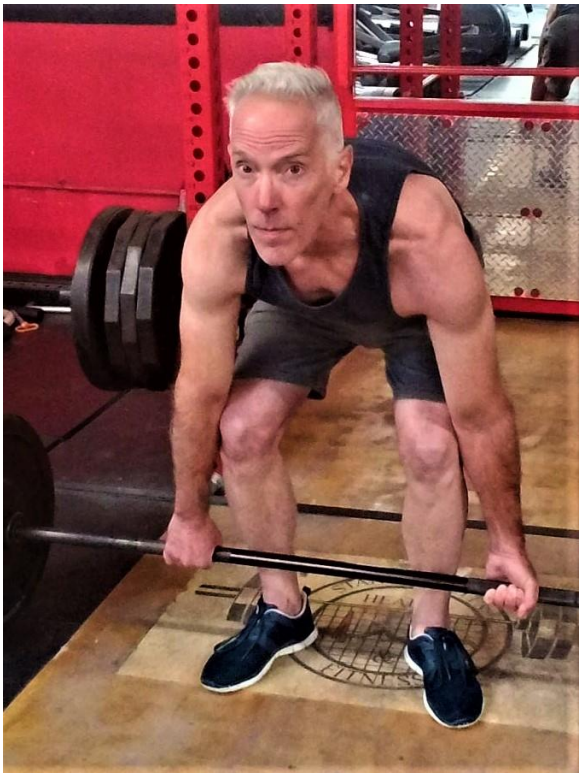
# The Exercises

If you're a beginner, you need to know what these exercises are. If you have some experience with resistance training already, feel free to skip this section.

## Deadlifts

Deadlifts consist of lifting a barbell from the ground to just below waist height. Essentially, you crouch down, knees bent, torso at a forward angle but with spine straight, and lift the weight by straightening your body into the upright position.

Deadlifts work the muscles of the legs, buttocks, and back primarily, but also many others such as the trapezius.



# Rows

Rows can be done in many different ways, such as T-bar rows, barbell rows, or machine rows, the last being the easiest to learn for a beginner.

You do a row by pulling a weight toward your body.

Rows work the large muscles of the back, as well as arms.

Below is a variant of T-bar rows. Most gyms have machine rows as well, more suitable for beginners.

# Pull-ups or pull-downs

Pull-ups are a familiar exercise, and are done by grasping an overhead bar with palms facing forward, and pulling one's body weight up so that the chin gets to the height of the bar.

Pull-downs are done on a machine. One pulls down on a bar attached to a weight.

Both exercises work primarily the lats, the large muscles on both sides of the back.




Pull-downs

# Chest cable fly

This exercise is done on a machine. You stand between two cables with handles that are attached to weights, arms extended to the side, and pull the cables forward and to the center of your body. Alternatively, there are machines (“pec deck”) in which, seated, you pull weights from the side forward and to the center.

Works chest and shoulder muscles.

# Bench or chest press

Both exercises consist of pushing a weight from the chest forward. In bench press, you lie on a bench, face up, and move a barbell from a rack, bring it down to chest height, and then up until arms are fully extended. Chest press is similar but uses a machine. As noted, bench press can be unsafe, with the possibility of being unable to move a bar from your chest and being stuck. I recommend the machine chest press for that reason; I never do bench press myself. (Purists will scoff at this, but who cares.)

Bench and chest press work chest and shoulder muscles. Below is the chest press.

# Dips

In this exercise, you grip two parallel bars and lower yourself (body weight), then raise yourself up again.

Dips work the chest, upper back, and triceps.


# Curls

This exercise consists of holding a barbell in front of you, arms extended down, and raising (“curling”) the bar upward until your arms are about at chest height. There are many variations of this, including with dumbbells, machines, or “preacher” curls done with a padded stand.

Curls work the biceps muscles in the upper arms.


# Triceps press down

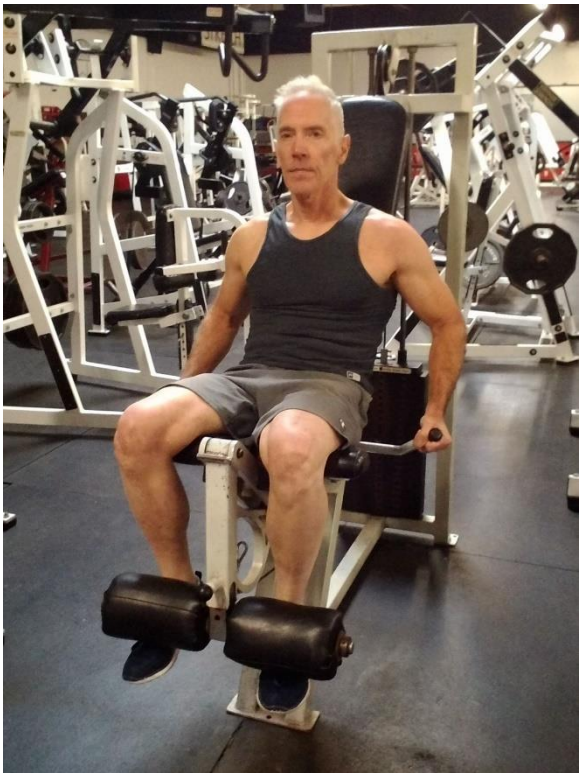
This exercise uses a machine, in which you stand, grasping a handle attached to a weight, and press the bar down until your arms are extended downward in front of you. Many variations exist, such as with barbells, or facing away from the machine and pulling the weight from overhead forward.

This exercise works the triceps, the muscles at the back of the upper arms.

# Leg extension

This exercise is done on a machine in which, seated, you place your lower legs behind a weight, and extend your legs until they're straight out in front of you.

Works the thigh muscles ("quads").



# Squats or leg press

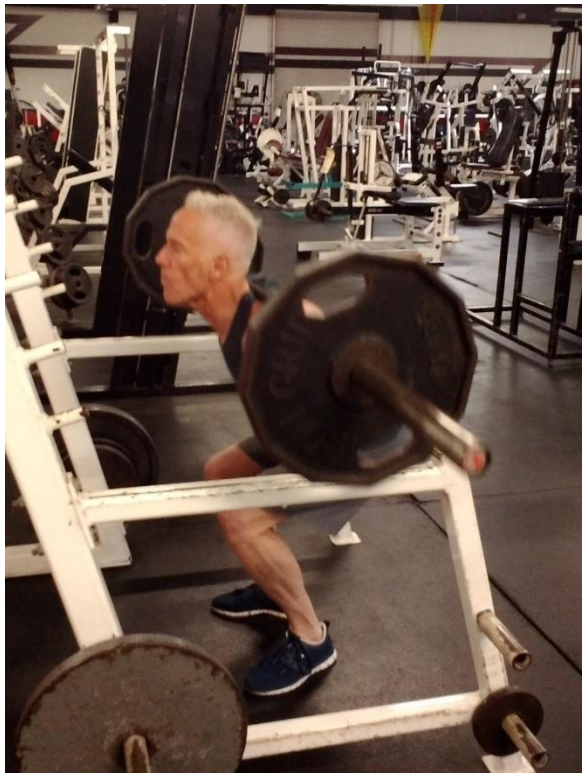
In the squat, you stand at a rack in which a barbell is at shoulder height, get underneath the barbell so that it rests on your upper back and shoulders, then squat down until thighs are at least parallel to the floor, then straighten back up. There are machines that do similar moves ("hack squats").

Leg press is done on a machine on which, seated, you start with legs in a bent position, and press a weight forward until legs are extended in front of you, then smoothly return to starting position.

Squats require some skill to learn, and because the weight is on the upper back, have some potential for injury, especially to the spine. If you're a squat beginner, start with a light weight, until you gain in strength and skill.

For this reason, the leg press is suitable for beginners and anyone who doesn't care about being a barbell purist, although the two exercises are not completely equivalent, squats being more difficult in terms of exertion.

Squats work the thigh muscles (quads) and the buttocks ("glutes"). Leg press puts more emphasis on quads alone.



# Calf raises

This exercise is done on a machine, with seated or standing variations, in which the feet are extended and retracted.

Works the calf muscles on the back of lower legs.

# Dumbbell lateral raises

Standing, grasp a dumbbell in each hand, and raise them from the side of the body out and up, and slightly forward, until your arms are parallel to the floor.

Works the shoulder muscles (deltoids).

# Overhead press

Using a barbell or a machine, you move a weight from shoulder height to overhead, arms extended above you.

Works the shoulder muscles (deltoids).

Machine overhead press

# Shrugs

In this exercise, grasp a barbell with arms extended down and in front of you, and shrug your shoulders slowly while keeping arms straight down, then return. Or this can be done with a dumbbell in each hand.

Works the trapezius muscles (“traps”).

# Chin-ups

Chin-ups are similar to pull-ups, but are done with palms facing you. Alternatively, using a pull-down machine, do the pull-downs with palms facing.

Works the back and biceps.

Chin-ups

# Progression

Progression is the principle of increasing the amount of work you do as you get stronger.

By using progression, you will always be improving and gaining in strength and muscle mass.

If you don't use the principle of progression… you won't make any progress.

The beauty of high-intensity training is that, by performing each set to momentary muscular failure, you are always pushing to the limits of your strength, and therefore always exerting enough effort to lead to improvement.

In our system of training here, there are two ways to increase effort and to progress:

1. Perform more repetitions
2. Add more weight.

1. Perform more reps

   Adding more reps should be your first choice in progression. If you begin with the ability to do 8 reps with a certain load, and can do 9 until failure the next time you do this exercise, you have progressed. When you get to the point of being able to do 12 to 15 reps, you may want to add more weight, although adding even more reps is acceptable.

2. Add more weight

   When you add weight, add no more than about 10% of your current load, which will be sufficient to increase the amount of work you do in a set. Adding a higher amount of weight than this may lead to injury if you can't handle the exercise in good form.

# Gainz

When you first start this program, if you've never done any kind of resistance training before *and* you are diligent and eat right, *you can expect big, fast gains in muscle size and strength.*

Beginners often add 10, 20, or 30 pounds (4.5 to 13.5 kg) of muscle in the first year of training.

I added 30 pounds in my first year, although I was skinny when I started, so I had a low baseline.

If you have both muscle to gain and fat to lose, your weight may not change a lot, but by losing fat and gaining muscle, your body composition can improve dramatically, leading to far better health, more energy, and a more attractive body.

As you become more experienced, gains in muscle mass and strength become more difficult. This makes perfect sense; no tree grows to the sky. In the second and third years of dedicated training, you may add only 5 to 10 pounds of muscle, and beyond that, gains become more difficult, assuming the same diet and other aspects of your overall routine. You approach your genetic limits to muscle mass.

# Metabolic finishers

A metabolic finisher is a set or interval of high-intensity training at the end of your workout. It's designed to increase heart rate to a high level and therefore to increase cardiorespiratory fitness.

Depending on how hard your weight session worked you, and on your condition, you may or may not want to do a metabolic finisher.

I want to make sure that I've had the best cardiovascular workout, so I always add one. High VO2max, a measure of cardiorespiratory fitness, is highly correlated with long life and good health.

One of the simplest metabolic finishers uses a stationary cycle. Set the cycle's resistance relatively high, so that it takes more than a little effort to push the pedals.

Then cycle all-out for 15 to 20 seconds.

At the end of this single bout, you'll be nearly breathless and have a high heart rate, assuming that it's done at the tail end of your resistance training session.

Other forms of metabolic finisher include rowing machines or other aerobics equipment that your gym might have. Or weights can be used, for example a set of clean and press with a light barbell or dumbbells. Clean and press involves picking a weight up from the floor, moving it to shoulder height, and then lifting it over your head.

Another good metabolic finisher is light deadlifts for reps. For example, use a weight about half of what you can normally lift, and do 15 to 20 reps. In my case, I can deadlift 270 pounds for 2 or 3 reps. For my metabolic finisher, I use 135 pounds, and do 15 to 20 reps.

Whatever metabolic finisher you choose, the key is intensity.

# Drop sets and rest-pause training

We've discussed the importance of moving the weight to momentary muscular failure.

Failure can be difficult to achieve, since it might be hard to know where you could have done another rep. In theory, you keep pushing (or pulling, etc.) until you literally cannot move the weight.

But due to the intensity of doing so, with your body telling you to stop, many people have difficulty achieving a lift to failure.

Is there a way around this problem?

One method that can help is the use of drop sets.

A drop set is one in which you lift to failure – or at least, what you think is failure – and then decrease (drop) the weight. You then lift again to failure, and decrease the weight again, etc. This can be done 3 or 4 times.

It's important not to rest in between dropping the weight down. If you're using a barbell, some rest is unavoidable, since it takes a few seconds to remove weight plates. On a resistance training machine, changing the weight may take only a second or two. With dumbbells, it's often a matter of replacing them in the rack and grabbing the pair next lowest in weight.

See the accompanying video of machine pull-downs for an example of a drop set.

How much should you decrease the weight in a drop set? Ten to 15%.

You will not be able to do the same number of reps when you drop the weight. For example, if you do 8 reps to failure, then drop the weight 15%, you may be able to do only 3 or 4 reps at the lower weight. That's OK.

Drop sets work. At the end of one, you will know that you've pushed the muscle(s) to their limit.

That's what causes growth.

I do drop sets on most of my exercises.

They’re intense.

*Rest-pause* is another, similar method. In rest-pause, you move the weight to failure, and then rest the absolute minimum amount of time required to be able to do another rep. This is usually 5 to 10 seconds. This may be done several times.

I typically use rest-pause for deadlifts, shrugs, and weighted chin-ups, where it’s difficult to drop the weight quickly.

Both of these methods are simply ways of getting to complete muscular failure, and should be seen as one long set, not multiple sets. Once you take the load off of a muscle, it begins to recover, so use minimal time to change the weight and continue the set.

# Recovery time

When you lift weights to failure, you place them under a stress. It's in recovery from stress that muscles grow and become stronger.

Muscles grow outside the gym, not in it.

You must allow plenty of recovery time to get the most out of your program. That's why this program has you working out only twice every 6 to 8 days.

Some people may need more time to recover. If that's you, by all means take that time.

You gain next to nothing, and may even harm muscle growth, by working out more often.

People who lift weights tend to believe that you need far more volume and frequency of exercise to build muscle than is really necessary.

They also neglect the factor of rest and recovery, and believe that you need less than is true.

Lifting weights too much and/or too often is a common mistake.

Serious bodybuilders who use high-volume training very often also use performance-enhancing drugs such as anabolic steroids, which allows them to train more frequently. That scenario is very highly *not* recommended.

In fact, if you want health benefits from resistance training, but aren't particularly concerned about getting jacked (that's bodybuilding jargon for "very muscular"), you could work out only once a week and get quite satisfactory results.

A once-weekly workout could consist of a whole-body routine, like this:

- Deadlifts
- Squats or leg press
- Lat pull-downs, or pull-ups
- Overhead press
- Rows
- Chest or bench press.

Or you can do a two-way split like the routine set out above. In that case, each weekly workout consists of one split.

Lack of sufficient recovery time leads to overtraining and poor quality of life, mainly from fatigue.

If you feel overly fatigued for many days after a workout, you may be overtraining. Add some more rest days in between workouts. And ensure that you're eating enough protein.

# High-intensity interval training

High-intensity interval training (HIIT) is a form of exercise in which you exercise at high intensity for a brief period of time, from 15 to 30 seconds, rest or exercise at low intensity for a minute or two, and then repeat.

These intervals may be done an indefinite number of times, although for most people, a set of 5 or 6 intervals is more than sufficient for excellent cardiovascular conditioning.

In fact, some research suggests that even one interval is all that's necessary. Hence that's why my program has one metabolic finisher at the end of the resistance training session.

HIIT can be looked at as a set of metabolic finishers.

The same caution about overtraining applies to HIIT as to resistance training.

Working out at high intensity requires ample recovery time.

While my program here does not include HIIT as a necessary part, some people may want to take their conditioning up to the next level, and HIIT is a great way to do that.

For most people doing resistance training twice a week, a weekly session of HIIT added to this may be excessive. For others, it may not be excessive. If you're interested in adding a HIIT session, you can give it a try and see whether your exercise in total leaves you overly fatigued.

For those doing resistance training once a week, adding a weekly HIIT session is less likely to be excessive.

However, I urge you to take the issue of excessive exercise seriously.

Many people who want to be in top condition overdo it. I've talked to too many people who were exercising intensely several times a week and who felt overly fatigued. Their quality of life suffered and they felt depressed. I have personal experience with it too.

HIIT programs vary tremendously based on the type of exercises done and the number of intervals.

Almost any exercise that can be done with high intensity qualifies for a HIIT program.

For example:

- sprints
- sprint stationary cycle
- push-ups
- jumping jacks
- burpees
- jump rope
- low-weight deadlifts
- clean and press, or just clean
- etc.

For example, perform any one of these exercises at all-out high intensity for 20 seconds, then walk for a minute or two. Repeat.

Exercises can be mixed or matched. For example, a set of jumping jacks, rest, a sprint, rest, push-ups, etc.

The number of intervals you perform will also vary according to type of exercise. For example, jumping rope is not as intense as a sprint, so you may want to do more intervals than when you sprint.

A word on sprinting: this exercise is one of those more prone to causing injury. If you sprint, ensure that you are adequately warmed up, are using proper footwear, and work up to all-out sprints before you attempt them.

In reality, if you practice this one-hour fitness program as I've described, and you lift with high intensity while doing compound exercises, you may not need to add any HIIT (other than the prescribed metabolic finishers) for good cardiovascular conditioning. I personally rarely do separate HIIT sessions, and get my cardiovascular conditioning via the standard one-hour fitness program that I've outlined.

I suggest a HIIT session once weekly for those who do resistance training only once weekly, or for those who are or want to be exceptionally athletic and fit and to take their training to the next level.

HIIT has been shown to be more effective than steady-state aerobic exercise (cardio) in increasing cardiovascular fitness, with trainees doing HIIT for only a few minutes a week improving their fitness as much as trainees doing cardio at 3 weekly sessions of 45 minutes each.

## Programs and systems

While I've referred to the routine above as a program, and it is, people's circumstances and conditions differ widely.

One person's goal may be fat loss, for another, muscle gain; for another, both; for yet another, just staying in good health.

Someone else may have an injury or a health problem; others may have limited time to work out.

One person may be young and have good recovery ability and time; another may be old and need much more time to recover between workouts.

Therefore, the program above is meant to be a guide.

You can change many variables, such as frequency of workout and which exercises you do, within reason. (You won't build your chest muscles unless you do a chest or bench press, for instance.)

But as a system, certain aspects are invariable.

The most important is moving the weight or resistance to momentary muscular failure.

Another very important aspect is using compound, rather than isolation, exercises.

Besides those, you need to have a sense of what's right for you. If you work out often, for example, and feel too fatigued too much of the time, you may need to cut back on frequency of workouts, or the amount of exercises you do in each workout.

If you have an injury of some kind, certain exercises may be difficult or impossible to perform, although there may be substitutes.

This program will work well for the vast majority of people.

But if it doesn't work for you, you can certainly play around with it and change it to suit you.

Keep in mind that your results may vary. Not only do your workouts contribute to your success (or lack of it), but also your diet, your sleep, and your genes.

# Diet

To be lean and muscular, diet is extremely important.

You simply must get your diet on track to get the most out of this program.

To build more muscle, two things are required: more protein, and more calories.

The amount of protein needed to build muscle has been the subject of countless studies, and the consensus is that 1.8 grams of protein per kilogram of body weight may be necessary.

However, more protein is not unhealthy, and promotes satiety, so that can help you both build muscle and stay lean.

Sources of protein that come from animals are more effective at building muscle than plant protein sources because they contain all of the essential amino acids.

High-protein foods include meat, fish, eggs, cheese, yogurt, and whey.

Foods such as roast beef, tuna, turkey, chicken breast, and eggs have a high ratio of protein to calories. They should be among your first choices for fat loss.

Fattier cuts of meat, such as ground beef, ribeye steak, sausage, and bacon are next in the ratio of protein to calories. They are fine if you don't need to lose fat.

Finally, foods with a low ratio of protein to calories include cream cheese, cream, butter, avocados, olives, and nuts. If you want a lean, muscular body, avoid them. I'm not saying they aren't healthy foods, but they're not terribly conducive to low body fat and high muscle mass.

Whey provides fast protein and is great for drinking right after your workout. It's low in calories and high in protein. Fast protein means it's easily digestible and leads to a high level of essential amino acids, the building blocks of muscle, in your bloodstream right at the time when muscles can most use it and are primed for growth: right after a resistance training session.

You can drink around 30 grams of whey protein immediately post-workout, and you can also take it on off-gym days to increase your protein intake. While you can use whey as an occasional meal substitute, keep in mind that it is a processed food, and your diet should consist of mainly whole, minimally processed foods.

## What to eat before and after a workout

What you eat before or after a workout is less important than keeping a healthy diet all (or most) of the time.

You need not eat anything at all before a workout.

If you eat and adapt to a low-carbohydrate diet, you burn more fat than glucose.

So, if you are adapted to such a diet, and you don't eat, you are burning body fat, which for most people is a very good thing.

Some authorities recommend eating before a workout in order to have more energy, which enables you to reach higher intensity when doing resistance training.

Personally, I've never been able to tell a difference in my energy levels whether I exercise with or without eating first. In fact, I've fasted for 20 hours and then gone to the gym and had great workouts.

However, if that's not your experience, by all means eat before a workout if you want.

If you do intense exercise (like what we're discussing in this book) and you have been fasting, you should eat afterwards, and include a substantial amount of protein, 30 grams or more, in your meal.

If you have eaten right before your workout, eating soon afterward is less important, although you should not undertake fasting until the following day.

## Calories and building muscle

More calories are required to build muscle too, but here, be careful.

Muscles only grow at the rate dictated by both your workouts and diet. Adding more calories than your muscles can use or that they need can make you fat.

"Bulking" is the process that bodybuilders use to build muscle, and basically consists of eating a lot. I recommend against this. The bodybuilders who do it also put on a lot of fat, which they have to lose later through dieting.

So be careful when adding more calories. A newbie weight lifter who's working out hard, and who is young and reasonably fit, may be able to use a few hundred to a thousand or more extra calories daily, compared to what he or she ate previously.

Others, older perhaps, or training with less intensity, and also those who are veteran trainees, need fewer calories.

Don't use your training program as an excuse to eat all you want. Some trial and error will be required.

Many bodybuilders swear by carbohydrates, saying that they are required to build muscle. Science says they are not, although I'm willing to concede that you may need them to get to bodybuilder size, i.e. really big.

Most people would be better advised to limit or entirely avoid refined carbohydrates, including sugar. This includes foods like bread, pasta, tortillas, oatmeal, breakfast cereals, pizza, etc. If you decide you want some carbs, potatoes are a fairly clean source.

If you're already lean and healthy and want to add some muscle, some carbohydrates may not do you a lot of harm, and could help. (Though I'm skeptical.)

If you are anything other than lean and healthy, and without a high level of exercise, refined carbohydrates and sugar are best avoided.

You can see here that I'm a fan of low-carbohydrate eating. While someone who wants to get to bodybuilder size may benefit from some carbohydrates,

most people are overfat – in the U.S., some 90% of people carry too much body fat.

And having a normal body weight is by no means a guarantee that you have a healthy (low) level of body fat.

Therefore, most people will benefit from restricting carbohydrates.

Low-carbohydrate diets may be defined as follows, based on 2,000 calories a day:

- Moderate carbohydrate, from 120 to 200 grams of carbohydrate daily.
- Low-carb, less than 120 grams daily.
- Ketogenic or very low carbohydrate, less than 50 or sometimes less than 30 grams daily.

Virtually no one, including serious bodybuilders, will benefit by eating more carbs than the moderate carbohydrate diet. Unfortunately, almost every American eats more grams of carbs daily than this, and they are in poor shape indeed.

If wanting to cut body fat, *any* carbohydrate restriction is beneficial. You don't need to go full bore low carb if you don't want to or can't for some reason. However, for fat loss, the more you restrict carbs, the more effective the fat loss.

You should also avoid vegetable oils, which contain large amounts of omega-6 fatty acids, and which promote obesity and disease. Corn, safflower, sunflower, soybean: these oils should all be shunned. These are better termed industrial seed oils and are an absolute hazard to human health. Avoid margarine, a toxic fake food made from seed oils.

For cooking and dressing food, use butter, ghee, lard, or olive, coconut, or avocado oils. These fats and oils are safe and healthy.

Unfortunately, seed oils, along with sugar and refined carbohydrates, are used to make almost all ultra-processed foods.

Plan on eating a fair amount of protein at each meal. You do this by making meat or eggs or fish the central part of your meal.

If you weigh 70 kg (154 pounds), then you need up to 140 grams of protein daily to build muscle. To get to that level daily, you need to be cognizant of what you eat.

Low-protein foods that also have a lot of calories should be avoided. These are foods like pasta, rice, etc., which are the same as the above-mentioned sources of refined carbohydrates. Some low-carbohydrate foods also do not have much protein, such as avocados, nuts, and olives, and you should avoid these for fat loss.

Beans and lentils are high in carbohydrates, and should be restricted for fat loss.

Dried fruit is little more than candy. Avoid. Most modern fruits have been bred to be bags of sugar, and barely resemble wild fruit, so take care that you don't consume large amounts of them. See illustration below, which shows a wild banana and its modern counterpart, which is typical for many types of fruit.

Avoid protein bars, most of which are just candy bars with extra protein, although there are some exceptions. Ditto for granola bars and other allegedly healthy foods which are really ultra-processed foods in light disguise.

Salads and cruciferous vegetables (broccoli, cauliflower, cabbage) are healthy and may be eaten without restriction. Be sure any dressing does not contain seed oils. Use olive oil if desired.

Avoid drinking calories. If you're thirsty, coffee, tea, or water are the best drinks. If you drink alcohol, avoid sugary mixed drinks and beer, and drink only lightly to moderately. Dry red wine and plain highballs are best for fat loss and staying lean, if you drink.

Do not drink soft drinks or fruit juice. (Despite what most people think, fruit juice is not healthy and is little better than soda pop. It will spike your blood sugar and make you fat.) Do not drink coffee frappuccinos or similar drinks that are loaded with sugar.

Avoid sports drinks that contain sugar. Try water instead. But you should only drink if thirsty.

## Vegetarian options

Vegetarians can eat a healthy diet so long as they plan their meals with care.

To ensure adequate protein, some eggs or dairy, such as cheese or plain yogurt (no sigar), should be eaten with each meal.

Vegetarians should follow the same practices as for omnivores in avoidance of ultra-processed foods containing seed oils, sugar, and refined carbohydrates.

## Summary

Here are the rules for eating on this program:

1. Do not eat ultra-processed foods. These are the kind of foods found in the middle aisles of a supermarket and are boxed, bagged, canned, and frozen. They contain large amounts of sugar, seed oils, and refined carbohydrates (usually flour), and soy. They're toxic and will ruin your physique, not to mention your health.

2. For muscle growth, get up to 2 g of protein per kilogram (2.2 lbs.) of bodyweight. Do this by emphasizing meat, fish, eggs, and some dairy products like cheese and yogurt (without sugar).
3. For fat loss, cut back on carbohydrates. My personal preference is for a very low carbohydrate diet, but you may not need to go very low, depending on your level of body fat, how much you exercise, and your health.
4. For fat loss, also emphasize protein, which is the most satiating macronutrient. You'll feel fuller and will be less hungry. De-emphasize high-fat, low-protein foods like butter, cream, olives, avocados, cream cheese, and nuts.

You should do most of your own meal prep and cooking. It's possible to eat well at restaurants and while out on the job, but can be a challenge.

For more on fat loss, see my program, The World's Simplest Fat Loss Plan.

### Low carbohydrate eating and resistance training

I get a lot of questions about the relation between my low-carbohydrate lifestyle and lifting weights.

Many experienced weight lifters and bodybuilders believe that eating carbohydrates (bread, pasta, potatoes, etc.), especially after workouts, is optimal for building muscle.

Carbohydrates replenish glycogen, the storage form of glucose, in muscles. While the body always burns a mixture of fat and glucose for fuel, during high-intensity exercise, such as the program here, the ratio of carbohydrate to fat burned goes way up.

You burn a lot of glucose during high-intensity weightlifting.

However, unless you are an elite, or at least high-performance, athlete, you're not going to need to eat a lot of carbs.

There are three issues here.

1. Adaptation to low carbohydrate. As your body adapts to a low carbohydrate diet, and you train in those conditions, the amount of

fat you burn during exercise increases, and the amount of glucose declines. So, there is less need of glycogen during exercise.

2. You don't need a "full tank" of glycogen. The amount of glycogen stored in skeletal muscle varies a lot due to many factors, but may typically be 400 grams for a 150-pound person, and it can be much higher in someone who trains and eats lots of carbs. 400 grams of glycogen represents about 1600 calories. In one hour of high-intensity training, you might burn 600 calories, not all of which is glycogen. (And keep in mind that this program has you doing only 30 minutes or so at a time.) You don't need to "carb up" to have plenty of glycogen. If you were a serious athlete and wanted to train daily, some carbs may be needed, but even there, many athletes do not carb up.
3. Carbohydrates increase insulin, which permits muscle growth. However, protein increases insulin adequately, and while adding carbohydrates further increases insulin, it does not enhance muscle growth than that from protein alone.

Don't worry about getting "enough" carbohydrate on this program.

If you're lean and healthy and exercise regularly, and enjoy them, go ahead and eat them.

If you're anything other than lean and healthy, cut back on carbohydrates.

## Intermittent fasting

I'm a big advocate of intermittent fasting, the practice of going without food for a longer-than-normal period of time.

Many people fast for 16 hours, followed by an 8-hour "feeding window". Others fast longer, up to 24 hours or even more.

Fasting has been shown to have health benefits, but since this program is about being in shape, fasting can also help you lose body fat and keep it off.

In a 16-hour fast, you merely stop eating after your evening meal, skip breakfast in the morning (black coffee or tea is permitted), and eat your first meal around noon. Boom-> you've just fasted 16-18 hours. Sleep time counts.

It can get a bit tricky integrating fasting into a weight training program.

Generally, you should not fast until at least 20 to 24 hours after your workout.

This is because muscles are primed for growth during that time.

You want to feed them.

You may fast up to and including your workout. I often work out fasted.

But you should eat afterwards.

I typically fast 2-3 times a week. Whether and how often you want to do this is up to you.

But don't eat all the time.

"Grazing", or eating many small meals or snacking a lot, is one of the dumbest ideas that health "experts" ever came up with. They still advocate it.

# Women benefit from this program too

Virtually everything in this program applies equally to men and women.

Women should practice resistance training to momentary muscular failure and should perform compound exercises mainly, just like men.

Muscles have the same metabolic and strength functions in women as in men.

If you're a woman and want to avoid chronic disease, such as heart disease, cancer, and diabetes, as well as to maintain a lean body and look your best, you should practice resistance training.

Women do not need to worry about "too much muscle" or about bulking up.

In the first place, women naturally have less muscle mass than men. On average, of course.

Muscular size and strength are closely tied to the male hormone testosterone, and most women are simply incapable of putting on as much muscle as men. Many women seem to fear this, perhaps encouraged in their fear by images of large, muscular female bodybuilders. At the elite bodybuilding level, these women take drugs (steroids and other drugs) to achieve high muscularity.

Furthermore, and this applies to both women and men, people greatly underestimate the amount of work required to build muscle.

It is simply impossible to get "too big" without dedicating a great amount of time, work, and life energy to lifting weights. And as indicated, many bodybuilders also use drugs to get big.

Women also have a greater amount of subcutaneous fat than men, so it's much more difficult for them to get that "ripped" look. Muscles are just not as prominent on them as on men, being covered by a larger layer of fat.

Women have nothing to fear and everything to gain in terms of health and appearance from lifting weights.

The one exercise that I recommend women do less of is the biceps curl. Since arms and biceps are prominent, and a small addition to the biceps is

noticeable, large biceps may give a woman somewhat masculine-looking arms. There's nothing wrong with that if that's what you want, however.

Women should beware of "toning" exercises.

Much bad advice is given in mainstream publications about this; women especially want to "tone" their triceps area, the back of the upper arms that sags with age. Or their rear ends.

In reality, *there's no such thing as toning*.

You either work the muscle and strengthen it, or not. To do that, train to momentary muscular failure using compound exercises. To fix sagging backsides, squats are the answer.

Sagging body parts are fixed by strength training and fat loss, not by "toning".

# Conclusion

This program, One-Hour Fitness, is one of the most efficient, time-saving, and safe ways to build muscle, control body fat, and improve cardiorespiratory fitness of any exercise program around. If there's a better way, I haven't seen it.

To optimize your health and to fight aging, resistance training is a must.

Resistance training, when done correctly, also improves cardiorespiratory fitness (VO2max), and therefore aerobic exercise (cardio) is superfluous.

One of the greatest roadblocks to beginning a resistance training program is time. Conventional resistance training features high volume of exercise and frequent workouts, and since most people have thought that that's the only way, were reluctant to take it up.

This program greatly reduces the time factor.

Anyone can find one hour a week, or even 30 minutes a week, to do this program.

Many people currently spend one hour or more *daily* on aerobics exercise. That's entirely unnecessary.

This program is also exceptionally safe and will keep you injury-free while in the gym.

Conventional exercise programs are wildly overrated for fat loss. To lose fat and maintain a lean body weight, your best bet is to build muscle.

Nevertheless, diet is by far the most important factor in maintaining a normal body weight, which is why I've included a discussion of diet in this program.

Gyms are full of people frantically running on treadmills or using stair-steppers to lose weight, when they would be far better off lifting weights and paying attention to their diet.

Don't be like them.

The exercise in this program is intense, and to get its full benefit, you must approach it seriously.

Exercise is a stress, one that should be applied infrequently but intensely, from which your body grows and recovers as it overcomes that stress, in order to be ready for it the next time it comes.

You simply will not make adequate changes in your body without sufficient stress, and then recovery.

The response to exercise is a survival mechanism guaranteed by evolution. If we're hunting a mammoth, fleeing a lion, or fighting another human, all of which are extremely stressful and in which our lives are at risk, our bodies want to be stronger and fitter the next time these things happen.

One of the most visible signs of aging is loss of muscle and gain of body fat. Resistance training, by increasing muscle mass and strength, and lowering body fat, is powerful anti-aging medicine.

Unfortunately, health experts have not emphasized resistance training and have instead focused on suboptimal exercise such as jogging. As a consequence, few people are aware of its enormous benefits.

People who want to take up resistance training have hesitated to do so not only because of a mistaken idea of the time required to do it, but also because they don't know how.

Gyms offer little instruction and what they do offer is generally not very good.

Trainers often do not push their clients hard enough, because then many of their clients quit. Intensity is bad for their business.

So, even among people who do practice resistance training, many are not doing it right, and do not get good results.

When good results fail to appear, they often quit.

Don't be like them.

This program can be adapted to virtually anyone of any age, and can be done for life.

If everyone practiced resistance training as set out in this program, the nation's health would be transformed.

While you're waiting for that to happen – and I wouldn't hold my breath – you can transform your own health and physique.

## The Program in Brief

- Lift weights with intensity. Each and every set should be done to momentary muscular failure.
- Perform one set per exercise. You may use drop sets and rest-pause training to ensure you get to muscular failure.
- Use a slow cadence to move the resistance.
- Do mostly compound exercises.
- Use minimal time between sets.
- Exercise briefly and infrequently. Avoid excessive exercise.
- Allow yourself plenty of recovery time to allow muscles to grow and body to rest.
- Pay attention to diet, which is important for both fat loss and muscle growth.
- Do not be sedentary on rest days.
- Maintain your dietary and fitness discipline.

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[1] Fisher, James, et al. "Evidence-based resistance training recommendations." *Med Sport* 15.3 (2011): 147-162.

[2] Steele, James, James Fisher, and Stewart Bruce-Low. "Resistance training to momentary muscular failure improves cardiovascular fitness in humans: a review of acute physiological responses and chronic physiological adaptations." *Journal of Exercise Physiology Online* 15.3 (2012): 53-80.