The Essential Exercise Handbook

How to go From Couch Potato to Workout Warrior – the RIGHT Way . . .

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The Essential Exercise Handbook – 3rd Edition

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INTRODUCTION

How long has it been since the last time you exercised? Regularly, I mean.

Three months? . . . Six months? . . . A year? . . . Five years? . . . Ten? Maybe you've never exercised before in your life. If so, that's OK, you're certainly not alone.

If you've now made the decision that you really need to start exercising, whether it's for the first time, the fifth time, or the tenth time in your life, you've definitely made the right choice. It doesn't matter what your reasons are. Whether it's to lose weight, to get fit, or just to start living a little more healthily:

exercise is *always* going to do you good.

And it's never too late to start either – age-wise or fitness-wise. You can be seventy years old, you can be two hundred pounds overweight, or you can be twenty pounds underweight.

Whatever your situation, the best time to start is always *now*.

But if you're new to exercising, you may well be finding the whole subject very confusing and daunting. I mean, let's face it, there are just so many options out there! Think about it . . .

There's weight training, gym resistance machines, bodyweight exercises, cardio classes, gym cardio machines, home exercise machines, ab exercisers, jogging, swimming, resistance bands, yoga, Pilates, the hundreds of branded gym workout routines, the hundreds of home exercise workout packages, and so on, and so on.

It's enough to make your head spin!

But that's not all. Even if you *did* know what exercise you should be doing – which is going to help you reach your goals – you might have no idea whatsoever exactly how to get started. What if you haven't exercised in years, or you're terribly overweight, or out of shape? What then?

Do you just jump right in and get started? Do you slowly work your way up to it? *How* exactly do you work up to it? What's the first step to take? And how quickly should you progress? How hard do you push yourself?

Of course you always have the option of joining a gym and/or getting yourself a trainer – someone who can answer all these questions for you and smooth your

transition into an active lifestyle. That's a quick and easy way of sorting through the confusion. But it isn't always affordable, and it isn't always convenient, depending upon your lifestyle and your situation.

On top of that, many gyms – especially the franchise chain ones, simply provide a dizzying array of set, brand-name workout routines and often leave you to choose which to participate in. This can frequently result in you not doing the types of exercise best suited to achieving your goals.

Whatever your situation however, if you're new or in any way uncertain about exercise and how to go about it properly, then this manual is specifically for you.

It will answer all your questions and clear away your confusion. If you're already exercising, even if you have been for a long while, but you're just not seeing the results you were expecting or hoping for, then it will be of enormous benefit to you as well.

Here are some of the invaluable insights you'll get from this manual:

- How to start out exercising from a totally sedentary lifestyle.
- How to start out exercising if you're obese.
- What type of exercise you should be doing and why.
- How to design your own personal workout program.
- How exercise ties in with your diet for weight loss or muscle toning.
- How to monitor your exercise progress successfully.
- The various levels of exercise program development.
- Lots more . . .

I've separated this manual into two parts. Part 1 deals with the background theory behind exercise, and is really important to your understanding of *why* you need to do the things you do with regards to your exercise program.

Part 2 deals with the practical part of your exercise program – how to get started and how to execute your program successfully.

Let's get started then . . .

PART 1
UNDERSTANDING THE BASICS OF EXERCISE

WHY EXERCISE?

Let me start by saying that regardless of your situation, weight and level of fitness, there's *always* a reason to exercise. Even if you don't actually have a specific objective in mind, exercise is simply an important part of maintaining good health and longevity of life.

There are a whole host of physical and psychological benefits to exercising; some of these include:

- Burning calories to prevent unwanted weight gain.
- Increasing your energy, strength and stamina.
- Improving your flexibility.
- Toning and firming your muscles, improving your body shape.
- Strengthening your heart, reducing your risk of heart disease.
- Reducing your risk of osteoporosis and certain types of cancer.
- Improving your circulation.
- Strengthening your immune system.
- Improving your liver function.
- Increasing the level of enzymes in your body that burn fat.
- Lowering your blood pressure.
- Lowering your resting heart rate.
- Increasing your metabolism, helping you burn more calories, even at rest.
- Reducing any joint discomfort.

- Improving your self-esteem, self-confidence and self-pride.
- Improving your mental focus.
- Reducing your risk of depression.
- Decreasing stress and tension.
- Improving your quality of sleep.

Our ancestors had to regularly rely on physical activity and exertion for many aspects of their daily lives – whether it was walking, running, pulling, lifting, carrying, or whatever. These days, the majority of us aren't so unfortunate. We have a much higher standard of living and many comforts and conveniences that allow us to avoid most demanding manual tasks.

The role of exercise then, is to go some way towards enabling you to use your body as nature intended, albeit in a condensed period of time.

Our body simply wasn't designed to be sedentary, as many of us nowadays are.

It thrives on activity and regular usage to remain healthy and strong.

That being said, the fact that you're reading this manual probably indicates that you have a higher purpose in mind than simply exercising to keep healthy. From my experience, women make the decision to begin exercising for one of three major reasons:

1. To lose weight or maintain their weight.
2. To improve or maintain their fitness level.
3. To tone up their body.

In addition to these, there can be a variety of more purpose-specific reasons as well, for example:

4. To improve strength.
5. To improve muscular endurance.
6. To improve anaerobic fitness.
7. To increase explosive power.
8. To improve speed and agility.
9. To increase flexibility.

These latter 6 reasons for exercising are generally those of more experienced exercisers, who are wanting to progress from a fairly common or generic exercise program to one that's more specific to their particular requirements.

In this manual I'll be focusing mainly on the first 3 reasons for exercising, since these will apply to most beginning, novice or struggling exercisers. I'll also be touching on some of the more advanced purposes as well though as part of the discussion.

The answer to the question *"Why exercise?"*, then, is fairly obvious.

You exercise to be healthy, and you exercise to achieve your physical objectives.

A more compelling question is *"What exercise should I do?"*

The answer to this fundamental question is one that unfortunately eludes so many women. This manual, however, will provide you with that answer, as well as why each specific type of exercise is necessary, and exactly how you need to go about doing it.

YOUR BODY'S ENERGY SYSTEMS

Before getting into the details of how different types of exercise improve your fitness and burn calories, it's important to first have a fundamental understanding of the systems in your body that fuel any exercise you do.

Whenever you move or perform a physical activity of any kind, your body needs to provide energy to your muscles, to allow them to contract and create the movement. This has to happen, regardless of how much force the muscle or muscles need to exert. This energy comes in the form of a chemical called **Adenosine Triphosphate,** or **ATP.**

Now, your body has three separate energy systems which it uses to produce ATP for your muscles, depending on the requirements. These energy systems are as follows:

1. **The ATP-PC System (Phosphagen System)** – This system is used for very short durations of up to 10 seconds. It's the primary energy system for very short, powerful movements like a golf swing, a 100m sprint, or powerlifting.

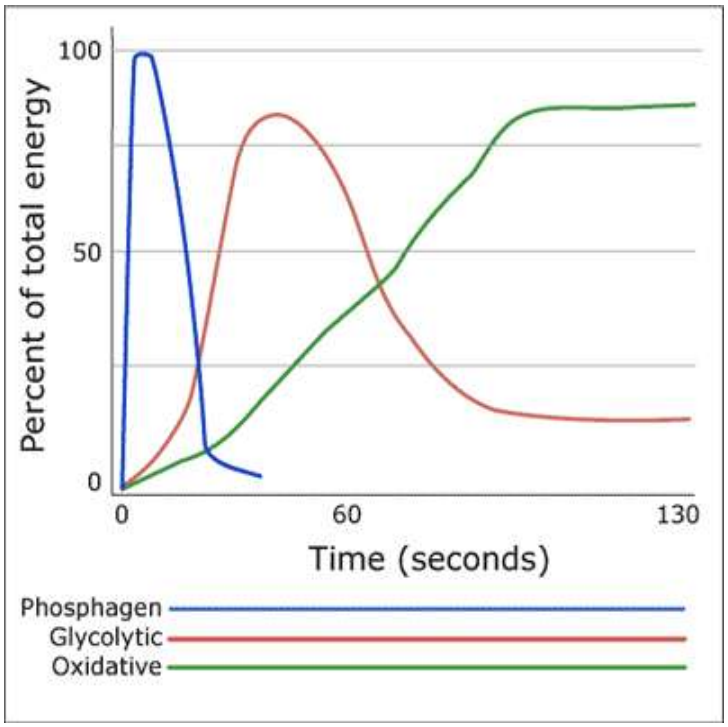
2. **Glycolytic System (Lactic Acid System)** – This system supplies energy for exercises lasting less than about 2 minutes. An example of an activity of the intensity and duration that this system provides for would be a 400m sprint.

3. **Aerobic System (Oxidative System)** – This system provides your body with energy for long durations. After about 5 minutes of exercise, this is clearly the dominant energy system.

The ATP-PC System and the Glycolytic System both produce ATP for your muscles without any need for oxygen – they're purely chemical energy systems. For this reason they're referred to as **anaerobic** energy systems, since the word *"anaerobic"* literally means *"without air".*

The Aerobic System, on the other hand, *does* need oxygen to produce ATP, as the name suggests (the word *"aerobic"* means *"with air"*).

The diagram below shows how these three energy systems share the job of producing ATP for your muscles over time while you're exercising:



In reality, these three energy systems don't work individually, but rather in conjunction with each other. The degree to which each system is used depends upon the requirements of the activity you're performing.

To give you an idea of how they work, the table below shows to what degree each energy system is utilized for a variety of common sports:

Sport	Energy System		
	ATP-PC & Glycolytic	Glycolytic & Aerobic	Aerobic
Basketball	60%	20%	20%
Fencing	90%	10%	0%
Field Events	90%	10%	0%
Golf Swing	95%	5%	0%
Gymnastics	80%	15%	5%
Hockey	50%	20%	30%
Rowing	20%	30%	50%
Running (Distance)	10%	20%	70%
Skiing	33%	33%	33%
Soccer	50%	20%	30%
Swimming (1.5km)	10%	20%	70%
Swimming (50m)	40%	55%	5%
Tennis	70%	20%	10%
Volleyball	80%	5%	15%

Adapted from Fox E. L. et al, The Physiological Basis for Exercise and Sport, 1993

WHERE THE CALORIES GO

Of course, the energy systems I just described don't create energy out of thin air. They need raw materials from which they can create the ATP your body needs, and these are provided by the food you eat.

Whenever you consume food, it's broken down and processed by your digestive system. And as part of that process, the energy (calories) from the food ends up in your bloodstream as **glucose,** otherwise known as **blood sugar.**

Once your blood sugar level rises, your pancreas secretes **insulin** into your blood, whose job it is to transport the blood sugar from your blood to various parts of your body, to be stored as fuel. This fuel is stored in two forms.

Firstly it's transformed into glycogen, to top up your body's glycogen stores. Glycogen is a carbohydrate that your body stores in your muscles and liver to fuel

short-duration, high-intensity activities. It's in limited supply in your body – you only hold about 500g, so once it begins depleting it needs to be replaced.

Once your glycogen stores are full, any excess energy from your food is simply stored as body fat. Your body can hold quite a large amount of fat, and so this can be considered your body's long-range fuel tank.

CARDIO EXERCISE

Now that you understand how your body stores and generates energy for your physical activity, let's take a look at the major type of calorie-burning exercise – cardio exercise.

As the name suggests, cardio exercise is basically any form of exercise whose primary purpose is to work your body's cardiovascular system, or in other words, to get your heat beating.

Some common examples of cardio exercise are brisk walking, jogging, running, skipping, bicycling, aerobics classes, shadow boxing, elliptical cycling, rowing, swimming, and so on.

A cardio exercise can be performed at any level of intensity, from just a very casual pace to absolutely flat-out. And as you'll soon see, different intensity levels create different responses in your body. The level of intensity of cardio exercise is often measured as a percentage of your theoretical **Maximum Heart Rate,** since this indicates how hard you're exerting yourself.

The table below shows the 5 generally-accepted **training zones** for cardio exercise. These are simply ranges of heart rate values and were created to approximately classify training intensity levels according to purpose.

Training Zone	% Max. Heart Rate
Warm-Up Zone	50-60%
Fat Burning Zone	60-70%
Cardio Zone	70-80%
Anaerobic Zone	80-90%
Maximum Effort Zone	90-100%

The names of these training zones are fairly self-explanatory. The **Warm-Up Zone** is a very low-intensity zone used for light warm-ups before training.

The **Fat Burning Zone** is a low-intensity training zone, and doing cardio exercise at this level of intensity causes your body to draw mostly on body fat for fuel, rather than carbohydrate, or glycogen.

The **Cardio Zone** is also considered a low-intensity training zone – this is where aerobic fitness is built up. In other words, doing cardio exercise in the Cardio Zone focuses on the use of your aerobic energy system.

The **Anaerobic Zone** and **Maximum Effort Zone** are used for anaerobic fitness. Doing cardio exercise in these zones focuses on using your two anaerobic energy systems.

The Maximum Effort Zone targets your ATP-PC System more, and the Anaerobic Zone targets your Glycolytic System more. The primary source of fuel for exercise at these high-intensity levels is glycogen.

Calculating Your Training Zones

OK then, so how do you work out what these training zones are, based on your own personal theoretical Maximum Heart Rate?

Well, I've made that easy for you. On the following webpage you'll find my **Training Zone Calculator** which does it all for you. All you need to do is enter your age and your **Resting Heart Rate.**

http://www.milliondollarbabyfitness.com/tools/training-zone-calculator.php

To determine your Resting Heart Rate you simply need to measure your pulse, or the number of times your heart beats per minute, while you're at rest. The best time to do this is in the morning while you're still in bed, right after you wake up, since this will be your most rested state.

Low-Intensity Cardio Exercise

It was once believed that the best exercise for weight loss was cardio exercise in the Fat Burning Zone (low-intensity cardio exercise).

The reasoning was that because exercising at this intensity level causes your body to use primarily body fat for fuel, it must therefore be the most effective way to lose fat.

We've since learned, however, that this isn't the case at all. Even so, you'll still no doubt find a lot of literature and many individuals around still clinging to the old ideas and singing the praises of low-intensity cardio exercise for weight loss.

The fact is that the amount of weight you lose through exercise is determined purely by the number of calories you burn. Where those calories come from, whether it's from body fat or glycogen stores, really makes no difference.

That's not to say though that low-intensity cardio exercise doesn't burn many calories – it does. It's just understood now that the higher the intensity of the cardio exercise you do, the more effectively your body burns calories, and the therefore the more effectively it burns fat.

To give you an idea of approximately how many calories you can burn per hour with various types of sports and cardio exercise, on the following webpage you'll find my comprehensive **Calorie Burn Chart:**

http://www.milliondollarbabyfitness.com/blog/calorie-burn-chart/

You can get an idea of the amount of fat you can burn with these activities when you consider that 7,700 calories is roughly the equivalent of 1kg of body fat.

You can also quickly and easily work out how many calories you'll burn with these activities over any time duration, based upon your body's measured or estimated fat percentage, by using my **Calorie Burn Calculator** on the following webpage:

http://www.milliondollarbabyfitness.com/tools/calorie-burn-calculator.php

High-Intensity Cardio Exercise

The one major variable of exercise that determines the returns you get from your workouts is **intensity.**

It stands to reason that running say 3km as fast as you can will have a significantly different effect on your body than walking the distance at a nice, cool, leisurely pace. Obviously, running a given distance will allow you to cover it in far less time than if you walked. But there's even more to intensity than simply getting through a physical task faster.

After you've exercised at high-intensity levels, where your body's anaerobic energy systems were engaged, your body experiences something called **Excess Post-Exercise Oxygen Consumption,** or **EPOC.** This is sometimes also referred to as **afterburn.**

During EPOC your body's metabolism remains at an elevated rate for a period of time, were it continues to burn calories and consume higher-than-normal amounts of oxygen. Your body does this as it works to:

- Replenish its glycogen energy stores (remember – these are used when you perform any high-intensity activity),
- Restore itself to a resting state, and
- Adapt itself to the exercise you've just performed.

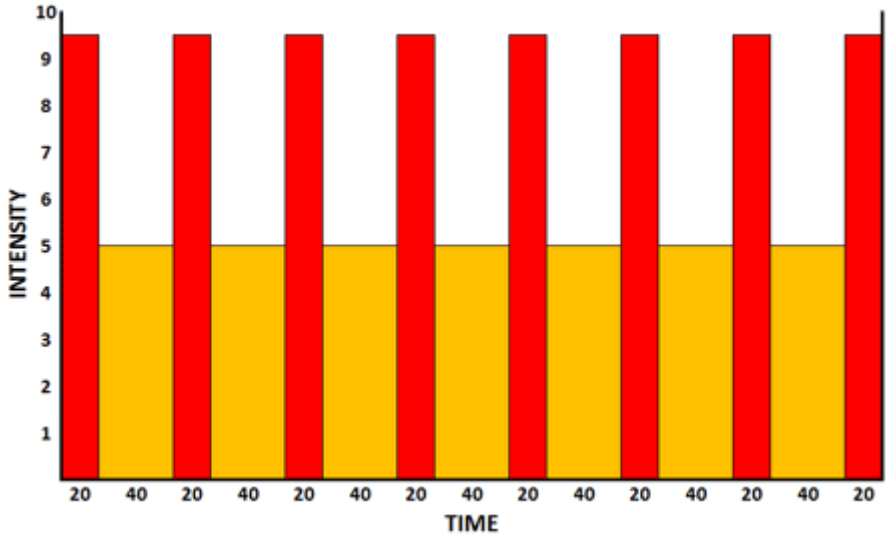
The EPOC effect is greatest soon after the exercise is completed and it decays over time – usually over 18 to 36 hours.

Because of EPOC, high-intensity exercise allows your body to burn calories for quite some time after the activity is finished, making it a very efficient weight loss exercise protocol. By contrast, when doing low-intensity cardio exercise your body stops burning calories pretty much when the activity stops.

High-intensity cardio exercise is most often done in the form of what's known as **High Intensity Interval Training,** or **HIIT.**

HIIT involves doing alternating cycles of high-intensity, maximum- or near-maximum effort intervals, and low-intensity recovery intervals. For example, you could do 8 repetitions of the following intervals – 20 seconds sprinting at maximum effort, followed by 40 seconds light jogging.

This is shown in the diagram below:



HIIT is recognized as the ultimate in fat burning exercise.

The calories burned engaging in 60 minutes of low-intensity cardio exercise can be burned in about 20 to 25 minutes by performing HIIT.

Cardio Exercise For Fitness

So far we've looked at the effects of the different types of cardio exercise on weight loss, but what about fitness? Well as you would expect, the intensity of cardio exercise also has a major effect on the type of fitness it can develop for you.

When we talk about fitness, most people only think about aerobic fitness. They consider someone to be fit when they're able to do some kind of exercise or physical activity for long periods of time. A typical example would be a long distance runner or a marathon runner.

But in reality there's more than one kind of fitness. Remember when we talked about the three energy systems earlier? Well, generally speaking marathon runners don't have very well developed anaerobic energy systems, because the type of training they do just doesn't focus on those. Their aerobic energy system, on the other hand, is highly developed. This means they have a low level of anaerobic fitness, but a high level of aerobic fitness.

By performing low-intensity cardio exercise, in the Fat Burning Zone and the Cardio Zone, you improve your level of aerobic fitness only.

By performing high-intensity cardio exercise through HIIT,
you improve your level of anaerobic fitness, but also get
the added side-benefit of improving your aerobic fitness as well.

This occurs for two reasons:

1. Your aerobic energy system is put to work in recovering your glycogen energy stores after a blast of high-intensity activity (notice how you start breathing very heavily after a brief sprint, for example?)

2. You're actually using your aerobic energy system during the recovery phase (low-intensity) intervals of your HIIT.

In the example HIIT session I gave you earlier, I mentioned high-intensity intervals of 20 seconds, followed by low-intensity recovery intervals of 40 seconds. In reality these interval lengths can both vary, usually from 10 seconds to 60 seconds or more.

You can have short high-intensity intervals and long low-intensity intervals, long high-intensity intervals and short low-intensity intervals, or equal length intervals, either short or long. Each combination will target your anaerobic energy systems in a different way.

The shorter your high-intensity intervals and the longer your low-intensity recovery intervals, the more intensity you can attain and the more you target your ATP-PC energy system.

The longer your high-intensity intervals and the shorter your low-intensity recovery intervals, the less intensity you can attain and the more you target your Glycolytic, and even Aerobic, energy system.

In Part 2 of this manual we'll look at which type of cardio exercise is most suitable for you if either weight loss or fitness is your goal.

RESISTANCE EXERCISE

As the name suggests, resistance exercise is any exercise that focuses primarily on working your muscles by making them overcome some form of resistance. Where cardio exercise focuses on developing your cardiovascular fitness and burning calories for weight loss,

resistance exercise specializes in developing your muscle attributes.

Depending on the type of resistance training you do, this can be muscle size and tone, strength, speed, power, explosiveness, endurance, or any combination of these. The table on the following page shows how a resistance training session can be configured to suit your particular objectives.

Resistance training programs for weight loss (you'll see shortly why these are necessary) and for muscle development and toning normally correspond most closely to those shown for muscle growth and strength in the table.

Exercise sessions don't necessarily have to follow these guidelines to the letter however, in fact you'll find that a vast array of resistance training programs exist, all with their own unique bent.

As a general rule though, resistance exercise with heavy loads and low repetitions per set promotes strength development, and resistance exercise with moderate loads and moderate repetitions per set promotes muscle growth.

Variable	Training Goal			
	Endurance	Power	Muscle Growth	Strength
Load (% of 1 rep max)	40-60	45-55	60-80	80-90
Reps Per Set	15-60	1-5	6-12	1-5
Sets Per Exercise	2-4	3-5	4-8	4-7
Rest Between Sets (mins)	1-2	2-6	2-5	2-6
Duration (secs per set)	80-150	4-8	20-60	5-10
Speed Per Rep (% of max)	60-80	90-100	60-90	60-100
Training Sessions Per Week	8-14	3-6	5-7	3-6

Reproduced from Siff MC (2003). *Supertraining*. Supertraining Institute.

DIET AND EXERCISE

Now that you have a clear picture of what the various types of exercise can theoretically do for you, it's time to look at how exercise works together with your diet to achieve the three major objectives that I listed earlier on.

Let's take a close look at each case individually.

Losing Weight

Despite all the smoke and mirrors that surrounds most weight loss programs and products these days, losing weight comes down to one very simple and inescapable point. And that is,

to lose weight you must consume fewer calories than you burn each day.

In other words, you must maintain what's known as a **calorie deficit.**

Now, there are two ways to create a calorie deficit – by eating less, and by burning more calories.

Any effective weight loss program will incorporate BOTH of these techniques.

In other words, it will control your calorie intake, and it will include cardio exercise for calorie-burning as well. That means less calories in *and* more calories out.

Why not just do one or the other? Well, that's simple – because you would lose weight painfully slowly that way, if at all.

If you're currently overweight for example, there's a very good chance that you're actually overeating at the present time. If that's the case, it would be highly unlikely that exercise alone would help you lose weight.

Excess calories are just too difficult to overcome by exercise for most women.

One of the things that many women underestimate is the destructive power of poor diet.

Simply hitting the gym in order to lose weight, without any regard for your diet, just won't cut it, I'm afraid.

So what about creating a calorie deficit by diet alone, and not bothering with cardio exercise?

Well, technically speaking you could, but as I mentioned, you would lose weight awfully slowly that way. Cardio exercise contributes significantly to the calories your body burns each day, *and* it keeps your metabolism working nicely as an added bonus, so your body burns even more calories in its natural state.

The other problem with this approach is that you're quite limited in terms of how much of a calorie deficit you can create by diet alone. Going too far constitutes starvation. When that happens, your body undergoes what's known as a **starvation response,** which is very bad news for weight loss.

As part of this starvation response, your body slows down your metabolism so that you conserve energy by burning fewer calories. It also begins to eat away muscle, for the same reason. It does this because muscle tissue is very active, meaning your body burns calories just maintaining it, even when the muscle isn't being used. So the less muscle you have, the more energy you conserve.

The starvation response is an in-built self-protection mechanism that your body has to keep you safe and alive in times of crisis when you can't get access to food.

That's great if you ever find yourself stranded somewhere and starving, but for losing weight it's a disaster.

The last thing you want is your body working against you by conserving energy – that's the exact opposite of what you're trying to achieve.

So calorie restriction alone has its limitations. But when combined with a good cardio exercise routine, you can in fact create quite a decent calorie deficit that will allow you to lose fat at quite a rapid (but sensible) rate.

So what about resistance training then? What's *its* role in weight loss? Well, the fact is that

resistance training is of vital importance on any weight loss program.

The reason is that any time you restrict your calorie intake (which as we've just seen, you *must* do to lose weight), even when it's a sensible amount and not to the point of starvation, your body will still exhibit some starvation response characteristics. It will still tend to want to slow down your metabolism and shed muscle, just not to the same, unmanageable degree.

There are dietary techniques that you can use to prevent your metabolism slowing down in this case, but we won't go into these here since this manual is about exercise and not diet. But as far as losing muscle goes – that's where resistance training comes in.

By using your muscles through resistance training, you signal to your body that they're needed and you therefore prevent it shedding any muscle tissue. This is very important for your ability to sustain weight loss and avoid **dieter's plateau.** Dieter's plateau is a common occurrence brought on by losing weight improperly, often too quickly and/or without resistance training, where your metabolism slows down to the point where your weight loss stalls.

Many women shy away from resistance training because they believe that it will cause them to look too muscular and masculine. Nothing could be further from the truth. Besides, you have to remember that on a weight loss programs, the objective of resistance training is to maintain your body's muscle, not necessarily to increase it.

Maintaining Weight

Exercising to maintain weight isn't too different to exercising to lose weight, it only varies in the degree of exercise required.

The one big difference between losing and maintaining your weight is that you don't need a calorie deficit while maintaining your weight, only while losing it. As you'll remember from the previous section, it's the job of resistance exercise to prevent any loss of muscle mass from occurring when you restrict your calorie intake.

So does this mean that without a calorie deficit there's no need for resistance exercise anymore? Well, no . . . not exactly. You see,

even without a calorie deficit, your body follows the principle of *"use it or lose it."*

This means that if you don't regularly use your muscles, over time they'll slowly waste away from lack of use. And of course, as a result your metabolism will slowly decrease as well. In our modern lifestyle there's really very little opportunity or need to use your strength to any degree, so resistance training is quite essential for this purpose.

The level of general physical activity in our modern lifestyle is also very inadequate. This means that cardio exercise is also important.

After age 30, the average woman's metabolism decreases at a rate of 2-3 percent per decade, mainly due to inactivity and muscle loss.

This leaves you at a very high risk of gaining weight at some stage unless you exercise regularly, especially if you have a tendency to gain weight easily.

By performing cardio exercise and resistance exercise as part of your normal lifestyle, you keep your metabolism running efficiently and your body burning calories regularly, drastically reducing your chances of gaining weight.

Simply reducing your calorie intake to compensate for a slowing metabolism and a low level of activity really isn't sustainable. It makes your life miserable and isn't a realistic long-term weight maintenance strategy.

Improving and Maintaining Fitness Level

We've already discussed the role of cardio exercise in developing your aerobic and anaerobic fitness levels. Low-intensity aerobic exercise develops your breathing capacity and general cardiovascular fitness; and high-intensity anaerobic exercise develops your anaerobic energy systems, as well as your breathing capacity and general cardiovascular fitness.

Resistance training, which focuses on the development of various muscle attributes, in the past wasn't traditionally associated with fitness level. In the traditional sense, fitness and strength, for example, were considered quite different attributes. You could be fit without being strong – an example would be a marathon runner, and you could be strong without being very fit – for example, a body builder.

Nowadays however, many trainers and fitness enthusiasts are recognizing that fitness comprises the all-round performance of your body, not just endurance.

In many circles the concept of **functional fitness** has become very widely accepted. This refers to your ability to perform challenging, everyday activities that require a whole variety of different abilities.

As an example, someone who competes in a marathon, or a triathlon or iron man event would be considered fit in the traditional sense. On the other hand, someone who could say climb 15 meters up a rope hand over hand, then swim one kilometer, then drag a 100kg log across a beach and perform 100 burpees would be considered functionally fit.

As you can see then, developing all-round functional fitness involves a combination of aerobic exercise, anaerobic exercise, and resistance exercise.

These can either be trained for individually, or as combination exercises, or circuits, that incorporate everything together.

This combination approach is far more effective because it creates challenges that can't be reproduced in any other way. For example, a particular workout could require you to use muscular strength and/or speed while you're exhausted and almost out of breath.

Regardless of the type of fitness you're striving for however, the concept of developing and maintaining your fitness level is the same. Improvements are achieved by pushing yourself to new limits regularly in your workouts. By extending yourself past previous performance levels, your body adapts and grows. Maintaining your fitness level can be achieved by using approximately the same limits over and over in your exercise sessions.

It's important to remember however, that variety is always key in exercise.

Performing the same routines over and over consistently will lead your body to quickly adapt and stop benefiting from the exercise. Exercise is only really effective when it's regularly changed around.

Muscle Toning

Anything to do with developing muscle attributes fits squarely in the domain of resistance exercise. And of course that includes toning and developing your muscles.

Resistance training activates your muscles, causing them to become stronger, larger, activate faster, have more endurance, or any combination of these things. It simply depends on how you train.

"Toning" is a term that we often hear when talking about women's muscles. Men, on the other hand, prefer to use words such as chiseled, ripped, sculpted, shredded, and so on. These terms sound very unappealing to women, but at the end of the day, the fact is that they all pretty much refer to the same thing – muscle growth.

Most women only like to see a modest amount of muscle growth, where a nice, firm definition can be seen, particularly in the abs, buttocks, thighs and arms. This is really what's meant when the term *toning* is used.

Muscle toning can be achieved by doing all-over resistance training with moderate to high loads and moderate to low repetitions (see the table on page 14). Such resistance training programs would generally target the following muscle groups:

- Chest
- Upper Back
- Shoulders
- Biceps
- Triceps
- Abs and Obliques
- Lower Back
- Glutes (Buttocks)
- Hamstrings
- Quadriceps
- Calves

These can be all be targeted on the same day or they can be broken up over two or more workout sessions (generally referred to as **splits**) in various combinations. Each individual has their own personal preference.

An important point to bear in mind when toning is your objective is that

your body can't achieve a toned appearance, regardless of how much resistance training you do, if it's carrying excess body fat.

For your toned physique to show through, your body must be reasonably lean.

Even though your body's fat percentage doesn't, strictly speaking, affect your muscle tone and size, it certainly does affect what it looks like from the outside. This is why most women, including body builders, who are interested specifically in developing their musculature, also undertake cardio exercise to burn calories and get lean.

PART 2
STARTING AND DEVELOPING YOUR EXERCISE PROGRAM

BEFORE YOU START

Having read through Part 1 of this manual, I think you'll agree that you'll most likely want your exercise program to include both cardio *and* resistance exercise for maximum effectiveness.

That being said, you may have your own reasons for choosing to exclude either of these. At the end of the day the decision is really yours. If this is the case for you, simply ignore the information in Part 2 that deals with the type of exercise you're not doing to undertake, and focus only on the type that's of interest to you.

Regardless of what you choose to include in your exercise program however, your very first priority should always be your own safety and wellbeing.

That's why it's important to take the step of getting yourself checked out by your medical practitioner before starting out on any exercise program. This is especially important if:

- You've never exercised before.
- You haven't exercised regularly in the past 12 months.
- You have an existing medical condition.
- You have an existing injury.

It's also vital that you always bear in mind that although working out can often cause some discomfort and even pain, there's normal pain and then there's abnormal pain. Muscle soreness and even stinging is an accepted part of exercising. The following pains and symptoms, on the other hand, can possibly indicate a problem and should be taken as a sign to stop what you're doing:

- Chest pains.
- Dizziness or disorientation.

- Nausea.
- Strong joint pains or signs of strain.
- Excessive muscular pains.

A part of exercising successfully is learning how to listen to your body and understand which responses to hard exercise are normal and which aren't. If at any point you're unsure, it's best to err on the side of caution. And if you *do* happen to suffer any abnormal pains during your exercise, it's always prudent to get them checked out by a medical professional before proceeding.

CARDIO EXERCISE

How to start out with cardio exercise varies significantly from person to person, depending on your weight, level of fitness, level of exercise experience, and a variety of other factors.

Below I outline a 16-level progression of cardio exercise that you can follow to help you get started on and progress your cardio exercise regime, from extremely light to very high-intensity. This list starts at the very bottom to cater for someone who is significantly obese, has very poor fitness, and has not exercised in a long time – perhaps never at all.

That may not be appropriate for you – it's up to you to decide which level on the progression is the most suitable point for you to start at given, your current condition and circumstances.

If you feel apprehensive or have any concerns about cardio exercise, by all means be conservative with where you start out. There's always time to step things up later on when you feel more comfortable.

Remember that taking up exercise is a lifestyle change and that can take time.

There's no one hurrying you along. The important thing is that you progress at a pace that's always challenging but still manageable for you. When your level of confidence and ambition increases, you can always push yourself harder at that point.

But for now, you certainly don't want to turn yourself off exercising forever by making the mistake of taking on too much too soon.

The 16-Level Cardio Development Plan

Level #16: Leisurely 30 minute walk or exercise bike cycle, 3-4 times a week.

If necessary, you can break a session into two 15 minute sessions or three 10 minute sessions in your exercise day.

Level #15: Leisurely 45 minute walk or exercise bike cycle, 3-6 times a week.

If necessary, you can break a session up into two shorter sessions in your exercise day.

Level #14: Leisurely 45 minute walk or exercise bike cycle, 2-4 times a week; 30 minute *"power walk"* or *"power cycle"* on the exercise bike, 1-2 times a week.

A *power session* consists of alternating your walking pace (in the case of a power walk) or your cycling speed (in the case of a power cycle on the exercise bike), as the case may be, from leisurely to brisk, in intervals of either 5 or 10 minutes.

Level #13: 35 minute power walk or power cycle on the exercise bike, 3-6 times a week.

Level #12: 50 minute power walk or power cycle on the exercise bike, 3-6 times a week.

Level #11: 40 minute walk or exercise bike cycle at a brisk pace, 3-6 times a week.

Level #10: 45 minute walk or exercise bike cycle at a brisk pace, 2-4 times a week; 20 minute Fat Burning Zone cardio workout, 1-2 times a week.

A Heart Rate Monitor can be used to keep track of your heart rate while doing cardio exercise – these are commonly available in sporting stores.

Any cardio exercise of your choice can be used, as long as it steadily maintains your heart rate in the Fat Burning Zone. Some examples are jogging/running, cycling, elliptical cycle, skipping, swimming, shadow boxing, rowing machine, and so on.

Level #9: 30 minute Fat Burning Zone cardio workout, 3-6 times a week.

Level #8: 40 minute Fat Burning Zone cardio workout, 2-4 times a week;
20 minute Cardio Zone cardio workout, 1-2 times a week.

Level #7: 30 minute Cardio Zone cardio workout, 3-6 times a week.

Level #6: 40 minute Cardio Zone cardio workout, 3-6 times a week.

Level #5: 50 minute Cardio Zone cardio workout, 3-6 times a week.

Level #4: 60 minute Cardio Zone cardio workout, 3-6 times a week.

Level #3: 45-60 minute Cardio Zone cardio workout, including random, short-duration bursts (say 10 to 120 seconds) of extra effort, 3-6 times a week.

These random bursts will extend your heart rate into the Anaerobic Zone and Maximum Effort Zone periodically during the session. This is known as **Fartlek Training.**

Level #2: 45-60 minute Cardio Zone Fartlek Training workout, 2-4 times a week;
High Intensity Interval Training, 1-2 times a week.

Level #1: High Intensity Interval Training, 2-4 times a week;
45-60 minute Cardio Zone Fartlek Training workout, 1-2 times a week.

NOTES:

1. For Levels #10 to #16 you can feel free to walk for one exercise session and cycle for the next if you wish. There's no need to stick to just the one mode all the time.
2. Power sessions should always commence with a leisurely cycle rather than a brisk one, so that it can act as an effective warm-up.
3. For brisk-pace sessions of either walking or cycling on the exercise bike, perform a 5 minute warm-up of either walking or cycling at a leisurely pace first.
4. For all cardio workouts in the Fat Burning Zone or higher, perform a 10 minute warm-up of the same exercise in the Warm-Up Zone first.
5. At every level you should try to stagger your no-cardio days as much as possible and spread the workout days as evenly as possible throughout the week. Avoid grouping all your no-cardio days together.

6. Only you can decide when it's appropriate to move up in levels. Naturally you should try to push yourself to progress as quickly as you're able, but it's important not to exceed your capabilities either.

7. Where a range is shown for how many times a week a particular workout is to be done, it's up to you to decide what's best for you. If you're new to that particular level, you might opt for a lesser number, for example. These ranges are also there to allow days during the week for your resistance training. If you're not doing any resistance training but have opted for a fewer number of cardio days for some reason, you should try to use your free days for walking if possible.

8. When deciding on what type of exercise to use for your cardio sessions, keep in mind that variety is always a good thing. Your body quickly adapts to any exercise that you do on a regular basis and stops benefiting from it, so using a wide variety of different exercises is very beneficial.

9. The example cardio exercises suggested for Cardio Zone workouts also apply to Fartlek Training and High Intensity Interval Training.

10. You may, for your own reasons, decide to stop your progress at any level you choose. For example, you may decide that high-intensity cardio training isn't for you, and therefore go no further than Level #4, #5, or #6. At the end of the day this is entirely your prerogative, though you should always bear in mind that the higher the intensity of your cardio training, the more benefit you'll get from it.

Fartlek Training

If your goal is to increase your fitness as much as possible or to lose weight, there are great benefits to be had from high-intensity cardio exercise.

High-intensity cardio really is the pinnacle of cardio training –
it's the most effective calorie-burning exercise there is,
and it enhances both your aerobic and anaerobic fitness levels.

When doing Fartlek training, the number and duration of high-intensity bursts of effort will depend on what you can manage, according to your current level of fitness.

If you aim to work your way up to high-intensity training, you need to push yourself during Fartlek training so that you extend your level of intensity as often as you can, and therefore progress to that level over time.

A Fartlek Training session is generally an unplanned workout, you simply up your intensity level as you choose while you're exercising. Below are two examples, however, of what a 60 minute Fartlek Training session might look like in terms of your Heart Rate, just for your reference. Anaerobic Zone high-intensity bursts are shown in orange and Maximum Effort Zone high-intensity bursts in red, for clarity.

For these examples, let's assume your age is 30 and your Resting Heart Rate is 72, so that your calculated Maximum Heart Rate is 187 beats per minute. I'll leave it to you to use the Training Zone Calculator (see Page 9) to work out your training zones based on that information – it's good practice for you!

Example 1:

1. 6min at 158bpm
2. 1min at 170bpm
3. 7min at 152bpm
4. 15sec at 183bpm
5. 5min at 160bpm
6. 30sec at 180bpm
7. 12min at 156bpm
8. 2min at 168bpm
9. 9.5min at 152bpm
10. 20sec at 187bpm
11. 6min at 160bpm
12. 40sec at 175bpm
13. 9min at 158bpm
14. 45sec at 177bpm

Example 2:

1. 4min at 160bpm
2. 30sec at 178bpm
3. 3min at 156bpm
4. 15sec at 185bpm
5. 5min at 152bpm
6. 1min at 168bpm
7. 3min at 160bpm
8. 20sec at 175bpm
9. 4min at 156bpm
10. 15sec at 187bpm
11. 2min at 152bpm
12. 1min at 170bpm
13. 5min at 156bpm
14. 40sec at 173bpm
15. 3min at 160bpm
16. 15sec at 185bpm
17. 4min at 152bpm
18. 20sec at 177bpm
19. 3.5min at 158bpm
20. 20sec at 172bpm
21. 5min at 156bpm
22. 2min at 168bpm
23. 3.5min at152bpm
24. 15sec at 180bpm
25. 3min at 160bpm
26. 1min at 165bpm
27. 4min at 156bpm
28. 30sec at 173bpm

Bear in mind that these examples are just for illustrative purposes, in reality it takes your heart rate some time to react as you start exerting yourself.

It's not necessary to watch your heart rate monitor during the bursts of effort, you can just exert yourself as you feel you can. You'll find your heart monitor handy

however, for referencing your Cardio Zone during the low-intensity parts of the workout.

High Intensity Interval Training

When doing High Intensity Interval Training, it's wise to vary your workouts from day to day. This will ensure that your body is always challenged and all aspects of your energy systems and cardio fitness are thoroughly developed.

That being said, keep in mind that if fat loss is your goal, your rate of return will increase with intensity, so it would be appropriate to emphasize workouts with shorter-duration intervals of maximum-effort intensity.

Here are a few general rules of thumb with regard to High Intensity Interval Training to keep in mind:

1. The higher the intensity you train at, the more calories your body will burn per minute of exercise time.
2. Short, maximum-intensity intervals (10 to 15 seconds) focus on your ATP-PC energy system.
3. Moderate-duration intervals of 30 seconds to 2 minutes focus on your Glycolytic energy system.
4. The more time you spend in recovery intervals, the more you focus on cardiovascular fitness and your aerobic energy system.
5. The lower the ratio of high-intensity interval duration to recovery interval duration, the higher the intensity you'll be able to achieve.
6. The higher the ratio of high-intensity interval duration to recovery interval duration, the lower the intensity you'll be able to achieve.

Below are some examples of typical HIIT workouts. As for the Fartlek Training examples above, we'll assume your age is 30 and your Resting Heart Rate is 72, so that your calculated Maximum Heart Rate is again 187 beats per minute, and the same training zones as before apply.

Example 1:

Cross Trainer – 16 intervals of 30 sec working, 30 sec recovery
(Total Time: 15.5 mins, Work/Recovery Ratio: 1:1)

Example 2:

Punching Bag – 24 intervals of 20 sec working, 10 sec rest
(Total Time: 11 mins 50 sec, Work/Recovery Ratio: 2:1)

Example 3:

Exercise Bike – 24 intervals of 8 sec working, 12 sec recovery
(Total Time: 7 mins 48 sec, Work/Recovery Ratio: 2:3)

Example 4:

Sprinting – 8 intervals of 30 sec sprinting, 2 min walking recovery
(Total Time: 18 mins, Work/Recovery Ratio: 1:4)

Example 5:

Running – 10 x 100m sprints, 100m jog recovery
5 x 50m sprints, 50m jog recovery

Example 6:

Running – 4 x 800m runs, 60 sec rest
5 x 50m sprints, 50m jog recovery

RESISTANCE EXERCISE

Starting out on a resistance training program can sometimes be intimidating because of the endless variety of exercises and program configurations available. It doesn't need to be complicated though – as you'll soon see there's no reason why you can't keep it very simple yet still effective.

Equipment Choice

With regards to the choice of equipment type for your resistance training, there are four general options available to you:

1. Bodyweight Exercise.
2. Free Weights.
3. Resistance Bands.
4. Gym Machines.

Each of these options has their own pros and cons, so it's up to you to decide which is best for you. Let's take a quick look at each one:

Bodyweight Exercise is very convenient because there's usually very little or no equipment required. That means it can easily be done at home or in your garage gym. The major drawback to bodyweight exercise is that it isn't always easy to achieve the right amount of resistance, since your body's weight is what it is. There are often ways of getting around this problem, however.

Free Weight exercise is probably one of the most versatile types of resistance exercise you can do since it gives you infinite control over the amount of resistance you're using. For example, you can load up a dumbbell with as little as 0.5kg or as much as 25kg or more if you wish. The main drawback is that you need to purchase the equipment, although nowadays it isn't necessarily all that expensive.

Resistance Band exercise is even more versatile than free weight exercise since it doesn't rely on gravity to produce resistance. That means you can create exercises where you pull downwards, something you can't do with a gravity-based exercise. Even though you need to purchase several bands of different strength, they're usually not too costly. They're also very compact and portable – ideal for travel. The main drawback to resistance bands is that it's difficult to fine-tune resistance levels.

Gym Machine exercise can usually only be done in a gym, so they're normally not an option for home exercise. Cable-based machines offer all the versatility of resistance bands, with great control of resistance level as well. A drawback of some machine-based exercises is that the machine controls the exercise movement for you. This takes away the need for small stabilizer muscles to control the movement and therefore removes some of the benefit of the exercise.

If your intention is to work out in a gym, then equipment won't be an issue for you – they'll have pretty much everything you need. If you're working out at home on the other hand, a great way to start out is to focus on bodyweight and resistance band exercise, since these have the smallest equipment requirements.

Whenever possible you can then add dumbbells to your collection of equipment as well, so that you'll have more exercise options available. You'll find that 20kg weight sets with two dumbbells are not all that expensive, and these are great to begin with. You can buy another set or add more weights in the future as you go.

Exercise Selection

A major factor in the design of an effective resistance training program is that it covers all your major muscle groups. If you wish you can always target some muscle

groups more so than others – if you feel they're less developed or if you simply prefer to improve one area of your body more so, for your own reasons. Many women like to work towards developing great abs, for example.

The table below lists a collection of suggested bodyweight resistance training exercises, categorized according to which muscle group they primarily target. It also shows how you can increase or decrease the resistance of each exercise to make it easier or harder than the standard configuration, according to your needs.

Exercise	Reduce Resistance	Increase Resistance
Chest		
Push-Ups	- Do exercise from knees - Elevate hands	- Elevate feet; - Weighted backpack
Upper Back		
Chin-Ups	- Feet in Resistance Bands pulling upwards	- Weighted backpack
Pull-Ups		
Inverted Rows	- Lower feet	
Triceps		
Triceps Dips	- Feet in Resistance Bands pulling upwards	- Weighted backpack
Bench Dips	- Raise bench	- Elevate feet
Abdominals		
Crunches	- Decline bench - Cross arms on chest - Extend arms toward feet	- Incline bench
Sit-Ups		
Lying Leg/Hip Raises	- Incline bench	- Decline bench
Vertical Leg/Hip Raises		- Ankle weights
Obliques		
Horizontal Side Bends	- Lower feet	- Weighted backpack
Bent-Knee Lying Twists		- Weight between knees
Abdominals/Obliques		
Twisting Crunches	- Decline bench - Cross arms on chest - Extend arms toward feet	- Incline bench
Twisting Sit-Ups		

Exercise	Reduce Resistance	Increase Resistance
Lower Back		
Back Extensions	- Lower feet	- Weighted backpack
Glutes (Buttocks)		
Reverse Hyper-Extensions	- Incline bench	- Ankle weights
Hamstrings/Glutes		
Glute-Ham Raises	- Extend arms down sides	- Weighted backpack
Hamstring Raises		
Quadriceps		
Squats		- Weighted backpack
Lunges		
Calves		
Calf Raises		- Weighted backpack - Use single leg

This isn't an exhaustive list of course – there are many more bodyweight exercises that you can add. These are certainly some of the better-known ones, however. Also be aware that the list doesn't include any exercises for shoulders and biceps, since these aren't easy muscle groups to target with bodyweight exercises.

Below is a listing of common free weight exercises for your reference, once again categorized according to which muscle group they target:

Chest

Dumbbell Bench Press
Decline Dumbbell Bench Press
Dumbbell Pullovers
Dumbbell Flys
Decline Dumbbell Flys

Upper Back

Bent-Over Rows
One-Armed Bent-Over Dumbbell Rows
Lying Dumbbell Rows

Shoulders

- Shoulder Press
- Dumbbell Shoulder Press
- Dumbbell Front Raises
- Dumbbell Lateral Raises
- Dumbbell Rear Lateral Raises

Biceps

- Barbell Curls
- Dumbbell Curls
- Hammer Curls
- Preacher Curls

Triceps

- Dumbbell Kickbacks
- Standing Dumbbell Triceps Extensions
- Lying Dumbbell Triceps Extensions

Abs

- Dumbbell Push Crunches
- Dumbbell Push Sit-Ups
- Weighted Crunches
- Weighted Sit-Ups

Obliques

- Side Bends
- 45 Degree Dumbbell Side Bends
- Saxon Side Bends

Lower Back

- Barbell Deadlifts
- Dumbbell Straight-Leg Deadlifts

Glutes (Buttocks)

- Barbell Bent-Knee Good Mornings
- Dumbbell Lunges
- Dumbbell Single-Leg Stiff-Leg Deadlifts

Dumbbell Step-Ups

Dumbbell Squats

Hamstrings

Barbell Good Mornings

Dumbbell Straight-Leg Deadlifts

Dumbbell Lunges

Quadriceps

Dumbbell Squats

Dumbbell Step-Ups

Dumbbell Lunges

Calves

Barbell Standing Calf Raises

Dumbbell Standing Calf Raises

Dumbbell Single Leg Calf Raises

Once again, this list is by no means exhaustive – there are many more free weight exercises that you can add. As you can see, this list covers the entire range of muscle groups, although generally speaking you'll find it easier to target your core muscles (abdominals, obliques and lower back) using bodyweight exercises (with or without added weight).

The great thing about these free weight exercises is that many can easily be adapted to Resistance Band exercises as well. It's simply a matter of using bands instead of dumbbells to produce the resistance, and utilizing the same exercise form. A range of resistance bands of varying stiffness would come in handy here.

A word of caution though. Oftentimes it's quite difficult to get the required level of resistance using rubber bands, so from this point of view their use can sometimes be quite limited for some muscle groups. As I explain later on, training with low resistance levels and high numbers of repetitions usually fails to deliver good results.

You really need high to moderate weights to get that desired muscle tone.

For more information on the exercises I've listed above as well as others, and to see demonstrations of how they all should be done, simply click on the following link:

http://www.milliondollarbabyfitness.com/exercises

Your Program Design

With an understanding of the range of exercises available to you, it's time to take a look at how to bring them together into a coherent program.

As I mentioned earlier, there's a huge variety of different approaches that people take to their resistance training workout programs. And there are no doubt just as many differing opinions as to which approach is the most effective.

Rather than weigh into the whole debate as well though, what I'll do is show you a few very simple but highly effective approaches that you can use as a total beginner, but that will also serve you perfectly well after years of resistance training.

I've tried quite a number of different resistance training approaches over the years, and I've found that these variations that I'm about to present to you are very effective while still being flexible, versatile and user-friendly.

Having said that, once you've gained some degree of experience with resistance training you should by all means feel free to experiment with different program variations as well if you wish, to see which suits you best.

The 2-Day Split Program

Resistance training is almost never done for all muscle groups in the one session. Normally, they're separated into 2 or 3 sessions. These are referred to as **2-Day** and **3-Day Splits,** respectively.

With a 2-Day Split program therefore, you cover all the muscle groups over two separate days. This program is ideal if your recent level of experience with resistance training can be described as beginner to intermediate. So of course if you're just starting out, this is the place to begin.

With my 2-Day Split program, the first day of the program is an Upper Body day, and covers the following muscle groups:

- Chest
- Upper Back
- Shoulders
- Biceps
- Triceps
- Abdominals (optional)

The second day of my 2-Day Split program is a Lower Body day, and covers the following muscle groups:

- Quadriceps
- Hamstrings/Glutes (Buttocks)
- Calves
- Lower Back
- Abdominals
- Obliques

The 3-Day Split Program

With a 3-Day Split Program of course, you cover all the muscle groups over three separate days. This program is ideal if your recent level of experience with resistance training can be described as intermediate to advanced.

It's up to you to decide when and if you move on to this program from the 2-Day Split Program. It would probably be a good idea for you to have at least 12 months of experience in resistance training before adopting this program though.

The first day of my 3-Day Split program covers the following muscle groups:

- Chest
- Upper Back
- Biceps
- Triceps

The second day of the program covers the following muscle groups:

- Quadriceps
- Hamstrings/Glutes (Buttocks)
- Obliques
- Calves

The third day of the program covers the following muscle groups:

- Abdominals/Obliques
- Shoulders
- Lower Back
- Abdominals

Supersetting

Supersetting refers to a selection of different techniques that are used in resistance training to increase the effectiveness of the workout and/or to reduce the time required for the workout.

When supersetting, you essentially perform one set of a particular exercise, and then immediately follow that with a set of another exercise, with no rest period in between. The exercises chosen depend on which supersetting strategy you're using, as you'll see shortly.

It can be argued that supersetting is strictly an advanced technique, and while it certainly isn't recommended for beginners, it's not necessarily difficult to implement so there are no real problems with intermediate exercisers using at least some supersetting techniques.

Let's take a brief look at four different supersetting strategies.

Protagonist/Antagonist Supersetting

Whenever you perform an exercise, the major muscle or muscle group involved in generating force for the action is called the **protagonist.** The muscle or muscle group that works in opposition to that muscle (which would of course not be generating any force as part of the exercise) is called the **antagonist.**

The major examples of protagonist/antagonist muscle pairs are:

- biceps/triceps
- quadriceps/hamstrings
- chest/upper back
- lower back/abdominals

Each one of these muscles or muscle groups generates force in the opposite direction to its partner.

Protagonist/antagonist supersetting involves working these opposing muscle pairs one after the other as part of your workout.

Notice that for both the 2-Day Split and the 3-Day Split programs I outlined above, the selection of the order in which muscle groups are trained was made with supersetting in mind. See how the four major examples of protagonist/antagonist muscle pairs that I just mentioned always appear adjacent each other?

As an example then, if you were to use to use supersetting in your workout, you would perform one set of a bicep exercise, followed immediately by one set of a tricep exercise, followed by a rest period. You would then repeat this sequence for however many sets you wanted to perform.

If you chose not to superset on the other hand, you would simply perform the required number of sets of the bicep exercise, with a rest period after each set, followed by the required number of sets of the tricep exercise, with a rest period after each set.

Protagonist/antagonist supersetting is very effective for getting the antagonist muscle loose while the protagonist is doing work. For example, when the biceps are contracted, the triceps are relaxed.

This will allow you to use more weight or to do additional repetitions for your tricep muscles.

Pre-Fatiguing Supersetting

As the name suggests, pre-fatiguing supersetting is where you exhaust a muscle or muscle group using a simple isolation (single joint) exercise, before you work it harder with a full-blown compound exercise (an exercise involving two or more joints).

This supersetting strategy can therefore only be used where you intend to perform more than one exercise type for a particular muscle group.

An example of pre-fatiguing supersetting for say your quadriceps muscles would be to perform one set of leg extensions (an isolation exercise), followed immediately by one set of squats (a compound exercise), followed by a rest period. You would then of course repeat this sequence for however many sets you wanted to perform.

As before, if you chose not to use supersetting, you would simply perform the required number of sets of the leg extensions, with a rest period after each set, followed by the required number of sets of the squats, with a rest period after each set of those.

It is possible to use pre-fatiguing supersetting with two compound exercises, but this is generally reserved for more advanced exercisers because it makes for an very challenging workout.

This supersetting strategy allows you to increase the intensity of your workouts, without needing to use excessive weights, which can lead to a degradation of form and perhaps even injuries. Because it causes your muscles to be fatigued prior to their real workout even starting, it makes your workouts very effective indeed.

Post-Fatiguing Supersetting

Post-fatiguing supersetting is almost identical to pre-fatiguing supersetting, the only difference being that the compound exercise for each muscle group is performed first, followed by its corresponding isolation exercise.

An example for your quadriceps muscles would therefore be the opposite of the above example – squats followed by leg extensions.

Post-fatiguing is generally more challenging than pre-fatiguing because the level of exhaustion of your muscles is greater earlier on in your workout, thanks to the compound exercise.

The 3-Day Split programs I present to you below will allow you to include isolation/ compound exercise supersetting if you choose. You can also decide yourself whether to use pre- or post-fatiguing.

Staggered Supersetting

Staggered supersetting is a strategy whereby you combine working out a major muscle or muscle group with a minor and completely unrelated muscle or muscle group. This is most commonly used for forearms, abdominals and calf muscles.

The way to do this strategy is to “squeeze in” a set of forearm, abdominal or calf exercises in between sets for any major, unrelated muscle group.

For example, you could perform a set of calf raises in between every set of bench presses (chest exercises) you do. You would therefore perform one set of bench presses, followed immediately by one set of calf raises, followed by a rest period. And you would then repeat this sequence for the required number of sets.

Instead of resting and therefore wasting time in between sets of major exercises, you’re making good use of your time by working a minor muscle or muscle group which is in no way involved with the major exercise.

This gets your workout finished much more quickly and saves you the monotony that many people feel from doing these small body parts by themselves.

The intention with staggered supersetting is simply to make best use of your time by allowing for full rest and recovery of one muscle or muscle group while at the same time working another.

The resistance training programs I'm presenting to you below don't officially include any staggered supersetting, but you should keep this technique in mind and use it at any time you choose, if you wish to:

- Exercise your forearms.
- Increase your abdominal workouts by doing an extra session on a different day, during the rest periods of an unrelated muscle group exercise.
- Save time on Day 2 of either the 2-Day or 3-Day Split program by doing your calf exercises on a different day, during the rest periods of some upper body exercise instead.

Pyramid Sets

In resistance training, each exercise movement you perform is referred to as a **repetition,** or **rep,** for short. You generally perform a number of repetitions – this is referred to as a **set** – before taking a rest of some duration. This may be anything from say 30 seconds to 3 minutes.

You generally perform several sets of a particular exercise before moving on to the next one. Normally, the same weight or resistance is used for each set of a particular exercise. But not always.

Pyramid sets are basically resistance training sets whereby you increase the resistance, or weight, with each set, while decreasing the number of repetitions per set.

It stands to reason, of course, that the greater the weight you use, the less repetitions you'll be able to perform.

Here's a simple example for say, dumbbell bench presses:

Set 1: 7.5kg, 12 Reps

Set 2: 10kg, 10 Reps

Set 3: 12.5kg, 8 Reps

Set 4: 15kg, 6 Reps

The reason this protocol is referred to as a pyramid set is that you're essentially building a pyramid of repetitions, from a large number at the base of the pyramid to a small number at the top. And as you can see, as you work your way to the top of the pyramid the load increases.

With this arrangement, you're targeting some muscle endurance, muscle strength, and everything in between as part of each workout.

One important point to be aware of however when using pyramid sets is that you need to take extra care when working out with heavier loads than those you've been accustomed to. It's vital that you maintain the correct form throughout your workout, even with heavier weights, to get maximum benefit and minimize the chance of any injuries.

The major benefit of using pyramid sets in your resistance training workouts is that it trains your body to adapt to a wide range of resistances. In other words, it develops a variety of muscle attributes and not just one, as most programs have a tendency to do.

This multi-faceted development is more in line with the principles of achieving good all-round health and fitness.

None of the programs I'm presenting to you below contain pyramid sets, simply because, unless you have a wide variety of pre-prepared free weights available (as only a well-equipped gym would normally have), you'll find switching weights for each set time consuming and a little impractical.

I think it's important that you know about pyramid sets however and why they exist, in case you choose to experiment with them at some point in the future.

Mixing up your resistances the way pyramid sets do leads you to achieving muscular development more quickly and effectively, since it makes it more difficult for your body to adapt to your workouts. As you'll see a little later on however, there are other methods we can use to achieve this desired goal.

Exercise Days Per Week

Generally speaking you should aim to do resistance training two to three times per week. When starting out two should be fine, then you should move on to three sessions per week once you feel ready.

If your goals are more focused toward muscle development and toning, you may even opt for a session every other day. This averages out to 3½ sessions per week.

You shouldn't really need to do resistance training more frequently than this in most cases, perhaps four days a week at the very most – bear in mind that

it's during your recovery days that your muscles actually repair and grow following their workout.

By working out too frequently you could actually risk not giving your muscles enough time and rest to develop as they should, and at some point your workouts can start to become counterproductive.

Number of Sets

The number of sets to do of each exercise is a matter of personal preference, depending on how much you want to take on. As a general rule however, if you're just starting out you should probably settle for two sets on the 2-Day Split Program, progressing to three sets within about two to three months.

Later on you can even advance to four sets if you wish. If and when you move on to the 3-Day Split Program, you should be doing three to four sets of each exercise.

The Overall Program

At the end of this manual you'll find four Record Sheets that you can use to track your resistance training workouts. There are two Record Sheets for the 2-Day Split program and two for the 3-Day Split program.

You can simply print out as many copies of these Record Sheets as you need to record your progress from session to session.

The 3-Phase Program Structure

Whether you're using the 2-Day Split or the 3-Day Split program, your program is divided into three phases, and is structured so that it repeats itself every 9 to 24 weeks, depending on the program.

Phase #1 of the program focuses mainly on muscle growth, Phase #2 focuses mainly on muscle growth and strength development, and Phase #3 focuses mainly on strength development.

The way these objectives are achieved is by using different numbers of reps for each of the three phases. This is outlined as follows:

Phase #1:	Core muscle groups:	12-24 reps
	All other muscle groups:	12-16 reps
Phase #2:	Core muscle groups:	12-24 reps
	All other muscle groups:	8-12 reps
Phase #3:	Core muscle groups:	12-24 reps
	All other muscle groups:	6-8 reps

NOTE: Core muscles include abdominals, obliques, and lower back.

Like pyramid sets, using this 3-phase technique allows your muscles to experience a variety loads and conditions – remember that decreasing the number of repetitions you use per set means that you also use heavier weights.

This approach also makes it much more difficult for your body to adapt to your workouts, and will therefore help you to achieve muscular development more quickly and effectively.

Supersetting Variations

As I discussed earlier, another method you may decide to use to boost the effectiveness of your workouts is supersetting.

If you take a look at the Record Sheets in the Appendix of this manual, you'll notice that the 2-Day Split Program has 2 Upper Body sessions and 2 Lower Body Sessions. They're labeled Upper Body #1, Upper Body #2, Lower Body #1, and Lower Body #2.

You'll also notice that each of the splits in the 3-Day Split program has 2 sessions as well. These are labeled First Split #1, First Split #2, Second Split #1, Second Split #2, Third Split #1, and Third Split #2.

Now, take a look at how the order in which the muscle groups are worked in session #1 differs from that of session #2 in each case. Basically, what's happening is that the order of each of the protagonist/antagonist muscle group pairs is simply being reversed.

For example, in the case of the 2-Day Split Program, in Upper Body #1 we're working biceps followed by triceps. This is so that your triceps can get the benefit of

protagonist/ antagonist supersetting. In Upper Body #2 therefore, we work triceps followed by biceps, so that the biceps then get the benefit.

The same principle carries for all the protagonist/antagonist muscle group pairs. This is why each of your splits (two for the 2-Day Split program and three for the 3-Day Split program) has two versions.

Program Calendars

Now, at this point all this may be getting a little confusing or overwhelming for you. Don't worry however, I'm about to simplify it all.

The reason I've just gone through this whole explanation about supersetting, pyramid sets, etc, is that I personally believe it's important for you to understand not only what to do for your exercise program, but also why you're doing it and how it's all supposed to work.

If you really don't want to be concerned about all that however, that's no problem. All you'll need to do is follow the few steps I'm going to outline now to get started.

To design your own workout program then, here's the process you need to follow:

1. Decide on which of the two programs you wish to follow – the 2-Day Split or the 3-Day Split.
2. Decide on how many days per week you wish to do resistance training. I recommend a minimum of two days a week for the 2-Day Split program, and a minimum of three days a week for the 3-Day Split program.
3. Decide on how many sets you want to do.
4. Choose appropriate exercises for each muscle group you'll be training.
5. Follow the appropriate Program Calendar of the seven that are included in the Appendix of this manual.
6. Follow the steps outlined in the next section for preparing for and performing each workout session.

Workout Sessions

Following below are step-by-step instructions for using your Record Sheets and putting together your individual workout sessions, for both the 2-Day Split and 3-Day Split programs:

The 2-Day Split Program

1. As I mentioned earlier, on the 2-Day Split Program you'll most likely be doing two to three sets of each exercise, perhaps four. Your Record Sheet however, allows space to record up to five sets. This is because you may choose to do more sets of a particular exercise type to focus on developing a certain muscle group, or because you find that exercise particularly easy to recover from.

   For example, you'll find that you recover from bicep exercises quite quickly, unlike quadricep exercises, which can often leave your legs feeling weak for quite some time.

2. To prepare for each workout session, start by choosing a selection of exercises and writing their names next to the corresponding muscle group on your Record Sheet.

3. If you decide to use supersetting as part of your workout, simply indicate this by putting an opening bracket around the exercise pairs to be supersetted.

4. Abdominal exercises are optional during your Upper Body days. Your core muscles (abdominals, obliques and lower back) are trained on your Lower Body days, but you can do additional ab work on your Upper Body days only if you wish to.

5. You'll need to be able to estimate the level of exertion for an exercise on a scale of 1 to 10, where 1 is extremely easy, 9 is extremely difficult, and 10 is really digging deep mentally and making an extraordinary effort. For each set of each exercise you do, you'll be aiming for an effort of about 8.5 to 9. Before starting your exercise session, record your target effort level for each exercise type in the Effort column of your Record Sheet.

6. As you know by now, the number of repetitions of each exercise you do in each set depends upon which of the three phases of your program you're currently in.

7. For each exercise type, you'll need to choose a weight that will produce the target level of effort at the target number of repetitions for each set. When starting out on your program, this might take a few sessions of each workout to get right. Don't worry, you'll soon get it.

   Write this weight next to each exercise in the Weight column of your Record Sheet. In the case of bodyweight exercises, simply write a note to indicate which variation of the exercise you'll use.

For example, if you're doing push-ups with your feet up on a 30cm step, simply write *30cm* in the Weight column. If you're doing sit-ups with your arms crossed on your chest, you can simply write *chest*. If you're using resistance bands, you can write the color of the bands you'll use.

We'll discuss this a little further in Point 9.

8. For each exercise session, record the date and the start time of the session on your Record Sheet when you commence.

9. Work through the exercises on your Record Sheet in order, completing all the sets for each exercise before moving on to the next. As you complete each set of each exercise, record the number of repetitions you did when you hit your target exertion level in the appropriate space of your Record Sheet.

10. You would normally rest for 60 seconds in between sets, and 120 seconds at the end of each exercise type. You may decide to vary this however for your own reasons. As you're working out, write the length of your rest periods in the appropriate spaces in the Rest column of your Record Sheet.

11. At the end of each exercise type, you may find that the weight you chose for that exercise was either too light or too heavy to achieve the target number of repetitions per set at the target level of effort. If this is the case, simply write a note in the Comments column of your Record Sheet to ensure you make the appropriate adjustment for your next exercise session.

12. You'll find that for each exercise, with each set you'll do fewer and fewer repetitions per set to achieve your target effort level as your muscles gradually fatigue. You might, for example, do 12 repetitions to achieve an effort of 9 in the first set, but only 8 repetitions to reach 9 in the third set. This is partly why we specify a range of repetitions for each set.

    Don't be too concerned if the range of repetitions you can manage for a given exercise type doesn't match with your target range exactly. For example, you might be doing four sets of a particular exercise, managing 12 repetitions for the first set and only 6 repetitions for the 4th set.

    That's fine, just get as close as you can. In this case you might adjust the weight for your next exercise session to shoot for a range of say 13 to 7 repetitions. This will get your target average as close as possible to what you're looking for during Phase #1 of your program.

13. At the end of your exercise session, record the end time on your Record Sheet. Work out the session duration and record that on your Record Sheet as well.

The 3-Day Split Program

For the 3-Day Split Program simply follow the exact step-by-step procedure described above for the 2-Day Split Program. There are just a couple of differences to note, however:

1. As you'll see from your Record Sheets, each muscle group requires two exercises rather than just one.

2. It's strongly recommended that you make one exercise for each muscle group an isolation exercise, and one a compound exercise. If you do your isolation exercise first, you'll effectively be using the pre-fatiguing supersetting strategy. If you do your isolation exercise second, you'll be using post-fatiguing supersetting.

   Which you choose to use is entirely up to you. Perhaps you can try both and see which suits you more.

   An isolation exercise is one where you're moving just one joint of your body. Some examples are: bicep curls (elbows), barbell Good Mornings (hips), and dumbbell kickbacks (shoulders).

   A compound exercise is one where you're moving two or more joints of your body. Some examples are: squats (hips, knees, ankles), dumbbell bench press (shoulders, elbows), and pull-ups (shoulders, elbows).

Working Your Program

Most resistance training programs you come across specify fixed values for the number of repetitions to be done for each set. What this means is that as you progress through your sets and your muscles gradually fatigue, you need to exert more and more effort to perform the repetitions.

To be able to finish all the sets therefore, the earlier sets need to be done at a relatively low level of effort, so that you hit your target level of effort on the last repetition of the last set.

As you can see, the program I've outlined here specifies a range of repetitions per set, but a constant level of effort. I personally like this approach because it means you're utilizing each set to its fullest effect.

Program Progression

As I mentioned earlier, as a total beginner you should be advancing from 2 sets per exercise to 3 sets per exercise after about 2 to 3 months on the 2-Day Split Program.

Once you've used the 2-Day Split Program for about 12 months at 3 repetitions per set, you can then progress to the 3-Day Split Program if you wish, starting with 3 or 4 repetitions per set.

These are just general guidelines however; you don't need to follow them to the letter. How soon you progress is largely up to your own personal preference and goals.

Form

While everyone likes the thought of progressing through a program quickly and making rapid gains, it's very important never to get ahead of yourself.

Without a doubt the most important consideration in any resistance training program you undertake is maintaining correct form. This will ensure that you minimize your chance of injury, and that your workout is as effective as it can be.

Trying to do too much too soon, or using heavy weights that you're not ready for, will not only compromise your form, it's almost certainly a recipe for disaster. Of course, this should be avoided at all costs.

You'll see that as you progress from Phase #1 to Phase #2 and so on, the weights you'll be using increase. When you're starting out, you may find the heavier weights intimidating and difficult to manage. If this is the case, by all means stick with Phase #1 for as long as you need to.

When you're good and ready to take the step up in weights to Phase #2, go for it.

The important thing is that you never do anything that you're not entirely comfortable with.

The same goes for starting out on your program. If you find that you can't achieve a level of exertion of 8.5 to 9 while still maintaining good form, by all means start out with a lower target exertion – say 7 to 8.

Gradually and in your own time you can work your way up to the recommended 8.5 to 9. Always remember, there's no hurry, just feel free to work at your own pace.

The Heavy Weight, Low Reps vs Light Weight, High Reps Debate

Since we're on the topic of form and weight sizes, this is a good time to talk about the reasoning behind our choice of repetitions for these training programs.

You'll see that although the programs I've outlined in this manual give you a lot of leeway in terms of choosing how often you train, what exercises you perform, how many sets you do, and so on, the number of repetitions you do per set during each phase of your program is fixed.

A great many women spend hours in the gym doing endless numbers of repetitions with tiny weights.

This is definitely NOT the way to perform resistance exercise if your goal is to tone up your body and look good.

In fact, using very light weights, strictly speaking, isn't even resistance training. It falls more under the category of muscle endurance training. Muscle endurance is nice, but it won't make you look any better! And it won't do much to prevent the loss of muscle during weight loss.

Toning up and looking great requires training with moderate to heavy weights, at low to moderate repetitions. This is commonly known and accepted among trainers, fitness models and competitors, because it works.

The format and repetitions I've chosen for the programs in this manual have been optimized for toning up your body, and to maintain or even increase muscle (depending on how much training you do) during a weight loss program.

Please don't fall for the old *"high reps are better because they burn more calories"* routine. Cardio is for burning calories, resistance training is for muscle development. The programs I've presented here will have you going through your routines quickly and effectively.

Variety

Variety in any workout program is important because it prevents your body from adapting to the exercises, where it would cease to get any further benefit from them.

The resistance programs I've outlined in this manual are good, all-round programs that will provide great benefits in the way of muscle tone and strength. As you

progress through each phase of your program you'll be working out your muscles in different ways to effectively produce fast results.

You should note which phase of your program you're currently on, on the top left hand corner of each of your Record Sheets.

It's also a good idea to change around the exercises you do every once in a while as well, just to keep things interesting and to stop your program going stale. It doesn't necessarily need to be each week, perhaps every few weeks or so.

Overload and Recovery

It's important to understand how resistance training causes your musculature to tone up and grow.

In a nutshell, by overloading your muscles in training, small micro-tears occur in your muscle fibers. These then heal and reform during the recovery period (the period in between your workouts), leading to muscle growth.

That's it! Pretty simple really, isn't it?

Now, generally speaking, your reasons for undertaking resistance training will fall under one of two categories – development, and maintenance.

If your goal is to develop muscle strength, tone, or size,
then it's essential that you constantly exceed your previous limits in training.

That doesn't mean you need to do it each and every session, but you *do* need to progress over time.

Failing to do so will mean that overloading of your muscles won't occur, meaning that muscle growth and development won't occur. In other words, you'll plateau. Not allowing your muscles time to recover adequately in between training sessions will also impede your development (that is, it will also cause plateauing).

Now, if your objective is to simply maintain the muscle tone you already have, or to prevent the loss of muscle during a weight loss program, then strictly speaking you're not trying to actually develop your musculature.

In this case, constant overloading of your muscles isn't as essential. It's important to note however, that as your program progresses and you get physically stronger,

you'll still need to increase your workload over time (though not necessarily to the same degree) to maintain the same level of effectiveness in your program.

At the end of the day, your body will tell you whether or not your program is working as intended. As you progress through your resistance training program, it's important to monitor your Fat-Free Mass on a regular basis, as I outline a little later, to ensure that your objectives are constantly being met.

FUNCTIONAL TRAINING

Functional training, done correctly, can really be considered the pinnacle of working out, in terms of overall fitness, strength and weight loss. It makes no distinction between forms of exercise, but rather, combines all types of exercise in the one session.

As a result, it's not a structured workout as such, but rather it consists of a group of varying complex tasks that need to be completed either as quickly as possible or within a specified timeframe.

In terms of all-round fitness and the development of physical attributes, functional training stands at the top of the heap. That's because it's always changing, always challenging, and not a workout that your body can adapt to or that you can prepare for.

Designing a personal functional training based program for yourself can be quite challenging however, because of the sheer number of different possibilities of exercises and combination thereof that can be used. It requires some degree of exercise knowledge and creativity.

For this reason, functional training is usually more suitable for advanced exercisers, especially those who are under the guidance or advice of a qualified personal trainer who has some background in this area.

Below are a few examples of functional training workout routines. As I mentioned however, the possibilities are virtually endless.

Example 1:

3 sets of the following circuit:

- 25 sledgehammer swings – right handed (into a large tire)

- 25 sledgehammer swings – left handed
- 400 meter run
- 100 box jumps (jumping up onto a 50cm high box with both feet, then back down)
- 5 x 6 meter rope climbs (climbing up a 6m rope and back down)
- 60 seconds rest

Example 2:

3 sets of the following circuit:

- 50 medicine ball slams (holding the medicine ball overhead and slamming it into the ground in front of you)
- 500 stair climbs (climbing up and down stairs, 500 up and 500 down)
- 20 sandbag lifts – right handed (lifting a large sandbag from the ground onto your right shoulder and putting it back down again)
- 20 sandbag lifts – left handed
- 100 burpees
- 60 seconds rest

Example 3:

3 sets of the following circuit:

- 200 power punches into a heavy punching bag
- 25 Turkish Get-Ups – right hand (an all-body dumbbell exercise)
- 25 Turkish Get-Ups – left hand
- 75 lateral box jumps (jumping sideways over a 30cm high box, alternating left to right)
- 50 rope swings (swinging a large rope up and down at one end, 50 times)
- 60 seconds rest

As you can see, each of these examples works your aerobic and anaerobic energy systems and therefore improves your overall cardiovascular fitness. In addition, they develop attributes such as strength, power, explosiveness, agility, speed and muscle tone as well.

MONITORING YOUR RESULTS

If you're exercising for either weight loss or muscle gain, it's very important to monitor how your body is changing, so that you can adapt your exercise program accordingly if necessary.

The primary goal of a weight loss program is to lose body fat without sacrificing muscle tissue.

Sacrificing a little muscle weight may be OK in some cases, especially if you have a lot of fat to lose, and gaining some muscle weight is certainly OK, and is in fact even desirable.

The primary goal of a muscle gain program is to increase your muscle weight without increasing your body fat as well.

Of course, decreasing your body fat in the process would be a bonus.

So how do you monitor whether your exercise program is in fact doing its job? Well, quite simply, by tracking your **Fat Percentage.** By measuring your body weight and your Fat Percentage on a weekly basis, you'll be able to monitor changes in your body's **Fat Mass** and **Fat-Free Mass.**

A good quality set of fat percentage bathroom scales is ideal for this.

Fat Mass is pretty self-explanatory – it's the total weight of all the fat in your body. Fat-Free Mass is the total weight of everything else. That includes bones, organs, muscle, water, minerals, etc.

There are only 2 components of Fat-Free Mass that change in the short- to medium-term – muscle weight and water weight.

Water weight doesn't normally change all that much – usually it changes the most when you first start on a weight loss program. After that, it only undergoes very small changes of a few percent at the most, as your Fat Mass or muscle mass change.

What that means then, is that these small errors aside, any changes in Fat-Free Mass give you a reasonably accurate indication of changes in your muscle mass. So monitoring your Fat-Free Mass is essentially a way of monitoring your muscle mass.

To record your Fat Mass and Fat-Free Mass each week is very simple; all you need is to use the following two formulas:

Fat Mass = Bodyweight x Fat Percentage ÷ 100

Fat-Free Mass = Bodyweight – Fat Mass

So as an example, if your bodyweight were 60kg and your Fat Percentage 25%, your readings would be:

Fat Mass = 60 x 25 ÷ 100 = 15kg

Fat-Free Mass = 60 – 15 = 45kg

See? Simple!

By recording these two values each week you can track the direction your body's going in, and thereby keep it on track towards your goal. Once you see that things aren't progressing as they should, you can go about making the appropriate changes to your exercise program and/or diet.

Just remember these four simple rules:

1. Cardio exercise burns calories and therefore fat.
2. Resistance exercise maintains or increases muscle.
3. A calorie deficit causes loss of body weight.
4. A calorie surplus causes a gain in body weight.

Simply use these as your guide as to whether you need to increase or decrease your cardio exercise, resistance exercise, and calorie intake.

APPENDIX

2-Day Split Program Calendar – 2 Days Per Week

Phase #1 12-16 Reps	**Week 1**	Day 1	Upper Body #1
		Day 2	Lower Body #1
	Week 2	Day 1	Upper Body #2
		Day 2	Lower Body #2
	Week 3	Day 1	Upper Body #1
		Day 2	Lower Body #1
	Week 4	Day 1	Upper Body #2
		Day 2	Lower Body #2
	Week 5	Day 1	Upper Body #1
		Day 2	Lower Body #1
	Week 6	Day 1	Upper Body #2
		Day 2	Lower Body #2
Phase #2 8-12 Reps	**Week 7**	Day 1	Upper Body #1
		Day 2	Lower Body #1
	Week 8	Day 1	Upper Body #2
		Day 2	Lower Body #2
	Week 9	Day 1	Upper Body #1
		Day 2	Lower Body #1
	Week 10	Day 1	Upper Body #2
		Day 2	Lower Body #2
	Week 11	Day 1	Upper Body #1
		Day 2	Lower Body #1
	Week 12	Day 1	Upper Body #2
		Day 2	Lower Body #2
Phase #3 6-8 Reps	**Week 13**	Day 1	Upper Body #1
		Day 2	Lower Body #1
	Week 14	Day 1	Upper Body #2
		Day 2	Lower Body #2
	Week 15	Day 1	Upper Body #1
		Day 2	Lower Body #1
	Week 16	Day 1	Upper Body #2
		Day 2	Lower Body #2
	Week 17	Day 1	Upper Body #1
		Day 2	Lower Body #1
	Week 18	Day 1	Upper Body #2
		Day 2	Lower Body #2

2-Day Split Program Calendar – 3 Days Per Week

Phase #1 12-16 Reps	**Week 1**	Day 1	Upper Body #1
		Day 2	Lower Body #1
		Day 3	Upper Body #2
	Week 2	Day 1	Lower Body #2
		Day 2	Upper Body #1
		Day 3	Lower Body #1
	Week 3	Day 1	Upper Body #2
		Day 2	Lower Body #2
		Day 3	Upper Body #1
	Week 4	Day 1	Lower Body #1
		Day 2	Upper Body #2
		Day 3	Lower Body #2
Phase #2 8-12 Reps	**Week 5**	Day 1	Upper Body #1
		Day 2	Lower Body #1
		Day 3	Upper Body #2
	Week 6	Day 1	Lower Body #2
		Day 2	Upper Body #1
		Day 3	Lower Body #1
	Week 7	Day 1	Upper Body #2
		Day 2	Lower Body #2
		Day 3	Upper Body #1
	Week 8	Day 1	Lower Body #1
		Day 2	Upper Body #2
		Day 3	Lower Body #2
Phase #3 6-8 Reps	**Week 9**	Day 1	Upper Body #1
		Day 2	Lower Body #1
		Day 3	Upper Body #2
	Week 10	Day 1	Lower Body #2
		Day 2	Upper Body #1
		Day 3	Lower Body #1
	Week 11	Day 1	Upper Body #2
		Day 2	Lower Body #2
		Day 3	Upper Body #1
	Week 12	Day 1	Lower Body #1
		Day 2	Upper Body #2
		Day 3	Lower Body #2

2-Day Split Program Calendar – Alternate Days

Phase #1 12-16 Reps	**Week 1**	Day 1	Upper Body #1
		Day 2	Lower Body #1
		Day 3	Upper Body #2
		Day 4	Lower Body #2
	Week 2	Day 1	Upper Body #1
		Day 2	Lower Body #1
		Day 3	Upper Body #2
	Week 3	Day 1	Lower Body #2
		Day 2	Upper Body #1
		Day 3	Lower Body #1
		Day 4	Upper Body #2
	Week 4	Day 1	Lower Body #2
		Day 2	Upper Body #1
		Day 3	Lower Body #1
Phase #2 8-12 Reps	**Week 5**	Day 1	Upper Body #2
		Day 2	Lower Body #2
		Day 3	Upper Body #1
		Day 4	Lower Body #1
	Week 6	Day 1	Upper Body #2
		Day 2	Lower Body #2
		Day 3	Upper Body #1
	Week 7	Day 1	Lower Body #1
		Day 2	Upper Body #2
		Day 3	Lower Body #2
		Day 4	Upper Body #1
	Week 8	Day 1	Lower Body #1
		Day 2	Upper Body #2
		Day 3	Lower Body #2
Phase #3 6-8 Reps	**Week 9**	Day 1	Upper Body #1
		Day 2	Lower Body #1
		Day 3	Upper Body #2
		Day 4	Lower Body #2
	Week 10	Day 1	Upper Body #1
		Day 2	Lower Body #1
		Day 3	Upper Body #2
	Week 11	Day 1	Lower Body #2
		Day 2	Upper Body #1
		Day 3	Lower Body #1
		Day 4	Upper Body #2
	Week 12	Day 1	Lower Body #2
		Day 2	Upper Body #1
		Day 3	Lower Body #1

2-Day Split Program Calendar – Alternate Days (cont.)

Phase #1 12-16 Reps	**Week 13**	Day 1	Upper Body #2
		Day 2	Lower Body #2
		Day 3	Upper Body #1
		Day 4	Lower Body #1
	Week 14	Day 1	Upper Body #2
		Day 2	Lower Body #2
		Day 3	Upper Body #1
	Week 15	Day 1	Lower Body #1
		Day 2	Upper Body #2
		Day 3	Lower Body #2
		Day 4	Upper Body #1
	Week 16	Day 1	Lower Body #1
		Day 2	Upper Body #2
		Day 3	Lower Body #2
Phase #2 8-12 Reps	**Week 17**	Day 1	Upper Body #1
		Day 2	Lower Body #1
		Day 3	Upper Body #2
		Day 4	Lower Body #2
	Week 18	Day 1	Upper Body #1
		Day 2	Lower Body #1
		Day 3	Upper Body #2
	Week 19	Day 1	Lower Body #2
		Day 2	Upper Body #1
		Day 3	Lower Body #1
		Day 4	Upper Body #2
	Week 20	Day 1	Lower Body #2
		Day 2	Upper Body #1
		Day 3	Lower Body #1
Phase #3 6-8 Reps	**Week 21**	Day 1	Upper Body #2
		Day 2	Lower Body #2
		Day 3	Upper Body #1
		Day 4	Lower Body #1
	Week 22	Day 1	Upper Body #2
		Day 2	Lower Body #2
		Day 3	Upper Body #1
	Week 23	Day 1	Lower Body #1
		Day 2	Upper Body #2
		Day 3	Lower Body #2
		Day 4	Upper Body #1
	Week 24	Day 1	Lower Body #1
		Day 2	Upper Body #2
		Day 3	Lower Body #2

2-Day Split Program Calendar – 4 Days Per Week

Phase #1 12-16 Reps	**Week 1**	Day 1	Upper Body #1
		Day 2	Lower Body #1
		Day 3	Upper Body #2
		Day 4	Lower Body #2
	Week 2	Day 1	Upper Body #1
		Day 2	Lower Body #1
		Day 3	Upper Body #2
		Day 4	Lower Body #2
	Week 3	Day 1	Upper Body #1
		Day 2	Lower Body #1
		Day 3	Upper Body #2
		Day 4	Lower Body #2
Phase #2 8-12 Reps	**Week 4**	Day 1	Upper Body #1
		Day 2	Lower Body #1
		Day 3	Upper Body #2
		Day 4	Lower Body #2
	Week 5	Day 1	Upper Body #1
		Day 2	Lower Body #1
		Day 3	Upper Body #2
		Day 4	Lower Body #2
	Week 6	Day 1	Upper Body #1
		Day 2	Lower Body #1
		Day 3	Upper Body #2
		Day 4	Lower Body #2
Phase #3 6-8 Reps	**Week 7**	Day 1	Upper Body #1
		Day 2	Lower Body #1
		Day 3	Upper Body #2
		Day 4	Lower Body #2
	Week 8	Day 1	Upper Body #1
		Day 2	Lower Body #1
		Day 3	Upper Body #2
		Day 4	Lower Body #2
	Week 9	Day 1	Upper Body #1
		Day 2	Lower Body #1
		Day 3	Upper Body #2
		Day 4	Lower Body #2

3-Day Split Program Calendar – 3 Days Per Week

Phase #1 12-16 Reps	**Week 1**	Day 1	First Split #1
		Day 2	Second Split #1
		Day 3	Third Split #1
	Week 2	Day 1	First Split #2
		Day 2	Second Split #2
		Day 3	Third Split #2
	Week 3	Day 1	First Split #1
		Day 2	Second Split #1
		Day 3	Third Split #1
	Week 4	Day 1	First Split #2
		Day 2	Second Split #2
		Day 3	Third Split #2
Phase #2 8-12 Reps	**Week 5**	Day 1	First Split #1
		Day 2	Second Split #1
		Day 3	Third Split #1
	Week 6	Day 1	First Split #2
		Day 2	Second Split #2
		Day 3	Third Split #2
	Week 7	Day 1	First Split #1
		Day 2	Second Split #1
		Day 3	Third Split #1
	Week 8	Day 1	First Split #2
		Day 2	Second Split #2
		Day 3	Third Split #2
Phase #3 6-8 Reps	**Week 9**	Day 1	First Split #1
		Day 2	Second Split #1
		Day 3	Third Split #1
	Week 10	Day 1	First Split #2
		Day 2	Second Split #2
		Day 3	Third Split #2
	Week 11	Day 1	First Split #1
		Day 2	Second Split #1
		Day 3	Third Split #1
	Week 12	Day 1	First Split #2
		Day 2	Second Split #2
		Day 3	Third Split #2

3-Day Split Program Calendar – Alternate Days

Phase #1 12-16 Reps	**Week 1**	Day 1	First Split #1
		Day 2	Second Split #1
		Day 3	Third Split #1
		Day 4	First Split #2
	Week 2	Day 1	Second Split #2
		Day 2	Third Split #2
		Day 3	First Split #1
	Week 3	Day 1	Second Split #1
		Day 2	Third Split #1
		Day 3	First Split #2
		Day 4	Second Split #2
	Week 4	Day 1	Third Split #2
		Day 2	First Split #1
		Day 3	Second Split #1
		Day 1	Third Split #1
Phase #2 8-12 Reps	**Week 5**	Day 2	First Split #2
		Day 3	Second Split #2
		Day 4	Third Split #2
	Week 6	Day 1	First Split #1
		Day 2	Second Split #1
		Day 3	Third Split #1
	Week 7	Day 1	First Split #2
		Day 2	Second Split #2
		Day 3	Third Split #2
		Day 4	First Split #1
	Week 8	Day 1	Second Split #1
		Day 2	Third Split #1
		Day 3	First Split #2
		Day 1	Second Split #2
		Day 2	Third Split #2
Phase #3 6-8 Reps	**Week 9**	Day 3	First Split #1
		Day 4	Second Split #1
	Week 10	Day 1	Third Split #1
		Day 2	First Split #2
		Day 3	Second Split #2
	Week 11	Day 1	Third Split #2
		Day 2	First Split #1
		Day 3	Second Split #1
		Day 4	Third Split #1
	Week 12	Day 1	First Split #2
		Day 2	Second Split #2
		Day 3	Third Split #2
	Week 13	Day 1	First Split #1
		Day 2	Second Split #1
		Day 3	Third Split #1

3-Day Split Program Calendar – 4 Days Per Week

Phase #1 12-16 Reps	**Week 1**	Day 1	First Split #1
		Day 2	Second Split #1
		Day 3	Third Split #1
		Day 4	First Split #2
	Week 2	Day 1	Second Split #2
		Day 2	Third Split #2
		Day 3	First Split #1
		Day 4	Second Split #1
	Week 3	Day 1	Third Split #1
		Day 2	First Split #2
		Day 3	Second Split #2
		Day 4	Third Split #2
Phase #2 8-12 Reps	**Week 4**	Day 1	First Split #1
		Day 2	Second Split #1
		Day 3	Third Split #1
		Day 4	First Split #2
	Week 5	Day 1	Second Split #2
		Day 2	Third Split #2
		Day 3	First Split #1
		Day 4	Second Split #1
	Week 6	Day 1	Third Split #1
		Day 2	First Split #2
		Day 3	Second Split #2
		Day 4	Third Split #2
Phase #3 6-8 Reps	**Week 7**	Day 1	First Split #1
		Day 2	Second Split #1
		Day 3	Third Split #1
		Day 4	First Split #2
	Week 8	Day 1	Second Split #2
		Day 2	Third Split #2
		Day 3	First Split #1
		Day 4	Second Split #1
	Week 9	Day 1	Third Split #1
		Day 2	First Split #2
		Day 3	Second Split #2
		Day 4	Third Split #2

2-DAY SPLIT PROGRAM

UPPER BODY #1		DATE:			START:			END:		MINS:
MUSCLE GROUP	EXERCISE	Weight	Effort	Reps 1	Reps 2	Reps 3	Reps 4	Reps 5	Rest (s)	COMMENTS
Chest										
Upper Back										
Shoulders										
Biceps										
Triceps										
Abdominals										

LOWER BODY #1		DATE:			START:			END:		MINS:
MUSCLE GROUP	EXERCISE	Weight	Effort	Reps 1	Reps 2	Reps 3	Reps 4	Reps 5	Rest (s)	COMMENTS
Quadriceps										
Hamstrings/ Glutes										
Calves										
Lower Back										
Abdominals										
Obliques										

2-DAY SPLIT PROGRAM

UPPER BODY #2		DATE:			START:			END:		MINS:
MUSCLE GROUP	EXERCISE	Weight	Effort	Reps 1	Reps 2	Reps 3	Reps 4	Reps 5	Rest (s)	COMMENTS
Upper Back										
Chest										
Shoulders										
Triceps										
Biceps										
Abdominals										

LOWER BODY #2		DATE:			START:			END:		MINS:
MUSCLE GROUP	EXERCISE	Weight	Effort	Reps 1	Reps 2	Reps 3	Reps 4	Reps 5	Rest (s)	COMMENTS
Hamstrings/ Glutes										
Quadriceps										
Calves										
Obliques										
Abdominals										
Lower Back										

3-DAY SPLIT PROGRAM

FIRST SPLIT #1		DATE:			START:			END:		MINS:
MUSCLE GROUP	EXERCISE	Weight	Effort	Reps 1	Reps 2	Reps 3	Reps 4	Reps 5	Rest (s)	COMMENTS
Chest										
Chest										
Upper Back										
Upper Back										
Biceps										
Biceps										
Triceps										
Triceps										

SECOND SPLIT #1		DATE:			START:			END:		MINS:
MUSCLE GROUP	EXERCISE	Weight	Effort	Reps 1	Reps 2	Reps 3	Reps 4	Reps 5	Rest (s)	COMMENTS
Quadriceps										
Quadriceps										
Hams/Glutes										
Hams/Glutes										
Obliques										
Obliques										
Calves										
Calves										

THIRD SPLIT #1		DATE:			START:			END:		MINS:
MUSCLE GROUP	EXERCISE	Weight	Effort	Reps 1	Reps 2	Reps 3	Reps 4	Reps 5	Rest (s)	COMMENTS
Abs/Obliques										
Abs/Obliques										
Shoulders										
Shoulders										
Lower Back										
Lower Back										
Abdominals										
Abdominals										

3-DAY SPLIT PROGRAM

FIRST SPLIT #2		DATE:			START:			END:		MINS:
MUSCLE GROUP	EXERCISE	Weight	Effort	Reps 1	Reps 2	Reps 3	Reps 4	Reps 5	Rest (s)	COMMENTS
Upper Back										
Upper Back										
Chest										
Chest										
Triceps										
Triceps										
Biceps										
Biceps										

SECOND SPLIT #2		DATE:			START:			END:		MINS:
MUSCLE GROUP	EXERCISE	Weight	Effort	Reps 1	Reps 2	Reps 3	Reps 4	Reps 5	Rest (s)	COMMENTS
Hams/Glutes										
Hams/Glutes										
Quadriceps										
Quadriceps										
Obliques										
Obliques										
Calves										
Calves										

THIRD SPLIT #2		DATE:			START:			END:		MINS:
MUSCLE GROUP	EXERCISE	Weight	Effort	Reps 1	Reps 2	Reps 3	Reps 4	Reps 5	Rest (s)	COMMENTS
Abs/Obliques										
Abs/Obliques										
Shoulders										
Shoulders										
Abdominals										
Abdominals										
Lower Back										
Lower Back										

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