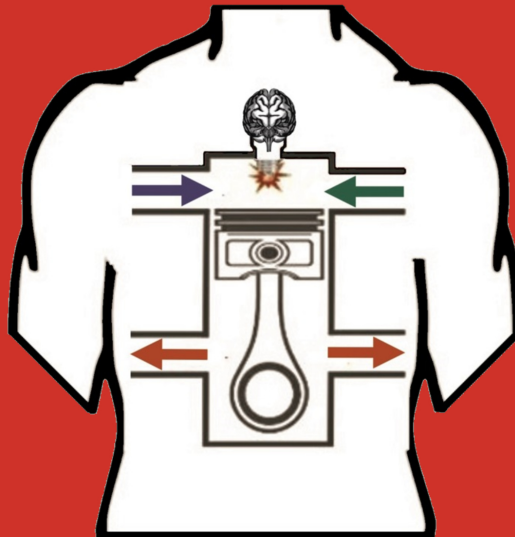




Fitness Frontline

# Aerobic Fitness

**Key driver of  
the metabolic  
health engine**



**- self-paced learning module -**

Hi, I'm John Miller.

Thanks for downloading the **Aerobic Fitness, Key Driver of the Metabolic Health Engine** book.

Aerobic fitness is an essential ingredient in the mix of lifestyle factors designed to keep your metabolic (and mental) health systems in good condition.

We live in the sedentary age. We don't move enough in our daily lives. We spend too much time sitting down. The amount of time we spend moving and the intensity of our movement is too low to maintain an efficient metabolic health engine.

There's a war going on between our need to move more and technology which is working flat out to remove just about all physical activity from our lives, particularly our working lives. Technology is winning, hands down.

Lack of vigorous aerobic exercise has caused an epidemic of personally-generated metabolic dysfunction that only a regular and systematic aerobic exercise program can personally 'un-generated.'

So, if you can't put the exercise back into your work, then you're going to have to do it as a recreational activity in your free time.

For that you need three things; focus, discipline and persistence. You need an exercise habit.

Former world record holder for the mile, Jim Ryun said, '*Motivation is what gets you started. Habit is what keeps you going.*'

For the first time, the Fitbit aerobic fitness prescription and monitoring system outlines a way of 'doing' aerobic exercise that lets you know exactly how much you're doing and its metabolic health value.

The Fitbit system contains an aerobic fitness prescription dosage, based on time (how often and for how long) and effort (rated against heart rate). And now, with the exponential growth in digital heart measuring devices you can keep track of just how much exercise you're doing.



*John Miller*

**Aerobic Fitness Key Driver of the Metabolic Health Engine**

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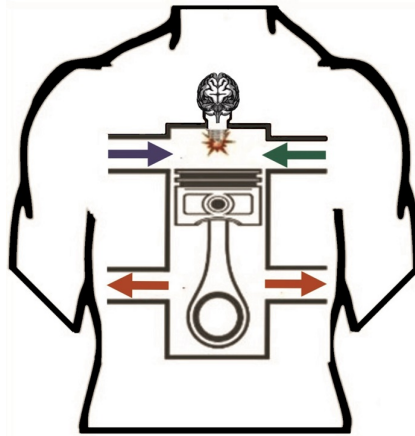
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August 2025



# Aerobic fitness, key driver of the metabolic health engine.



**John Miller**

This book is dedicated to Alison, who continues to become fitter and healthier.

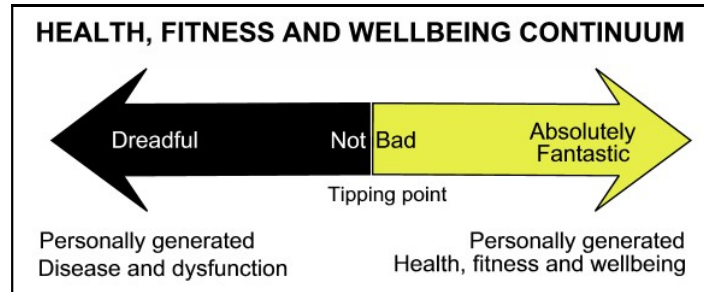
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What man needs is an organ by which he can be constantly aware of the exact date of his own death. This would stop men wasting their lives as if they were immortal.  
Martin Heidegger

## 1. HEALTH, FITNESS AND WELLBEING 101

Health is more than the absence of disease. It's a personally-generated state of high level health, fitness and wellbeing accompanied by feelings of exuberance and zest. For most people it's pretty much a choice, feel absolutely fantastic or feel dreadful.



### 80:20

If you want to be fit and healthy, do what fit and healthy people do! Most of us have an 80% chance of the major systems of the body becoming dysfunctional, unless we do the things we need to do to keep ourselves fit and healthy. On the other hand, for 80% of people there's an 80% chance they can get themselves back to 80% of good nick in around 80 days - if they're diligent.

The things that are needed to be done vary from individual to individual, but basically it boils down to keeping fit, eating wisely, managing the stress of your life and your work and meditating. Couple that with doing the job you'd love to do so much you'd do it for nothing (but which you did so well you were paid handsomely) and passionately living the life you'd like to and you're on the way to good health.

People who feel good about themselves are well adjusted to dealing with their internal and external environments. They take charge of situations instead of letting situations take charge of them. They deal with the stresses of life rather than being overtaken by them. They take responsibility for themselves rather than blaming other people. Importantly they have an ability to give back to their *Self* and take time out to do the things that give balance to their life. They set aside time to do the things they need to do to stay fit and healthy.

People who are physically fit are less likely to become depressed. They are more likely to have strong immune systems and to have autonomic nervous systems that successfully manage key physiological responses. They are healthy; they are happy; they have normal blood pressure; they sleep like logs, are about their ideal weight, rarely, if ever, get a headache and don't have a crook back or a crook gut.

Regrettably, it's becoming harder and harder to find such a person, particularly someone over 50. In a very short space of time, the nation that started off '*hard and tough and wiry*' like the mountain pony belonging to the Man from Snowy River has become fat, weak and depressed.

In the last 30 years of the 20th Century, the countries of the Western world became societies characterized by an epidemic of **affluenza**, an inability of people to live in balanced harmony with an affluent environment.

High energy diets and low energy lifestyles lead to a dramatic increase in the incidence of the metabolic, musculo-skeletal and psychological dysfunctions.

*At all times and under all circumstances we have the power to transform the quality of our lives.*  
Werner Erhard

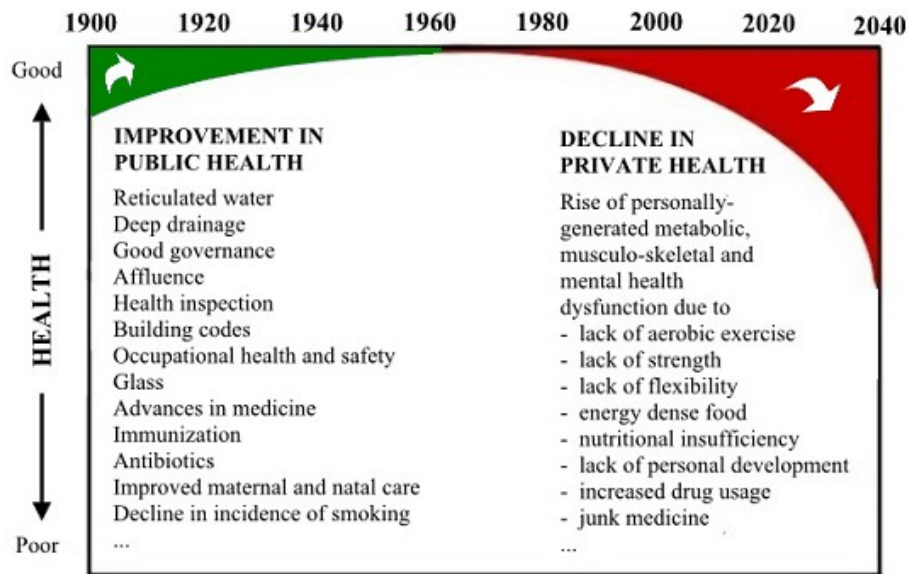
## 2. DECLINING HEALTH STATUS

It is a fact that the health status of the Western communities is declining - the increase in the size of abdomens, backsides and medical expenditure confirms this. It's obvious; if people were becoming healthier, medical bills would be coming down. After the Second World War the health of people in these countries improved dramatically, for the reasons outlined in the diagram below. The improvements were led by good public health outcomes.

Those public health initiatives which stretched back for 100 years, included good governance, good education, rising affluence, health inspection, building inspection, access to fresh water, deep drainage, immunization, access to anti-biotics, better obstetric care ...

In the 1950's most people were in reasonable health due to these public health measures. They walked more - because they didn't have a car. Many grew their own vegetables. There were a few mitigating factors. More than 50% of men smoked. A high proportion suffered from the post traumatic stress of war which was self-medicated in hotels. From around the mid 70's the health of these countries started declining, particularly as people stripped physical activity out of their lives and subsisted on a diet high in fat, flour and sugar.

But whereas much of the improvement in health was driven by good public health practice, the decline was stimulated by poor private health practice.



Nowadays, of course, not only do people want the Government to continue to invest in the public health infrastructure, they also want it to pay to patch up their personally-generated dysfunctions.

The level of poor health has reached epidemic proportions. Government subsidy of medical treatments for these personally-generated dysfunctions, coupled with massive protection of the medical and pharmaceutical industries is threatening to bankrupt the country. This subsidization and protection, coupled with the merging of the welfare and health systems (with an all up cost of over \$200B a year) has fuelled the growth of poor health, not good health.

This trend is affecting workplaces. At the same time as they have become safer, they've also become unhealthier. My assessment is that poor health is now the most prominent driver of OH&S costs

Don't ask what your doctor can do for you, ask what you can do for yourself.

### 3. BODY SYSTEM DYSFUNCTION

There is an epidemic of personally-generated body system dysfunctions. When we talk about 'poor health', it becomes easier to grasp the concept when we define it as '**body system dysfunction**'. Most of the diseases that plagued the country 100 years ago have disappeared. The current illhealth epidemic relates to life-style induced dysfunctions. It's a private health issue, not a public health issue.

These dysfunctions are driven principally by

- a sedentary way of life
- inappropriate food choices
- an inability to cope with the normal stresses of life (and work), and
- a toxic environment

The good news about this is that if personal lifestyle choice is the major cause of the problem, then personal lifestyle choice can be a major influence in the solution.

We've reached the point in time where it is not the heroic diseases that are the big health problems but the personally-generated body system dysfunctions. They are recognized by their symptoms.

These dysfunctions are recognized by their symptoms.

| SYMPTOMS OF PERSONALLY GENERATED<br>BODY SYSTEM DYSFUNCTIONS                                                                                                                                                                                                                                                                                                                                                                                                   |                                                                                                                                                                                                                                                                                                                                                                      |                                                                                                                                                                                                                      |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Metabolic                                                                                                                                                                                                                                                                                                                                                                                                                                                      | Musculo-skeletal                                                                                                                                                                                                                                                                                                                                                     | Psychological                                                                                                                                                                                                        |
| <ul style="list-style-type: none"><li>▪ aerobically unfit</li><li>▪ over-weight</li><li>▪ high blood pressure</li><li>▪ depression</li><li>▪ sleeplessness</li><li>▪ snoring</li><li>▪ sleep apnoea</li><li>▪ headache</li><li>▪ tired, lacking energy</li><li>▪ low libido</li><li>▪ diabetes</li><li>▪ elevated blood fats</li><li>▪ elevated cholesterol</li><li>▪ cardiac insufficiency</li><li>▪ irritable bowel</li><li>▪ cancer</li><li>▪ ...</li></ul> | <ul style="list-style-type: none"><li>▪ musculo-skeletal pain</li><li>▪ bones out of alignment</li><li>▪ arthritis - bone inflammation</li><li>▪ lack of strength</li><li>▪ lack of flexibility</li><li>▪ lack of mobility</li><li>▪ torn ligaments</li><li>▪ torn tendons</li><li>▪ torn muscles</li><li>▪ bulging discs</li><li>▪ sciatica</li><li>▪ ...</li></ul> | <ul style="list-style-type: none"><li>▪ stress</li><li>▪ anxiety</li><li>▪ irritability</li><li>▪ difficulty coping</li><li>▪ grief</li><li>▪ sadness</li><li>▪ vacuity</li><li>▪ depression</li><li>▪ ...</li></ul> |

When he was a child, my father had scarlet fever and rheumatic fever. Later in life he was able to have a heart valve replaced and his innings lasted until 86. Not bad. (His elder sister, a great, great, grandmother was still going strong at 102. One of his younger sisters reached 100, not out.) But those infectious diseases have just about gone. There aren't many cases of rheumatic fever around these days.

I met a bloke in Brisbane a few years ago who told me he was the last person in Queensland to get polio. That's gone, along with diphtheria, smallpox and a host of nasties. TB is rare. (Some of us still bear the scars on our shoulders from immunization programs that saved our lives.)

There are three principal categories of personally-generated, body system dysfunctions:

- metabolic
- musculo-skeletal
- psychological.

These days the main focus of our health (medical) systems is to mask the symptoms of our dysfunctions, rather than treat their causes.

There are two ways to get rid of a symptom

1. mask it with a drug
2. restore poor function to good.

It seems as though masking the symptom is sufficient treatment; the treatment concluding when the symptom appears to have disappeared. That, of course is bunkum.

The pharmaceutical industry is the driver of the symptom-masking option. The lifestyle that contributed to the dysfunction continues on its merry dance. Poor health continues to gnaw away.

If you're reading this book, you're probably more interested in restoring poor function to good. For the metabolic dysfunctions, this means embarking on a good aerobic fitness training program and a diet that steers clear of excessive amounts of fat, flour and sugar. For the musculo-skeletal dysfunctions it means strength and flexibility exercises. For the psychological dysfunctions it means mind re-education, aerobic exercise and a better diet.

The most cost effective and usually the most successful treatments involve things you can do for yourself. The least effective are those that rely on other people prescribing products and services, which mask symptoms without affecting a cure.

These treatments have become the prescriptions of choice in our health care system. It's quick, it's easy and it's a good earner. Customers keep coming back because it relieves pain but doesn't restore poor function to good. The underlying condition keeps getting worse.

## 4. REACTIVE MEDICINE v THE PRO-ACTIVE LIFESTYLE

For many of the common lifestyle related and personally induced body system dysfunctions the prescription from a surgery has become a drug which masks symptoms and does not restore poor function to good. For instance we now subsidize the purchase of drugs for high blood pressure, when the elevation of the blood pressure in the first place was due to poor lifestyle choices and not a lack of ACE inhibitor or diuretic.

Similarly with most of the common dysfunctions;

- depression is not due to a lack of Zoloft
- headaches are not due to a lack of Panadol
- reflux is not due to a lack of Mylantin
- constipation is not due to a lack of Zelnorm
- diabetes is not due to a lack of Diabex,
- eczema is not due to a lack of Advantan,
- high cholesterol is not due to a lack of Lipitor
- arthritis is not due to a lack of Celebrex
- attention deficit is not due to a lack of Ritalin
- any more than piles are caused by a lack of Anusol.

The narrowing of the range of things we need to do to keep ourselves fit and healthy has perverted the course of modern medicine. We're in the junk medical era. Tried and true remedies that are as old as antiquity have been cast off like dirty shirts and replaced with treatments that are much less effective. The simple has become complicated, the cheap has become expensive and the obvious has become obscure.

As professional healers we have a tendency to get locked into narrowly defined positions, first by our specialist education and then our professional associations. It is for this reason that a significant proportion of therapists will give you a narrow interpretation of what's caused your dysfunction and a narrow range of treatments to fix it up. My own profession is no less guilty than any others.

Experience suggests that if you've lost function in one or more body systems, there's a good chance that you'll be able to restore it by adopting a lifestyle that restores good function to all body systems.

The most graphic example of this that I've heard of is that of Percy Cerutti, (Olympic champion athlete Herb Elliott's coach). At age 46 Percy was a physical and mental wreck. Medical intervention hadn't worked. So in the end he said to his doctor that what he was going to do was either going to cure him or kill him.

He started exercising and didn't eat anything cooked for two years. At age 50 he was the Victorian marathon champion and just missed out on a berth in the London Olympic Games in 1948. An amazing recovery. Imagine how you'd feel if you didn't eat anything cooked for two years and ran for half an hour every day? You'd be jumping out of your skin.

My greatest encouragement is for you to listen to and read about what other people did to keep themselves fit healthy and to restore themselves to good health. If a lifestyle change or a particular therapeutic approach worked for them, maybe it will work for you too.

In this respect the internet provides a marvelous resource, providing you can get past the selective-evidence, unimodal and pharmaceutically based sites.

The body possesses wonderful recuperative powers. Who can really say they know everything about all the things that may stimulate those powers? The history of the world is too short!

At the right hand end of the continuum on page 5 are personally-generated things we can do for ourselves to get better - to become stronger, more flexible and healthier in both body and mind. Mencius said '*Those who follow the part of themselves which is great will become great men. Those who follow the part of themselves which is small will become small men.*' We have a choice, to put up with our dysfunctions or fix them up.

The Health Climate Survey will provide clues as to how healthy you are.

## 5. INSPIRED AND MOTIVATED TO BE FIT AND HEALTHY

German philosopher, Nietzsche said, '*Learn to enjoy the things you need to do.*' For many people hearing that sort of stuff is likely to provide cold comfort, and yet it's probably true. One of the things we need to do in an affluent society is keep fit.

The following pages contain an outline of the benefits that come with vigorous aerobic exercise on a regular and systematic basis. Few people ever got fit by ambling around the block for 10 minutes at half rat power. The fit ones got fit through the vigorous expenditure of energy, the vigorous injection of oxygen into their body and the vigorous stimulation of their various elimination systems.

So, as much as you may not like doing it initially, once you start to experience the benefits of a vigorous aerobic exercise program you'll be inspired and motivated by the results to keep going. Staying focused on the benefits is a key to maintaining your exercise program.

The corollary is that as soon as you start to become dysfunctional and diseased you'll be able to recognise that something within your body is out of kilter and that it is highly likely that good working order can be restored by vigorous exercise (along with a better diet and medication). Instead of (or as well as) a trip to the doctor, start exercising.

When it's all boiled down you have to ask yourself the question 'Why do I want to be fit and healthy?' If you can't think of a good reason it's probably because you have plenty of reasons for being unfit and unhealthy!

If you're going to break the vicious cycle of inactivity you'll need all the help you can get. In particular you'll need to stay one step ahead of that part of your mind which says, 'Give up.'

It seems to be a tough assignment for most people to maintain the motivation to do the things they need to do to keep fit and healthy. The surgeries of the Western world are littered with people who either have never taken part in a fitness program or who started one and then gave it away.

Yet some people do manage to keep their level of motivation up and maintain a regular and systematic aerobic fitness program.

The foundation for a successful aerobic fitness program rests on seven pillars.

1. Write down your goals for being fit and healthy.
2. Get a coach and/or an exercise mate.
3. Develop a program.
4. Develop strategies for maintaining your exercise program; for instance do things like varying your program, cross training, exercising in different surroundings, on your own, with other people, in a class where you have to be there at a certain time ...
5. Exercise at a rate you can manage. Have hard workouts and easy workouts. Don't train so hard today that you can't train tomorrow. Get a heart rate monitor so you know exactly how hard you're exercising.
6. Monitor your progress. Establish a benchmark of your aerobic fitness at the beginning of your quest and
7. Stay focused on the results you want to achieve. A goal is a dream with a deadline.

After you've done the initial fitness test use the contact form [at www.fitandhealthyonline.com](http://www.fitandhealthyonline.com) to send me an email and let me know how you went. Then, at any time over the next three months feel free to report back and let me know how you're going.

## 6. KEY BENEFITS OF PHYSICALLY ACTIVITY

In affluent societies, regular, systematic, vigorous physical activity strengthens all of the major body systems and, along with diet and stress management is the foundation stone of good health.

### **Feel better**

The most immediate benefit of physical activity is that you feel better. The mind is just another body system, and like all body systems works better when you're aerobically fit.

### **Stimulate the elimination system**

The main players in the body's elimination system are the lungs, perspiratory system, lymphatic and blood systems, liver, digestive system and the kidneys.

### **Cool down an over stimulated sympathetic nervous system**

We live in an age when more and more people have over-stimulated sympathetic nervous systems, particularly people cooped up in offices all day. The fight response that starts with the mind and then works through the endocrine system produces muscle tension, constricts blood vessels and alters a range of body functions.

### **Overcome insulin resistance**

The major cause of adult onset diabetes is insulin resistance in the muscles due to lack of regular, vigorous physical activity. Whilst physical activity will not cure a dysfunctional pancreas it will go a long way toward enabling diabetics to manage type II diabetes without medication.

### **Warm up an under-stimulated parasympathetic nervous system**

The gentle exercises, yoga, tai chi and walking have the effect of stimulating the parasympathetic nervous system and causing muscles to relax and blood vessels dilate. Endocrine function is restored to more normal levels. You feel better

### **Strengthen the immune system**

Vigorous physical activity stimulates corticosteroid production and the increase of white blood cells. When the immune system is strong, you are more resistant to colds and flu. You have an enhanced ability to deal with allergic reactions and you're less at risk of cancer.

### **Lower incidence of high blood pressure**

Elevated blood pressure is directly related to motion starvation. For the greater proportion of people, training aerobically, with vigour for 40 minutes each day will restore blood pressure to normal.

### **Increased aerobic efficiency and capacity**

You can expect a rapid improvement in aerobic efficiency once you start to train.

### **Reduced risk of heart attack**

Cardiac dysfunction usually comes at the end of a long chain of dysfunctions (autonomic nervous system, elimination system, liver ...). The status of all these systems is improved by regular, systematic and vigorous physical activity.

### **Clears the respiratory tract**

Every person with a regular aerobic training program knows that physical activity has a wonderful effect on clearing the respiratory tract. One wonders how it gets 'cleaned up' under normal circumstances without the stimulation of the lungs and warming of the body.

### **Reduced blood sugar and cholesterol levels**

A key ingredient in a glucose and cholesterol lowering program is regular and systematic vigorous exercise.

### **Stimulates the bowel**

Anyone who runs or exercises with vigour knows that the digestive system works better. One has to wonder where the gas discharged during activity goes when there is no activity!

### **Fewer headaches**

There is an epidemic of headaches in this country. It is the most popular symptom of poor health that people experience (and ignore). Headaches have many causes. However, what we know is that people who are fit and healthy don't get them. If you want to have less headaches, do what fit and healthy people. They train.

### **Reduction in body fat**

It is a tough assignment in an affluent society expecting to stay at your ideal weight without a regular fitness training program. Once the activity level drops you can be certain that sooner or later you'll start stacking on the weight. A reasonable body fat for a man is less than 20% fat, and for women less than 30%.

### **Ease musculo-skeletal dysfunction**

Bones do what muscles tell them to do. In affluent societies there is an epidemic of musculo-skeletal dysfunction caused principally by motion starvation of the skeletal muscles. Strength, flexibility and postural aligning exercises tone muscles, get bones back into position and increase the ability of the body to do the things that fit and healthy people can do.

### **More oxygen to the brain**

Physical activity ensures that your brain gets more oxygen. You feel better.

### **More energy**

There is a universal law which says that if you want more energy you need to use more up.

### **Stimulates the endocrine system to release a range of 'good' chemicals**

When you exercise with reasonable vigour for about 30 minutes or more, your endocrine system clicks into gear. One of the better known effects is the release of endorphins (that is, naturally occurring opiates) from the brain brings about a naturally occurring high: - you feel better. You have more energy and vitality.

### **Increased libido**

Regular vigorous physical activity has a wonderful effect on improving libido. A lowered libido is a symptom of poor general health. It is dramatic evidence that a number of body systems are not working properly, from the head down. Increase your aerobic fitness and you'll end up fit as a trout, lean as a greyhound and toey as a Roman sandal!

### **Slows down development of osteoporosis**

Weight bearing exercise is essential for maintaining and increasing bone density.

### **Sleep better**

When you are vigorously physically active you need less sleep and you sleep better.

### **Discipline**

If you can learn the discipline of regularly and systematically exercising your body, it stands you in good stead for disciplining yourself to do other things in your life.

### **Distraction**

You experience an elevated mood state when you interrupt your normal daily routine with physical activity. It's like having your own little escape from reality.

### **Looking after your Self**

Being involved in regular physical activity is the most potent symbol of your ability to give back to your Self.

### **Break down the emotional and physical vicious cycle**

Whereas it is widely recognised that emotional states affect the body (psychosomatic), it is also the case that physiological states affect the emotions (somatopsychic). This is why one of the best things you can do when you're depressed and miserable is to exercise. The main benefit of physical activity is that you feel better.

### **Eat less**

Strange as it may sound, when you exercise regularly, systematically and vigorously you are less inclined to overeat and/or search out those extra high fat/starch/sugar snacks.

### **Social**

One of the great benefits of physical activity is being with other people. People often feel better when they are doing things in the company of others. The secret of a successful fitness program is having the mutual support of a buddy.

### **Introspection**

Exercising on your own provides an opportunity for introspection. As Thoreau said about his walks in the forest, *'I never found the companion that was as companionable as solitude.'*

## 7. HEALTH CLIMATE SURVEY

Before we get started I want to give you the opportunity to reflect on how your health, fitness and wellbeing is generally. It's frequently the case that musculo-skeletal dysfunction is just one of many dysfunctions around the body. Completing the Health, Fitness and Wellbeing profile will provide you with the impetus to not only improve your fitness but your health generally

**Circle the number** appropriate to the degree to which you experience the symptoms on the left hand side of the page. The greater the symptom, the higher the score.

|     |                                                     | None | Hardly any | A fair bit | A lot |   |   |   |   |   |   |    |
|-----|-----------------------------------------------------|------|------------|------------|-------|---|---|---|---|---|---|----|
| 1.  | Headaches (including migraines)                     | 0    | 1          | 2          | 3     | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
| 2   | Lack energy and vitality                            | 0    | 1          | 2          | 3     | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
| 3.  | Furry tongue, thrush, jock itch, tinea...           | 0    | 1          | 2          | 3     | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
| 4.  | Poor sleep (Score 10 if you frequently use tablets) | 0    | 1          | 2          | 3     | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
| 5.  | Snoring, sleep apnoea (Score 10 if using mask)      | 0    | 1          | 2          | 3     | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
| 6.  | Crook back, sore shoulders, stiff neck, RSI         | 0    | 1          | 2          | 3     | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
| 7.  | Frequent colds, flu and sinus                       | 0    | 1          | 2          | 3     | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
| 8.  | Reflux unsettled stomach (Score 10 on tablets)      | 0    | 1          | 2          | 3     | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
| 9.  | Overweight (1 pt for every 2kg over ideal weight)   | 0    | 1          | 2          | 3     | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
| 10  | Irritable bowel, constipation, trots...             | 0    | 1          | 2          | 3     | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
| 11. | Shortness of breath from asthma                     | 0    | 1          | 2          | 3     | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
| 12. | Low level of fitness (Your estimate)                | 0    | 1          | 2          | 3     | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
| 13. | Chest pain, palpitations                            | 0    | 1          | 2          | 3     | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
| 14  | Itchy, rashes, skin outbreaks, psoriasis...         | 0    | 1          | 2          | 3     | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
| 15. | Mouth ulcers, cold sores ...                        | 0    | 1          | 2          | 3     | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
| 16  | Elevated blood pressure (Score 10 if on tablets)    | 0    | 1          | 2          | 3     | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
| 17. | Elevated blood cholesterol? (10 if on tablets )     | 0    | 1          | 2          | 3     | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
| 18. | Elevated blood glucose? (Score 10 if on tablets)    | 0    | 1          | 2          | 3     | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
| 19. | Shakes, nervous tics and mannerisms                 | 0    | 1          | 2          | 3     | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
| 20. | Grinding teeth                                      | 0    | 1          | 2          | 3     | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
| 21. | Alcohol intake (2 points per drink/day)             | 0    | 1          | 2          | 3     | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
| 22. | Smoking behaviour (1 point/cigarette/day)           | 0    | 1          | 2          | 3     | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
| 23. | Caffeine intake (1 point per cup)                   | 0    | 1          | 2          | 3     | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
| 24. | Anxious about life, insecure, apprehensive          | 0    | 1          | 2          | 3     | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
| 25. | Are you depressed? (Score 10 if on medication)      | 0    | 1          | 2          | 3     | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
| 26. | Are you in the wrong job?                           | 0    | 1          | 2          | 3     | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
| 27. | Do you feel under appreciated at work?              | 0    | 1          | 2          | 3     | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
| 28. | Do you have a poor work/life balance?               | 0    | 1          | 2          | 3     | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
| 29. | Unhappy with your family life?                      | 0    | 1          | 2          | 3     | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
| 30. | Unhappy with your financial status?                 | 0    | 1          | 2          | 3     | 4 | 5 | 6 | 7 | 8 | 9 | 10 |

The score of a normal, fit and healthy human being is less than ..... TOTAL .....\_\_\_\_\_

You'll find out what the ideal score is on the next page.

Don't look until you've completed the survey.

## HEALTH CLIMATE SURVEY RESULTS



If you scored less than 20 you're in good shape.



If you scored less than 40 that's not bad, but the signs are there that certain parts of your body are not working as well as you'd like. You're starting to exhibit the signs and symptoms of general metabolic dysfunction.

A tweak here and there and in 3 months you'll get under 20.



Over 40 the amber light is flashing.

You're probably not as fit as you could be. You need a fitness program. You may be a little overweight, in which case you need a fitness program and the Hourglass Diet.

There's a chance there's evidence of musculo-skeletal dysfunction, in which case you're not strong or flexible enough to keep your body in alignment.

You probably need a holiday or some good distractors that distract you from feeling tired and miserable.



Over 80 and you're getting right into the red zone. It's time to take stock.

You certainly don't want things to get worse, which they will if you don't do something now. You could be in the wrong job or the wrong relationship. There's probably something going on in the top paddock that's not right and it's affecting the rest of your body.

If you don't do something now there's a good chance that pretty soon you could end up on the medical hurdy-gurdy.



Over 100 and there are high scores throughout the profile. IT is not unusual to see scores well over 120. It's definitely time for a lifestyle make-over.

The average score of most corporate organisations is over 80.

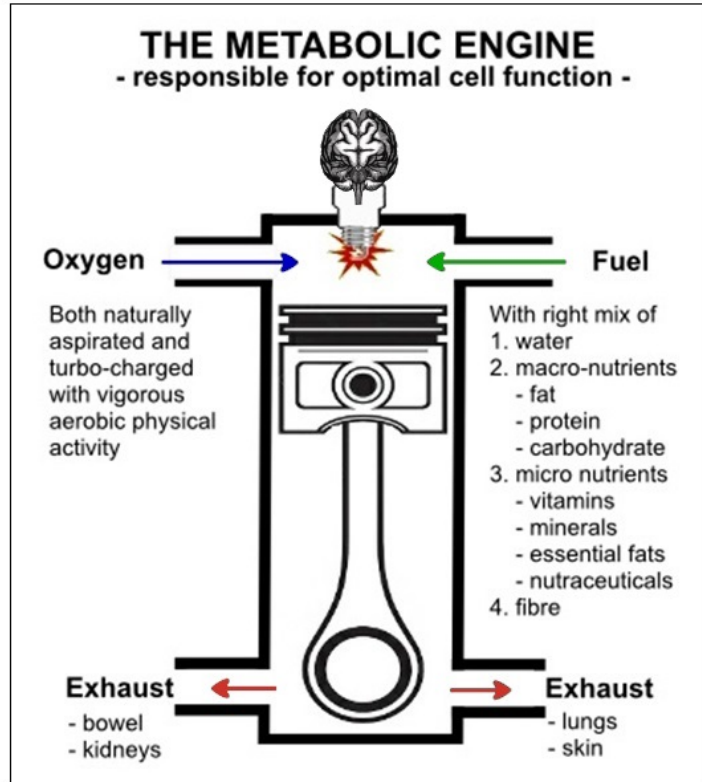
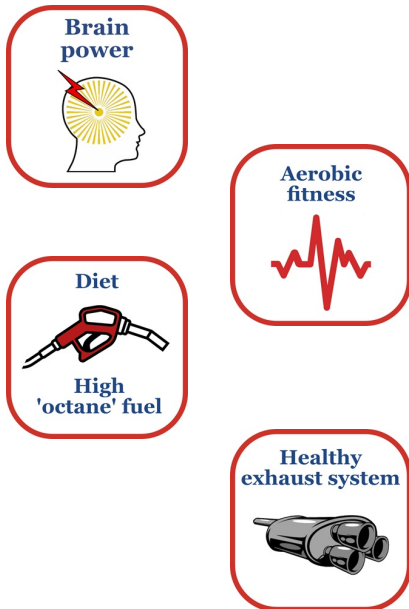
Certainly though, at any score you're not beyond redemption. A lot of people brought themselves back from the brink by becoming fitter, getting themselves in the job and personal relationship they'd really like to be in.

Certainly though, at any score you're not beyond redemption. A lot of people brought themselves back from the brink by becoming fitter, trimming back to their ideal weight, getting themselves the job they'd really love to do and the personal relationship they'd really like to be in.

In three months' time you have the power to halve your score by doing the things fit and healthy people do to keep themselves in good condition. All it takes is a little time, effort and thought - and maybe some money.

## 8. THE METABOLIC HEALTH ENGINE

Good metabolic health is driven by:



We're in an era when there is an epidemic of metabolic dysfunction. It's recognized by its symptoms.

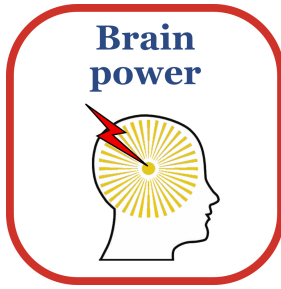
- |                         |                       |                       |
|-------------------------|-----------------------|-----------------------|
| • cardiac insufficiency | • type 2 diabetes     | • headaches           |
| ▪ breathlessness        | • elevated blood fats | • tired               |
| • obesity               | • insomnia            | ▪ lacking energy      |
| • high blood pressure   | • snoring             | • low libido          |
| • depression            | ▪ sleep apnoea        | • irritable bowel ... |

We're not talking about disease; we're talking about personally-generated body system dysfunctions.

And being personally generated there's a good chance they can be personally ungenerated.

As to why there is something wrong with the metabolic health engine:

1. it's barely ticking over - due to a lack of brain power
2. it's not delivering enough oxygen to every cell in the body
3. it's not delivering the right amount of high 'octane' fuel to every cell of the body
4. it's got a sluggish 'exhaust system,' one that fails to successfully remove the waste products of cellular metabolism.



*‘Since finishing the Commonwealth games last year I have wanted this so badly.*

*I’ve made sure I’ve focused on every single training session that I’ve done and I’ve left everything on the track.*

*I’ve just given it all and finally come out tonight and proved that when I want something badly enough and I stay focused enough I can achieve it.’*

Sally Pearson, 2012 Olympic Games 100m hurdles gold medalist

You’ve got a brain; use it to keep yourself fit and healthy to the best of your ability!

Former Australian Rules Football player and coach Tom Hafey was an inspiring and motivating guest speaker at a lot of sporting, community and corporate events, bringing his experience on the field into everyday life.

He spoke of **four D’s**:

- **destiny** – you’ve got your goal firmly fixed in your mind – you have a plan
- you have a burning **desire** to achieve it.
- you’re **dedicated** to the task
- you express your **determination** in the achievement of your goal(s) but sticking to the plan

In short, you’ve disciplined yourself to achieve your destination.

If you want to improve your metabolic, musculo-skeletal and mental health, start with the desire to be fit and healthy.

There are thousands of books with quotes from great minds on ‘*How to be successful*,’ ‘*How to get what you want*.’ ‘*How to get fit*. .... My contribution is to leave you with two words, ‘*motivation*’ and ‘*persistence*’.

## MOTIVATION

The word ‘motivation’ comes from two words, ‘*motive*’ and ‘*action*’ If you want to move forward you need both. A tip: you don’t motivate yourself to do something, you do something and then become motivated.

A lot of famous runners have said that the hardest thing they ever had to do was put their shorts and sandshoes on and get outside the front door. After that it was ‘*one leg at a time*’.

## PERSISTENCE

Nothing in the world can take the place of Persistence.

Talent will not; nothing is more common than unsuccessful men with talent. Genius will not; unrewarded genius is almost a proverb.

Education will not; the world is full of educated derelicts.

Persistence and determination alone are omnipotent.

The slogan ‘Press On’ has solved and always will solve the problems of the human race.

Calvin Coolidge 30th president of US (1872 - 1933)



Your level of aerobic fitness is a good indicator of the condition of the system responsible for transporting oxygen to not just working muscles, but to all major organs and every cell in your body: - via the heart, lungs and arteries. But to restrict the importance of aerobic fitness to the cardiovascular system does it a grave injustice. On the contrary, your level of aerobic fitness is perhaps the best indicator of the health status of most of the important body systems.

Only 10 to 15 percent of people over the age of 30 years participate in sufficiently vigorous activity (of the huff and puff variety) each week to maintain reasonable level and reap the benefits of aerobic fitness.

For too long the body system dysfunctions generated by a lack of aerobic fitness have been papered over. The medical industry in particular has been blind-sided by the influence of the pharmaceutical industry. Not including the aerobic fitness arrow in the medical quiver has been a long standing oversight.

Aerobic fitness activity 'turbo-charges' the delivery of oxygen into every cell of the body, It recharges the amount of oxygen in the blood and enhances circulation. It impacts cells in all organs of the body – including the brain – which is why aerobic exercise is a significant driver of good mental health.

If you're serious about becoming aerobically fitter, merely recording time, steps or distance is pointless unless effort is also taken into account.

A good aerobic fitness training prescription includes a 'dosage' involving an equation based on frequency (times a week), duration (length of each session) and intensity of **effort** (based on heart rate). You can't swallow an aerobic fitness prescription!

#### AEROBIC FITNESS PRESCRIPTION

##### Frequency

- times a week

##### Duration

- length of each session

##### Intensity

- the 'dosage', rated against a percentage of maximum heart rate

I use and recommend the Fitbit zone points system. It fits the aerobic fitness prescription and monitoring specifications. The system is based on a scientific formula that includes an 'active dosage' (intensity of effort) based on heart rate.



Go to page 21 for a more detailed outline of the Fitbit system.

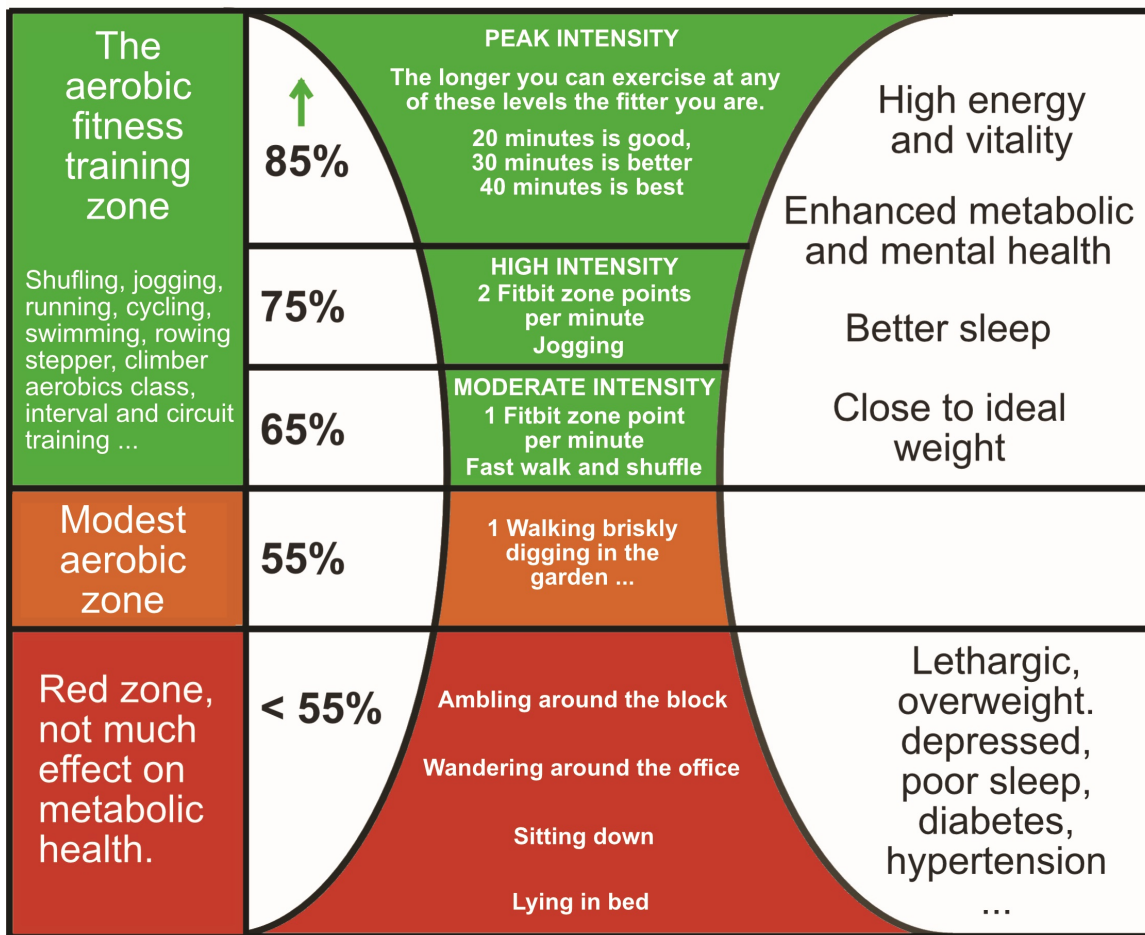
Along with time, the intensity of your aerobic exercise needs to be taken into account. They say that you need to get your heart rate to at least 65% of your maximum heart rate (MHR) to gain an aerobic training effect. 75% is probably more like it. 85% is achievable and sustainable for people in good aerobic condition and is something worth aiming at. Maximum heart rate is said to be 220 minus your age.

The people I see who are in the best of health are those who have a vigorous aerobic training program, for 40 minutes on most days of the week. I see little evidence that ambling around the block for 10 minutes a day does much for the cardiovascular or any other system, or that it has much of an impact on lowering stress levels.

Aerobic fitness exercise is the body's 'turbo-charging' mechanism designed to make sure that all the trillions of cells in your body are getting the oxygen they need to work efficiently. It is the mechanism for boosting the various elimination systems, including the lymphatic system, the blood, liver, kidneys, bowel, skin and lungs. The better the cells work the healthier you are.

It trivializes the concept of aerobic fitness to ascribe as its main benefit your ability to do more vigorous, muscular, physical activity for longer periods of time. Sure that's what happens, but it is a byproduct, a symptom of the fact that a range of body systems are working more efficiently, not just your muscles.

## HOURLGLASS AEROBIC FITNESS



Exercise at the top of the hourglass.

c John Miller.

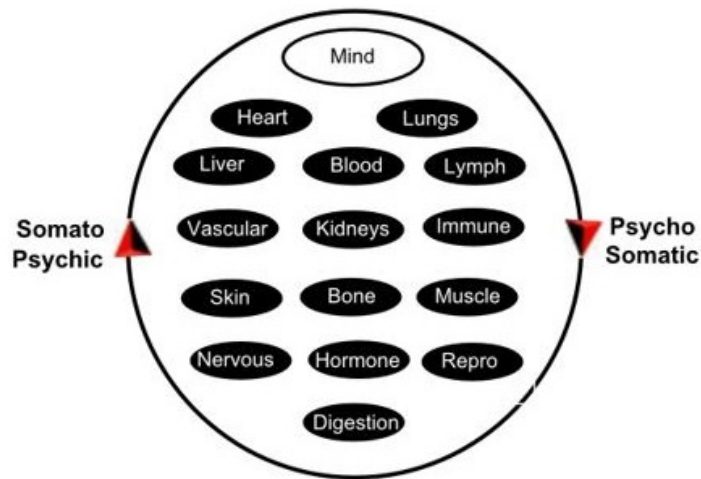
True ease in health comes from effort, not chance, as those  
move easiest who have learned to dance.  
With apologies to Aleander Pope

## THE SOMATO-PSYCHIC ECOSYSTEM

What happens in the mind effects the rest of the body – that's the **psycho-somatic response**. The simplest example of that is when you're about to give a speech you get sweaty palms or your hands shake.

What happens in the rest of the body affects the mind - that's the **somato psychic response**.

In short, aerobic physical activity has a positive affect on all parts of the metabolic health system including the mind.



## THE AEROBIC FITNESS STANDARD - the 20m run

Of all the measures of how well your body is working, your level of aerobic fitness stands out as important as blood pressure. (You can still have normal blood pressure long after the condition of major body systems has decreased.) If your doctor doesn't know about the 20m run test you can inform them and ask them to take you out the back of the surgery and count the number of 20m laps you can complete in five minutes.

Or you can do the test at home and take your results to the doctor. Let him or her know exactly how aerobically fit you are. Spread the word about the test to your friends

What is important is that a drop in aerobic fitness is one of the first warning signs that general body system function is being compromised.

**Having said all that**, it's usually the case that when we talk about aerobic fitness we start talking about our ability to do things that require physical effort – whether it's walking to the end of the street, walking up a couple of flights of stairs, going on a hike, playing a game of tennis... Wouldn't it be awful to restrict your choices in life because you hadn't bothered to keep yourself fit enough to do them?

However, whatever your level of fitness you can get fitter. Age is not an excuse. The older you are the longer you've had to train!

If you're wobbly on the pins, take to the stepper, the bike, the climber, the elliptical, the rower or the pool.

You'll feel better, you'll be able to do more and do it for longer.

I recommend you get a Fitbit watch and start measuring, managing and monitoring your aerobic fitness training program. I find it a highly motivating device.

You'll find more details of the **20m run** and the **Universal Fitness Test**, on pages 26 – 29, which also include tests of strength and flexibility.



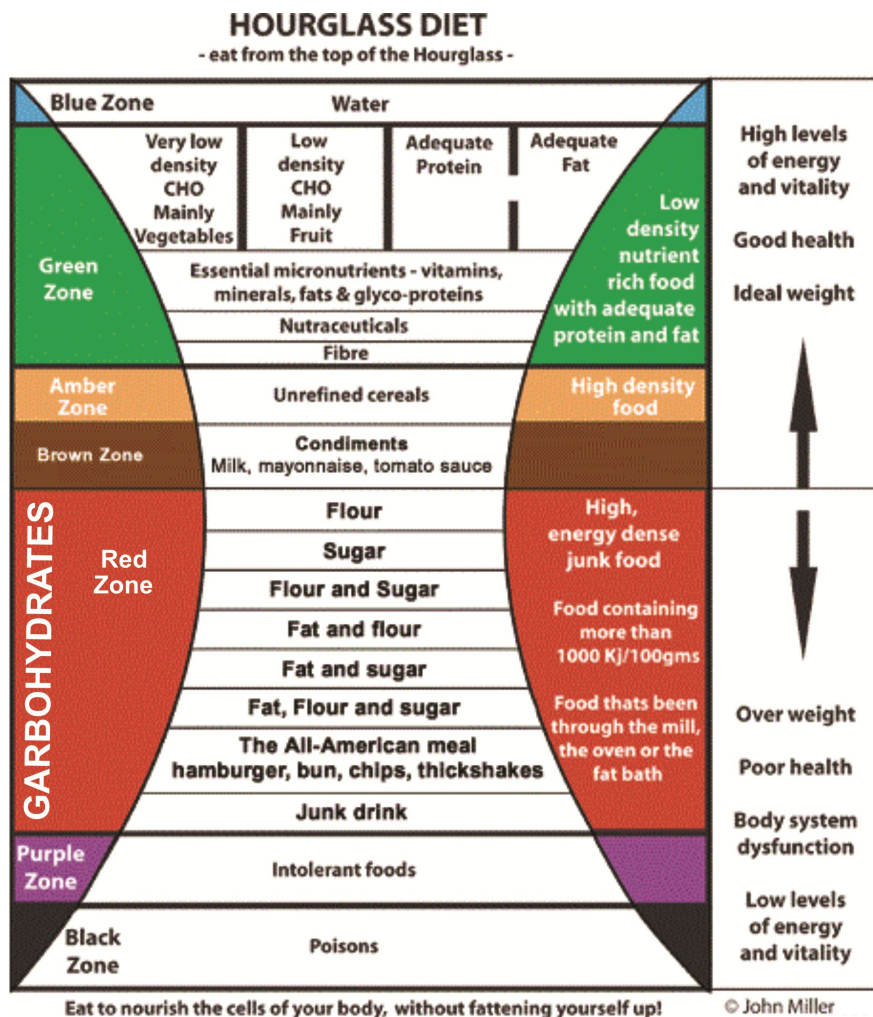
## THE HOURGLASS DIET

The body works best on 'high octane' fuel, delivered at the right time and in the right quantity.

As a means of doing that, you need to have a clear distinction between what's good food and what's junk food. You need more of the good food and much, much less of the junk food.

### THE MODEL

In a nutshell, it's good food at the top and junk down the bottom.



It is my belief that the various diet pyramids no longer provide a useful model for eating healthily in a sedentary society.

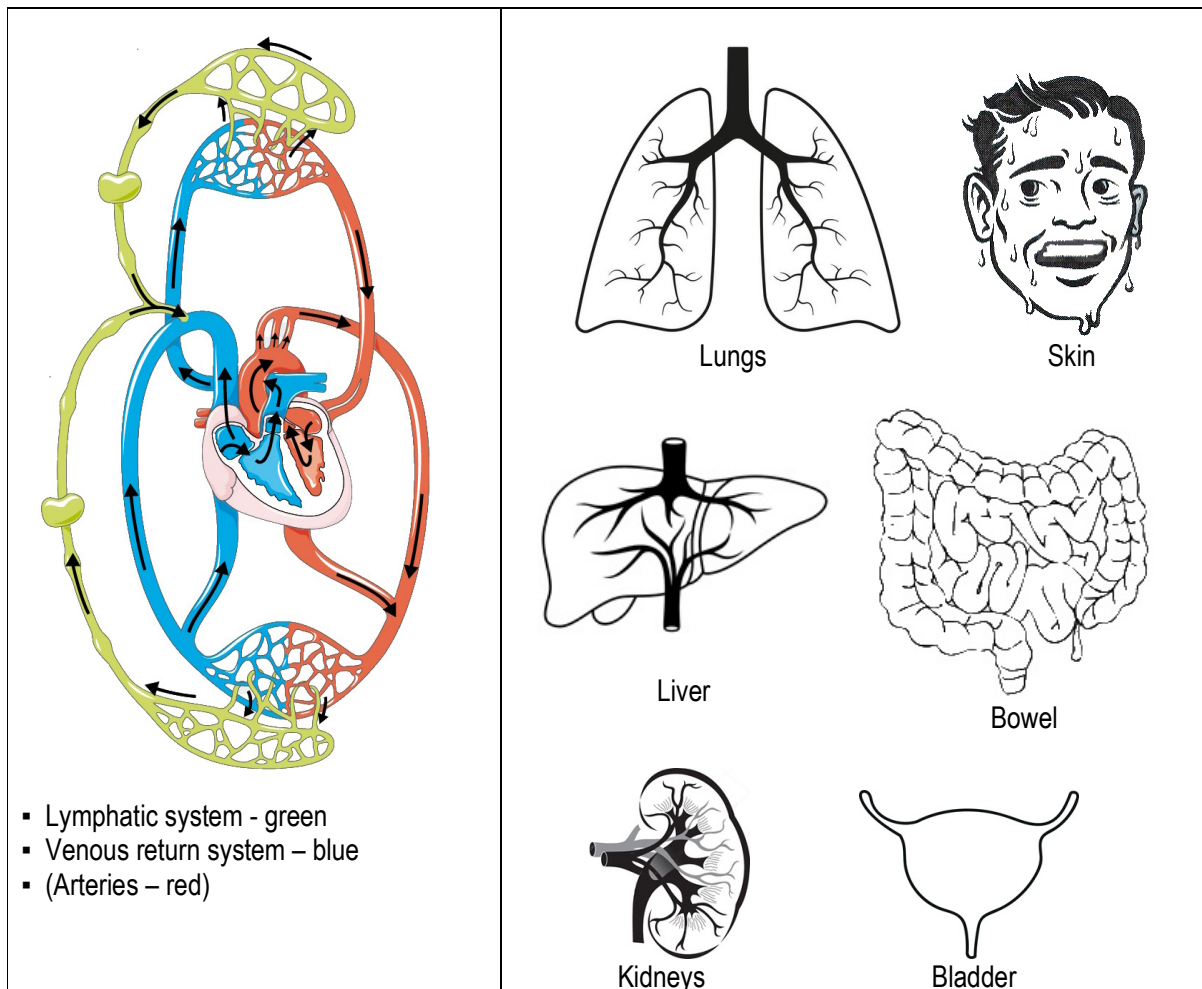
### Healthy exhaust system



Vigorous physical activity plays a role in stimulating the body's 'exhaust' system.

The exhaust system is responsible for taking the waste products from every cell and removing them from the body.

When it comes to metabolic health, there are a lot of parts in the exhaust system that are frequently overlooked.



## 9. FITNESS – the word that dare not speak its name!

There are three components of fitness:

### 1. aerobic fitness



### 2. strength



### 3. flexibility.



Fitness is the word that dare not speak its name in the consulting rooms of most medical and allied health practitioners.

Whilst this book is primarily about metabolic health and the contribution aerobic exercise plays in improving and maintaining it, don't forget the importance of strength and flexibility in maintaining a healthy musculo-skeletal system.

*Withdraw into yourself and look. And if you do not find yourself beautiful yet, act as does the creator of a statue that is to be made beautiful: he cuts away here, he smooths there, he makes this line lighter, this other purer until a lovely face has grown upon his work. So do you also; cut away all that is excessive, straighten all that is crooked, bring light to all that is overcast, labor to make all one glow of beauty and never cease chiseling your statue.*

**Plotinus (circa 250 BC)**

## 10. WHAT'S THE BEST AEROBIC EXERCISE?

There is no one exercise that's best.

There are many aerobic activities for you to choose from and you'll gravitate to the ones you enjoy most - or get the most benefit from.

Some you can do on your own or with a partner, some you can do in groups.

All you have to remember is that the stimulus to improvement of aerobic capacity is how often you do it, the time you do it for and your heart rate.



The situations themselves are trivial, but the underlying theme is far from it. If you want something, you have to act on it. Just looking at someone else's end result and wishing you had that will get you nowhere. It will take you time to get where you want to be, but that's just life. There aren't any shortcuts.

Tulsi Subramanian

## 11. Fitbit aerobic fitness prescription and monitoring system



Trying to improve your aerobic fitness without an exercise prescription that includes **frequency**, **duration** and **intensity** is like taking a pill of unknown active ingredients and without instructions on how often to take it.

Without a definition of intensity, based on time and heart rate, the exercise guidelines recommended by the American College of Sports Medicine and the Centre for Disease Control lack scientific rigor. The College's prescription is - 'a minimum of 30 min of moderate activity on five days per week, or vigorous intensity aerobic activity for a minimum of 20 min on three days per week.'

This prescription has been holding back the medical industry from prescribing, measuring, managing and monitoring the aerobic fitness of their clients.

Fitbit has filled the prescription and monitoring gap with its **Fitbit Aerobic Fitness Zone System**.

|                    |          |              |          |                                                                   |
|--------------------|----------|--------------|----------|-------------------------------------------------------------------|
| <b>Zone Points</b> | <b>=</b> | <b>Time</b>  | <b>x</b> | <b>Intensity of effort</b>                                        |
|                    |          | (in minutes) |          | (on a scale where points per minute are rated against heart rate) |

Fitbit calculates the number of zone points you've accumulated using a formula based the actual time (T) in minutes, maximum heart rate, resting heart rate and heart rate reserve. Below it a rough guide, based on percentage of maximum heart rate. It's a close estimation of how Fitbit calculates the Fitbit zones.

Fitbit has two aerobic fitness training zones:

- **Zone 1:** if you get your heart rate over (circa) 65% of your (estimated) age-related maximum heart rate (220 minus age) you get 1 point per minute.
- **Zone 2:** if you get your heart rate over (circa) 75% of your maximum heart rate you get 2 points per minute.

### The prescription

A medical, fitness, or allied health practitioner can prescribe a certain number of points a day to improve metabolic and mental health. 40 zone points a day (and 200 a week) sounds about right for someone wanting to see an improvement in their health.

### Monitoring and managing the prescription

Fitbit sends people a weekly report which can be emailed to a medical fitness and allied health practitioner, friends or relatives and from whom an appropriate response can be accorded.



| Fitbit zone points per minute- based on % of age-related maximum heart rate. |       |          |     |     |          |     |     |     |     |      |
|------------------------------------------------------------------------------|-------|----------|-----|-----|----------|-----|-----|-----|-----|------|
| Effort                                                                       | Light | Moderate |     |     | Vigorous |     |     |     |     |      |
| Pts/min                                                                      | 0     | 1        |     |     | 2        |     |     |     |     |      |
| % MHR                                                                        | 55%   | 60%      | 65% | 70% | 75%      | 80% | 85% | 90% | 95% | 100% |
| Age                                                                          |       |          |     |     |          |     |     |     |     |      |
| 20                                                                           | 105   | 114      | 124 | 133 | 143      | 152 | 162 | 171 | 190 | 200  |
| 25                                                                           | 102   | 111      | 120 | 130 | 139      | 148 | 157 | 167 | 185 | 195  |
| 30                                                                           | 99    | 108      | 120 | 130 | 140      | 150 | 160 | 170 | 180 | 190  |
| 35                                                                           | 96    | 105      | 114 | 123 | 131      | 140 | 149 | 158 | 175 | 185  |
| 40                                                                           | 99    | 108      | 117 | 126 | 135      | 144 | 153 | 162 | 180 | 180  |
| 45                                                                           | 94    | 103      | 111 | 120 | 128      | 137 | 145 | 154 | 171 | 175  |
| 50                                                                           | 89    | 97       | 105 | 113 | 121      | 129 | 137 | 145 | 161 | 170  |
| 55                                                                           | 89    | 97       | 105 | 113 | 121      | 129 | 137 | 145 | 161 | 165  |
| 60                                                                           | 86    | 94       | 102 | 110 | 118      | 126 | 133 | 141 | 157 | 160  |
| 65                                                                           | 81    | 88       | 96  | 103 | 110      | 118 | 125 | 132 | 147 | 155  |
| 70                                                                           | 79    | 86       | 93  | 100 | 107      | 114 | 122 | 129 | 143 | 150  |
| 75                                                                           | 76    | 83       | 90  | 97  | 104      | 110 | 117 | 124 | 138 | 145  |
| 80                                                                           | 73    | 80       | 86  | 93  | 100      | 106 | 113 | 120 | 133 | 140  |
| 85                                                                           | 70    | 77       | 83  | 90  | 96       | 102 | 109 | 115 | 128 | 135  |
| 90                                                                           | 68    | 74       | 81  | 87  | 93       | 99  | 105 | 112 | 124 | 130  |

If you're diligent in your training, over the weeks and months you'll notice that you're able to train with a higher heart rate for longer periods of time. This means you're getting fitter, your metabolic system healthier.

A minimum of 200 zone points per week (ZPPW) is good, 250 is better, 300 is best and 350 is entering 'aerobic fitness defrag territory'. Once you start getting 250 or more ZPPW a week you'll keep yourself in pretty good shape.

| Frequency / intensity / duration       | Good | Better | Best  | Metabolic defrag and 1% weight loss territory |
|----------------------------------------|------|--------|-------|-----------------------------------------------|
| Frequency: based on sessions per week  | 5    | 7      | 9     | 11                                            |
| Duration: based on minutes per session | 20   | 30     | 40    | 60 (2 x 30)                                   |
| Intensity: based on heart rate         | 65%+ | >75%+  | >85%+ | 75%+                                          |
| Fitbit zone points per day             | 40   | 50     | 60    | 80+                                           |
| Fitbit zone points per week            | 200  | 250    | 300   | 350+                                          |

'They say' that your estimated, age-related maximum heart rate (MHR) is (roughly) 220 minus your age. Therefore, the maximum heart rate of a 40-year-old person is said to be 180bpm. Aiming to work at 75% of maximum heart rate for a 40-year-old is roughly 135 bpm. If you're a 40-year-old person and you're in good physical condition and aerobically trained, you'll be able to sustain more than 135 bpm for at least 40 minutes.

If you're fitter or less fit than the average fit person, you may need to modify the recommendation.

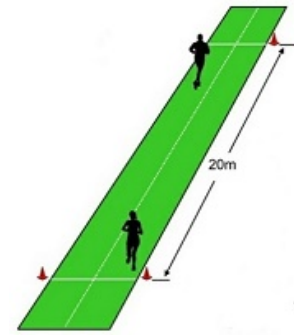
1. You'll need a Fitbit heart rate monitor connected to a smart phone containing the Fitbit app.
2. Set your Fitbit watch to, 'Workout.' Start the workout. Check what your heart rate is as you go along.
3. You'll get a feel for what the two heart rate zones are and adjust the intensity of your workout accordingly.
4. The Fitbit app will start counting zone points from the moment you start exercising at a rate of (circa) 65% of your age-related maximum heart rate. You can track the duration of your session and the number of zone points you've generated while you are exercising.

## 12. 20m run- world's premier test of aerobic fitness

How many 20 metre laps can you walk, shuffle, jog or run in 5 minutes? The 20m run is the most useful field test measure of metabolic function.

The 20m run test has been derived from the 'Beep' Test, 20m Shuttle Run, a reliable and valid measure of aerobic fitness, particularly for athletes and very fit people. However the 'Beep' Test is not discriminating enough for regular folks; a lot of people drop out before the beginning of level 3 (two minutes). With the 20m run you can start off at any pace; walk, shuffle, jog or run.

If you're not in great shape, don't start off too fast. If you run out of puff, slow down, or walk, but continue going for the full five minutes. Most people who slow down usually pick the pace up again after a short while



Make sure at least one footstep over the end line on each lap.

### 1. Scoring table for regular folks

| 20m run |     |    |    |    |    |    |    |    |    |    |    |
|---------|-----|----|----|----|----|----|----|----|----|----|----|
| Men     | <22 | 22 | 24 | 26 | 28 | 30 | 32 | 34 | 36 | 38 | 40 |
| Women   | <20 | 20 | 22 | 24 | 26 | 28 | 30 | 32 | 34 | 36 | 38 |
| Points  | 0   | 1  | 2  | 3  | 4  | 5  | 6  | 7  | 8  | 9  | 10 |

Score/10

Lap score/100

### 2. Scoring tables for serious athletes and sports people

| 20m run |       |     |    |    |    |    |    |    |    |    |    |
|---------|-------|-----|----|----|----|----|----|----|----|----|----|
| Laps    | Men   | <44 | 44 | 46 | 48 | 50 | 52 | 54 | 56 | 58 | 60 |
| Laps    | Women | <40 | 40 | 42 | 44 | 46 | 48 | 50 | 52 | 54 | 56 |
| Points  |       | 0   | 2  | 3  | 4  | 5  | 6  | 7  | 8  | 9  | 10 |

Score/10

Lap score/100

### 3. 20m run percentage tables for all comers

| REGULAR FOLKS FITNESS |        |       |  |      |        |       |
|-----------------------|--------|-------|--|------|--------|-------|
| LAPS                  | POINTS |       |  | LAPS | POINTS |       |
|                       | Men    | Women |  |      | Men    | Women |
| 11                    | 0      | 0     |  | 31   | 56     | 62    |
| 12                    | 12     | 12    |  | 32   | 57     | 66    |
| 13                    | 13     | 13    |  | 33   | 58     | 70    |
| 14                    | 14     | 14    |  | 34   | 59     | 72    |
| 15                    | 15     | 15    |  | 35   | 60     | 74    |
| 16                    | 16     | 16    |  | 36   | 64     | 76    |
| 17                    | 17     | 17    |  | 37   | 68     | 78    |
| 18                    | 18     | 18    |  | 38   | 72     | 80    |
| 19                    | 19     | 19    |  | 39   | 76     | 82    |
| 20                    | 20     | 20    |  | 40   | 80     | 84    |
| 21                    | 22     | 22    |  | 41   | 82     | 86    |
| 22                    | 24     | 24    |  | 42   | 84     | 88    |
| 23                    | 26     | 26    |  | 43   | 86     | 90    |
| 24                    | 28     | 28    |  | 44   | 88     | 95    |
| 25                    | 30     | 30    |  | 45   | 90     | 100   |
| 26                    | 35     | 35    |  | 46   | 92     |       |
| 27                    | 40     | 45    |  | 47   | 94     |       |
| 28                    | 45     | 50    |  | 48   | 96     |       |
| 29                    | 50     | 55    |  | 49   | 98     |       |
| 30                    | 55     | 60    |  | 50   | 100    |       |
|                       |        |       |  |      |        |       |

| ELITE FITNESS |        |       |
|---------------|--------|-------|
| LAPS          | POINTS |       |
|               | Men    | Women |
| 40            | 70     | 72    |
| 41            | 72     | 74    |
| 42            | 74     | 78    |
| 43            | 76     | 82    |
| 44            | 78     | 86    |
| 45            | 80     | 88    |
| 46            | 82     | 90    |
| 47            | 84     | 91    |
| 48            | 86     | 92    |
| 49            | 88     | 93    |
| 50            | 90     | 94    |
| 51            | 91     | 95    |
| 52            | 92     | 96    |
| 53            | 93     | 97    |
| 54            | 94     | 98    |
| 55            | 95     | 99    |
| 56            | 96     | 100   |
| 57            | 97     |       |
| 58            | 98     |       |
| 59            | 99     |       |
| 60            | 100    |       |

## 13. UNIVERSAL FITNESS TEST

### 1. Body composition.

How close are you to your ideal weight? You can estimate the number of kilograms over your ideal weight or use percent body fat..



### 2. Lower body strength – squat

How many squats can you until exhaustion? Your bottom must go lower than the crease at the back of your knees.

If you've got sore knees either don't proceed or **proceed with caution**. Suggest a 3cm heel raise.



### 3. Front of body strength – sit-ups to exhaustion. Arms crossed and hands clasping alternate shoulders: knees bent.

There is evenly divided conjecture about whether it is safe to do situps with feet held. I believe the exercise is safe.



If it hurts, stop doing it

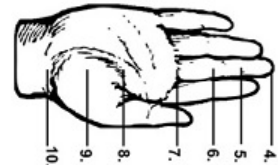
### 4. Upper body strength – press-ups to exhaustion.

If you've got painfully sore shoulders either don't do this exercise or **proceed with caution** – and don't do too many.



### 5. Hamstring flexibility - sit and reach

Sitting on the floor, with feet outstretched in front of you, see how far down toward or past your toes you can reach with your fingers. Keep the back of your knees flat on the floor.



### 6. Buttock flexibility - ability to sit up straight with legs crossed

With legs crossed and hands clasped behind your back, see if you can sit up straight without falling over backwards.



### 7. Shoulder function

Stand with heels and back against the wall, arms and wrists vertically in the 'surrender position'. The further they are away (in cms) the lower the score.



### 8. Aerobic fitness - 20m laps in 5 minutes

How man 20m laps can you complete in 5 minutes.

One foot must go past the line each time you turn.



## Universal fitness test – scoring table for ‘regular folks’

### 1. Body composition: how close are you to your ideal weight?

Current weight ..... Ideal weight ..... Percent body fat .....

|  |                  |     |     |     |     |     |     |     |     |  |
|--|------------------|-----|-----|-----|-----|-----|-----|-----|-----|--|
|  | Kg over ideal wt | >25 | <25 | <20 | <15 | <10 | <7  | <4  | <2  |  |
|  | % fat men        | <40 | <40 | <36 | <32 | <29 | <26 | <23 | <20 |  |
|  | % fat women      | <50 | <50 | <46 | <42 | <39 | <36 | <33 | <30 |  |
|  |                  | 3   | 4   | 5   | 6   | 7   | 8   | 9   | 10  |  |

### 2. Lower body strength – squats – until exhaustion #.....

Squat so your bottom goes down to at least the crease in the back of your knees and stand up straight with legs fully extended.

|    |   |   |    |    |    |    |    |    |    |    |
|----|---|---|----|----|----|----|----|----|----|----|
| >6 | 6 | 8 | 10 | 12 | 14 | 16 | 18 | 20 | 22 | 24 |
| 0  | 1 | 2 | 3  | 4  | 5  | 6  | 7  | 8  | 9  | 10 |

### 3. Front of body strength – situps feet held - until exhaustion #.....

Men on toes, women on front of thighs.

|    |   |   |    |    |    |    |    |    |    |    |
|----|---|---|----|----|----|----|----|----|----|----|
| >6 | 6 | 8 | 10 | 12 | 14 | 16 | 18 | 20 | 22 | 24 |
| 0  | 1 | 2 | 3  | 4  | 5  | 6  | 7  | 8  | 9  | 10 |

### 4. Upper body strength – press-ups – until exhaustion #.....

Men on toes, women on front of thighs.

|    |   |   |    |    |    |    |    |    |    |    |
|----|---|---|----|----|----|----|----|----|----|----|
| >6 | 6 | 8 | 10 | 12 | 14 | 16 | 18 | 20 | 22 | 24 |
| 0  | 1 | 2 | 3  | 4  | 5  | 6  | 7  | 8  | 9  | 10 |

### 5. Hamstring flexibility – sit and reach

Sitting on the floor with feet outstretched in front of you, see how far down toward, or past your toes you can reach with your fingers. Keep your legs straight, back of knees on the floor.

|             |         |   |   |      |   |   |       |
|-------------|---------|---|---|------|---|---|-------|
| Can't touch | Fingers |   |   | Palm |   |   | Wrist |
| 0           | 4       | 5 | 6 | 7    | 8 | 9 | 10    |

### 6. Buttock Flexibility – ability to sit up straight, legs crossed, hands behind back.

|                 |          |      |        |      |      |         |
|-----------------|----------|------|--------|------|------|---------|
| Right leg under | Big fail | Nope | Almost | Just | Good | Perfect |
| 0               | 1        | 2    | 3      | 4    | 5    |         |

|                |          |      |        |      |      |         |
|----------------|----------|------|--------|------|------|---------|
| Left leg under | Big fail | Nope | Almost | Just | Good | Perfect |
| 0              | 1        | 2    | 3      | 4    | 5    |         |

Ttl

### 7. Shoulder function - stand with heels and back against the wall, arms and wrists vertically in the ‘surrender’ position. The further they are away, from the wall (in cms) the lower the score.

|     |    |    |    |   |   |   |   |   |   |      |
|-----|----|----|----|---|---|---|---|---|---|------|
| >15 | 15 | 13 | 11 | 9 | 7 | 5 | 3 | 2 | 1 | Flat |
| 0   | 1  | 2  | 3  | 4 | 5 | 6 | 7 | 8 | 9 | 10   |

### 8. Aerobic fitness – 5 minute, 20m lap run. Laps .....

|        |     |    |    |    |    |    |    |    |    |    |    |
|--------|-----|----|----|----|----|----|----|----|----|----|----|
| Men    | <22 | 22 | 24 | 26 | 28 | 30 | 32 | 34 | 36 | 38 | 40 |
| Women  | <20 | 20 | 22 | 24 | 26 | 28 | 30 | 32 | 34 | 36 | 38 |
| Points | 0   | 1  | 2  | 3  | 4  | 5  | 6  | 7  | 8  | 9  | 10 |

X 3

If you want to be fit and healthy, exercise like fit and healthy people exercise!

TOTAL

## Universal fitness test – scoring table for sports and elite force personal

The Elite Fitness Test has the same tests as the Universal Fitness Test – only with higher standard.

### 1. Body composition: how close are you to your ideal weight?

Current weight ..... Ideal weight ..... Percent body fat .....

|                  |     |     |     |     |     |     |     |     |
|------------------|-----|-----|-----|-----|-----|-----|-----|-----|
| Kg over ideal wt | >25 | <25 | <20 | <15 | <10 | <7  | <4  | <2  |
| % fat men        |     | 26  | <26 | <34 | <22 | <20 | <18 | <16 |
| % fat women      |     | >34 | <34 | <32 | <30 | <28 | <26 | <24 |
|                  | 0   | 5   | 6   | 7   | 8   | 9   | 10  |     |

### 2. Lower body strength – squats – until exhaustion #.....

Squat so your bottom goes down to at least the crease in the back of your knees and stand up straight with legs fully extended.

|     |    |    |    |    |    |    |
|-----|----|----|----|----|----|----|
| <35 | 35 | 38 | 41 | 44 | 47 | 50 |
| 0   | 5  | 6  | 7  | 8  | 9  | 10 |

### 3. Front of body strength – situps feet held – until exhaustion #.....

Men on toes, women on front of thighs.

|     |    |    |    |    |    |    |
|-----|----|----|----|----|----|----|
| <35 | 35 | 39 | 41 | 44 | 47 | 50 |
| 0   | 5  | 6  | 7  | 8  | 9  | 10 |

### 4. Upper body strength – press-ups – until exhaustion #.....

Men on toes, women on front of thighs.

|     |    |    |    |    |    |    |
|-----|----|----|----|----|----|----|
| >35 | 35 | 38 | 41 | 44 | 47 | 50 |
| 0   | 5  | 6  | 7  | 8  | 9  | 10 |

### 5. Hamstring flexibility – sit and reach

Sitting on the floor with feet outstretched in front of you, see how far down toward, or past your toes you can reach with your fingers. Keep your legs straight, back of knees on the floor.

|                  |         |   |   |      |   |   |       |
|------------------|---------|---|---|------|---|---|-------|
| Can't touch toes | Fingers |   |   | Palm |   |   | Wrist |
| 0                | 4       | 5 | 6 | 7    | 8 | 9 | 10    |

### 6. Buttock Flexibility – ability to sit up straight, legs crossed, hands behind back.

|                 |          |      |        |      |      |         |
|-----------------|----------|------|--------|------|------|---------|
| Right leg under | Big fail | Nope | Almost | Just | Good | Perfect |
| 0               | 1        | 2    | 3      | 4    | 5    |         |

|                |          |      |        |      |      |         |
|----------------|----------|------|--------|------|------|---------|
| Left leg under | Big fail | Nope | Almost | Just | Good | Perfect |
| 0              | 1        | 2    | 3      | 4    | 5    |         |

Ttl

### 7. Shoulder function – stand with heels and back against the wall, arms and wrists vertically in the 'surrender' position. The further they are away, from the wall (in cms) the lower the score.

|     |    |    |    |   |   |   |   |   |   |      |
|-----|----|----|----|---|---|---|---|---|---|------|
| >15 | 15 | 13 | 11 | 9 | 7 | 5 | 3 | 2 | 1 | Flat |
| 0   | 1  | 2  | 3  | 4 | 5 | 6 | 7 | 8 | 9 | 10   |

### 8. Aerobic fitness – 5 minute, 20m lap run. Laps .....

|        |     |    |    |    |    |    |    |
|--------|-----|----|----|----|----|----|----|
| Men    | <45 | 45 | 47 | 49 | 51 | 53 | 55 |
| Women  | <43 | 43 | 45 | 47 | 49 | 51 | 53 |
| Points | 0   | 5  | 6  | 7  | 8  | 9  | 10 |

X 3

If you want to be fit and healthy, exercise like fit and healthy people exercise!

TOTAL

## 14. WHAT ARE YOU GUNNADO

– to prescribe, measure, manage and monitor your aerobic fitness training pogram?

|  |
|--|
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Nothing in this world can take the place of persistence.  
Talent will not; nothing is more common than unsuccessful  
people) with talent.  
Genius will not; unrewarded genius is almost a proverb.  
Education will not; the world is full of educated derelicts.  
Persistence and determination alone are omnipotent.

Calvin Coolidge



fitbit

- key tool for prescribing measuring, managing and monitoring aerobic fitness programs -

Modern medicine is a wonderful thing, but there are two problems:  
people expect too much of it, and too little of themselves.  
Don Ardell

