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A SAMPLE

CHAPTER 1 - An Overview Of The "Sedentary Lifestyle"

It seems that there is a new study and statistic coming out every day that warns us about the health concerns related to the "sedentary lifestyle." The "sedentary lifestyle" itself refers to the way in which millions of people around the world have become trapped in the unfortunate habit of "sitting down for extended periods of time." Despite the fact that the human body was specifically designed for physical activity, it is recognised that the average person sits for more than half of their waking life.

There's no doubting that in today's fast-paced world, we ALL lead busy lives. Unfortunately though, for many people this involves taking a seat in front of some form of technology for upwards of 60 hours a week. Despite the fact that technology itself has led to the pace of the world becoming a lot "quicker," it has come at quite a cost to the human body. Statistics from Medibank's 2009 "Stand-Up Australia" program show that 77% of "office-based workers" sit down for more than 6 hours per day. On top of the amount of time spent at the desk, there are also other situations in which we usually find ourselves taking a seat, such as commuting to and from the workplace, and watching television in the evening.

If we add this time together, it can quite easily amount to over 12 hours of our normal day. Taking this into account, we now begin to understand just how easy it is to spend half of our time sitting down, and why this has become such an issue for our health. The statistics and research into the concerns of the "sedentary lifestyle" (some of which have been published back in the 20th century), has led to the British Journal of

Sports Medicine claiming in 2012, that sitting down is now “the new smoking” when it comes to the health of the Western world.

The good news is that although there are new studies on the health concerns of sitting being released almost daily, there is also a global awareness toward reversing the effects of the "sedentary lifestyle" growing right alongside. The aim of this program is to assist and educate those who lead this "sedentary lifestyle," to begin making the necessary changes toward turning pain and discomfort into increased strength and vitality.

We understand that there is a process that anybody must go through when making changes and improvements to their overall health & wellbeing. However, by guiding you through the simple information on the "symptoms & causes of the challenges related to sitting down," and then clearly demonstrating the easy-to-follow techniques to reverse these challenges, we hope to improve the lives of people in all corners of the world.

Our mission is to *help people to create a body and mind that matches the pace of the world around them.* Quite simply, we were born to move, but over the past few centuries we have progressed as a species to a point in which we have superseded the use of our own physical bodies. It is important to understand that the human body is our single most powerful resource. Although we tend to “use” our minds a lot more than we use our bodies, we must become more aware of balancing the care between the two of them, in order to reach our ultimate potential, and live healthy happier lives. As entrepreneur and author Jim Rohn once said, “Take care of your body, it’s the only place you have to live.” Before delving into the concerns & improvement procedures related to the “sedentary lifestyle,” it is important to gain perspective on it’s history, and how we as a population have managed to eventually put ourselves in this position.

The Industrial Revolution

The Industrial Revolution first began in Great Britain, and then made it’s way into the United States in the early 19th century. The first signs of the revolution began with the invention of the steam engine in the early 1700’s, and then the cotton gin by Eli Whitney at the turn of the 18th century. The initial aim of the Industrial Revolution was to provide workers with a healthier alternative to their current working environment. Prior to this, most families worked either from home, often as farmers or trades people. With the rising concerns of malnutrition and disease during this time, there was a definite need for change.

As the Industrial Revolution spread rapidly into the United States during the early 18th century, private investors and financial institutes assisted companies to begin building large-scale businesses. The result of this growth eventually led to what is recognised as one of the greatest progressions in the history of mankind. Unfortunately, it seemed that no one would know just how much of an effect the invention of the regulation “office job” would have on the health of mankind.

The Automobile

Next in the chain of events was the invention of the automobile. Although the first car was created in the early 18th century, their mass production has been recognised as the result of Henry Ford, and the invention of the Ford "Model T" in 1908. Much the same as the Industrial Revolution, the aim of the car was simply to make things easier for people. All of sudden, we had the ability to not only supersede walking long distances to save time, but we also had the ability to transport vital resources quickly and more efficiently. Once again, mankind had rapidly "progressed," and it paved the way for a revolution in transportation.

However, as was the case with the Industrial Revolution, the introduction of the automobile meant paying the price when it came to the health of the everyday individual. In the pursuit of saving time, we had removed another need for us to move, and the physiological impacts would prove costly.

The Television

In today's world, it would be difficult to come across a modern home that doesn't have a television. Since its introduction to the living rooms of millions worldwide, the TV has served as one of the greatest entertainment portals known to man. In the 21st century, it is recognised that the average individual divides their day between working, sleeping, and watching television. Statistics from the Journal of the American Medical Association (JAMA) in 2011 state that, "Television (TV) viewing is the most commonly reported daily activity apart from working and sleeping in many populations around the world. On average, 40% of daily free time is occupied by TV viewing within several European countries, and 50% in Australia. This corresponds to a daily TV viewing time of about 3.5 to 4 hours. In the United States, the average number of daily hours of TV viewing has recently been reported to be 5 hours."

There's no doubt that nearly everybody has a favourite Television show, and sometimes it's nice to sit down with the family after a meal for some entertainment. Unfortunately, it is the *repeated* process that has led to the majority of the Western population spending incredible amounts of time in front of the tube, without sufficient physical activity. The British Journal of Sports Medicine study in 2012, that recognised "sitting as the new smoking," also suggests that each hour of television watched after the age of 25, reduces life expectancy by 21.8 minutes. This means that if you were to watch television for 2 hours a day from the age of 25 until you were 70 (which is far less than the recognised average), you would cut 497 days off your life!

Let's take a second to look ahead...what if you chose not to watch television, and decided to do something physical instead? How much extra time would you have in your life? Basically, if you replaced those 2 hours of television with something other than sitting down (over that same period of 55 years), it would result in a total of 32,850 hours, or 1369 days. Now add the other 497 days that you've replaced to your life expectancy, and you have just over 5 years of extra life to enjoy.

What would you do with an extra 5 years in your life?

The Wireless & Social Media Age

Lastly, we have the Internet boom and the age of social media. In recent statistics taken in January of 2014, Facebook has just over 1.3 billion monthly users. Like other social media sites such as Instagram & Twitter, Facebook has allowed people from all corners of the globe to connect with ease at the touch of a button. No matter which side you're on when it comes to the positives or negatives of social media platforms, the reality is that it seems they're here to stay. Social media is seen by many as the biggest shift in humanity since the Industrial Revolution, and the opportunities for individuals and companies to connect is greater than it has ever been.

However, much the same as the Industrial Revolution, progress must always come at a cost. Despite the ability to move freely and connect with other users "on-the-go," more and more people are spending their time communicating from a sedentary position. Being able to voice opinions and interact with friends and colleagues via "tweets" and "posts," has led to the habitual nature of human beings to make less of an effort to interact face-to-face.

Lee Hawksley, managing director of ExactTarget Australia, ran an interesting "Digital Down Under" study in 2012 that shows Australian consumers are spending the "majority of their time online." The survey was taken by 1400 people, aged 18 and above, and was designed specifically to monitor the behaviour of those who used social media to help expand and promote their businesses. Hawksley recognises that social media is revolutionising the way businesses communicate and build relationships, with "94 percent of Australians now regular Internet users, and mobile device sales outnumbering PC sales for the first time ever in 2011." However, perhaps the most interesting statistic in this study points to "*one in every five minutes being spent on social media,*" with Australians also being recognised as using Facebook more than people surveyed in the both UK and United States.

According to statisticbrain.com, a renowned statistics website, the total amount of minutes spent on Facebook every month is a whopping 700 billion! They also claim that the average amount of time that a person uses Facebook for each month is just over 15 and a half hours - and that's just one of the 200 social media platforms listed on Wikipedia. With social media platforms such as Facebook and others becoming such powerful tools for business and personal communication, there is no sign of them slowing down in the near future. Although, with that said, I reckon it would be a safe bet that the vast majority of the 700 billion minutes spent on Facebook each month is not spent walking or standing up!

Nowadays, the health concerns relating to areas such as depression, anxiety, obesity, and diabetes, are all beginning to trace back to the amount of time that people are spending in a seated position - with more and more linking to the influence of the internet

and social media. Perhaps just as “costly” as these concerns, is the topic of pain and discomfort in areas of the body, more specifically the lower back. In fact, lower back related injury and absenteeism is now one of the number one costs to taxpayers in Australia, with millions of dollars being spent in worker’s compensation each and every year. But with the 15 hours spent in an office, in a car, or in front of technology, all combining to form the “sedentary lifestyle” of millions of people in Australia, and worldwide, is there any wonder why the good health of individuals is compromised?

CHAPTER 2: The Shape Of The Modern Sedentary Lifestyle

With the majority of jobs shifting away from fields and factories into office buildings, and access to instant entertainment just a click away, we are a sedentary people. As was explained in the previous chapter, many people young and old now find themselves spending the majority of their time sitting at a desk or on the couch. Sitting could be the most dangerous thing you do in your day, considering it is now ‘the new smoking’. The simple fact is that sitting is killing us as a population, and the research is quite compelling. Each and every day there is a new study being released that is linking our sedentary lifestyle to diabetes, cardiovascular disease and even cancer. Unfortunately, true consensus is not always an easy thing to come by in the health and wellness world, but if there's one topic that inspires seemingly little debate, it is 'sedentary lifestyle'. After gaining a perspective and awareness of just how much of an impact a sedentary lifestyle can have on your health, it may be worth taking a look at this list of the latest and greatest reasons why the chair -- at least when inhabited for long periods of time -- may not be your friend.

1. It Ups Diabetes Risk:

Researchers from the University of Missouri published results suggesting that sitting throughout most of the day may put individuals at higher risk for diabetes, obesity and non-alcoholic fatty liver disease -- even if you do manage to fit in time for an hour of daily exercise.

2. It Increases Your Overall Death Risk:

A study in the *American Journal of Epidemiology* found that women who sat six or more hours a day were nearly 40 percent more likely to die over a 13-year-stretch than those who sat less than three hours. And the statistics for men? Sitting for more than six hours was linked with an 18-percent higher risk of death.

3. Just A Few Minutes (In Front Of the Tube) Takes A Toll:

An August study from the British Journal of Sports Medicine found that every hour you sit in front of the TV, you could slash your life expectancy by nearly 22 minutes. Hence, what happens when you watch the tube for six hours a day? That type of seriously sedentary behaviour can cut your life expectancy by five years.

4. It's Linked With Cancer:

As MSNBC reported, sitting may be responsible for more than 170,000 cases of cancer

yearly -- with breast and colon cancers being the most influenced by rates of physical activity (and inactivity). But according to that article, a little bit of walking can go a long way. "For many of the most common cancers, it seems like something as simple as a brisk walk for 30 minutes a day can help reduce cancer risk," Christine Friedenreich, an epidemiologist with Alberta Health Services told MSNBC.

5. It Makes Your Bottom Bigger:

As our UK compatriots recently wrote, researchers have found that putting pressure on certain body parts (i.e., your bottom) can produce up to 50 percent more fat than usual. Huff Post UK reported: "In a bid to explain why sedentary behaviour causes weight-gain, scientists believe that the precursors to fat cells turn into flab (and end up producing more) when subjected to prolonged periods of sitting down, otherwise known as 'mechanical stretching loads.'"

6. It Could Raise Your Heart Attack Risk:

Not too long ago, Men's Health covered a study in the journal *Medicine & Science in Sports & Exercise*, in which researchers from Louisiana found that people who sit for the majority of the day are 54 percent more likely to die of a heart attack. Indeed, the investigators found that sitting was an independent risk factor for serious cardiovascular events.

7. Other Health Concerns:

Other health concerns linked to sitting include:

- Electric activity in the leg muscles **shuts off**
- Calorie burning drops to **1 per minute**
- Enzymes that help break down fat drop **90%**
- After 2 hours: Good cholesterol drops **20%**
- After 24 hours: Insulin effectiveness drops **24%** and risk of diabetes rises

A sedentary lifestyle also contributes heavily to lower back pain; by tightening many muscles in the hip flexors and the lower back itself. This tension leads to a misalignment of the lumbar spine, and a compression of the nerves that pass through the lower back region. With more and more studies being released each and every day into the health concerns related to the sedentary lifestyle, it is only a matter of time before some serious changes are going to be made into corporate working environments. There is no doubting that the shape of the modern lifestyle is not assisting the shape of the modern physique, and it is up to us to make the decision to move more and sit less if we are to live a life of true health longevity.

CHAPTER 3: An Overview Of The Sedentary Lifestyle's Impact On The Brain

When discussing the topic of the "Sedentary Lifestyle" and health, it's more often

the case that we refer to the impact that it has on our bodies, rather than our minds. Over the past few decades, the major health issues have been related mostly to the “obesity epidemic,” and how sitting down has greatly increased the number of inactive people across the world. The result has been an influx in the number of people suffering from increased weight gain and heart disease due to a lack of physical movement. However, in today’s world, the most “costly” impacts of the "Sedentary Lifestyle" are now relating back to “injury & illness,” both physical *and* mental. In fact, according to recent statistics from the Mental Health Services in Australia (MSHA), over \$7.2 billion was spent on mental health-related services during 2011-2012, which was an increase of \$282 per person from 2007-2008.

With that said, it’s important to review the significance of the brain’s function in everything that we do, whether we are at the desk, or out and about. The brain is the most active organ in our entire body, and is at the core of everything that we do. Every action, conscious or unconscious, is triggered by information processed by the central nervous system, that links directly to the intricate command centre nestled between our ears.

When it comes to “activity,” both mental and physical, there is a special process that occurs between the brain and body. The process itself is far too complex to delve into here, but simply put, there are a series of chemicals (or neurotransmitters) inside the brain that act as communicators to assist with positive emotional states such as “excitement,” “love” and “inspiration.” When the brain goes through a depletion of these chemicals, it has a hard time sending the “feel good” messages around the body, which can leave us in a negative emotional state such as “fear,” “boredom,” and of course, “anxiousness.”

We’ve all had bad days, but it’s when the “bad days” seem to reoccur that we can find ourselves in a position in which it’s hard to face the next one. This is when the symptoms of depression and anxiety can start to creep in, and sometimes without even realising, they begin to affect how we think, feel, and act. Depression and anxiety, although different, are very closely linked together when it comes to their diagnosis in individuals. In fact, it is recognised that almost 50% of people diagnosed with depression, are diagnosed with an anxiety disorder as well.

The bottom-line is that both depression and anxiety are extremely common amongst the population, affecting around 3 million Australians, and around 40 million Americans. On top of that, the rates across Australia, the U.S, and the UK, are all increasing, with millions of dollars begin invested into assisting people to recover from their conditions. As it was with the “obesity epidemic,” that has risen dramatically over the past few decades, the links to "depression and anxiety in the workplace" are now leaning heavily towards *how much time as a population we spend sitting down*.

Depression & Anxiety In The Workplace

As discussed in Module 1, it is recognised that 77% of office-based workers in Australia sit for more than 6 hours per day. Taking into account that this is only relating to time spent in the office, there is no doubting that many of us often spend ridiculous

amounts of time in a sedentary position. What has been an interesting part of being involved in the gym environment is becoming aware of many people who feel “too tired to train of an evening.” It is a situation in which I’ve definitely been in myself on many occasions; *you know you should exercise, but you just don’t feel any desire to get started.*

What’s interesting to understand is that quite often this has nothing to do with how “tired” we are, but has everything to do with how the chemicals in the brain are communicating. Have you ever been in a situation in which you haven’t really “felt” like exercising, but then a friend calls you out of the blue and wants to train? All of a sudden, that low energy state is replaced with a feeling of excitement. It doesn’t always happen, but sometimes there are situations in which external forces cause a shift in how we feel, and we are more likely to “move”. The spark of energy can come from something as simple as hearing a beautiful piece of music, receiving a positive comment from a friend, or noticing a nice change in weather.

When it comes to depression and anxiety in the workplace, the challenge lies in developing the habits that give us the positive desire to move. Underneath it all, the greatest desire of any human being is to be healthy. How we feel when we are in a rhythm, eating well, training hard, and seeing results, often gives us even more energy to want to improve. So, for those experiencing depression and/or anxiety, that same “rhythm” may simply be moving in the opposite direction. Feelings of hopelessness, decreased energy, insomnia, and other physical symptoms that arise as a result of negative rhythms in the body, and often lead to periods of being overwhelmed and stress. Being caught in this position makes it far more difficult to begin making the necessary steps towards returning to that positive cycle of feeling healthy and energetic! It’s simple, the laws of momentum in action!

The link between the Sedentary Lifestyle and anxiety was examined in an interesting study that compared sedentary mice, to mice that exercised. The study was conducted by researchers at Princeton University, and was published in July of 2013. The researchers stated that “physical activity reorganises the brain so that its response to stress is reduced, and anxiety is less likely to interfere with normal brain function.”

During the experiments, one group of mice were free to run on a wheel, whilst the other mice were restricted to minimal movement. Mice, like humans, are natural born runners, and according to one of the researchers Elizabeth Gould, mice will run up to 4 kilometres a night when given access to a running wheel. After a 6-week period, all mice were exposed to cold water for a brief period of time. The results were quite surprising, and showed the chemical reaction in the brain was incredibly different between the two groups of mice. The mice that were restricted to no exercise reacted very slowly, due to a lack of inhibitory neurons that are designed to assist with a reaction to an external stressor. On the other hand, the active mice responded almost immediately to the cold water, and were far more capable of resilience to stress.

In simple terms, the study led researchers to believe that remaining sedentary without exercise often lead to a person feeling less likely to exercise. Some may simply

call it bad habits, but as the study clearly demonstrated, the reason for our lack of *desire* to exercise basically comes down to a "fear of potentially dangerous situations," and in order to "increase the likelihood of survival."

It's an interesting point of view, and there are also many other influencing factors involved in our decision of whether or not we feel like exercising between our work hours. However, it makes sense to believe that after spending over 1500 hours each year at our desk, we would feel far more "safe" or "comfortable" remaining in the one place, despite the fact that we know it's not good for us!

The following conditions are caused by a sedentary lifestyle:

- **Depression:**

A Sedentary lifestyle is one of the causes of neurological disorder/depression, which is any disorder of the body nervous system. Structural, biochemical or electrical abnormalities in the brain, spinal cord or other nerves can result in a range of symptoms. Examples of symptoms include paralysis, muscle weakness, poor coordination, loss of sensation, seizures, confusion, pain and altered levels of consciousness.

- **Lack of muscle fitness**

Lack of muscle fitness is one of the most common causes of muscle weakness. If muscles are not used then the fibres within the muscles are partially replaced with fat. Muscle wasting will eventually occur: muscles become less chunky and more floppy. Each fibre is just as strong but there aren't so many of them and they don't contract so effectively. When you feel them they may be floppy and a little reduced in bulk. This leads to easy tiring when you try to do things that would have been easier when the muscles were fit. The condition is reversible with sensible, regular exercise regimes. It gets worse and more marked with increasing age.

- **Obesity**

A sedentary lifestyle is likely to lead to obesity in people. Work has become less physically exerting and more automated, and modern homes are equipped with all effort reducing gadgets and appliances. Speaking of home gadgets, how can we miss talking about television in context with obesity? In children and adults both, watching endless hours of television is linked to risks involving obesity. Many reports conclusively show that rate of obesity for child increases exponentially with the amount of time they dedicate to watching television.

Signs and symptoms of obesity

- Clothes feel tighter, and require larger size
- Weight gain around waist area – increased weight circumference
- Higher than normal body mass index

- Breathing disorders
- High cholesterol levels
- Symptoms from diseases discussed in the previous section

Obesity is not a rarity. But that doesn't quite mean it can't be controlled. A life-long healthy lifestyle is the key in combating this, which in essence means adopting a healthy, balanced diet plan for weight loss, and opting for [prescription weight loss pills](#) if required for achieving proper weight loss through involvement in regular physical activities.

- **Shortness of Breath**

The medical term for shortness of breath is dyspnea. This feeling of breathlessness can be due to many causes including asthma, lung disease and allergic reactions. Coronary artery disease can be a major cause of dyspnea and leading a lifestyle of inactivity can predispose you to this. In one study, researchers discovered that a sedentary lifestyle was the most detrimental risk factor for heart disease in women age 30 and older. Physical deconditioning due to a sedentary lifestyle is a common cause of dyspnea

Examples of sedentary activity:

- Sitting while at work or school and watching television.
- Using a computer or playing video games - this excludes 'active' gaming.
- Reading.
- Sitting while socialising with friends or family modern transportation promotes a sedentary lifestyle.
- Office work can be sedentary