Aging Gracefully

Rules for Longevity

A Workshop by Christina M. Truscott

Body Blueprint Fitness Education

Note from the Author:

In this workshop I will be referring to "**women**". By that I mean people who were born with internal reproductive organs (Vagina, cervix, uterus, fallopian tubes, and ovaries) and will go through menopause at some point in their lives. The internal reproductive system refers to the reproductive system of those assigned female at birth.

I understand that not everybody with an internal reproductive system identifies as a woman, and that some people who identify as a woman do not have an internal reproductive system. The same is said for a "man", people born with an external reproductive system (penis, testicles, scrotum).

Please take out of this workshop what applies to you or your client and understand that your clients may have diverse genders and bodies.

No disrespect is meant toward anybody with an internal reproductive system and does not identify as a woman, or to those who identify as a woman and do not have an internal reproductive system. And none to those with an external reproductive system that does not identify as a man.

Thank you for understanding that the language in this workshop is a work in progress and written with a historical understanding and from a personal perspective and we welcome readers to adapt the meaning of any gendered terms to fit your needs and preferences.

Christina

“Don’t stop having fun when you get older.
You get older when you stop having fun”.

Anonymous

Don't regret growing older, it's a privilege many are denied.

Cindy McDonald

Introduction

Aging is a natural part of life, and should we have the privilege to live long enough, there will be physiological changes.

In this workshop we'll look at some of the changes people experience as they age and how to do so gracefully. We'll also look at the aging process and what we can do to be the best version of ourselves at any age.

People age differently and how you age depends on a lot of factors such as genetics, lifestyle and culture.

Some people struggle with aging because of the physical changes – wrinkles, weight gain, or simply the number of candles on their birthday cake. A friend of mine just turned 70 years old and she is having a hard time with it. She doesn't like people to mention her age as she doesn't want to be "old". I on the other hand am happy to be the age I am (65 years old at this writing). I have dealt with all sorts of health issues, none of which were my making. They involved auto immune issues that are trying to shorten my life and I'm fighting hard not to let that happen. I can thank my parents for the genetics that gave me that. I am so happy to be able to get older, so I am a proud 65 year old!

I have a relative that struggles with getting older. She's two years older than I am. Her very long hair is still dyed blonde, she wears short skirts, short shorts and tight trousers and lots of makeup. She gets Botox and lip injections. And this makes her happy.

I on the other hand often go out without makeup (more often than not) wearing my jeans and a t-shirt. My medium length hair is thrown back into a ponytail.

Who is right? There is no right when it comes to being who you are and what you are happy with. It's an individual choice! As long as it's not morally threatening or life threatening, then it's up to you if you want to go either route.

Two very different middle aged woman. This may have something to do with, not only who they are but what they are interested in. Sure, the one on the right can get dressed up for a night out too.

(Person on the right is the author of this workshop).

Everyone accepts aging differently, and aging gracefully is something we can all do if we put some effort into it. It all boils down to **attitude**.

In my opinion it's not what you look like or what you are capable of, it's the ability to get up every morning and have a positive attitude, dress however you feel is right for you and don't give a darn what others think.

"I've decided to take a page from my older female friends who embraced their new-found freedom and power – I find I am even more of a vocal and active warrior for human rights than I was before, and I find that I bite my tongue far less than I used to! Whether that's good or bad, I don't know, and I'm not sure if I care, either. (Is this a harbinger of becoming the elderly lady who has no filter and says inappropriate things because they're old and don't care?)

I've never been one to care about the opinions of others, and that is so far off my radar now, it's beyond liberating. I'm not cutting my hair short and dressing conservatively – I'm keeping my long hair and dressing joyfully, like a happy, go-lucky toddler. I have five dresses with dinosaurs on them! I wear them with tights and fun boots. This isn't a dress rehearsal, and you only get one chance on this planet. I'm almost 60 years old now, and I'm not wasting any more time."

Heather J

My sister, who is older than me by a couple of years, commented that I have more wrinkles than she does. I responded ***"These aren't wrinkles. This is the map of my life. I have lines around my eyes because I've played outside in the sunshine, and I have laughed until I cried. The lines around my mouth are because I smile a lot and have kissed the people I love."***

I have earned every single one of my "wrinkles". I would love to have the skin that I did when I was 30. In fact, when I was 30, I would look at my tiny laugh lines and my frizzy/curly/thick hair and the bit of fat around my belly and criticise the person in the mirror.

How lovely would it be if I had loved the person I was back then. The bubbly, energetic, full of life, perfect young person.

But society has put so much pressure on people, especially women, to be thin and fit and a version of themselves that would be difficult to attain. Just watch any superhero movie or rom coms on TV. Every one of those actors looks like they just stepped out of a photo-shoot. They

have the time and money to have someone cook healthy meals, dress them, personal train them and put their make up on every single day.

We "normal" people do not. We work, pay our bills, look after our families, clean our houses, shop for food and cook it ourselves. And if we have 30 minutes to look after the hair and makeup, we've really accomplished something.

When my mother was 52, she was diagnosed with breast cancer. She survived it, at least for another 20 years, but she was an old person. She dressed old, acted old and called herself old. People seem to be getting younger all the time, but that might be because I am getting older.

I am dealing with some serious health issues (thanks genetics), but I am not a sick old person. I am a woman who is happily aging and happens to be dealing with some illness. And I will not allow that to take me down!

There are no rules to how we grow old. You will grow old by choosing your own approach and attitude. We will all have challenges as we age, some more than others, but we also have our own strengths. And focusing on what we can do instead of what we can't goes a long way in helping us age gracefully.

Grace, as in gracefully, comes from the Latin word "**gratus**" which means "*pleasing*". That doesn't mean we need to be pleasing to others. I take it to mean I have to please myself, and that means being good to myself, not criticizing myself with words that demean who I am.

The word graceful means **elegance** or **beauty of form, manner, movement** or **speech**. Thre is far too much emphasis put on the outward appearance of people or how "beautiful" they are. I personally think that beauty is when you have a smile on your face, you hold yourself in a confident yet outgoing manner, you are kind to others and talk kindly about others and treat yourself well.

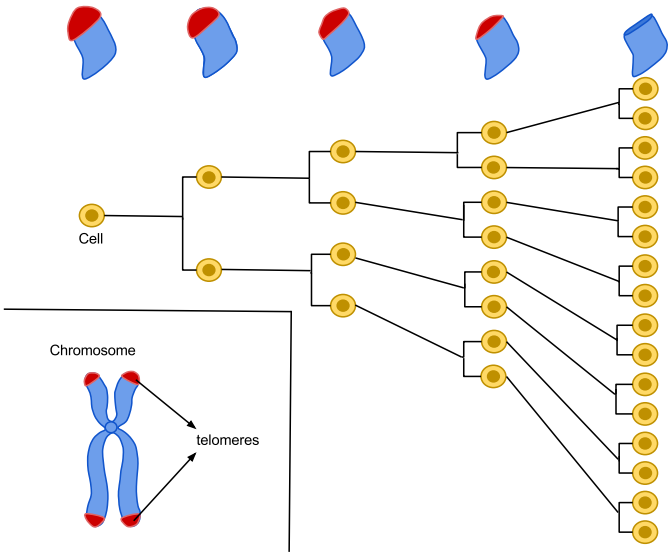
Theories on Aging

Aging is caused by many things; multiple processes contribute to it - and one thing may lead to another compounding how fast we age. The **big four -** Stress, smoking, high fat diet, and leading a sedentary life can trigger a certain gene to cause cancer, MS, Parkinson's disease or other illnesses. But different theories abound. Some suggest that we are destined to age in a certain manner, no matter what we do. While this has a little truth to it, there are lots of things we can do to age gracefully, all of which we'll discuss further on in this workshop.

Genetic Theory

The genetic theory suggests that certain genes turn on or off overtime and that is genetically predetermined. They are preprogrammed from birth to death. We can thank our parents for this. While there is a lot of evidence to support certain diseases, hair colour, eye colour, where you carry your fat, how much fat you have etc etc, there are a lot of other factors in play. The genetic theory is broken down even further:

Programmed senescence theory – cells stop dividing and growing.



Telomere theory – telomeres are compound structures at the end of **chromosomes** that protect them as they multiply, preventing the chromosome from progressive damage. It's suggested that telomeres shorten as you age which causes disease and aging (essentially changing your chromosomes). A telomere is like an aglet (that piece at the end of a shoelace) that protects the end from damage.

Telomere Graphic by Azmistowski17

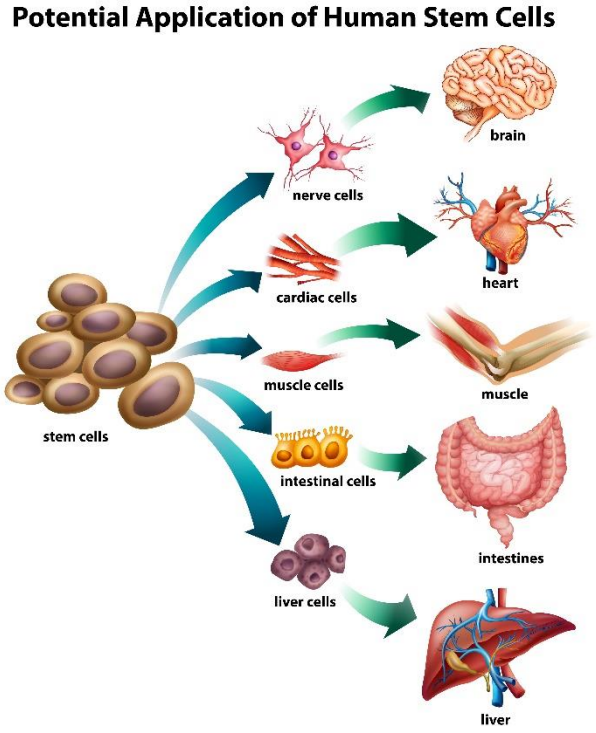
Aglet photo by Ian W. Fieggen

As the cell divides the telomeres on the end of the chromosome get smaller/shorter. Due to the telomeres shortening through each division, the telomeres will eventually no longer be present on the chromosome. This end stage is known as **senescence** and proves the concept that links the deterioration of telomeres and aging.

The **Hayflick Limit** is a concept that explains the mechanisms behind cellular aging. Human cells can only replicate and divide 40 to 70 times before they break down and apoptosis (cell

death) occurs. Stem cells and cancer cells do not have a limit to how many times they can divide.

We will discuss **telomeres** throughout this workshop and the importance of them in aging.



Stem cell theory- a stem cell is an immature cell that can turn into other cells. This means that as stem cells are created, they can turn into blood, skin, brain or nerve cells and repair organs or other tissues. Stem cells decline over the years, which can contribute to aging.

Other theories

Endocrine theory – changes in hormones, produced by the endocrine system can cause age related changes. As any menopausal woman and she will tell you that this is absolutely the case as estrogen and progesterone decline.

Immunological theory – suggests that immune responses, which can trigger immune associated diseases, decline over time, again predetermined by genetics.

Imbalance theory – states that we are a yin and yang species, and opposite forces form a whole brain, endocrine glands, immune system and as we age, they become imbalanced and then fail.

The problem with using these theories as a finite explanation is that they disregard the importance of all other factors such as smoking, high fat diet, inactivity and stress, among others.

Wear and tear theory states that cells break down over time, but the speed of which depends on your lifestyle and much more.

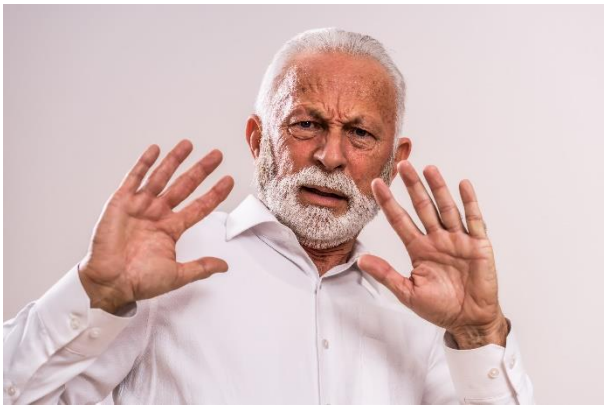
The problem with these is that they are saying that no matter what we do, there is nothing we can do about how we age. I disagree.

Studies are suggesting that 25% of your lifespan is dictated by your genes, whereas the other 75% is lifestyle.

The truth of the matter is the **big four** can affect us in so many ways and can switch on or off genetic markers and the possibility of getting one disease or another.

There are lots of other theories that aren't backed or based on scientific evidence and need a lot more research, so we won't be discussing them here.

Fears of Aging



As people age and realize there is an end date, they start to think about their mortality and with that there may be a fear of the unknown. The biggest fears are:

Loss of independence which may included physical issues, loss of memories and inability to live in your own home, care for yourself, or get out on your own.

Moving into a nursing home is second on the list as that can take away your independence. People also know that once they are in a home, they rarely come out again to live independently.

Loss of family and friends. At a certain point in our lives, we will lose some of the people we love. The fear of losing their driver's licence. This will mean that they are often dependent on others to get them to and from appointments, take them shopping and allow them to get out to enjoy their hobbies.

Only 5% of people stated that they fear death itself.

Cellular aging and Cellular Damage

Intrinsic factors cause cellular aging, which is the biological age of your cells. Eventually, as you age, your cells lose the ability to functional properly. Cellular damage occurs as we get older causing biological processes to fail which accumulates the older we get.

There are lots of extrinsic things that can cause cellular damage as well, air pollution, alcohol consumption, smoking, malnutrition and other lifestyle related issues. However, the severity and speed of the changes differs from person to person.

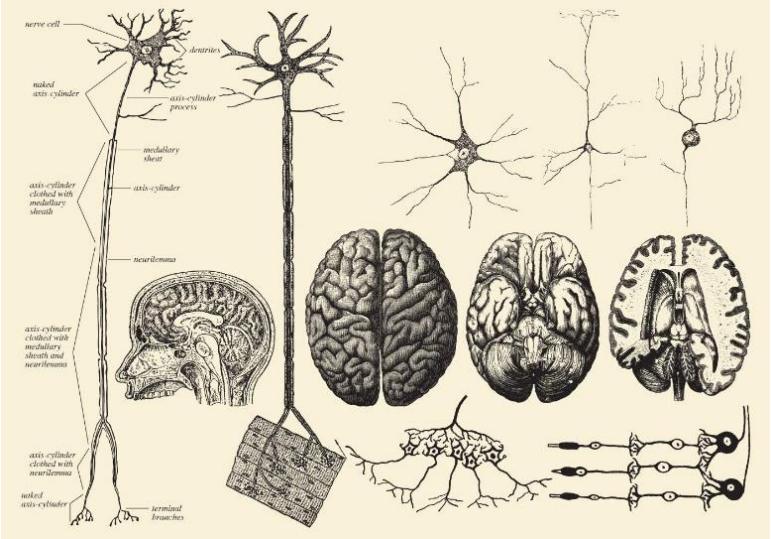
Physiological Changes During Aging

Over the age of 30, the following changes occur in **sedentary** individuals:

Changes in the Nervous System

With aging there are changes in balance, coordination and agility resulting from decreased efficiency of the nervous system. The central nervous system (CNS) consists of the brain and spinal cord while the peripheral nervous system (PNS) is the rest, a system of nerves that connects the CNS with the muscles and other cells. The PNS controls all the things that you normally don't think about, including breathing and digestion.

As we age so does the nervous system and we receive, process and transmit messages more slowly, causing slower reaction times to situations. The brain and spinal cord lose both cells and mass, and waste products can collect in the brain tissue as nerve cells break down, causing abnormal structures called plaque. A fatty brown pigment called lipofuscin can also build up in nerve tissue.

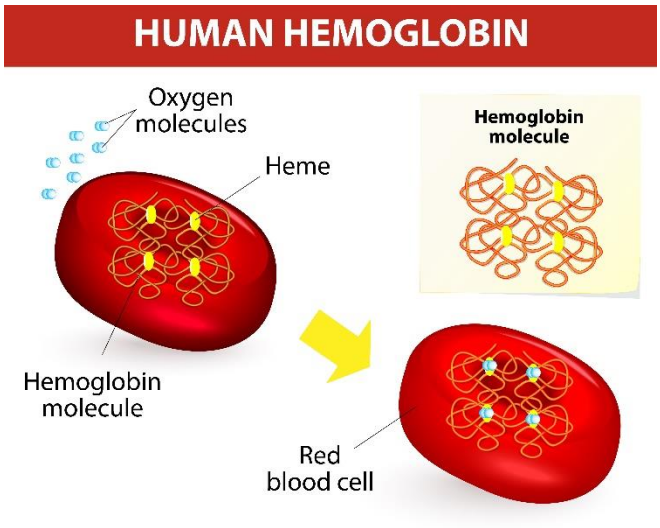


There also appears to be an increased reliance on reactive control (using feedback to initiate corrective movement) rather than predictive control (initiating movement in anticipation of a change). The older adult may have reduced or lost reflexes or sensation, leading to problems with movement and safety. These changes can contribute to a greater inability to perform tasks that require quickness and reflexes, such as driving or exercise movements.

The breakdown of nerves can also affect the senses. Declines in sensory perception such as hearing, and vision may be the result of a decrease in the level of glucose utilization by the portion of the brain that is associated with vision, audition and sensory-motor function. These changes do not occur in everyone at the same rate. Some people have drastic changes in their nervous system and brain tissue while others have little change.

Age related hearing loss is called **presbycusis** and is the slow loss of hearing in both ears. Three out of ten adults over the age of 65 have hearing loss. This happens slowly so some people are not aware of the change at first.

Both aerobic and muscle-conditioning exercises have a powerful influence over slowing the age-related deterioration of the central nervous system. Mental exercises can also help maintain thinking and cognisant abilities. Reading, doing crossword puzzles, learning a new language or surrounding yourself with interesting and engaging people, in addition to exercise, may help keep your brain stay active and young. The studies are inconclusive – but activities such as these certainly can't hurt!



Functional capacity (VO_2 max) decreases by up to 9% per decade, after the age of 25. This is because our maximal HR decreases as well. This is the body's ability to take in oxygen at the cellular level. If your functional capacity decreases, it takes more effort to do the same amount of work, i.e., your movements become more difficult. Functional capacity depends on three main things: the haemoglobin taking in and transporting oxygen through the bloodstream; cardiac output (the product of heart rate and stroke volume); and the amount of myoglobin in cells.

Myoglobin is an iron-containing protein, similar to haemoglobin, located in the muscle cell and is responsible for carrying oxygen to the mitochondria (the powerhouse) of the muscle cell. When the heart is strong it can pump more blood per beat (greater stroke volume), which leads to a decrease in the heart rate and causes less stress on the heart. Regular exercise can reduce the effects of aging in relation to your VO_2 max.

Work capacity decreases by 25-30% by age 65.

Since functional capacity decreases along with many other things slowing down, such as digestion and absorption of food, the older adult may find that they are doing things slower and with more fatigue than when they were younger.

Thermoregulation

Thermoregulation is a mechanism by which humans (and other mammals) maintain body temperature. At about 70 years old there is a diminished ability to thermoregulate. This gets worse with each decade of life. Thirst, blood vessel dilation or constriction, and the ability to perspire are normal homeostatic mechanisms that help individuals regulate body temperature during extremes of cold or heat. It is important to ensure your clients are working out in comfortable temperature and give them lots of time to warm up and cool down.

Changes in the Musculoskeletal System

Muscle mass and strength can decline by up to 30% by 50-65 years old. These are associated with disuse and not old age - remember, muscles don't age!

Older adults often complain about joint stiffness or pain due to old injuries, muscle imbalances, poor posture or other congenital issues. The pain causes them to slow down and the muscles atrophy and decrease in strength.

Another factor is the body's inefficiency at digesting and absorbing food and so we may not be getting the nutrients we should be. Muscle mass can decrease from 12-30% and strength can decrease from 2-30%.

By the age of 65, individuals who do not engage in a regular exercise program may see their muscular strength decrease by as much as 80%.

Our skeletal system consists of bones and the connective tissue that hold it all together. The muscular system consists of the muscles and the tendons which provide the forces that cause our bones to move.

As we get older, the strength of muscles diminishes due to a decrease in the number and size of muscle fibres (cells) as well as their decreased ability to react to nervous stimulation. Fewer motor units respond to stimulation, and they respond more slowly. A motor unit is the nerve and all the muscle fibres that it innervates. Functional grip strength, for example, is reduced by up to 37% in women and 28% in men by the age of 70.

As we age there appears to be a selective atrophy of fast twitch muscle fibres, thereby reducing the ability for strong, fast contractions. Slow twitch fibres essentially remain the same, meaning the capacity for endurance exercises generally remains unchanged. This decline has a lot to do with what you do and don't do. Older adults can and will gain strength if they start a weight training program later in life.

When planning a resistance training exercise program, you need to consider that fast twitch muscles can be retrained. Participants should be lifting weights to increase strength, not endurance, which means lifting heavier weights fewer times.

Don’t forget to include resistance training for small muscle groups that stabilize the joints. Further on in this course we'll give you examples of exercises to do with your older adult clients.

In healthy young people about 30% of the body weight is muscle, only about 20% is fat and 10% is bone. The rest is internal organs, skin, etc. By age 75, however, only about 15% of body weight is muscle, 40% is adipose tissue, and 8% is bone; thus, half of the muscle mass has disappeared. The word for degradation of muscle is sarcopenia, which literally means “poverty of flesh”.

Sarcopenia will cause a decrease in the average fibre size and decrease the number of muscle fibres (both slow and fast twitch). Sarcopenia is muscle atrophy and will have a dramatic effect on the strength of the muscles and cause them to lose their power. Sarcopenia will affect approximately 50% of all older adults over the age of 75 years. Power, you may remember refers to a great force production over a short period of time, such as explosive jumping, gallops, skips, and other explosive moves.

Body composition changes and fat accumulates around muscles, with a corresponding decrease in the basal metabolic rate (BMR). As the BMR decreases, the way in which one eats may not change and they gain weight. The best way to counteract this, is you guessed it, exercise. It’s important to have a healthy amount of fat on the body, but if there is too much fat it can cause a host of other problems such as heart disease, strain on the joints, depression and much more.

Flexibility decreases by up to 30%.

Flexibility diminishes with age due to a decrease in muscle fibre and connective tissue elasticity, joint flexibility, and structural changes to the joint cartilage. By 70 years of age, people will experience an overall estimated loss of 25-30% of their flexibility which can result in a reduced range of motion and cause joint stiffness. With aging, collagen fibres tighten and the membrane separating connective tissue from other tissue thickens. This results in less responsive and less compliant tissue when reacting to mechanical stress.

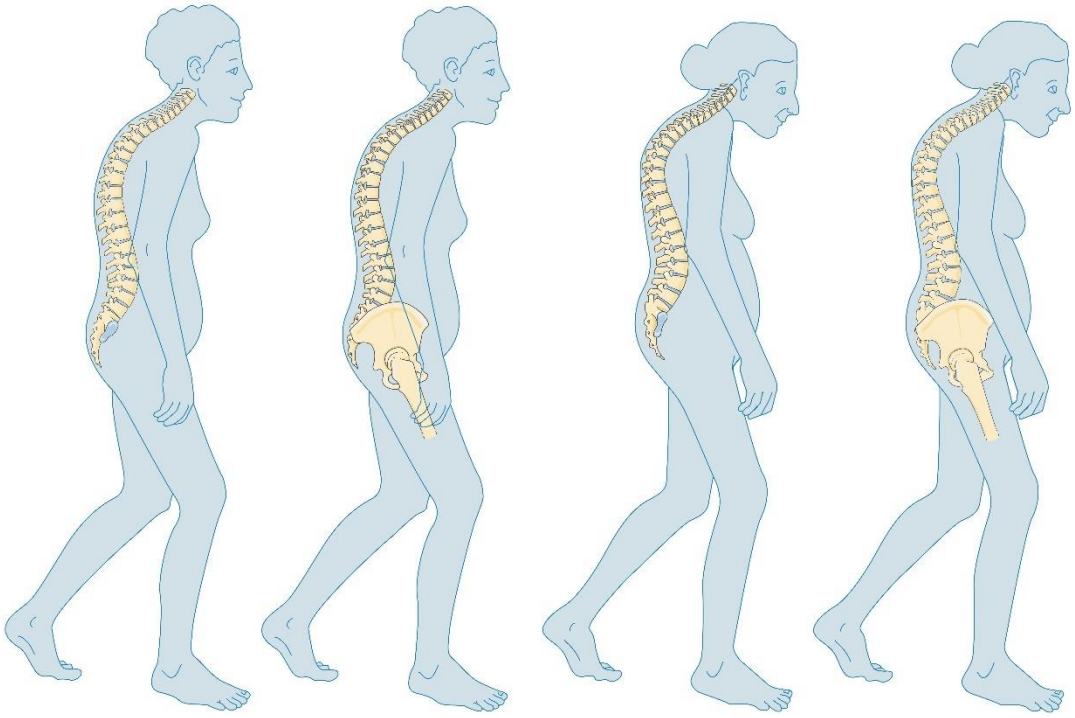
Again, this doesn't have to do with the muscles aging - there are some older adults who are still able to touch their toes or get into some astounding yoga poses. Flexibility decreases in anyone who doesn't stretch, and if an older adult spends years getting into bad posture (such as rounded shoulders, a hunched position or sitting for extended periods of time) then you, the fitness professional, won't be able to fix this problem overnight. As a muscle pulls repeatedly on the bones, boney changes occur over time. This can make tight muscles tighter and weak muscles weaker and prevent joints from moving properly.

There is a substance called **mucopolysaccharide** that are long chains of sugar molecules which act like a glue to hold the fibres of the connective tissue together in bundles, and as a lubricant which gives the connective tissue the ability to slide over each other.

Fascia consists of layers of parallel collagen fibres bundled together in an undulating fashion. Layers are separated by adipocytes (fat cells) to allow the separate layers to slide on one another. Each layer's fibres are oriented in different directions – at right angles to each other. The flexibility of a joint is reliant on these layers sliding easily past each other. It is the presence of mucopolysaccharide that lubricates the layers. This helps to reduce force between moving parts and gives fascia a great deal of strength and helps transmit forces of the muscles.

As we age, mucopolysaccharide decreases and we gradually become more dehydrated. Stretching can stimulate the production and retention of lubricants between the fibres of connective tissue. This prevents the connective tissue from sticking together and making you stiffer. Other factors that contribute to less flexibility are changes in the chemical structure of muscle and connective tissue and increased adhesions and cross links in the body.

Joint space is reduced and the range of motion of joints is inhibited. This is seen most obviously in the knees and hips. Lesson planning for the older adult exerciser should include range of motion exercises as well as stretching.



Bone mass and bone mineral content decrease with age. Females may begin to lose approximately 1% of their bone mass per year starting at age 35. Menopause causes a temporary acceleration of bone mass loss of 2%-4% per year for 2-5 years, so that by age 70 some women can have lost up to 30% of their bone mineral mass. Men begin to lose bone mass at a rate of about 1% per year at approximately age 50.

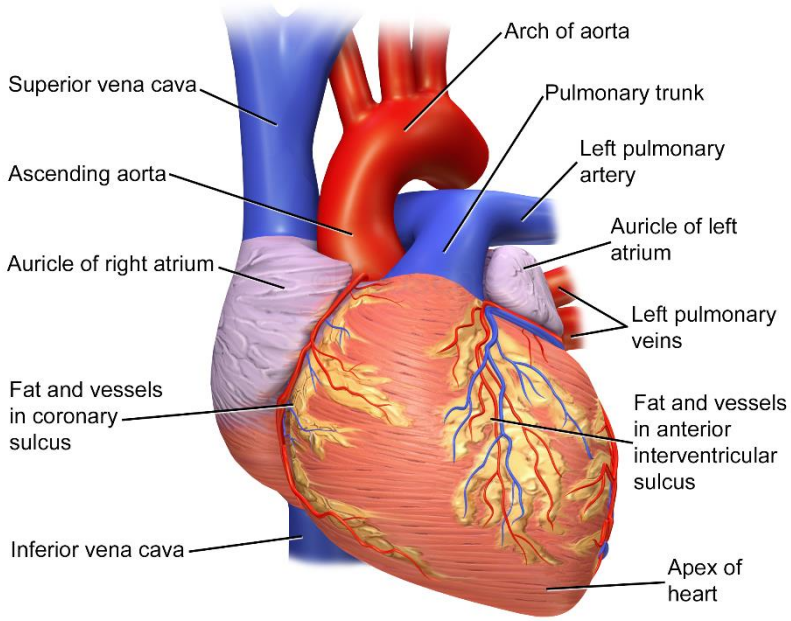
Basal metabolic rate declines by 8-12%. It makes sense that if the muscle mass and the way in which you absorb food decrease, then the metabolism must also decrease. If an older adult is in pain they will not want to move, and metabolism slows down even more.

Changes in the Cardiovascular System

Changes take place in the venous/arterial system of the heart as well as in the respiratory system. These changes contribute to decrease an older adult's VO_2 max (the capacity to take in oxygen at a cellular level) by about 9% per year. Collagen/muscle ratio changes which results in increased heart stiffness, which in turn decreases the volume of blood pumped per beat (stroke volume).

From ages 20-80 resting stroke volume decreases by 0.5%-0.7% per year, resulting in the resting and maximum heart rate decreasing slightly. Cardiac output decreases during rest and, of course during exercise which makes the exercise harder to do.

Due to decreases in arterial elasticity, blood pressure increases, and this increases the heart rate. There is a decrease in blood flow to the skeletal muscles at rest and during exercise.



Graphic by Bruce Blaus

Superficial Heart Anatomy (Anterior)

The term **compliance** is used to describe how easily a chamber of the heart, or the lumen (cavity) of a blood vessel expands when it is filled with a volume of blood. Arterial stiffness can occur as we age causing blood pressure to increase.

If the muscles don't get the blood and oxygen they need, every movement seems like more work.

Ensure your lesson plan allows for some time between each exercise to permit blood to flow back to the worked muscles. In other words, you would give more rest between exercises for older adults than you would for younger participants.

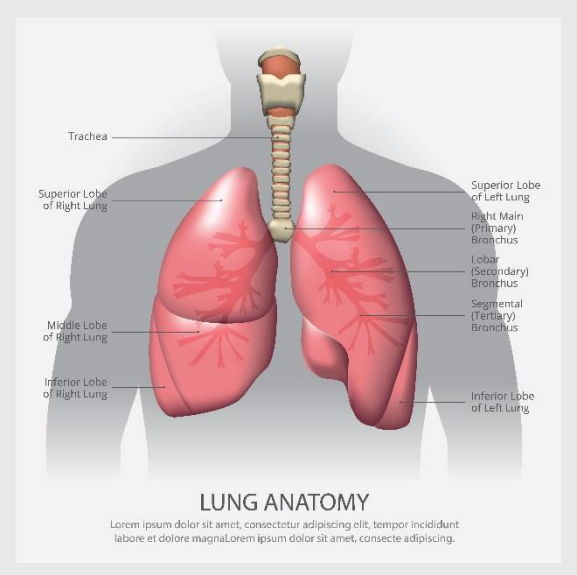
Cardiovascular capacity declines by up to 30%. This is determined by lack of use and the way in which the heart functions. The heart is a muscle and responds similarly to other muscles in the body with lack of use. If heart size decreases due to lack of cardio exercise, then so does stroke volume, the capacity for it to pump blood to the working muscles. The more you exercise the stronger the heart will be, barring any congenital or physical problems.

If an older adult has had high blood pressure for many years, this will take its toll on the heart. Over years this will break the heart down and, as a result, cardiovascular capacity declines.

Systolic blood pressure increases by 10-15 mm and diastolic pressure increases 5-10 mm. Blood pressure increases because of stress, inactivity, diet and genetics and has been called the silent killer. Often a person won't know that they have hypertension unless they get tested for it.

Changes in the Respiratory System

Most of the physiological changes in lung function associated with aging can be attributed to:



- Decrease in lung capacity of 40%-50% due to elasticity of the lungs.
- Increase in residual volume (the volume of air remaining in the lungs) is 30%-50%. This means less air is used during respiration.
- Increase in chest wall stiffness, decreasing the ability to take in air.
- Decrease in respiratory muscle (diaphragm, intercostals) strength.
- Decrease of 50% maximum voluntary ventilation (the maximum amount of air that can be inhaled and exhaled in one minute.)
- Pulmonary function diminishes as the thoracic muscles weaken.

The effects of aging on the lungs are similar to those that occur during the development of mild emphysema. Aging affects ventilation, gaseous exchange (oxygen in, carbon dioxide out), and other lung functions. Age-related changes, however, do not lead to significant airway obstruction in a non-smoker.

Many factors reduce the efficiency of the respiratory system in older adults. As we age, elasticity of most of the body's tissue deteriorates. This reduces the lungs' ability to inflate and deflate. When this happens, not as much air is drawn into the lungs and the person must breathe more often to get the oxygen into the body. Arthritis may prevent the rib cage from moving as freely. These two factors cause a reduction in chest movement which limits respiratory volume. When a person isn't taking in good amounts of oxygen there is a reduction in the amount of exercise performed because the ability to do the exercise decreases.

This means that the size and strength of the lungs and respiratory muscles decrease. The size and strength of your diaphragm, intercostals (muscles between the ribs) and pectoralis minor (another respiratory muscle) decline with lack of use. The activity at the alveoli (the little air sacs that exchange oxygen for carbon dioxide in the lungs) will decrease if you don't use them. If the older adult was a smoker, their lungs may also be irreparably damaged.

Other Issues

Liver and kidney function decline by up to 30-50% of peak function and the functional capacity of most organ systems declines every year from age 30. This is dependent on many things. Diet and exercise obviously play a part in a healthy body, but as we age the capacity

of the organs simply decreases. The speed at which the decline occurs depends on genetics, how active the person is and what goes into their bodies.

The average bone loss is 15-20% for men and up to 30% for females by age 70. Inactivity, poor diet, pharmaceuticals, and genetics will all play a part in bone loss. One in three older women will get osteoporosis after the age of 50. The older adult will generally have a decreased bone mass and mineral content. This can be prevented to some extent with exercise.

These are subtle changes that most people will not even be aware of. Participants will come to you and say things like, "My breathing isn't as good as it used to be," or "I used to be able to touch my toes but now I can't." It is with an understanding of these subtle, but over time, obvious changes that you will be able to deal with older adult exercisers.

Physiological Responses of the Older Adult vs. Younger Adults

The older you are the less hypertrophy of muscle fibres occurs with training, and the speed at which muscles repair declines. The nervous system slows down, and motor neurons are unable to send messages as quickly. If a person hasn't exercised in years the motor nerve "pulls away" from the cells, making it harder for the nerve to get the message to the cell. This can be a muscle cell or any other cell in the body, which explains why muscle functioning decreases, organs don't work as well, and the person generally feel "old". But this doesn't have to be the case, and it can be reversed to some extent.

Physical activity certainly helps. Human bodies are designed to last approximately 120 years but due to disease, environmental factors and lifestyle choices we simply do not. The average life span in Canada is 79.5 years for a man and 84 years for a woman, a considerable difference from 1930 when the averages were 59.7 and 61.6 years for men and women, respectively. These numbers are constantly changing due to medical advancements.

Most of the negative changes can be slowed or prevented with physical activity.

If you exercise, you will still grow old, but you will do it more gracefully. Exercise can improve strength and endurance of the muscles, increase lean body mass, joint flexibility and give you stronger bones. Hypertrophy of the muscles is limited as you age, however.

Menopausal changes

Estrogen and progesterone decline as women get older but we also know that lifestyle can speed up or slow down the process. Studies also show that our lifestyles will determine, at least in part, what symptoms women get and how badly they will get them.

It may be difficult to differentiate between menopause, a natural drop in estrogen, and those caused by natural aging. Interestingly some of the symptoms woman get during menopause, like weight gain, urinary incontinence, dry skin, hair loss, dry hair, headaches and heart palpitation happen to men as well in their 50s and 60s. So, one wonders if it is indeed an "age thing" or a symptom of menopause.

Body Odour

This is a touchy subject and something most people don't talk about, but one of the symptoms of aging (and menopause and associated hormonal imbalance), is that we smell differently. You may be the type of person that never had body odour issues, and now find yourself needing deodorant and being cognisant of body odour.
Body odour can affect your self-esteem, confidence and even sexual relationships. Body odour can affect the feet, hands, groin area, armpits and even your hair! Some of the things that cause body odour to become an issue are discussed here.

Hygiene – even if you have impeccable hygiene, you may still struggle with body odour. No one wants to smell like an "old person". Body odour can be caused by normal skin aging process. As you age, the skin produces more fatty acids (Omega-7) while antioxidants decrease. The result – smelly skin.

Night sweats and hot flashes cause you to sweat and as the body cools itself down after the sweating has stopped bacteria will feed on sweat that is not absorbed by clothing or wiped away and it can cause pungent smells!

Your **urine** may be more smelly than usual, and some people (especially postmenopausal women) say it smells like ammonia. This can be caused by dehydration or certain diets. Foods that can contribute to stinky pee are coffee, dried fruit, honey, alcohol, fennel, Brussel sprouts and onions. The smell, however, is temporary and will go away in a couple of days.

If you are one of those people who get smelly pee from eating **asparagus**, you will know what I'm talking about here. Within an hour of eating asparagus your pee may become smelly

because asparagus contain asparagusic acid, a sulphur containing compound that affects your urine. Interestingly not everyone gets it, and it has something to do with a specific hormone (asparaganum) that was discovered in about half of us. In about 15% of the population, they have a newly discovered gene that not only do they not get smelly urine from eating asparagus, but they can't smell it if you do!

During menopause there is a drop in the hormones that change the way in which we digest the food we have eaten. Menopausal women have more difficulty in metabolizing some foods such as eggs, onion and garlic. If you think your body odour is associated with food, start a journal and see if there is a correlation between what you've eaten and body odour in the hours and days that follow.

Zinc or magnesium **deficiencies** can also cause body odour. These minerals are responsible for making you smell good.

Consuming a lot of **simple sugar** in your diet can increase body odour as bacteria and fungi feed on sugar.

Smoking will definitely make you smell. Not only will you smell like old cigarettes, but it can mess with your hormonal levels causing further issues. If you are having trouble quitting smoking, see your health care provider. Quitting now will make a difference. You may not be able to reverse some of the damage, but you can prevent it from getting worse.

What can help

Some people cover up a smelly body with perfume or oils, but that can make matters worse. It doesn't take the smell away – it just adds more smell to the room.

So, what can we do about this? Stay hydrated, don't smoke, use a natural deodorant and eat healthy, clean food. Reduce coffee, spices and alcohol – all things that can cause body odour. Maintain good hygiene by showering before you go to sleep (so bacteria can't grow). You may want (need) to shower in the morning after a good bout of night sweats, so do what works for you.

Eat more cruciferous vegetables (cabbage, broccoli), lettuce, wheatgrass and other foods with fibre as they have known properties as a deodorant because of the chlorophyll content in the food.

Herbal therapy might do the trick for you. As usual, and with anything new, talk to a professional in the field before taking or using any medication or herbs to see what is right for you.

Try lavender and sage natural deodorant or make a sage tea. Brew some sage tea and soak a cotton or bamboo wash cloth. Apply the cloth to your armpits to help fight off bacteria that can cause odours.
Don't wear nylon clothes, and this includes your socks. Cotton socks and shoe liners work well to wick away and prevent any smells that happen on your feet. Sprinkling baking soda or talcum powder in your shoes can also help prevent smelly feet.

Use shampoo that contains lavender or tea tree oil and use a coconut or other nice smelling conditioner.

Consuming probiotics (yogurt and supplements) can help with good bacteria in the vaginal area.

Intrinsic aging vs extrinsic aging

Intrinsic aging predetermines how you age depending on genetics. This will determine how fast your hair goes grey, how many wrinkles you have, where fat is deposited on the body and if there are any genetic predispositions to health issues such as autoimmune.

Extrinsic aging is lifestyle, what you do and how you do it. It's the food you eat, how you handle stress, if you smoke or consume alcohol, or if you exercise or not. It's also about your attitude. If you believe it's going to be a bad day, you are usually right!

Do women live longer than men?

The simple answer is yes. In the United States, according to a recent study by the Centre for Disease Control and Prevention (CDC) in Atlanta, Georgia, the average life expectancy for women is 79.3 year, and for men it is 73.5 years. (Compare that with the Canadian study above – Canadian generally live longer). There are many factors at play, some genetic, others caused by extrinsic factors.

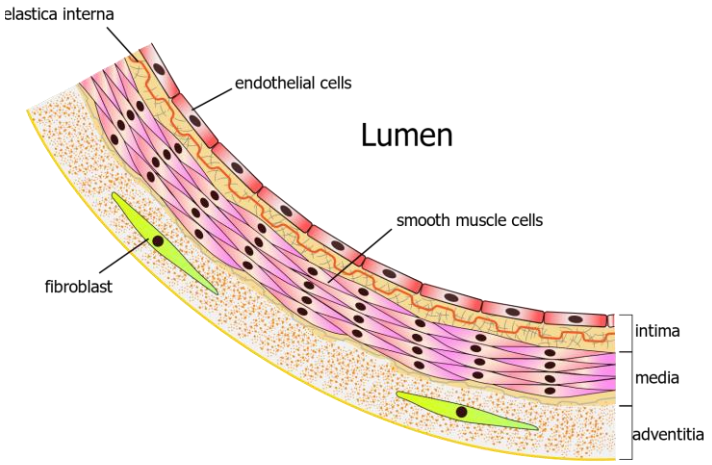
High Risk Activities

Women are less likely to engage in high risk behaviour. According to research, more men than women smoke, eat high fatty foods and drink more alcohol than women do. These factors will increase the risk of chronic and serious diseases such as COPD (chronic obstructive pulmonary disease, kidney disease, cirrhosis of the liver, Type 2 diabetes, high cholesterol, hypertension and obesity. Just to name a few.

When someone is inebriated (drunk) they are more likely to engage in risky behaviour which can lead to serious injury which, in turn, can shorten their lives.

Hormones

Estrogen, or oestrogen as it's spelled in England, is a sex hormone responsible for the development and regulation of the female reproductive system. There are three major estrogens **estrone**, **estradiol** and **estriol**.



Estrogen dilates blood vessels and keeps them healthy and improves endothelial cells.

Endothelial cells are a thin, **c**ontinuous, protective layer of compactly packed cells which form a barrier, or interface, between circulating blood and the rest of the blood vessel wall. As the function of endothelial cells decline, the risk of atherosclerosis (hardening of the arteries) goes up. Since estrogen dilates blood vessels, it is less likely for a woman to get atherosclerosis than a man. Estrogen also helps in decreasing the bad cholesterol (LDL) that increases the chance of cardiovascular disease and increases HDL (the good stuff).

However, after menopause in people with an internal reproductive system, estrogen declines which means that cardiovascular related illnesses can increase as well.

Diet

Studies show that women tend to choose healthier food than men. Recent studies suggest that men do as much shopping as women, although men tend to choose less healthy food and generally spend less than a woman.

Stress

Women are pretty good at expressing their emotions. I've been married to the same man since 1978 and I've seen him cry twice. Once when his mother died and another when his favourite cat died. I, on the other hand, can cry at commercials on TV if they are emotional. We've watched lots of movies together and I can be sobbing at something that happened, but my husband just gets quiet.

Studies at the CBT Centre in California suggest that men are more likely to suppress their emotions. Men are conditioned, by society that crying makes them look weak and as a result they keep stress in much more than a woman does. According to the American survey centre, men don't seek help for stress related issues as much as their female counterpart and, as a result, men get more stress related illnesses.

The same study showed that women also tend to have more support by having a "tribe" of other women they can count on. Women build stronger social connections which has a positive effect on mental health and give us better coping skills.

Emotional suppression are emotions that you choose to ignore, but ignoring a stressful or emotional event, doesn't make it go away. The emotion is still there and can "leak" out in other ways (anger, depression, heart disease).

Health Care

According to the CDC (Centre for Disease Control) women are more likely than men to go to the doctor and seek medical attention. Studies done in the US show that women are more

likely to leave their place of employment instead of brushing signs of discomfort, shortness of breath and chest pain. To be clear, this doesn't make men stronger than women, or women weak at all. It's just another example of how different the two sexes are.

According to a study (American Academy of Family Physicians, 2017) it showed that men tend not to follow doctor's orders as much as a woman does. This means that they don't fill or take their prescriptions, go to follow up appointments at the doctor, or make the life changes they need.

Having said all of this, being a woman does not guarantee that you will live a longer life than your male counterpart. As I said, lifestyle plays a massive part in all of this.

Doing all of the right things can slow down the aging process, and we'll get to this shortly.

Senescence

Senescence the condition or process of deterioration with age. It is the state of being old, or the process of becoming old. Genetics and environment are two of the primary factors that determine the rate and extent of aging. As a fitness instructor, you need to understand the older-aged exercise participant and how they differ from their younger counterpart.

Physiological age can be expressed as someone's ability to adapt to their environment in either normal or crisis situations. It is categorized as:

Mid-Age		45-64 years
Young Old	(elderly)	age 65-74 years
Middle Old	(elderly)	age 75-84 years
Oldest Old	(elderly)	age 85+ years
Centenarian		age 100+ years
Super Centenarian		age 110+ years

Take a moment right now and think about the people you know who fall into these categories. But what about the ones that don't? You probably know someone who seems very old at age 52 or someone else who seems very young at age 83. ACE (American Council on Exercise) states a "senior" is anyone over 50 years of age. However, most people at 50 don't consider themselves a senior citizen, and there are lots of seniors that can run marathons or hikes great distances or swims 5 times a week. If a person stays active and fit throughout their lives, there is no reason to feel "old" for many years to come.

Fitness instructors need to be careful when instructing older adults that you don't stereotype someone just because they answered with a number on their PAR-Q. Many people over the age of fifty can run circles around people half their age!

Chronological and relative age are somewhat difficult to measure. However, research suggests that people who exercise regularly have a lower relative age than their contemporaneous counterparts.

Chronological age

Chronological age is the length of time someone has been on the planet. However, numbers alone are not enough to measure the **functional** age of someone, as there are vast differences in the physical and mental abilities of older adults. Some believe that **biological age** better characterizes the traits of each individual. Biological age is measured in terms of *changes* as a person ages and the subsequent effects on behaviour. In many other parts of the world, chronological time has little or nothing to do with the meaning of old age.

Social Age

Social age is the understanding and significance that is attached to chronological age. It affects age-relevant behaviour and is ruled by social rules and norms rather than biological ones.

Functional age

Functional age is the term used to describe a person's age that is determined as a measure of their functional capabilities. It is a combination of physiological, psychological and social age.

For example, you could smoke and drink at 15 years old or dress provocatively at 80, but most people want to fit into society and do thing that others in their age group would do, thereby conforming to society.

Relative Age

Gerontologists also look at an older person in terms of **relative age**, a comparative measure to see if the person is aging faster or slower than the average person of the same chronological age. Differences between chronological and relative age are somewhat difficult to measure.

However, research suggests that people who exercise regularly have a lower relative age than their contemporaneous counterparts.

Ageism

Ageism is a discrimination based on a person's age. We all experienced discrimination of sorts when we were young. Adults sometimes ignore a young person when they talk, especially in a public setting. There are of course other types of discrimination. You may be discriminated against because of your ethnicity, sexual orientation, religion or belief, or disability.

Ageism happens far too often with older adults and may be casual or systemic. The term **ageism** was coined in 1969 by Robert Neil Butler to describe discrimination against older adults and patterned on sexism and racism.

There are four forms of ageism. Exposure to ageist messages, ageism in interpersonal interactions, internalized ageism (personally held beliefs about aging and older people) and institutional ageism. Ageism can be intentional or unintentional.

Exposure to ageist messages

Exposure to ageist messages literally means that we are exposed to discrimination based on our age. You don't have to look very hard to find it all over social media and in advertising. Just think of most of the advertising depicting young men or women and a lot less middle aged and older adults. Consider those products on the market that are meant to prevent wrinkles, burn fat, make your lips look fuller, prevent the forehead from moving and anything that makes you look "old".

The problem is we also give ourselves these messages. We have over 50,000 thoughts a day, and when those thoughts aren't positive, it can and will affect not only our psychological self, but also our physiological self. More on this in the Positive Self Talk section below. These negative messages will influence our self-esteem, health and wellbeing.

Internal ageism can lead to increased stress, reduced cognitive function, lower life satisfaction and it can even affect your relationships.

Ageism in interpersonal interactions

I'll start with an example: A couple of years ago I hired someone to work with me to run my business. Within a month I noticed that they tended to ignore me, were condescending and even rude. They spoke to me as if I was hard of hearing and smirked when I asked for

something to be done a certain way. I got the distinct impression that this person didn't think I could "handle the job" anymore because, we'll, I'm "old". Needless to say, that the employee was soon shown the door.

I really don't care what age you are, if you can still form thoughts and function throughout the day, taking care of yourself, you are still a productive part of society. And that can come at any age.

Interpersonal relationships and interactions should be positive. You should come away from a conversation feeling valued, appreciated and cared for. I have ended relationships based on the fact that I felt devalued, looked down upon, not heard and simply unappreciated. When I put more into a relationship than I get out, I evaluate that relationship and see if it is something worth keeping.

Not every relationship is meant to last a lifetime. And that goes for family as well as friends. This workshop isn't about boundaries, but having big boundaries doesn't mean you are shutting everyone out. Boundaries are moveable. I allow people their idiosyncrasies, especially when it's family. But there must be a positive outcome most of the time.

It's important to evaluate your relationships throughout your life and make sure that every one of them makes you a better person. I have several women in my "tribe" and these women have embraced me as their sister. They have never criticized, belittled or undermined me (those that did are no longer in my life). These women have loved me despite my hyperactive personality, being emotional and taking a stand on many topics. They tell me they love me because of that. And those are the people that I want to keep in my tribe. It's so important to surround yourself with people that make you a better version of yourself.

Never, ever let anyone tell you that you are "too". Too loud, too much, too fat/thin/old, just too. You aren't too anything. You are exactly who you are meant to be at this point in your life. And don't let anyone tell you otherwise.

Internalized ageism

Internalized ageism is a personally held belief about aging and older people. This doesn't need an explanation, but suffice it to say, we've probably all done it when we were younger.

When I was in my teens and early 20s, I remember my mum telling me how she used to like to dance, and then proceeded to show me how she danced back in the 1950s. I found it "embarrassing" at the time. But what I didn't understand is that she was young at one point too. She was a young,

vibrant, outgoing, happy, silly, dancing youth that loved life. And she had a lot to offer – no matter how old she was. I wish I could go back to my 20 year old self and tell her to embrace my mum, and that I too, one day, would be "old".

Institutional ageism

Institutional ageism is a systematic stereotyping and discrimination against older people in an institutional setting, that perpetuates ageism through its actions and policies. This might occur in the workplace where you are prevented from getting a promotion because of your age.

A fabulous example of this was at a meeting I attended several years ago. I was in my late 40s with several other fitness professionals about the same age. We were the ones involved in the fitness industry when it really started in the 1980s. We were the ones that developed courses, helped build policies and strategies that were just in the baby stages. There were two or three younger people in the meeting, and this is where it goes sideways.

We were discussing some policy and this young woman in her early 20s disagreed with what we were planning. Instead of stating her case and having us try to see her point of view, she said, "*I try, and I try to make a difference, but there are so many* ***old dinosaurs*** *in the fitness industry*".

We were shocked and offended. Not only was this completely out of line, unprofessional and rude, it showed her prejudice towards us "older" people. Remember we were in our 40s at the time. I can't imagine how she would have treated us if we were in our 50s or 60s. I really hope that this person, who will now be in her late 40s or 50s has had a change of heart and treats people with much more respect and dignity.

Health care can also contribute to institutionalized discrimination and ageism. I've spent more time in hospital than I care to mention and seen all too well how some old people are disregarded. What a lonely and discouraging feeling it would be for someone who has lived an entire life, worked, brought up children, contributed to society, and then just pushed aside.

With more education and kindness, we can make ageism a thing of the past.

To combat ageism, it is necessary to raise public awareness about its existence and to dispel common stereotypes and misperceptions about aging.

Aging is a highly individual experience, and it is not possible to generalize about the skills and abilities of an older person based on age, any more than it is possible to make assumptions about someone based on any other aspect of their identity.

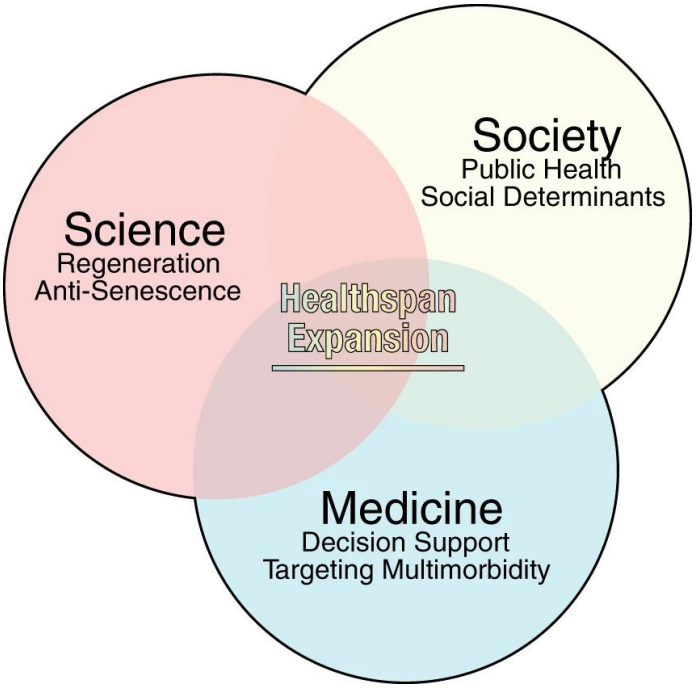
Human rights principles require people to be treated as individuals and assessed on their own merits, instead of on the basis of assumptions, and to be given the same opportunities and benefits as everyone else, regardless of age.

It is important to recognize that older persons make significant contributions to our society and that we must not limit their potential.

Living Longer

Humans are living longer than they did before. This is partially due to medical health improvements, which includes advances in medication such as antibiotics.

Antibiotics have extended the average human lifespan by 23 years. Before antibiotics, diseases like tuberculosis and pneumonia were common causes of death, especially in infants.



Graphic and study by Armin Garmany, Satsuki Yamada & Andre Terzic

Living longer brings new opportunities for people, their families and for society. More years on the planet means you can get more adult education, pursue new hobbies, volunteer, start a new career, look after grandchildren or aging parents.

Living longer means you can do the things you value with generally more time to do it compared to when you were younger, working, raising a family, getting an education, etc.

However, all of this is dependant on the most important thing – your health. If the added years are dominated by mental and physical decline the implications for getting old are much more negative.

It's great to be an older person who can get out for fitness classes, go bowling, play pickleball, hang out with friends, go back to school, learn a language, walk their dog, hike with friends, and more, but if you become a frail old person, not much of that will be possible.

One of our friends is in his 80s and is sharp as a tack, he walks every day, plays walking soccer, travels and still takes out his sailboat from time to time. Some people in their late 50s, 60s and 70s aren't able to do those things because of health related issues. Some people in their 80s have the same capacity as someone in their 40s. You know the old saying "**If the mind is willing**" which shows that a lot of what we can't do is overcome by knowing what we can.

What you Can and Can't do.

It's important to understand that there may be things that prevent us from doing what we want. I can no longer teach high intense classes, but I can still teach moderate fitness classes. I can no longer play rugby, but I can still play tennis and go swimming.

It's easy to get depressed and frustrated when you can't do what you used to be able to do, but if we look at what we can do instead, the list is often endless. Again, depending on health!

"The United Nations (UN) General Assembly declared 2021–2030 the UN Decade of Healthy Ageing and asked WHO to lead the implementation. The UN Decade of Healthy Ageing is a global collaboration bringing together governments, civil society, international agencies, professionals, academia, the media and the private sector for 10 years of concerted, catalytic and collaborative action to foster longer and healthier lives."

WHO, 2023

Aging Gracefully

Now that we've got all the physiological and psychological aging issues out of the way, let's look at the many ways we can grow old gracefully. There are lots of things we can do, and your lifestyle is a massive (75%) part of that. I call this the ***happiness project***. Doing things that make you happy and keep you healthy.

Healthy Diet

We all know what a healthy diet should look like, at least most of us do. It should include lots of fruits and vegetables, lean protein such as fish and beans, whole grain cereals, breads and rice as well as healthy fats (from fish, avocado, oils). Avoid using solid fat and stay away from processed food and sugar.

Eat less red meat and more skinless chicken, fish and legumes. Use herbs and spices instead of salt and limit alcohol consumption.

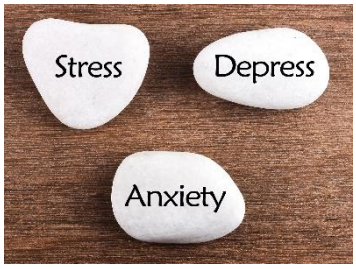
Keep the Brain Active

Keeping your brain active goes a long way in warding off cognitive decline and disorders. Something as simple as doing daily crossword puzzles or as complicated as learning a new language are all brain activities. One of the reasons I like to write workshops is that I do a lot of research before I write them, so I'm always learning something new.

Other ways to keep the brain active are:

- Read non fiction
- Play games
- Learn or play a musical instrument
- Start a new hobby
- Learn new skills
- Exercise
- Eat a healthy diet
- Go to lectures

Stress Management



Stress is an unavoidable and essential part of life. To understand how to cope with stress, we must understand what stress is and learn to recognize it. Stress disrupts the body's normal balance (homeostasis). Dr. Hans Selye, a physician at McGill University, defined stress as “any event or situation which disrupts the body’s normal homeostasis." Stress is any factor that threatens the health of the body or has an adverse effect on its functioning. Constant stress brings about changes in the balance of hormones in the body. Stress, if left unchecked, can lead to mental and physical breakdown.

Stress can be caused by several factors: psychological, physiological and environmental.

Psychological stressors are anxiety, fear, excitement, joy, perceived stress, personality traits, psychosocial conditions and bad habits.

Physiological stressors are pain, cold, exercise, hunger, trauma, alcohol, drug abuse, smoking.

Environmental stressors are noise, pollution, occupational stress, adverse life events (death in the family, divorce).

Dr. Selye discovered that there are three stages to the body’s response to stress: alarm, resistance and exhaustion.

Alarm is the first stage in stress, considered the "flight or fight” response, referring back to a time when our prehistoric ancestors were confronted with danger and responded with either fleeing or fighting. They had a way to discharge their tension.

The sympathetic nervous system triggers the flight or fight response. The sympathetic nervous system is the part of the autonomic nervous system that is also involved in regulating pulse and blood pressure, dilating the pupils and changing muscle tone. Flight or fight worked well for our ancestors but in today's modern society, we are faced with different types of stressors which require different responses.

For example, during a heated confrontation with someone, you may want to either hit them or shout at them. Unfortunately, neither of these responses would be socially or politically acceptable, so you often react by gritting your teeth, internalizing the frustration and fuming about it later (usually thinking about all sorts of things you *should* have said).

When alarmed, the body responds physiologically by releasing energy to deal with the crisis by increasing the following:

- heart rate
- blood pressure
- serum cholesterol levels
- stomach acidity
- tension in skeletal muscles causing headaches/ muscle aches
- sugar and insulin
- adrenaline

Stress *decreases* release of sex hormones, thickens the blood, makes the senses more acute and shuts down the digestive tract.

Chronic stress accelerates telomere shortening. Remember our discussion above. Telomeres are those proteins at the end of chromosomes that keep the chromosome healthy and prevent damage.

Some of the psychological responses in the alarm stage are:

- Difficult making decisions
- Poor prioritization
- Loss of self confidence
- Irritability
- Anger
- Depression
- Cravings
- Nervousness
- Anxiety
- Insomnia
- Inability to concentrate
- Fearfulness
- Emotional outbursts
- Feeling of being keyed up
- Laughing or crying easily
- Over partying

Simply put, chronic stress leads to hyperactive hypothalamic-pituitary-adrenaline which in turn leads to decrease fat metabolism, increased appetite, anxiety, depression and activation of lipoprotein lipase which deposits visceral fat – all of which leads to increased weight and higher chances of obesity. Which can cause increase chances of heart disease and cancer. It should go without saying that you should control stress as much as possible.

The next two stages of stress are less obvious but more dangerous, especially if we allow them to continue.

Resistance, the second stage, releases the hormone cortisol into the system which acts an anti-inflammatory, suppressing the immune system. This is caused by the parasympathetic nervous system which normalizes or quiets the flight or fight response. It settles down the alarm stage but lowers the body's resistance to illness.

Cortisol is your body's alarm system that helps control motivation, fear and your mood. Cortisol is made in the adrenal glands, small triangular shaped organs at the top of the kidneys. Cortisol is released during flight or fight response and plays an important role in:

- Keeping inflammation down
- Regulating blood pressure
- Increasing blood sugar
- Controlling wake and sleep cycles
- Managing how the body uses fat, carbohydrates and protein
-

Cortisol helps calm you down and aids in getting your blood pressure, heart rate and other systems back to normal. But if stress is high and continues for a long time, too much stress can cause cortisol to get out of whack. Too much cortisol causes anxiety, depression, headaches, memory loss, concentration issues, digestive issues, insomnia, weight gain, premature aging, wrinkles and can increase the chance of heart disease.

Chronic stress and high cortisol levels leads to a hyperactivated HPA axis. The HPA axis is a system called hypothalamic pituitary adrenal axis and describes a set of interactions between the hypothalamus and pituitary glands (parts of the brain) and the adrenal glands. When the HPA axis is hyperactivated it can increase appetite, anxiety, depression, apathy. It can decrease fat metabolism and aid in depositing visceral (deep abdominal) fat. This is why people who are under a great deal of stress for a long time tend to get thick through the torso. This in turn can lead to heart disease.

There are lots of ways to decrease cortisol levels, getting enough sleep, exercise, relaxation and taking care of your mental health

Once the stress is over it seems, on the surface at least, that stress appears to have gone away, however, chemical changes are taking place in the body which may lead to illness and the breakdown of the body. This is where the health declines.

The body's immune reserves are depleted and the body malfunctions, making you more susceptible to disease. Sugars and fats are released into the system creating pressure, fatigue and internal physical decline. At this stage, some people self-medicate (with coffee, alcohol, cigarettes or drugs) which in turn can create a series of other problems.

If stress continues, the body's reserves are depleted, and the body begins to malfunction. This stage is called **exhaustion** and, unfortunately, this goes on behind the scenes.

We know that we will always have *some* stress, so we must learn to manage it to stay healthy.

As Stephen Brown says, "***Classify the stressors in your life into those you can change, change your response to the stressors or remove yourself from the stress. Balancing stress can be achieved through knowing yourself and understanding the stressors in your life, then taking control of these stressors and your responses to stress***."

Change the situation. Explore the problem and try to find a solution. Sometimes it's as easy as telling a person how you feel or by making some rules and laying boundaries. Respectfully ask others to change their behaviour and be willing to do the same. Small problems often create larger ones when they aren't resolved.

Change your response to the stress. Sometimes stress is unavoidable. As I get older, I try to let things bother me less. Situations that a few years ago would have made me angry, I am trying to learn to let slide. Most things really aren't as important as we make them out to be. If you are dealing with a difficult parent, sibling, friend or co-worker, we can change our response to their behaviour. This might mean not taking things so personally or learning to understand someone more or letting go of hard feelings.

However, if the situation can't be resolved or changed, remove yourself from the situation. If it is an unhealthy relationship or a job that gives you dissatisfaction, you have tried changing the situation and don't feel it is appropriate to change your response to a situation, the only choice is to remove yourself from it. It may sound flippant to say "just leave" but after trying other ways of dealing with stress sometimes you just need to leave.

Happiness is about the choices you make:

"Change those things you can, learn to live with those you can't, and most importantly, learn the difference between the two."

When Does Stress Affect you?

Ask yourself, "When Am I Most Vulnerable to Stress?" Is it at a particular time of day, week or month? Is it caused by the winter blues, anniversary of an event or something else? If you can predict when stress will occur, you can nip it in the bud before it happens to you.

Learn to Live with Less

Things don't make us happy; experiences make us happy. However, some people do "retail therapy" buying things online or in shops to temporarily give a good feeling. But that feeling quickly goes away so we tend to buy more and more. Needing to buy more things to help us feel better can make us feel more stressed. We spend money on things we don't need which can cause a financial strain. All the things we buy clutter our homes. Clutter, in itself, can cause stress.

Practice time management

Set realistic goals and act upon them. Use a daybook and try to stick to it. Having too much to do in one day and not possibly having the time to accomplish the tasks you've set will increase your stress levels. Feel free to ditch part of your list. Prioritize your to-do list. If your day is particularly hectic cross some of the less important stuff off your list.

Having a plan and sticking to it reduces stress and increases self-confidence. It allows you to summon ideas without having to rely on memory. When you cross things off your list it shows how you have performed and keeps you motivated.

Plan Ahead

There are few things more stressful than feeling rushed. Fill up the gas tank before the car is running on empty with the light on - don't let the gas tank go below ¼ full. Make a schedule for the regular chores you need to do each week. Leave plenty of time to get to an appointment so you won't be rushing in the car or worried about traffic.

Make time for fun!

Live whole-heartedly in the present. Do things that make you happy. During a stress management workshop, I was teaching, I asked people to write down ten things that made them happy. Then I asked them how many of those things do you get to do for themselves every day, every week or even within the year. We often put off doing things that give us joy because there is so much demand on our time. Helping others, work, etc, but it's important for cognitive functioning and to help with stress to make time for the things that give you joy.

Learn to Say "No".

When you feel pressured into doing something you know will overload your schedule or is something that you simply don't want to do, learn to say "No" - and mean it! Avoid using phrases like, "I don't think so." Or "let me think about it" or saying "yes" because you don't want to hurt someone's feelings.

Be as brief as possible as you don't need to explain **why** you don't want to do something. Say "I won't" rather than "I can't." You may have to decline several times before the person hears you. Don't apologize and avoid feeling guilty – it's okay to say "no" and you can always change your mind later on.

Strive to be competent, not perfect

In today's society we are expected to be "super people." There is a lot of pressure to be "perfect" - at home, on the job and even in leisure time.

> ***"Just imagine how quiet the forests would be if only the best birds sang."***
>
> - Katie Chernoff

It is okay if your house isn't as clean as you think it should be. A good friend once gave me a little plaque that says, "My house is clean enough to be healthy and messy enough to be happy." Whose standards are we trying to live up to? Redefine cleanliness, success and perfection. You will feel less guilty and frustrated. This gets much easier as we age. Many people in their 60s, 70s and 80s say they don't really care what people think and go about their business doing what makes them happy.

Start your day slowly

A hurried start sets the pace for the rest of the day. Take an extra ten minutes to lay in bed each morning and stare at the ceiling or sit by the window and listen to the birds. Consider the positive things in your life and practice gratitude.

Eat a good breakfast, plan your day and you'll have lots of energy for the rest of the day. When you take a few minutes to mentally prepare for the day, you will be more organized, less stressed and more able to handle the day ahead.

Turn off the news

Everyone knows that horrible things happen in the world we live in, and those happenings get airtime. Instead of watching the news, especially before bed, take time with the people you love, go for a walk, take a hot bath or read a relaxing book. I wonder how many of us have lost sleep over some tragic event that there is absolutely nothing we could do anything about. I'm not suggesting you stick your head in the sand and ignore the outside world, but don't subject yourself to some of the things we see on social media that we can't do anything about.

Be Selfish

This shouldn't really be called being "selfish" it should be called being "self-caring". Get everything you can out of life. Be spontaneous, eat great foods, ride with the wind in your hair.

As you become older, time seems to go by much more quickly. Wouldn't it be great to be able to look back on your days and say, "If I had it to do all over again, I would do it just the same." Treat fun as a necessity.

Take care of **your** needs first. If you don't take care of yourself, how can you have the energy and mental capacity to take care of others? Taking care of who you are is a sign of self-respect. Give yourself the permission to put yourself first. Putting yourself first gives you the peace of mind and energy to be a better person (friend, wife/husband, sister/brother, mother/father).

Let go of Resentment

Learn to forgive people as everyone makes mistakes.

Stop angry thinking. How many times have you found yourself replaying a situation over and over in your head? It takes up energy to be angry, negative energy which surrounds you. Forgiving someone takes practice but you will free yourself from more negative energy.

But if something they did was unforgivable, then close that door. You aren't mad, you aren't sad, you are just "done". Carrying hatred and anger isn't healthy.

Avoid contact with stressful people – Boundaries!

If there is someone in your life who causes your jaw to tense up, put physical distance between you – a polite distance. If it is someone you work with, there are ways to avoid that person. There are some people who thrive on drama and conflict and some people can drain you of the joy you deserve and drain your energy. I call these Emotional Vampires. Just as you weed a garden, sometimes you need to weed your life of the people that are unpleasant and don't add to your life. While it may not always be easy to do so, it is in your best interest to set boundaries and avoid the people that cause you stress. You aren't mad, you aren't sad, you are just "done".

While you may not be able to eliminate all stressors in your life, you can and should set boundaries. Boundaries are essential to healthy relationships. Understanding and knowing what your limits are will help you have healthier relationships with people.

To set healthy boundaries you must identify your emotional, physical and mental limitation. Learn to recognize what makes you feel stressed or uncomfortable. If you can't identify it, you can't set boundaries against it. It's important to recognize if you have resentment against someone for how you feel when they are in your company. You must ask yourself "***What is causing the stress and resentment about the interaction with this person?"***. What is bothering you?

Resentment comes from being taken advantage of, being bullied or not being appreciated. Resentment can come in the form of guilt and self-doubt. A healthy relationship doesn't give you guilt. People in healthy relationships don't impose views or expectations on others. If you feel guilty about something yet know in your heart that you did what was right and the other person is causing you guilt, this isn't healthy. Healthy relationships aren't built on guilt or resentment

.

"Resentment is a poison you drink hoping that someone else will get sick."

- Paul Bestow

Take risks. Do the fun things you've always thought of doing.

Take the art class you've always dreamed about doing. Go back to school. Learn a new language. Learning something new may not always be easy but it sure is rewarding. It keeps us sharp and makes us feel successful.

I had always wanted to scuba dive, but the mere thought of it scared me. I took the plunge and finally signed up for a course. I have never looked back (even though the training was frightening at times). It was exciting and exhilarating and gave me a feeling of accomplishment.

Smile

Not everyone will answer you with a smile, but it is amazing how many people are happy that you smiled at them. You will find that when a smile is reflected back to you your good mood always increases. Smiling can lift your mood, boost your immune system and lower stress. It can also help change your thought patterns. Smiling helps spur chemical reactions in the brain that make you feel happy.

Attitude - Create mental pictures

Whatever you believe about yourself is going to be the path you take to make every decision about your life. Negative self-talk will get you down. "I'm not good enough or smart enough." "I've got to lose weight - but I can't stay on that diet." "Smoking is killing me, but I just can't quit." "I want to exercise more - but I don't have the time." Sound familiar? These are sure ways to NOT achieve your goals. What are the recurring themes in your self-talk? How do they influence your behaviour? When repeated over and over to yourself they affect not only your mental but your physical status too.

Practice Mindfulness

Mindfulness is a type of meditation in which you focus on being intensely aware of what you're sensing and feeling in the moment, without interpretation or judgment. Practicing mindfulness involves breathing methods, guided imagery, and other practices to relax the body and mind and help reduce stress. Mayo Clinic

Practicing mindfulness has the following effects:

- Lowers stress
- Better memory
- Improves focus
- Increased immune function
- Improves emotional reactions

There are many ways to practice mindfulness including meditation, tai chi, or doing something creative but peaceful like colouring or painting.

Getting Enough Sleep

Good sleep is so important for your mental and physical health. A good night's sleep (7 – 9 hours a night) can do the following:

- Cell repair
- Telomere maintenance
- Improve skin health
- Lowers risk of heart disease and stroke
- Reduces stress
- Reduces depression
- Lowers risk of obesity
- Reduces inflammation
- Improved focus
- Improved concentration
- Allows the body to repair

Take care of your teeth

Dental hygiene is just as important now as it was when you were a child. **Gingivitis** affects the gums, but **periodontitis** is more severe and can spread below the gums and damage the bone that supports the teeth. Tooth decay has also been linked to heart disease, stroke and bacterial pneumonia.

No smoking, limit alcohol

This should go without saying but smoking and alcohol have both been shown to cause premature aging and increase the risk of disease.

Posture

Good posture can make you look strong, energetic and youthful. Poor posture, on the other hand can make you look 10 pounds heavier, lacking confidence, and will age you. Poor posture can cause all sorts of health issues such as lymphatic problems, digestive issues, breathing issues, joint issues, pain in and around the joints, muscle spasms, and can compress the spinal discs.

One joint affects and is affected by other joints. If you have a bad back, it can affect your shoulder and your knees, and this will prevent you from moving properly. Poor posture can also increase the risk of falls.

Older adults are at risk for osteoporosis, muscle loss, and can compress the spinal discs causing pain and immobility.

Good posture makes you look and feel more youthful, confident and helps the joints move properly. It is also a big factor in helping with aging gracefully.

This isn't a postural workshop, and it would take pages to get into all the muscles and corrective exercises involved in good posture. If you are interested in more information about posture, please take our Perfect Posture workshop on www.bodyblueprint.com

Suffice it to say that it's important to keep the core strong. The core muscles are the abdominals (transverse abdominis), spinal erectors (including the multifidus – the small muscles running down the vertebrae), the gluteus maximus, iliopsoas and more.

Good posture is more than just standing up straight. A simplistic way to look at good posture, which brings on good mobility is to strengthen the weakened muscles and stretch the shortened and tight muscles.

A good, balanced stretching and strengthening program goes a long way in keeping your muscles strong, your joints moving, and keeping you pain free.

Exercise

Exercise is a significant factor in helping to prevent physical frailty that eventually results in complete functional impairment. Physical frailty could mean any number of things, such as impaired muscle function, decreased bone strength, reduced joint mobility, decreased cardiovascular function, and poor gait or posture control. Often these frailties lead to falls and fractures in the older adults. There may also be underlying conditions in that can lead to functional impairment requiring increased long-term care needs.

A study (Booth, F. 2012) showed that "low cardiorespiratory fitness is a better predictor of death than hypertension, smoking and diabetes".

Cardiorespiratory exercise has a major impact on vascular function by improving balance between vasodilators and vasoconstrictors. It also aids in reduction of oxidative stress and inflammation and can grow new capillaries in skeletal muscles.

Physical activity has the following effects:

- Maintains telomere length
- Improves insulin sensitivity
- Prevents diabetes
- Can prevent falls and balance issues
- Aids in mineral density
- Reduces body fat
- Lowers blood pressure
- Reduces LDL, increases HDL
- Promotes cellular health
- Reduces oxidative stress
- Lower risk of heart disease by up to 50%
- Lowers risk of cancer (breast, colon)
- Helps you retain your mobility
- Lowers stress
- Improves sleep
- Helps with skin health

(Morton and Kratz 2016)

C

Cardiovascular training

A sedentary lifestyle is linked to increase risk of illness and early death! A study (Kravitz L, et al. 2019) showed the following results after subjects did aerobic activity (50-70% HR max) 3 – 5 times a week for 30 minutes a day:

- VO2 max improves 13% after 10 weeks of training
- VO2 max improves 14% after 12 – 18 weeks of training
- VO2 max improves 17% after 24 – 52 weeks of training

Higher intensities increased the percentage of VO2 max in the same periods of time. In Dr. Kravtiz's study it showed that exercise done in this manner can give you back 12 years of vigour.

It is recommended that adults do between 2.5 and 5 hours of moderate to intense exercise per week, or 1.25 to 2.5 hours of intense exercise per week – or a combination of both. Health Canada says 150 minutes of exercise per week is adequate, and as long as you aren't overdoing it, more is better.

Walking like you are late for an appointment has shown to have major benefits. Dr. Kravitz form the University of New Mexico recommends getting in at least 8,000 steps a day. Just 4,000 steps a day can improve mental health.

HIIT Training

HIIT training is one of the most effective ways to burn fat. Interval training gives by far the best results for increasing VO_2 Max.

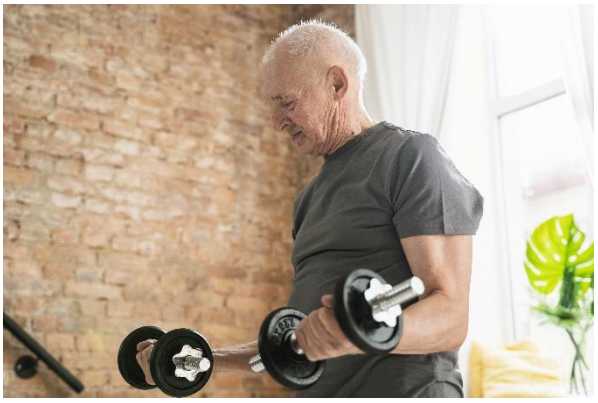
Some simple ways to do HIIT:

Option 1 - Do 4 minute bouts of high intensity (85-95% of HRmax) with 10 bouts of hard followed by 3 minute recovery intervals.

Option 2 – Do 45 seconds of HIIT with 90 seconds of rest (walking etc). Do this 10 times.

Be careful not to overdo as two to three times a week is adequate. Interval training can be done on a bike (hitting a hill), while swimming, hiking or walk/running.

Resistance/Strength Train



Most of us know the benefits of strength training, and reversing the aging process is on the list. Studies (Kravitz 2018) showed that gene expression in older adults who strength trained three times a week (full body workout) showed the same gene expressions similar to a younger group (40s). Mitochondrial impairment, normally seen with inactivity is reversed within six moths of resistance training.

Other benefits of resistance training in older adults are:

- Better sleep
- Increased resting metabolism
- Stronger muscles
- Increased bone density
- Increased glucose metabolism,
- Increased muscular endurance
- Lower incidence of chronic disease,
- Improved physical well being
- Less fractures
- More fat free mass

Get outdoors

Being outdoors has shown to reduce stress, lower blood pressure, heart rate and improve your mental health. It can also decrease depression, give you better sleep, mental restoration, improved immune function, improved well being and some research showed that it can help prevent short sightedness.

Spending time outdoors boosts your mental and physical health.

Drink tea

Black tea is rich in antioxidant and has an anti-inflammatory effect. Besides water, black tea is the most consumed beverage in the world. Some studies suggest it can lower LDL (the bad cholesterol) and improve gut health.

One study done in the UK (Zhang et al 2018) followed over 350,000 people for 11 years and looked at the association between drinking tea and the risk of stroke, dementia, and post-

stroke dementia. The study concluded that those who drank at least two cups of tea a day had a 16% lower risk of ischemic stroke over those who didn't drink tea.

Add to this, people who put milk in their tea can benefit from the calcium to build healthy bones.

Unless it's decaffeinated tea, try not to consume it for at least four hours before going to bed.

Drink water

Every single process in your body is done in water. Drinking enough water keeps you regular, maintains brain function and lubricates joints. It can also keep your skin healthy and reduce signs of aging.

Be careful of drinking too much water as it can disrupt your electrolyte balance.

Get regular check ups

Seeing your doctor on a regular basis can help find issues before they become a problem. Especially if you have a doctor that is proactive (prevention is better than the cure).

There are lots of factors that determine how often you see your doctor: age, family history, lifestyle and existing conditions.

Be proactive and ask for tests if you feel something is wrong. A few years ago, I saw my doctor as I'd been feeling "off". I asked for some tests, and he sent me for a blood test. I asked to get a cardiac monitor. I knew my body and knew something was up. He dismissed me and said I was fine. I was able to see another doctor, was sent for a heart monitor and heart surgery 6 weeks later for a heart defect I didn't know I had. Be your own advocate!

Be gentle with your skin

Your skin is your largest organ. If your skin is healthy, it can protect your body from the elements and regulate your body temperature. Some tips for skin care:

Drink water! Hydrate from the inside (not just the outside)

Wear sunscreen, protective clothing and a hat when going outdoors, even if it's cloudy.

Get checked. Get a yearly skin cancer screening. Having lost two friends to skin cancer (both under the age of 50) it encouraged me to get checked. I'm glad I did as I had a rather aggressive cancer removed from my leg. The dermatologist said, "We got it all, but had you not come in when you did, we'd be having a different conversation."

There are different types of skin cancer, and some don't look like what we might expect.

Use gentle skin care products. Vitamin C oil can help protect your skin and help with skin health.

Positive Thinking

Positive thinking is more than just telling yourself that you are happy today, or that you look good or you're going to have a great workout. It's a way of life. Positive thinking is the emotional and mental attitude that focuses on the bright side of life and gives us expectations of positive results.

And you have total control about the positive results in your life. Your happiness can't come from someone else; it must come from within, and it may take work. Like most other things in your life, practice makes perfect. You can't just know about the existence of positive thinking or try it once or twice and expect miracles.

Our attitudes should be reflected in everything we do. Positive thinking is thinking about what you want out of every day of your life. And yes, **your attitude can change your life!**

Positive thinking makes you happy. There are physiological responses to thinking positively.

If science consists of conclusions based on observation, then the opposite of science would be observation based on conclusions. That is, you decide how you think the world should be, and you then explain all observations of the world based on that foregone conclusion.

Ronald Kimmons

Endorphins are released when we exercise, have sex, laugh and yes, even when we think positively. Endorphins are peptides which activate the body's opiate receptors. This causes an analgesic effect. The release of endorphins can act as the body's natural pain killer. Endorphins give you a sense of happiness, relaxation, a general feeling of wellbeing and confidence. This creates a cycle of more positive thinking.

Stop Pessimistic Thinking

Pessimism = A tendency to see the worst aspect of things or believe that the worst will happen, a lack of hope or confidence in the future

Some pessimists blame others for bad events while others internalize, blaming themselves. A pessimistic person sees negative events as more permanent events. "This always happens". "I never have any luck".

A pessimist looks at a positive even as transient. “That was lucky”. “That doesn’t happen to me often”. “I won’t hold my breath for that to happen again”. Using words like these causes more negative thinking and doesn’t allow you to appreciate when something good has happened.

Studies done in the U.S found that people who think negatively are up to eight times more likely to become depressed than a positive thinking person. They are also on more medication to help control depression than a positive thinking person.

The pessimist often performs worse at work and school and has more conflict around them than their positive thinking counterpart. They have rocky relationships with co-workers, family and friends. Pessimistic or negative thinking slows down thought processes and make it difficult to find solutions to problems thus, making them less productive at school and at work.

Negative thinkers create a lot of their own fear and feelings of inadequacy. They often feel frightened that they aren’t good enough or can’t compare to others or feel threatened by them

Happy people are happy with who they are (most of the time). They don’t worry about what others are doing and don’t compare themselves to others. Happy people believe we are all created equal. You may have more than someone else, but you are no better than someone else.

However, according to a university of California study, unhappy people often compare themselves to others. They compare themselves to people who they believe are below them and label the person as “loser”, “jerk”, “idiot” etc. Using this type of language (even if we don’t say it out loud) can cloud our thoughts and give us the same negative responses as if we said them out loud. When we compare ourselves to someone who we believe is above us, we may become jealous or cause trouble for that person.

The "glass half empty" person often makes the worst of a bad situation. Negative thinking is associated with depression, insomnia and other sleep disorders, aggression, high blood pressure, anxiety and heart disease. It can also add to making poor choices – smoking, drinking or drug use, over partying.

Negative thinkers interact with their environments negatively. Negative thinking affects our ability to remember and perceive positive situations. Negativity is self-inflicted. It will cause you to be cynical, have a pessimistic world view and can cause you to be insecure.

There have been many studies on depression and negative thinking that showed depressed people tend to spiral downward, had more narrowed thinking, worse moods and more illnesses and aged more quickly than the positive thinking counterpart. According to research (Fredrikson et.al 2014) it found that the upward spiral in which positive emotions broaden thinking and influence other aspects of life in a positive way. The researcher calls this "broaden and build theory". And finally, studies have shown pessimistic thinkers have much shorter lives than a positive, happy person.

Spring would not be so sweet if we hadn't experienced winter.

William Wordsworth

Catching Negative Thinking

Being a positive thinker doesn't mean you don't have negative thoughts sometimes. Sometimes you will let your thoughts dictate your moment, or even your day. That's normal. You aren't a perfect being. You are a work in progress.

Try to catch yourself having those negative thoughts. It's one thing if it's a few fleeting negative thoughts. But when the thoughts go on longer than a moment try to find something that makes you happy.

Find something you love to do and find a way to do it when those pesky negative thoughts enter your head. Those bad thoughts can take you down the "rabbit hole" of dark thoughts. One dark thought can lead into the other. If you let your thoughts get away with you, they can pile up and pile up. You can see how this may be a disconnect between the two parts of the brain.

If you are going through a stressful situation, having someone say, "just think positively", doesn't help. If you are having issues and don't have a good friend to speak with, it's time to talk to a professional. If you had a physical illness like, say appendicitis, you would seek medical help immediately. Don't discount seeing a professional for what's ailing your brain.

Making changes to your way of thinking when you are distressed or sad or angry is incredibly difficult. That would be like trying to run a marathon when you have the flu. Pick the right time to start making changes. It's difficult to switch off negative thoughts in the middle of a battle ground. In fact, it can backfire by making you feel even worse. But, once you have the tools to start thinking more positively, you can make major changes in your life. Rewiring your brain takes a considerable effort to gain control over the negative thinking.

With over 50,000 thoughts a day it is difficult to supress unwanted thoughts. You may remember a time when you were thinking about something that was causing you stress. You may have told yourself to stop thinking about it. But before you know it you were right back in the middle of the stressful thinking. It is more difficult to conjure up new thoughts than it is to settle down negative, repetitive thoughts. It's like trying NOT to see the mole on someone's face when it is clearly there!

We humans are drawn to negative thinking. We tend to pay more attention to dark thoughts and emotions like sadness, disappointment and anger than we do to happiness and peace. The negative thoughts are often the things you replay over and over. But good feelings like joy and contentment tend to be forgotten quite quickly.

To prove my point, think about the last thing you remember seeing on the news. More than likely you conjured up something awful like a plane crash or climate change or something frightening. You probably don't remember one of the feel-good stories. Unfortunately, the feel-good stories tend to be quickly forgotten but something awful can stay with you for a long time. But that's life – and we have to work at being happy.

Happy and Positive Thinking

Positive, happy thoughts give you hopefulness and joy. They create optimism and peace. Positive thinking decreases the stress hormone, cortisol, and can increase serotonin. Serotonin is a chemical neurotransmitter that carries messages from the brain and the nerves. Low serration has been linked to depression and pessimistic thinking.

Increasing serotonin and decreasing cortisol helps the brain function properly and gives you a sense of happiness and wellbeing. Positive thinking supports brain growth and can help repair the damage done by negative thinking.

The prefrontal cortex of your brain is the only part of your brain that controls behaviour and emotion. Happy and positive thinking creates new synapses in your brain, especially in the prefrontal cortex. This gives you clearer thinking and "un-muddles" the brain patterns. It can help you control emotional responses and helps you reflect on things (both physical and mental) and organize your thoughts. In other words, positive thinking can help you become a better person than you were yesterday by helping you decide what to do and make the changes you need to make to give you a happier life.

You can't be happy all the time. That wouldn't be human. But the balance between positive and negative thoughts will determine your happiness and wellbeing.

You can't change genetics, but you can reduce some of the affects. Even if depression runs in your family, you can do something about it. You have the tools to improving brain health. Thinking positively helps set up roadblocks in the brain to help decrease neurological patterns of thinking.

Keep your face to the sunshine, and you cannot see the shadow!

Helen Keller

According to Dr. Barbara Fredrickson from the University of Michigan, she states that positive emotions produce optimal functioning. Not just at the moment of the positive state, but over the long term as well. It's important to cultivate positive emotions in ourselves and in the people around us – not just to be happy now, but as Dr. Fredrickson says, "to achieve psychological growth and improve psychological and physical wellbeing over time".

Optimism

Most happy people have one thing in common - they are **optimistic**. Like most things in life, we can learn to be optimistic, it just takes practice. Especially if you have had bumps in the road of life, it may take more work than others but is worth it. In fact, anything worth having is worth working hard for. And optimistic thinking is no different.

Believing (or starting to believe) in positive thinking and speaking in a positive, life affirming way will help the brain rewire to stop the negative thinking.

Rewiring your brain can only happen with your help.

Feeling happy, hopeful, peaceful and joyful stimulates your brain to respond in more pleasurable ways. Your brain and your feelings are intertwined.

A study done in 1996 showed there was an association between more resilient people have an optimistic, zestful and energetic approach to life. They are more curious and open to new experiences and have a high positive emotionality (Block & Kremen 1996; Klohnen 1996).

It's like the chicken and the egg. Which came first? Was it the positive thinking and positive emotions that created more resilience or that more resilient people have more positive emotions? Both are true and go hand in hand. Resilient people may use positive emotions to achieve their effective coping, indicating reciprocal causality (Block & Kremen 1996).

Another study found that resilient people cultivate positive emotions in themselves to help them cope with stresses, but they are much more skilled at eliciting positive emotions in others which creates a positive social network (Fredrickson et al. 2000).

The study (Block & Kremens, 1996) showed that positive people reacted differently to the same stress given to the negative thinker. Positive people don't anticipate the same levels of anxiety in a stressful task as much as a negative person did. As a result, the positive person experienced less stress and less physical response to the stress. This means their heart rate didn't elevate as much.

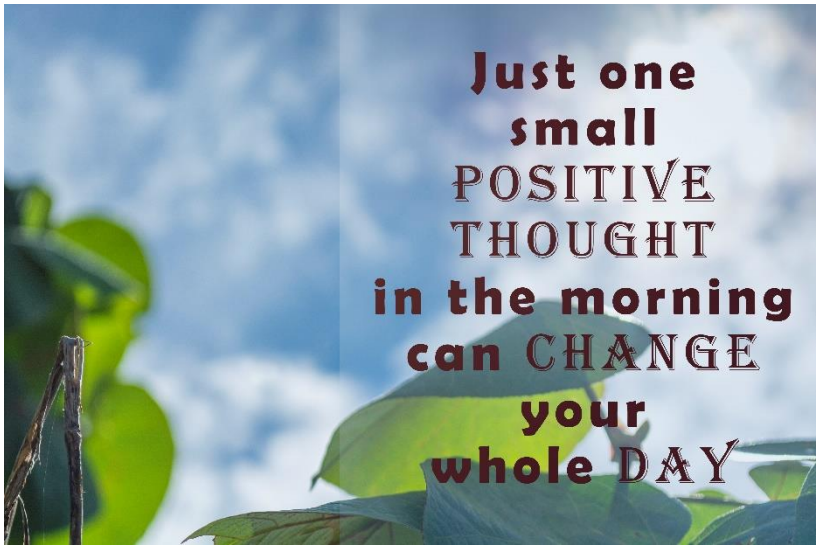
Being happy and thinking positively improves our ability to be more productive and alert and can improve our ability to analyse a situation (negative or positive) more clearly. Some of the other facts associated with positive, happy, optimistic thinking are listed below:

It affects how we see the world, and often how the world looks at us. It's surprising when you feel happy and good about yourself, the connections you make with others. If you look confident, happy and positive you often attract the same type of people. This isn't always the case, of course. But dealing with an unpleasant person when you are feeling on top of the world, seems much easier than if you were having a bad day.

It allows us to live in the moment. While thinking positively we don't have the time or inclination to dredge up old negative memories.

Some memories should stay in the past and as a result we have a broader way of thinking which allows us to be more creative and feel more at peace.

Happy thinking leads to more positive thinking and improve the ability to learn and be more productive. It makes us think more cheerfully, more quickly and much clearer. We become more mentally alert and more creative.



People who think positively experience more positive emotions like love, joy, contentment and look forward to more things in life. Happy brains grow more nerve connections and have a much higher activity in the prefrontal cortex than negative thinkers. This in turn allows us to think about the future more positively and make plans for a more productive life. What a wonderful way to age gracefully. With mostly happy, positive thoughts and shutting out that negative voice.

Positive people have less emotional ups and downs and happier moods in general. They can control their emotions and their responses to a stressful situation.

Positive people tend to do things that make them happy; hobbies, exercise, learning new things, socializing, practicing mindfulness and more. Happy people don't spend too much time alone. It is healthy to be alone sometimes but being alone too much can be detrimental. Happy people have healthier and more positive relationships with friends, family and co-workers.

Positive thinkers tend to be more successful due to the fact that they don't let the little things get them down. They find the silver lining in a bad situation – glass half full!

Positive thinkers often have better physical health. This may be because they believe in themselves and don't let the world get them down. They have the inclination and the energy to exercise.

Taking care of your brain and your body creates a strong immune system and health habits. Even if genetics has thrown you a curve ball with illnesses, happy people tend to deal with the illness in a more positive way, often recovering from the illness much quicker than their pessimistic counterpart.

Thinking positively helps builds **psychological resilience**. This means you will be stronger to handle stressful events. This also means if you have been handed a bad card, you can deal with it much better than someone who tends to see the glass half full.

When bad things happen, they aren't permanent. Positive people ask themselves "will this matter in 1 month, 1 year, 10 years?". Happy thinkers use words such as sometimes, rather than always and never.

And finally, positive people tend to live longer than the pessimistic thinking counterparts. Several studies have been done over the years on the mind/body connection of positive and negative thinking. A study (Danner et al. 2001) showed that a strong association was found between positive emotional content and mortality. The study was done over a span of many years and showed that the test subjects lived on average 10 years longer.

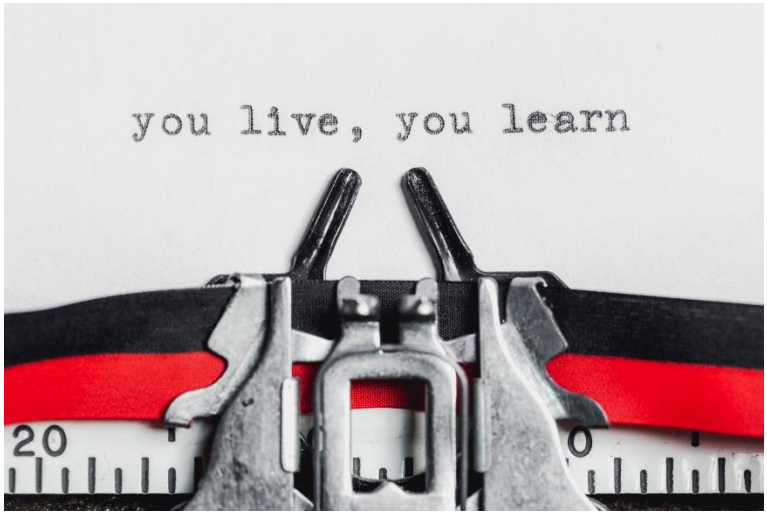
It takes work to be positive and happy and peaceful, just like it takes work to have a healthy body through exercise. Working on your happiness is "work" and I like to call this the **happiness project**. I choose to be happy. The alternative isn't so much fun!

Re-wiring your Brain to be Happy

It used to be said that our brain is in charge of us and that is true to some extent. We don't have to give thought to breathing, blinking or having our hearts beat. We have autonomic responses to being too hot or too cold and get the signal from our brains when we are hungry.

But recent studies are showing that we have much more effect on our brain than we thought. You can retrain your brain to be more positive. This results in less stress hormones and less chromosomal damage from stress.

The upside to all of this - you will be happier.



Learning to be positive and happy is like learning a language. It takes practice. But repeated over and over our mental activity will change. The more you practice learning a language or a new movement pattern or positive thinking the more neurological and cerebral development occur. These aid the new thought pattern (or movement pattern) to get stronger and weaken the connections in ones no longer used.

What you do and what you think determines the size and efficiency of the regions in your brain responsible. In other words, more positive thinking creates less negative thinking and gives less space to it in the future.

The benefits of positive thinking don't just last while you are thinking those thoughts. A big benefit from positive thinking is the enhanced ability to open your mind and build skills for use later in life. This can transfer to other aspects in your life – better relationships, happier at work, less altercations, etc.

Thinking more positively prevents you from limiting your self-belief. You can change your entire life by changing your thought patterns. Your thought patterns affect the person you become.

What you say to yourself – matters!

Be appreciative and grateful

Be thankful for what you have and the many positive things in your life rather than complaining about the things you do not have. Look around you and know you will always have a roof over your head, food in your stomach and people that love you. These are basic needs. Other than food, warmth, safety and a soft bed, most of the other things we have in our lives are wants, not needs.

Your home is the dream of the homeless
Your job is the dream of the unemployed
Your smile is the dream of the depressed
Your health is the dream of those who are sick.
Dhar Mann

Most people aren't happy all the time and will inevitably have days where their thinking is darker than other days. That's life. One way to rewire your brain for positivity, happiness and joy is to be grateful.

Studies have shown that gratitude makes people happy. In fact, one study showed that grateful people are 25% happier than those that don't practice gratitude.

Being thankful releases dopamine in the brain. Dopamine is the chemical that can drown out negative thoughts and feelings.

Something that was suggested to me by someone (my daughter, who is almost always positive and happy, so I must have done something right!) is to write a gratitude journal.

Every evening before you fall asleep write down the things that make you happy and the things you are grateful for. This can be things that happened the previous day or things that are constant (your children, your job, your dog, etc). Don't write down the same thing over and over., instead look for the small things in life that make a difference to your life. In time you'll see that you have a very long list of things to be grateful for.

"Reflect upon your present blessings, of which every man has many, not your past misfortunes, of which all men have some."

Charles Dickens

It's important to talk to others about your feelings and get help when you need it. While this can sound odd and just plain wrong to feel grateful when things are not going well, especially when it involves a loved one, or a loss or a serious health issue, gratitude is a large part of your happiness project.

It may be difficult to find things to be happy or grateful about when you feel the world is crushing down on you, but if you look hard enough there are lots of things that most people have in their lives.

A very good example of this is my own story. In 2021 I had started to feel tired. I was swimming almost every day and strength training 3 times a week, hiking with my dogs and generally being active. I thought I was overtraining.

I went for a blood test and my entire life got turned upside down. I was diagnosed with a rare and quite deadly autoimmune disease. I had chemotherapy and bags and bags of blood and platelet transfusions. It turned my life upside down.

But I am so very grateful for so much. Sometimes I have to dig a little deeper, but if I look hard enough, there is a lot to be grateful for.

I had over a million dollars of medical treatment and am so grateful I live in Canada where it didn't bankrupt me. I have a large garden and my friends organized "gardening parties" where my friends would come over every week and pull weeds, mow the lawn and take care of my plants. They even planted some dahlias (granted, some were upside down, but you can't look a gift horse in the mouth). I am especially grateful for my friends and family. But they know that. Here is something I wrote about my journey:

I decided that every day feeling sorry for myself was a day that I will never get back. I surround myself with people that make me happy. That love me.
I wake up every single morning, and have done for years, grateful I live in Canada, grateful for my life, my family, friends, dogs, career and the ability to travel.
I choose to be happy.
Don't get me wrong, I have days that are less than perfect…
But for the most part I choose happiness.

There were times when I was sad about missing my home, my family, my dogs, and scared about where this health journey might take me. I was upset because I couldn't swim, or garden or even walk my dogs as I had no energy after my chemotherapy. But I tried not to stay down in that "rabbit hole". I figured the more time I spent feeling sad or sorry for myself, the less time I had to be happy. So, I tried to fix my way of thinking.

Positive People

We are affected by the people we meet – and we affect them. This happens due to words, body language and even thoughts and feelings. If you are anything like me, you tend to surround yourself with positive happy people. Who wants to be around someone who's always gloomy and negative? That will just bring you down.

If you portray a positive side to the world, you will almost certainly attract more positive people to you that are like you. Unlike the term "opposites attract", positiveness and hopefulness will attract the same. You will be rewarded with people that make you a better person. People who have your best interests in mind, who celebrate your successes and who are there to help pick up the pieces when something goes badly. Keep these people close!

If you are a positive person, people are more likely to want to help you. It's important that your relationships are equal - give and take. If your friend feels like they are always on the giving end, the relationship won't last long.

Dump the negative vampires

Look at your relationships with people. If you have someone in your life that is always putting you down, making jokes about your hair, your clothes, your body, recognize that this person is either insecure or a bully. You don't need people in your life that try to knock you down a notch. If it's a close friend or relative, it's important you bring up their words and how they make you feel. If they can't have an adult conversation and change their behaviour and insulting, hurting words, distance yourself from them.

Sometimes people can be unkind or even cruel and try to be hurtful. This says more about them than it does about you. Some people just don't think before they say something to you and may not consider that their words sting. But no matter what their intention is, their words can stick with you. You may play it over and over in your head until it makes you crazy and you start believing that what they have said to you is true. Or it may make you angry. But you can't tell someone what to think or feel or how to speak. You can only control how you respond to it. And they are just words - they can't hurt you unless you let them.

It's none of my business what you think of me.

Surround yourself with your cheerleaders

Spend more time with people that have your best interests in mind. Those that love you for who you are. Those that don't want to change you. And those that have a positive outlook on life. Don't take advice from people who have given up on their own dreams.

Cultivating a positive attitude can slow telomere shortening and prevent chromosomal damage.

Have a Support Network

Surround yourself with the people that care about you. (there seems to be a common theme here…)

People that love for who you are and have your best interests in mind.

They will support you when you need it and will encourage you when you are doing well. They will also be there when you fall. I told a friend recently that I appreciated her in my life. My words to her were "When I needed a hand to hold, you had two." Showing gratitude to your friends goes a long way. There is nothing like having good friends or close family that are your cheerleaders.

Social connections and positive relationships are linked to longer telomeres (less chromosomal damage) and less stress, less cortisol, more energy and so much more.

Hobbies

Doing a hobby that you enjoy keeps your brain healthy. Studies show that people who engage in the hobbies they enjoy are happier, less depressed and live longer. Your hobby can give you a sense of purpose.

Hobbies can change over the years as your interests waxes and wanes, so don't be afraid to try new things. Take an art class, go to lectures, read interesting books, garden, anything that gives you peace.

Accepting what you can and can't change

There is a lot we can do to age gracefully, but some things we cannot control.

Grey Hair

The follicles at the root of each hair on your body contains pigment cells with melanin. It is melanin that determines your hair colour. As you age, melanin declines and as a result, the hair goes grey (or silver, or white).

For years I died my hair, blonde, reddish blonde, dark blonde. And I was never happy with the result. Occasionally I'd splurge and get it done professionally, but my hair grows fast so I often didn't bother.

When Covid hit in 2020 I decided to stop dying my hair. I thought "Well, I'm not seeing anyone anyway, so might as well save myself the bother". And I'm so glad I did. My hair is naturally a blondy-grey and I like it. If I didn't, I could always dye it, but who knew all I had to do to achieve the colour I liked was just to stop dying it.

My sister, on the other hand has grey, dull hair. She said, "I will always have blonde hair". And she probably will.

She's older than me and gets her hair done professionally every few weeks and that makes her happy.

If feeling more youthful means dying your hair, then do it! Whatever make you happy!

"Gray hair is a crown of splendor; it is attained by a righteous life."

Proverbs 16:31

For some people having grey hair represents maturity and wisdom, for others it means being old. You can blame your grey hair on genetics as it determines when and how fast you go grey.

There is some research that suggests that poor nutrition and toxins (environmental, alcohol, smoking) can speed up the process of going grey. There is no positive research that stress affects the colour of your hair, but I'm sure it doesn't help!

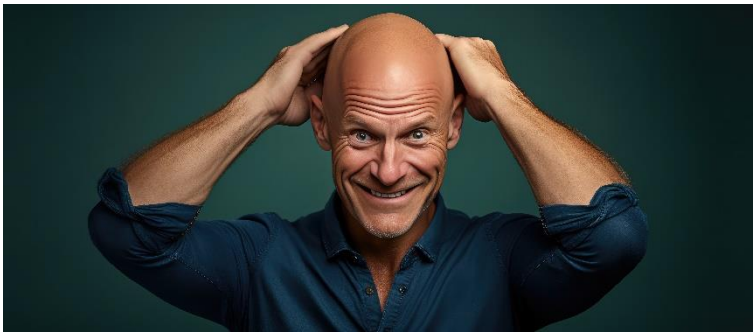
Research in Psychology Today in 2022 found that women spend over $2 billion dollars a year in the United States on hair dye, but men only spend $150 million. Why do more women than men dye their hair? Does it have something to do with how we view older men. “Men age but get better looking. Women age and get old.” Unfortunately, many of us buy into that.

However, a study (Harvard University, 2021) found that women who do dye their hair tend to have lower blood pressure. This wasn’t because the colour of your hair has anything to do with it, but it does show that some women feel younger because of it. It was suggested that people internalize the message that we are now younger with dyed hair and can relax because we aren’t “old”. But, if you are happy with your natural grey, silver, white hair – then embrace that! It’s the perfect you.

Going grey might be a tricky process for some people. My hair was already blonde, so when I started to grow it out, it wasn’t really that noticeable. (Plus, we were on “lockdown” with Covid), so I let it go.

However, if your hair is darker and you start to let it grown out you might get that white line down your part. A friend of mine calls it her “skunk line”. If this is the case, see your hairdresser to help slowly transition to grey. This may include putting low lights or highlights into your hair.

Grey and silver hair absorbs light so it’s easy to make it look dull. Use purple shampoo to prevent it from going dull or yellowy and a good leave in conditioner to make it shiny.



For some people, especially men, they may lose their hair. Some men choose to shave their heads to prevent the partially bald look (nothing on top and a little around the sides).

This can be a harder transition for women however, but there are products on the market that can help so see your doctor or pharmacist. There are also several herbs that can help with hair loss.

Hair Loss and Changes in Hair

Humans lose up to 100 hair strands a day but more than 50% of menopausal women will get some degree of hair thinning and hair loss. This can happen in peri or post menopause. You'll be able to tell if you are losing hair as there will be more in the bottom of the shower and in your hairbrush after brushing. You may not notice it at first but then the part in your hair may get wider or the ponytail is thinner.

You may also notice that you grow less hair in your armpits, legs and arms and your pubic hair is a lot thinner. Many post-menopausal women report that their eyebrows and eye lashes become thinner too. When estrogen and progesterone decrease androgens increase.

Some medications can cause hair loss too. Antidepressants, blood thinners or beta blockers, epilepsy medication and those that treat hyperthyroidism can all cause your hair to become thinner.

What can help

Eat a healthy diet with lots of fruit and vegetables and healthy protein.

You may consider supplements for hair growth, look for vitamins that contain vitamin B, C and D, iron and zinc. There are specialty supplements on the market designed for hair growth including collagen tablets.

Some doctors recommend Rogaine which is an over the counter product for hair loss treatment. It's generally used

for male pattern baldness but can help women with menopausal hair loss. But be aware there may be side effects such as itchy scalp, dryness flaking or even a burning sensation. Check with our health care provider before starting this product.

Your doctor may prescribe oral medication to help with hair loss as well. There are other, more expensive and invasive treatments such as micro needling and laser treatment.

Facial Hair

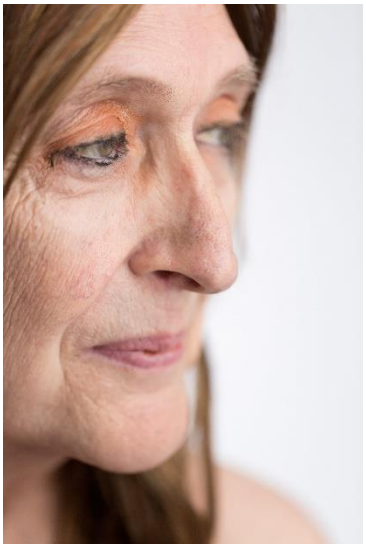
"No one tells you how fast chin hair grows! What is up with those little buggers? I am fair with dark hair, so my mustache and chin hair came on strong. Never leave home without a pair of tweezers in your purse!" *H*

If all the aging issues weren't bad enough, when estrogen and progesterone go down and androgens go up, women can grow hair on their face. This usually is not full-blown facial hair like a male has, but you may notice "peach fuzz" on your chin, upper lip and even at the side of your face. One woman said she had "little blonde sideburns."

What can help

Any woman will tell you waxing or threading isn't enjoyable, but it is effective. So that may be a plan of attack for this symptom.

Wrinkles



Collagenous connective tissue is made mostly of **collagen**. Collagen is the most abundant protein in the body and is essential for healthy tendons, cartilage, bones, facia, blood vessels and skin. It is responsible for suppleness and firmness and the elasticity of the skin.

Collagen is the intracellular glue that gives support, shape bones, organs (kidney, liver) and the skin. As we age our body stops producing collagen and wrinkles are born. Wrinkles and liver spots can also be caused by sun damage.

Graphic by Genusfotografen

There are lots of creams and potions you can put on your skin, but the best thing to do is wash your face every day, use vitamin C oil and a good moisturizer, stay out of the sun and wear a hat and sunglasses. Embrace those beautiful lines. You have earned every one of them. They are the map of your life.

You are as old as you are, and only as old as you feel

Studies have shown that overall happiness increases with age. This might be because many of us are retired, or have the relationships we enjoy, have some extra money to travel, may not be worrying about money as much and have a more balanced approach to life in general.

Many middle aged and older people I've spoken to say they don't feel their age. What surprises me sometimes is that in my head I still feel like I'm in my 20s. Then I put on my coat and my mother's hand comes out the sleeve, complete with thin skin and age spots. But I still don't feel old!

The old adage, **you are only as old as you feel**, really does make sense. As we get older, most of us become acutely aware of our mortality and as a result we have two choices. We can buy into being "old" or we can appreciate our lives and chose to do the things that make us happy.

Chronologically you are ___ years old, this is determined by your years on the planet and the candles on your birthday cake. But that doesn't mean you have to **feel** your age or **act** your age. Try to maintain a positive outlook on growing older. Look at all the things you can do, and the strength you still have. You are likely more confident than when you were young. You may have more true friends who have a long history with you. You are smarter than you were before.

Aging is inevitable, should we be so lucky. You may have more body fat, wrinkles, grey hair and a little less energy than you did 20 years ago, but that's normal. Embrace the new you!

My sister once said to me "oh grow up" – now why would I want to do that?

I can laugh so hard my face hurts, tell silly jokes, play on the playground with my grandkids, make fun a top priority, and focus on the joyful parts of adulthood. I will not go quietly.

A friend once said to me "You always look like are having fun". Sometimes I have to work a little harder because life's reality gets in the way (stress, illness, aging parents, etc.) but it's well worth the effort.

Don't walk softly into the night. Instead skid into home base saying "yee-ha – that was quite a ride".

Graphics

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