

Women Aging and Beauty

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“When you are a kid you think anyone over forty is finished I am not finished” (Ford, 2005).

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Introduction

I am 50 and scared of the sudden impact of aging. I noticed over my 49th year that there were significant changes to my body and skin. It was insidious and without a doubt a shock. My arms were sagging – I had to give singlets away! My eyes began to get baggy and my energy levels slumped. I had put on weight and was feeling my digestive system was not doing what it should anymore. There were smiling faces around my knees which were rapidly heading south. I could no longer run and wanted to sleep forever.

I had begun a diploma in body and beauty therapy – what was I thinking. I didn't have the energy to do what I had years before. I was among young women and all my years of being a career woman accounted for nothing! It made me think, what were other women my age thinking? How did they feel going into a beauty therapy clinic and facing a line of stunning 20 year olds who were yet to face the impact of age?

I wanted to know what was happening to us and what was available to stem the tide of decline. It lead me to choose this as a special topic to research what was happening and why, how that makes women feel and what were the options available to them to make a difference.

This research allows me to examine the effect of aging on women physiologically – with a focus on the skin – the thinning dermis, cell turnover, and the reduction of fibroblast production, the imbalance of osteoclast and osteoblast activity, and menopause (Guedner, Grabo, Newman, Cooper, 2008).

I will also explain the psychological and emotional effects – how women feel about themselves as the signs of aging become apparent. It will also cover what else women do to help reduce or slow the signs of aging through beauty therapy treatments at a clinic or appearance medicine for botox, and fillers, cosmeceuticals which are covered in the research.

This research will also cover the impact of health and the dietary changes women make to help reduce aging along with exercise, and other alternative therapies. It will give me a greater understanding of what is happening to me and what I can do personally do to stem those changes as well as learn more about the treatments I can carry out as a beauty therapist in my own clinic. The knowledge will help me to position my business for the target market I wish to focus on and to provide me with my point of difference and strategic advantage.

I will have a greater understanding of the changes women face and the beauty treatments that can benefit them whether they are surgical, injectables, electrical or cosmeceutical. I will learn more about the skin conditions that arise as a woman ages and how to prescribe treatments and products to improve, or reduce the impact of these. It will also help me by learning about how health and diet can impact the speed of aging and how dietary changes, and exercise (for example) can make a difference.

Chapter One

What's happening on the inside?

As we age cellular changes occur and the body and its organs become more tired. Subsequently the body becomes less efficient at the absorption of the necessary nutrients from the food we eat, skin thins, muscle tone begins to slacken, and bones begin to lose density. The long-term effects of stress, ill health, smoking, alcohol and exposure to the sun begin to show.

There are many theories thought to explain why aging occurs, here are just a few.

1. That there are limitations to the number of times a cell can divide known as the Hayflick Limit Theory of Aging as discovered by Hayflick (as cited in Cavanaugh & Blanchard-Fields, 2006). A cell can divide 50 times and then it dies.
2. Telomeres parts of DNA begin to shorten and eventually are too short to allow chromosomes to replicate according to Saretzi & Zglinicki (as cited in Cavanaugh & Blanchard-Fields, 2006).
3. Cross-linking – collagen and elastin fibres in the dermis made of amino acid chains protein interlace with each other and as we get older collagen knits with itself more frequently making the skin less supple (Cavanaugh & Blanchard-Fields, 2006).

“It takes about 200,000 frowns, for example, to produce one permanent brow line.” (Medina, 1996).

Figure 2. Botox Cosmetic® (from doctor, n.d.)

In figure 3 we see an example of a markedly deep frown line – one of the visible signs of aging. The skin is made up of 3 layers: the epidermis that has 5 layers of its own including a protective outer layer the stratum corneum, the dermis and the hypodermis or subcutaneous layer. Cells in the skin assist with the production of vitamin D for bones and teeth, provide protection from ultraviolet radiation and act as water proofing (Shier, Butler & Lewis, 2010).

Cells regenerate in the basal layer of the epidermis, and migrate up as they lose their nucleus and flatten out. They end up tightly packed in the thick outer layer and are held together by desmosomes that provide stickiness and hold the outer layer of cells together to protect the skin and hold in moisture. As we age, we lose some of this stickiness and the skin becomes dryer as less moisture is held in and the cells do not slough off as easily. Fibroblasts generate collagen and as we age they deplete faster than they are replaced resulting in thinner skin and wrinkles purports Matteson, et al (as cited by Farley et al, 2011).

Figure 3. Skin layers (from adam, n.d.)

Skin becomes lipid dry – oil secretion from the sebaceous glands decreases and pores enlarge due to the glands losing their elasticity (Nagel and Frey, 2007). It loses moisture and is inclined to be drier and tighter and more susceptible to trauma.

Muscle fibres begin to loosen, and waste decreasing their mass as the elastin fibres tire and the junction between the dermis and the epidermis begins to reduce and the

fibres get misarranged causing wrinkles (Barrett-Hill, 2004). Sarcopenia is thought to start around the age of forty and speeds up after seventy five Vella and Kravitz (as cited in Waters, et al 2000). Sarcopenia is muscle wastage or the reduction of muscle and is usually attributed to people who have been inactive all their lives.

Collagen is a thread like protein with great strength; it provides support and structure for much of the body and makes up large proportions of the body's connective tissue. In the dermis it is woven with elastin allowing the skin to spring back, and reticular fibres that give bracing. Over time the fibres age, they become rearranged; collagen becomes less flexible, and elastin loses its ability to recoil making it difficult for skin to return to its original shape resulting in sagging (Shier et al, 2010).

Bone density reduces, along with muscle depth, and fat deposits lessen. The loss of bone density happens all over, not just in the joints or spine so as we age the bones of our face are also be affected making it more angular. Gueldner et al, (2008) explain that bone has a conversion phase where osteoclasts remove worn out or damaged bone by absorbing calcium and breaking down the matrix. Then the osteoblasts, in large numbers, begin to repair the bone forming new bone and eventually become part of the bone. Overtime the osteoblasts can be less active than osteoclasts that breakdown bone causing the bone to become thinner and more porous. In figure 4 we see a very good example of the bone loss around the eye and in the jaw of the older female.

Figure 4. Bone loss (from skincaretalk, n.d.)

It is not clear how much of normal bone loss can be attributed to hormones or aging and the environment; however, a deficiency in oestrogen is associated with rapid bone loss at menopause (Gueldner et al, 2008). In some people the absorption and repair process is so unbalanced it is called Osteoporosis and affects many women making them prone to fractures. Hence some weight loss is caused by the bones being less solid.

Photoaging or Pigmentation is caused by Ultra Violet radiation (UVA) which damages collagen fibres and penetrates more deeply into the dermis. UVB radiation damages the epidermis and over time this shows as pigmentation often referred to as age spots on hands (Cressy, 2010).

Melanocytes in the basal layer of the epidermis provide protection to the nucleus from the sun. They initially cause even tanning in some skins and freckles in others. Age spots occur when the melanocytes damaged by sun become less spread out in the basal layer of the epidermis they are concentrated and are highly visible on backs of hands and the face (Medina, 1996).

Figure 5 & 6. Barbara Kendall (from wilkins, 1992; from newzealandherald, 2010)

Barbara Kendall after receiving her gold medal at the 1992 Olympics and a more recent picture in 2010 showing photo aging of our most esteemed Olympian. Barbara was blessed with a fair skin and the exposure to ultraviolet radiation and reflection from the water has had a severe impact on her skin.

The fat or adipose cells reduce in number and size, thinning the skin making it less smooth so we get clumps in certain areas and the skin becomes more susceptible to cellulite. Due to fat cells being spread less evenly, bags under the eyes develop, along with jowls and double chins (Medina, 1996).

Figures 7-10. Sophia Loren (from picsearch, n.d.)

In figures 7-10 we can see Sophia Loren as a young woman with fully rounded cheeks and fullness around the jaw line. As she ages the jaw becomes more defined as the natural fats lessen and the definition is lost.

Hormones

Hormones have a part to play in the aging process too. Oestrogen controls hyaluronic acid, the substance that holds water in the dermis, and collagen production assists healing so when it is lost the skin thins, our collagen levels decrease and cell renewal slows. Oestrogen depletion and UVR damage and are the most common causes of aging (D'Allaird, 2010).

Other hormones will have an impact if they are out of rhythm, for example reduced thyroxin levels result in thickened dry skin, baggy fluid filled lower lids. By contrast an over active thyroid gland will cause an increase in thyroxin causing a flushed, warm, sweaty smooth skin. Testosterone has an effect on oil production resulting in dry skin if the levels are too low; it will also cause an increase in hair growth on the face if there is too much (D'Allaird, 2010).

The food we eat

A diet full of sugar will have the nasty effect of increasing insulin levels that can increase oil production and affect the skins growth resulting in skin tags and deformed follicles while capillaries can become weaker. Thinner walls of capillaries become visible on the cheeks and nose of thin skins in the form of telangiectasia or what is more commonly referred to as broken veins (Willis, 2010).

According to Cavanaugh (2006) it is no secret that reducing calories will lead to a longer life.

Chapter Two

How does the way you look affect your psychology?

Where you were once concerned with being fat or a large dimple in your thigh you realise that at 20 you had absolutely nothing to be concerned about and wished you had worn those skimpy dresses, kicked those legs up and been proud of your assets. But alas it is too late here you are 50 years old, menopausal and facing cellulite on your legs, bottom and stomach. Your décolleté takes 2 hours to smooth off in the morning after a good night's sleep. Your knees seem to have taken on a life of their own – almost life like faces in the middle of your leg.

You have no idea what to wear anymore, glittery eye shadow is no longer appropriate. You wrap yourself in a kaftan from your pool seat to the pool slipping into the water while removing your top so no one can see this flabby body.

You know the wolf whistle is for your 23 year old niece and begin to doubt you have anything much to offer as the young ones around you who once thought you had it all begin to question your knowledge. And to top it off your face is sliding off your head at a rate of knots – leaving you to consider surgery and other radical forms of age reduction including painful dermal rolling, fillers and Botox.

It is not just my opinion; I have surveyed a random group of women in the 40-50+ age group to determine whether we all felt the same or if there was wide ranging of views regarding the topic. I received some very interesting insights as to how they were feeling about aging.

The questions focussed on how they felt about aging, what major effects they were most concerned about as they aged and questions on what they might do to counter the effects.

Many felt old; one said they felt 'older than I feel on the inside'. Several thought they would or were dressing differently to hide the signs of aging including hiding their arms, and loose skin. Thirty percent thought aging was inevitable and would do it gracefully while others were nostalgic about what was happening to them and felt sad that they were no longer getting the attention they had had in the past from men. One said she was always looking at affordable ways of reducing the impact while another said she was torn between the joy of natural aging and being conscious of looking older.

Their concerns involved increasingly dehydrated and dry skin, wrinkles, loss of fullness and tone, brown spots and sun damage, frown lines, loss of elasticity, dullness, sagging eyelids, unwanted hair and 'broken veins'. Many of the body issues included changes in shape, additional weight, a lack of tone, dry skin, and the loss of firmness in the chest, arms and legs. One commented on how she would have exercised more when she was younger if she had been aware of what would happen to her body with age.

When asked about what they would do to reverse or stem the signs of aging 50 percent of those surveyed would consider having a glycolic peel, 30 percent would try Botox and 35 percent would be interested in fillers, 35 percent would be interested in micro-needling or dermal rolling while only 5 percent of the sample would have surgery. 86 percent would be keen on make-up lessons to help them to

improve their looks or to update their image. Others would be keen to learn ways on how to dress to suit the changes in their bodies as they age.

“Perimenopause” brings with it an array of issues including a lack of attention or the inability to concentrate. Prior to menopause women suffer from decreased oestrogen levels as their eggs run out and can have a number of symptoms like sudden increase in body temperature usually referred to as hot flashes and night sweats, loss of calcium from bones and lipid dryness of the skin along with a raft of other symptoms (Gaudet, 2004).

Chapter Three

How do your diet, supplements, and exercise affect the visible signs of aging?

As we age we have to take more care to reduce the amount and change the balance of what we put into our bodies. We have to be more aware of the nutrients that we need to increase the consumption of to ensure our bones are strong, our skin is plump and our joints are mobile. We need to do more exercise or different types of exercise and add more supplements to our diet, try different skin products to get the same or similar results we might have had when we were younger.

Exercise

Figure 11. Women running (from bbc, 2008).

According to Goodyer (2009) UK researchers have found that people who are physically active will have longer telomeres than couch potatoes, therefore slowing down the aging process and reducing the likelihood of them developing cancer.

There are so many options available to help you slow the effects of aging: running, Pilates, cycling, walking, yoga or working out at the gym. But it is the type of exercise that is done that will have an impact on stemming the tide of age.

A certain amount of resistance and endurance training appear to stem the decrease in muscle mass and the negative effects on the slow and fast twitch fibres in the muscles if there is enough weight bearing and the exercise time is extended for long enough (Thompson, 1994).

We talk a bit later about the other benefits of exercise including stress relief, increased cardiovascular activity so the cells are better nourished, a boosted immune system, and diabetes is less likely as excess sugar is used up by the muscles for energy. Resistance training with weights three times a week can help you lose weight, increase your strength and firm the flab (Goodyer, 2009).

I now understand more about the importance of weight bearing exercise and how it is beneficial especially for those with a propensity for osteoporosis.

Diet

Figure 12. Fruits (from fitnessstricks4all, n.d.)

Omega 3 is well documented to assist you to turnaround the effects of aging. Some studies have found that it has a positive effect on osteoporosis; women who took high levels of EPA (a polyunsaturated acid) over a 3 year period showed a lesser degree of bone loss and in some cases had actually increased the density of their bones (Gouge, n.d.).

Smokers need to be sure to add Omega 3 into their daily supplement consumption as it will minutely smooth out fine lines by working with proteins to brighten their skin. However may not have the same effect for non-smokers (Spitale et al., 2012).

Antioxidants are in vitamins and minerals that attempt to balance the action of unstable electrons (free radicals) that are looking for another free electron to stabilise themselves. If they are unstable causing oxidation which damages the structures of

the skin for a long length of time, they can cause diseases like arthritis, cancers and heart disease (Gouge, n.d.).

Berry fruits, leafy green vegetables, carrots and green, red or orange fruits are high in natural antioxidants and as Captain Cook found are essential for avoiding scurvy (Lamb, 2011). It has been documented for years that dark chocolate and red wine is good for the cardiovascular system along with green tea which is also in many skincare products. Interesting statistics included in the graph in figure 13 rate dark chocolate as a source of beneficial antioxidants.

Figure 13. Graph of anti-oxidant strength (from allchocolate, n.d.)

Good news – dark chocolate is higher in antioxidants than blueberries!

**ORAC (Oxygen Radical Absorbance Capacity) is a measure of the antioxidant power of a food.*

Vitamin C is important for the manufacture of collagen in the body and capillary strength; without it the skin will take longer to heal and will easily bruise. Vitamin C also stimulates cell regeneration and helps boost skin immunity. Fresh vegetables, specifically spinach, broccoli, lettuce, citrus fruits, potatoes, tomatoes and strawberries are a great source of vitamin C (Dermatech, 2011).

Bioflavonoids (or flavonoids) are an important part of a healthy diet and have been shown to contribute to anti-ageing effects on the body (Hil, 2008). They are found in just about all fruits and vegetables (for example) apples, apricots, carrots, parsley and tomatoes. Flavonoids help prevent nose bleeds, reduce inflammation following injury and protect from flus and colds (“Flavonoids”, n.d.).

Vitamin A is great for dry and flaking skin as it is essential for managing the size and the purpose of sebaceous glands. It is found in eggs, butter, liver, cabbage, spinach and carrots (“Diet”, n.d.).

Tomatoes are a great source of lycopene, which is responsible for lessening the effects of sun damage and boosting the concentration of collagen. It can reduce the onset of wrinkles (“Tomatoes” n.d.).

Not only will eating protein help to fill you up but it is the building block of all the cells in our bodies which is essential for keeping us in good health (Weaver, 2011).

Chapter Four

What can you do about aging?

It seems sensible to live a healthy life by eating a balanced diet, exercising, and covering up in the sun. However prevention is better than cure and it is a case of starting as you mean to continue by implementing a healthy diet full of fresh fruit and vegetables and exercising regularly at an early age. If we had only realised that covering up from the sun and having a good skincare routine would have reduced the impact of wrinkles and pigmentation now.

Skin Therapy and Peels

It is important to find a beauty therapist who you feel comfortable with and is a credible source of information about what you can do to improve your skin to reduce the signs of aging. Research the skincare range they use and recommendations they make – consider if this is a fluffy facial or prescribed for your specific skin conditions and concerns (Arndt, 2007).

Figure 14. Apples (from istock, n.d.)

It would be wonderful if reducing the signs of aging was as simple as photo-shopping an apple like the one in figure 14?

In New Zealand there are a number of professionals you can go to for various levels of skin rejuvenation techniques. These include beauty therapy treatments like, microdermabrasion, peels, EMS, microneedling, IPL, ultrasound, cosmeceuticals and many more. I have detailed a few treatments able to be carried out by beauty therapists in New Zealand.

Glycolic peels are alpha hydroxy acids derived from sugar cane and come in varying concentrations. The skin needs to be prepared by using active cosmeceuticals and low percentage glycolic product before application to avoid adverse reactions from higher percentages of acid. Over time this treatment combined with home care and micro needling can make significant improvements to acne scarring, pigmentation and lines and wrinkles. Glycolic creams used at home will speed up the process over a period of 3-6 months (Hill, 2011).

Lactic acid is used for acne and will provide immediate but short lived plumping of the skin. Repeated use will soften lines and wrinkles and improve the appearance of pigmentation (Image, n.d.).

Figure 85. Pigmentation before and after use of lactic acid peel (from imageskincare, n.d.)

Vitamin A or retinol is a highly effective product used to reduce the signs of aging specifically pigmentation, lines and wrinkles. It can be applied topically by a clinician or as a home treatment (Dermatech, 2012).

Combinations of all three, glycolic acid, vitamin A and lactic acid are also available and are found in varying concentrations. It is essential to find a therapist who understands the effects of these products and knows the pH levels to ensure any potential side effects are minimised (Image, n.d.).

Microdermabrasion is a milder peeling procedure that uses a stream of aluminium crystals or a diamond tip wand and suction to gently exfoliate the skin. It has the benefit of increasing cell turnover and strengthening the outer layer of the epidermis. However, there is the potential to damage the skin with overuse and can result in telangiectasia (Hill, 2005).

Iontophoresis is a treatment that can infuse water soluble active ingredients like Vitamin C in serums deeper into the epidermis. It works to smooth fine lines and wrinkles, reduce pigmentation, soften scars and to normalise skin (Dermatech, 2012).

IPL (intense pulse light) is similar to laser where light rays are used to rejuvenate pigmented areas on the skin. The light is converted to heat energy which destroys areas of concern. Overtime IPL can reduce pigmentation, fine lines and telangiectasia and can also be used to permanently remove unwanted pigmented hair (Ngan, 2009).

Micro needling or Dermal Rolling or “percutaneous collagen induction therapy” as aptly named by Doddaballapur, (2009). The epidermal layer of the skin is pierced by 192 needles creating tiny holes which help stimulate the production of collagen and elastin fibers in the dermal layer. New capillaries arise as a result of the treatment similar to the healing reaction when the skin is damaged through trauma. The skin becomes more receptive to the infusion of serums as a result of the increased permeability of the skin. Pigmentation and scarring may reduce, lines and wrinkles soften and skin thickens and brightens. It is a cost effective treatment but results can vary and are not guaranteed. The needling sensation is not for everyone (Dermatech, 2011).

Toning

The ‘Facial Flex Ultra’ was developed to assist people who had had facial surgery. It works by tightening muscles around the mouth, the sternocleidomastoid and other chest muscles. While reviews are quite positive, it could easily be another momentarily fashionable device that becomes redundant (Conley, 2011).

EMS or electrical muscle stimulation has been proven in studies to increase blood pressure and the cause the muscle pump to contract pulling on the tendons of joints. The effect of this can prevent bone loss and even increase the bone density of patients with spinal cord injuries (Sampson, Burham & Andrews, (as cited in Gueldner et al, 2008). Beauty therapists use the EMS treatment to successfully tone the muscles in the face and necks of clients (Cressy, 2010).

Supplements and HRT

Hydrolysed collagen capsules like Puraz can be taken orally to aid the production of collagen to help thicken the dermis and reduce fine lines and wrinkles; however, most of the literature available appears to be written by clinicians or scientists employed by the companies that produce the collagen products. In my mind there is still a question of whether or not the nutrients in the supplements are able to be absorbed and can actually generate collagen production (South, n.d.).

HRT can replenish oestrogen levels creating fuller skin, minimizing loss of subcutaneous fat increasing hydration and the skins natural moisturizing factors

(D'Allaird, 2010). It can be taken orally or as a progesterone cream. Documented side effects by far outweigh the benefits of the treatment.

Cosmeceuticals

Peptides, retinols and stem cells are all ingredients included in active skincare products. They either maintain and repair the skin, or prolong the effects of peels and other skin treatments that can reduce or reverse the signs of aging. In my experience clients become addicted to peels and micro needling. While they are happy to return for repeat treatments, clients need products with ingredients like glycolic acid, bio-peptides and growth factors to enhance or prolong the effects of clinic treatments to believe they are getting value for money (Rivers, 2008).

Sunblock

And of course sun block! This should be applied every morning especially in New Zealand given the lack of protection from damaging UV radiation from the ozone layer. Apply to face, neck, and décolleté and to the back of hands to prevent sun damage. Sunblock is either a physical or a chemical block or a combination of both. Chemical sunblocks have special elements that provide protection by filtering the amount of ultraviolet radiation that can enter the skin. Physical sunblock's have zinc or titanium oxide in them to block ultra violet radiation ("Sunblock", n.d.).

Conclusion

This research has prompted an interesting journey through numerous websites, books, journals and magazines. The information gathered identified that while many women over 40 feel like me, in that suddenly I am a woman who is aging; there are many that are happy to age gracefully.

Most of the women surveyed were fairly well informed about what they can do to reduce the impact of aging or to slow it down with external facial treatments. Many are exercising more and are watching their diets; however, not so well educated about the breakdown of food required to improve their facial and body skin. This includes a reduction in fats and carbohydrates, and increased calcium.

While there are numerous treatments and products available to alter the external impact of aging, the results vary from person to person and are not lasting. The effects of aging vary from person to person and are dependent on their genes, and on the amount of Ultra Violet Radiation (UVR) they have been exposed to and diet among many other factors.

Lifestyle changes, especially a well-balanced diet, regular cardio and resistance exercise combined with treatments and skin care products prescribed by a beauty therapist are what we need to stem the tide of aging.

Our cells have a limited life so the aging process cannot be reversed. Without reducing alcohol, limiting sun exposure, eliminating stress and giving up smoking other changes to lifestyle will not be as effective. Regardless of what you do some genetic factors, for instance fair skin will be thinner, drier and probably more prone to freckles, photoaging and wrinkling.

If our daughters and granddaughters want gorgeous skin as they age they should avoid stress, smoking, alcohol and any exposure to the sun. They should use good skin care products and start a regular skincare routine as early as possible. They need to exercise regularly including weight bearing and most importantly eat a balanced diet.

Ultimately there are a vast amount of treatments available to prevent or reduce the signs of aging in women.

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