



'The preservation of health is easier than the cure of the disease'

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Physical Activity is referred to as *'any body movement generated by the contraction of skeletal muscles that raises energy expenditure above resting metabolic rate'*¹⁶. As such, it is regarded as a 'key determinant of health'^{12,16}. It includes all types of activities such as *'household and outdoor chores, the jobs held outside the home, walking, cycling, shopping, sport, intentional exercises and other activity of daily living or other recreational activities.'*¹⁶ It is therefore, considered to be a crucial ingredient in adopting a healthy lifestyle and your overall well-being. It also provides opportunity for social engagement, it helps you maintain your independence longer, and provides opportunities to improve your mood and self-esteem. In terms of Alzheimer's Disease and Dementia, there is a growing body of research that links the beneficial aspects of physical activity, not just to your physical/psychological health and well-being but also to improved cognitive performance and reduced cognitive decline⁷.



In order to distinguish between the different types of Physical Activity that you can do on a daily basis, I have found it convenient to use the following categories in my *Tree of Awakening your Positivity*. These being, Stretching/Balance/Coordination, Keeping Active and Gym Training Program.

Keeping Active

On a daily basis, there are many activities you can do at home that are all centred at around Keeping Active. This includes housework (cleaning floors/windows/tables etc, vacuuming, washing clothes, packing/unpacking the dishwasher), general maintenance (gardening, mowing the lawns, cleaning the footpaths, washing the car) and of course, shopping and washing/walking the dogs. As you can see the list is really endless, and is only limited by your own needs, abilities and limitations. From my perspective, I found it relatively easy to set-up a program or check-list to ensure that I don't forget to complete specific activities on a regular basis (daily, weekly, monthly basis). A template for developing your own program or check-list has been included as part of this package.

Gym Training Program

As a member of a local fitness centre, I have access to a wide range of facilities that allow me to keep fit and healthy. In conjunction with my Exercise Physiologist from Empower, Matt Donovan has designed a personalised daily program that takes into account my age, medical diagnosis, goals, free time and the lifestyle that I want to lead. This program gives me direction, instruction and specifically focuses on using a variety of fitness machines and free weights that are designed to strengthen my muscles/bones, build resistance/endurance, improve my balance/posture and provide a cardio workout. At the end of my Gym Training Program I also make use of the clubs heated swimming pool and steam sauna.

Stretching /Balance/Coordination

Every Tuesday afternoon, I visit Matt Donovan at his business in Brookvale, where he not only monitors my progress but he also, based on my needs at that time, introduces me to a variety of new exercises. As I often find it difficult to remember the specific details of each of these new exercises, Matt will either create a video or a written document that shows me how each of these new exercises are to be completed. This, then allows me to practice them in my own time at home on a regular basis. More recently I have decided to add activities/exercises that are designed to improve my motor coordination and balance.



Self-Care Program

According to Sherman (2004), self-care is broadly defined as *'the self-initiated behaviour that people choose to incorporate to promote good health and general well-being'*. As self-care involves a *'proactive, holistic and personalised approach'*¹¹ it is important that each of the following aspects are included in your Self Care Program:

- **Workplace or professional** - This involves activities that help you to work consistently at the professional level expected of you
- **Physical** - Activities that help you to stay fit and healthy, and with enough energy to get through your work and personal commitments.
- **Psychological** - Activities that help you to feel clear-headed and able to intellectually engage with the professional challenges that are found in your work and personal life.
- **Emotional** - Allowing yourself to safely experience your full range of emotions.
- **Spiritual** - This involves having a sense of perspective beyond the day-to-day of life.
- **Relationships** - This is about maintaining healthy, supportive relationships, and ensuring you have diversity in your relationships so that you are not only connected to work people.

<https://schools.au.reachout.com/articles/developing-a-self-care-plan>

I have included a template for a Self-Care check-list as part of this package.

Sauna/Cold Water Plunge (Contrast hydrotherapy)

This Finnish tradition involves subjecting the body to alternative treatments of hot and cold water. When I'm at the gym, I always finish my training program with a hot sauna (5 – 10 minutes) followed by a cold shower for around 60 seconds. While at home, I will alternate a number of times between a hot and cold shower on a daily basis. Not only does this practice increase my heart rate and blood flow, but I find that it triggers the release of adrenalin and endorphins, which leaves me happier, more alert and in an energetic frame of mind. At a cellular level it induces the production of *'heat shock proteins and reduces oxidative stress and inflammation pathway activities.'*⁸ In terms of building my mental resilience, it is important to first reset my Autonomic Nervous System, so that my Parasympathetic Nervous System is able to override my Sympathetic Nervous System. This will then allow me to withstand the extremes in temperature, when I move from the environment of the hot shower to that of the cold shower.

Healthy Diet

Although there is no special diet for people who have diagnosed with Alzheimer's Disease, there is however, a need to follow a well-balanced healthy diet that provides the body and brain with the essential nutrients that it needs to function properly. As I have decided to follow the inflammatory approach in the management of my Alzheimer's Disease, I became very interested in learning about the suggestion that *'Diet seems to influence inflammation and oxidative stress in the brain, high levels of which promote formation of the plaques and tangles that damage brain cells in people with Alzheimer's disease.'*¹⁵ According to Cremonini (2019), research conducted by Fotuhi (2009) and Granzotto (2014), has shown that *dietary patterns based on foods that are rich in omega-3 fatty acids, flavonoids, and other antioxidants stimulate neurogenesis, reduce oxidative activity, and downregulate proinflammatory processes*².

It is for this reason that I decided to learn about three well known diets that place a strong emphasis on patterns of foods that have anti-inflammatory and antioxidant properties.

- **Mediterranean Diet (MeDi)** – is an eating pattern that focuses on *'a high consumption of fresh fruits and vegetables, legumes, olive oil, nuts, seeds, moderate consumption of fish, low to moderate consumption of dairy products and alcohol, and low consumption of red and processed meats.'*
- **DASH Diet** – emphasises many of the components of the Mediterranean Diet such as *'high in fruits, vegetables, nuts whole-cereal products, low-fat dairy products, fish and poultry'* plus a reduction in *'sodium, saturated fat, total fats, carbohydrates'*.
- **MIND Diet** – is a hybrid of the Mediterranean Diet and the DASH Diet and is *based on 10 brain-healthy foods (leafy green vegetables, nuts, berries, beans, whole grains, fish, poultry, oil and wine) and 5 unhealthy foods (red meats, butter and stick margarines, cheese, pastries and sweets, and fried or fast food)'*. Cremonini (2019)

There is another dietary pattern, referred to as the Ketogenic Diet, that *'assumes a very high-fat and low-carbohydrate diet'*¹³. By restricting the amount of carbohydrates that are available to be consumed to produce energy, *'it triggers a systemic shift from glucose metabolism toward the metabolism of fatty acids (FA) yielding ketone bodies (KB)'*¹³. Presently, I haven't done enough research on this dietary pattern.

As I accept that I have a long haul in front of me, I have chosen, mainly due to time constraints and accessibility to ingredients, to take the best out of each of these diets, and combine them together to create a well-balanced healthy diet that works for me. Besides eating red meat and poultry, I consume a lot of leafy vegetables, fruit, nuts and legumes on a regular basis. I only use extra virgin olive oil to cook and steer away from using margarine and butter. I drink coffee and green tea each day, but as I'm not really a fish eater, I will take an Omega 3 supplement. I also eat a lot of strawberries/blueberries, some dark chocolate and dishes such as curries, that contain turmeric (a source of curcumin). Although I will very occasionally eat pasta and rice, I mostly replace these items with cauliflower rice. In terms of maintaining a healthy and diversified gut microbiota, my breakfast in the morning is usually consists of a low carbohydrate muesli (which contains toasted nuts and a probiotic) with natural yoghurt.

Reduced Alcohol

The consumption of alcohol has always been a natural and normal part of my life. From my early teenage years, there has been a gradual progression from beer/spirits to wine. Although, at this stage, you might be thinking that I am an excessive drinker that is far from the truth. Rather, since turning 50, over ten years ago, I now only drink for pleasure and enjoyment, especially when I'm in the company of family and close friends, celebrating a personal achievement or a special occasion. It is for that reason; I mainly drink the red wine that I have been cellaring and the whisky that I have collected from different parts of the world.

Limited Processed Food

The brain needs its own brand of food. *'It requires healthy fats, fruits, vegetables, lean proteins and adequate vitamins and minerals. Consuming too little of these foods and too many complex carbohydrates, processed foods and sugar, is known to stimulate the production of toxins in the body. These toxins can lead to inflammation, the build-up of plaques in the brain and result in impaired cognitive function.'*

(<https://www.alzheimers.net/foods-that-induce-memory-loss>)

Given that our brain is already comprised, I have taken the view that I need to limit the amount of processed food (including junk food) that I consume on a daily basis. *'In plain English, this means commercial breads and buns, packaged snacks, confectionery and desserts, soft drink and sweetened drinks, cold cuts of meat and chicken nuggets, instant noodles and soups, frozen or shelf stable meals, margarine, processed cheese. My aim here is to reduce the amount of artificial flavouring agents, preservatives, carbohydrates, saturated and trans-fats, sugar and salt that I am being exposed to on a daily basis'.*

(<https://qz.com/1234901/the-road-to-alzheimers-disease-is-lined-with-processed-foods/>)

Regular/Intermittent Fasting

Normally our bodies and of course our brains, are fuelled by the glucose (in the form of glycogen) that we obtain from the foods we eat. When we fast for periods greater than 12 hours, there is a *'metabolic switch'* as our neurones now rely on an alternative energy source called *'ketone bodies'*.⁴ There is a growing body of evidence suggesting that ketone bodies not only provide our neurones with more energy, that they also might be linked to improved learning, thinking and memory. Cremonini (2019) reports that animal modelling has found that Intermittent fasting may also *'promote hippocampal neurogenesis, activate adaptive stress response systems, and enhance neural plasticity'*.

On most days, I always try to keep at least 12 hours between the time I have dinner in the evening to the time that I have breakfast in the morning. This can be achieved, for example, by finishing dinner by 8 pm at night and then having breakfast in the morning at 8.00 am (the so called 8,8 regime). There is of course nothing wrong in changing this to 7 pm for dinner and 7 am for breakfast OR 7.30 pm for dinner and 7.30 am for breakfast. The important thing is that you maintain this minimum of 12 hours of fasting. On alternate days of the week, I will then extend my fasting time to around 14 hours, as I won't have breakfast until I return from taking my dogs on separate walks in the morning. Which is around 9 am.

Reduce Stress

Living with a diagnosis of Alzheimer's Disease brings with it, not only many changes to your life, but it also places demands on your life that are very stressful. Too much stress, *'any perturbation from the outside world that disrupts homeostasis'*, can be overwhelming and via the *'cortisol connection'*, causes neurotoxic damage to the brain cells in your hippocampus that are connected to your short-term memory³. When cortisol levels are persistently high such as in chronic stress, levels of certain neurotransmitters are reduced and the suppression of neurogenesis is induced⁶. According to Justice (2018), this may also have a role in driving the progression and exacerbating the symptoms of Alzheimer's Disease. Therefore, taking steps to reduce and manage the amount of stress in your daily life is a very important component of any strategy that is designed to help you manage Alzheimer's disease.

In terms of reducing the amount of stress in my life, I will often try to plan ahead, avoid any potential triggers and if you understand your own personal boundaries and limits, it is easy to say 'no' when un-realistic expectations are placed on you. I also, on a daily basis, make use of a lot of stress reduction techniques such as meditation, physical activity, deep breathing, listening to music, eating healthy, working in the garden and getting enough quality sleep.

Quality Sleep

Sleep can have a major impact on your overall health and wellbeing, as it is, during this time that your brain removes waste products, repairs damage and produces new brain cells. Obviously, when your sleep is interrupted, not only are you deprived of quality sleep but these restorative processes are also interrupted.

Given that I have sleep apnoea, and sleep disturbances are common in people who have Alzheimer's Disease¹⁷, I am obviously concerned about how much quality sleep I receive each night. It is for this reason that I follow a very structured routine which involves getting at least eight hours of quality sleep each night, going to bed and waking up in the morning at approximately the same time each day. Besides, maintaining a comfortable setting in the bedroom, I also follow a nightly ritual so that I send signals to my brain when it time to go to sleep. This includes, avoiding foods after 7.30 pm and not using my computer after 9.30 pm due to the effects of blue light.

Supplements – Vitamins, minerals and herbal medicines

This is a very contentious issue as everyone has their own opinions and there isn't much evidence from the literature that is supportive of any particular supplement over another. Likewise, the literature also contains reference to a number of herbal preparations that lay claim to improving your cognitive function. Again, through my research I haven't found any conclusive evidence that supports their ability to improve your cognitive function. In fact, a lot of these herbal preparations, depending on your own medical status and what particular stage you are at in your Dementia and Alzheimer's Disease, can interact and cause a range of dangerous side effects if they are taken with your current medication. Given my background in Pharmacy, I strongly advise you to first seek the opinion of your Medical Practitioner if you are considering taking a particular supplement that you have heard or read about.

With this in mind, I decided in consultation with my doctor, to undergo a complete blood test, to see if there were any areas in my body that were lacking and needed to be addressed. In my case, a deficiency of vitamins A, D and E were detected, and my blood levels of magnesium and calcium were low. Thankfully I didn't have any toxic levels of heavy metals to worry about. In our present climate, as I want to support Australian companies, I regularly buy all of my vitamins and minerals from Blackmores, which was established in 1932, and is Australia's leading health care company.

In terms of promoting my own brain health and growth, besides eating a healthy well-balanced diet, I have noticed over the past 6 months, a number of benefits in taking unrefined organic coconut oil and Souvenaid on a daily basis. Coconut oil, being high MCTs, provide an alternative energy source in the form of ketones for your brain cells. Whereas, *'Souvenaid is a once-daily drink containing a mixture of precursors and cofactors (long-chain omega-3 fatty acids, uridine, choline, B vitamins, vitamin C, vitamin E, and selenium), which was developed to support the formation and function of neuronal membranes and synapses.'*¹ I consider both of these to be highly important in my management of Alzheimer's Disease, as I have learnt through my research, that the brains cells in Alzheimer patients lose their ability to use glucose as an energy source, and therefore there is some evidence supporting the use of unrefined coconut oil. Whereas with Souvenaid, given the success that I am having with my clinical trial, I want to be able to provide the best possible environment for any neurones to grow in my brain.

Either way, you should never take any vitamin and/or mineral supplement unless it has been approved by a medical practitioner.

Assistive Technology

According to Klimova (2014), Assistive Technology is defined as '*any item, piece of equipment, or product system, whether acquired commercially, modified, or customized, that is used to increase, maintain, or improve functional capabilities of individuals with disabilities*'. On the basis of their intended purpose, the Alzheimer's Society has divided Assistive Technology into the following four categories

- Devices for daily living
- Safety devices
- Telecare devices
- Devices to support engagement, social participation and leisure.

Presently, I am piloting a medical App that is called *Perx*. Besides sending me regular reminders regarding specific parts of my daily routine such as, when to take my medication, when to complete my brain exercises, this App also keeps a record of all of the activities that I complete on a daily basis. As I am a fairly competitive person, the added features of a '*point and level system*' supported with award bonuses, is a great way of motivating me each day, to complete all of my allocated tasks. As of World Alzheimer's Day (21 September 2020) I have reached Level 7 with 16,888 points. My current streak is 160 days. This means that since April 14, I have reached each of the targets that I have set myself.

I am also piloting a website called *MooveandGroove*, to determine how this piece of Assistive Technology could be used, on an individual basis, by people who have been diagnosed with Alzheimer's Disease. Presently, I using the Music facility, as a means of accessing the music I want to listen to on a regular basis and the Podcast facility to virtually travel to, different parts of the world. Due to the diversity of activities that are available through this website, *MooveandGroove* is enjoying a great deal of success, especially in the area of Aged Care facilities.

Using Zoom on my computer is a great way of keeping in contact with family members and friends. Especially with the restrictions associated with COVID-19, this piece of Assistive Technology is also allowing me to continue with advocacy work, as it provides a great platform to participate in meetings and attend webinars that are being held in Australia and overseas.

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