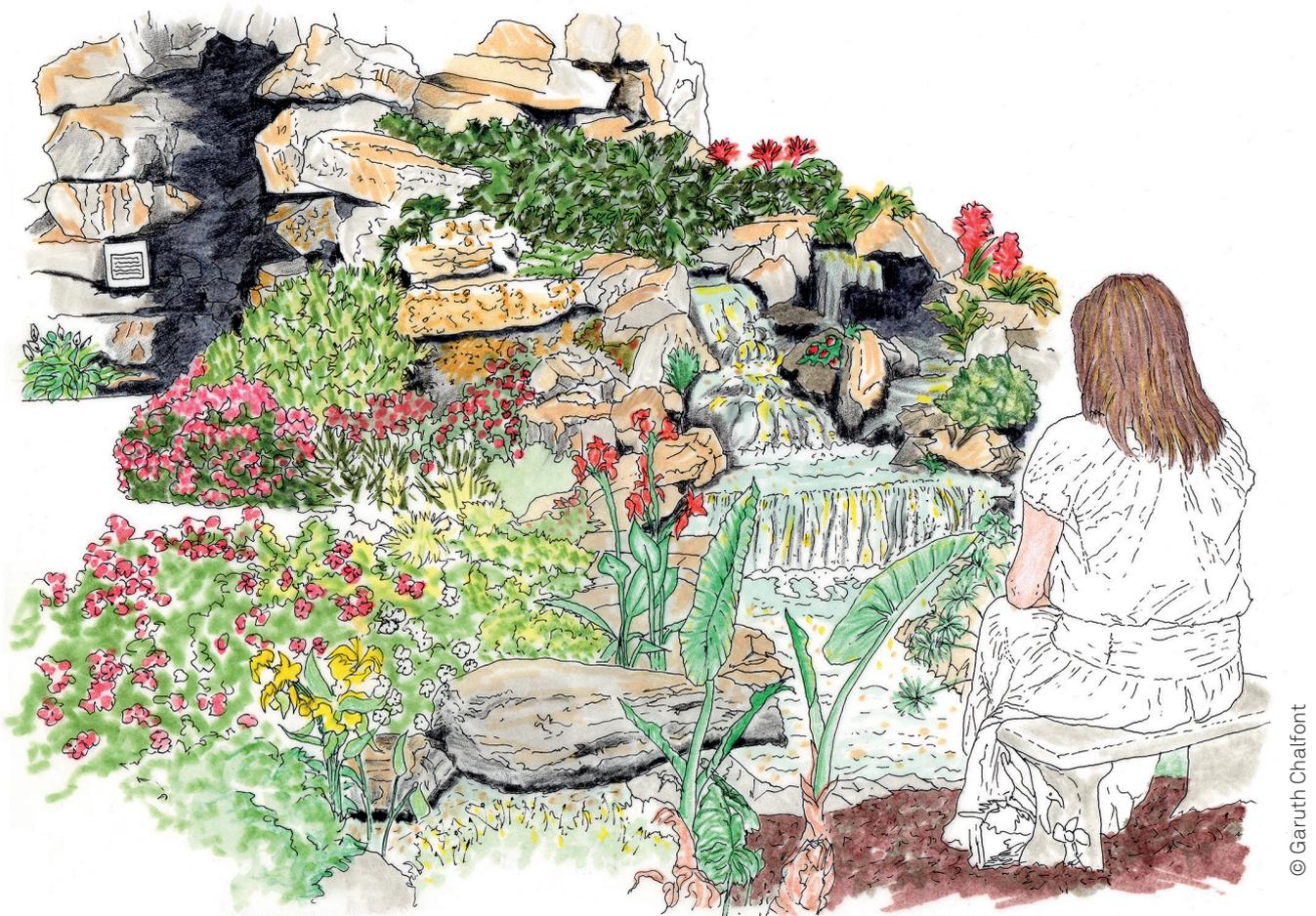


Healthy Ageing through Dementia Prevention

Garuth Chalfont



© Garuth Chalfont

The latest figures show that the prevalence of dementia globally is still increasing – someone in the world develops dementia every 3 seconds. The World Alzheimer Report 2015 estimated that 46.8 million people worldwide were living with dementia in 2015. This number will almost double every 20 years. Assessment and intervention are therefore critical. For caring professionals, knowing what can be done is critical to keeping your patients, loved ones and yourselves as healthy as possible. This article contains evidence-based ways to prevent or slow down dementia as part of healthy ageing.

Primarily prevention reduces a person's risk for developing dementia. An example is lifestyle-related advice on websites. Improving public health and health education is helping to lower the dementia incidence in Central Europe. Lifestyles have improved because older people are taking advice about diet, exercise, quitting smoking and increasing cognitive and social activities. Treating chronic illnesses such as heart disease or diabetes contributes to primary prevention. These are all modifiable risk factors for dementia, which may account for 35% of dementia cases. A reduction of 10% per decade in the prevalence of several lifestyle risk factors (obesity, physical inactivity, hypertension and smoking) could potentially reduce the number of worldwide cases of Alzheimer's in 2050 by 9 million. Multimodal interventions targeting multiple risk factors can

add to or increase preventive effects. They are more beneficial than targeting just one risk factor.

A 2-year multi-domain intervention based in Finland to prevent cognitive decline in elderly people targeted diet, exercise, cognitive training and vascular risk monitoring. The FINGER trial included participants who were already at risk for dementia. The intervention consisted of nutritional guidance, exercise, cognitive training, social activity and management of metabolic and vascular risk factors. The study found that a multi-domain intervention could improve or maintain cognitive functioning in at-risk elderly people.

Secondary prevention is concerned with diagnosing and treating conditions early before they cause significant ill health. It is designed for people who are experiencing symptoms. They may have mild cognitive impairment or be in the early stages of dementia. This can be delivered at a community project designed for people with dementia, such as grow-your-own gardening or social dancing. Sometimes these are offered in a day centre or a care farm. Such projects exist widely, but they rarely research the intervention scientifically. However, feedback from service users and carers confirms some benefits.

There are also therapeutic programs such as Cognitive Stimulation Therapy (CST). This was developed at University College London for small groups of people with early dementia or MCI. Sessions are held weekly to stimulate cognition during 45-minute activity sessions led by a qualified therapist. CST is the only non-drug therapeutic intervention for dementia endorsed and funded by the UK National Health Service (NHS).

Innovative research projects in the USA and elsewhere are finding and addressing a wide range of root-causes of dementia. Memory loss and confusion may develop because of poor diet, inflammation in the body, high levels of stress, poor sleep, lack of exercise, poor gastrointestinal (gut biome) health, lack of cognitive stimulation or heavy metal toxicity, to name a few. Memory loss in patients with subjective cognitive impairment, mild cognitive impairment, and at least the early phase of Alzheimer's disease, may be reversed, and improvement sustained, if a therapeutic program to address all the root causes is achieved.

Private practitioners around the world help individuals with cognitive complaints. These medical professionals see patients individually. Assessments are lengthy, comprehensive and often expensive. Services include various levels of support to clients prescribed a treatment program. Extensive data analysis allows these companies to evaluate and promote their success to new patients. Such services are not yet part of the NHS in the UK, but this author is designing a program to make it possible.

Tertiary prevention focuses on reducing negative impact of an existing disease through restoring function and reducing complications. It helps people with moderate to severe dementia become stable and improve their wellbeing. Tertiary prevention often occurs in a care home or nursing home with residents or patients.



© Garuth Chalfont

There is evidence for numerous non-drug treatments which can improve cognitive function in people with a diagnosis of dementia. These are often cognitive stimulation plus physical, psychosocial or nutritional. Participants are supported by caregivers, nurses, students or a social network. This review found nutrition, fasting, oxygen therapy, stress reduction, sleep improvement and other modes addressed the underlying causes of dementia. Scan this code to read “A mixed methods systematic review of multimodal non-pharmacological interventions to improve cognition for people with dementia” in *Dementia: International Journal of Social Research and Practice*.



Architecture and Nature for Cognitive Health

While most elders maintain good cognitive function into old age, a stimulating environment can be designed to keep them physically, mentally and socially active, reduce depression, and ameliorate problems of frailty and impairment. Gardens and nature spaces are important for reducing loneliness and isolation, which can lead to cognitive decline, depression and dementia.

Nature was intrinsic to early settings for dwelling, ageing and human health as evidenced by physic, monastery and medicinal gardens at the heart of these communities. As well as nature for medicine, a natural, plant-rich environment facilitated healthy engagement throughout the lifecycle. With the advent of modern architectures of care, simultaneous with pharmaceutical symptoms management, the importance of nature for health became a matter of aesthetics and marketing rather than a practical necessity. The 21st century invites nature back into the picture to support the healthy ageing agenda – particularly for maintaining cognitive health. Edge spaces and therapeutic green spaces can help.

Edge Spaces: Architectural features must enable easy physical and visual access to the outdoors, as well as invite nat-

ural elements such as daylight and views to flow inward: complex windows, porches, windowed corridors, covered walkways, conservatories and garden rooms. Scan this code to read 'Building Edge' in *Alzheimer's Care Quarterly*.



Therapeutic Green Spaces: The outdoor environment plays an important role in mental and physical well-being by providing a wide range of benefits, such as exercise, fresh air, emotional well-being, the opportunity for informal encounters with neighbors and friends, the appreciation of the countryside and decreased levels of agitation. In the UK, the King's Fund program, Enhancing the Healing Environment, worked with almost 30 hospitals and 35 hospices to support the design of healing environments, many with a focus on gardens. Gardens are also important to support recovery from illness. Horatio's Garden provides beautiful therapeutic gardens for spinal injury patients. Dementia care gardens can also improve mood. Scan this code to read 'Exposure to nature gardens...' in *Dementia: International Journal of Social Research and Practice*.



If architecture connects people and nature environments in meaningful ways, this helps mentally and emotionally by providing opportunities that lift the spirit, enhance the mood and stimulate the senses to increase overall wellbeing and quality of life. Landscape design, architecture and care practice involving nature and the natural world will support proactive therapeutic opportunities. There are many activities, besides nature-based ones that help prevent the decline of dementia.

Examples of evidence-based dementia prevention activities

- **Nature:** Horticultural therapy, gardening, barefoot walking (grounding), sunshine, animals and pets
- **Exercise:** High intensity interval training (HIIT), swimming, cycling, aerobics, walking, weight training
- **Mind-body, Energy balancing:** Dance, yoga, meditation, Tai Chi, Shiatsu, acupressure, Reiki, massage
- **Cognitive stimulation:** Crafts, art, cooking, drawing, sewing, puzzles, math, playing an instrument
- **Nutrition:** Good fats, omega 3's, vegetables, herbs, spices, berries, coffee, green tea, plenty of water

- **Socialising:** Join a group, volunteer, do intergenerational or multicultural activities, sing in a choir

Outlook and Conclusion

Improve assessments and interventions for dementia with the following recommendations:

- Carry out comprehensive assessments of lifestyle as well as metabolic factors
- Provide multi-factorial lifestyle interventions for people in small groups or individually
- Design interventions at a neighbourhood level – in a park, garden, day centre, care farm, etc.
- Scientifically evaluate all interventions so methods and outcomes are known and improved

If followed, these recommendations would increase the effectiveness of interventions, the number of people who could benefit, and the speed at which good practice in dementia prevention succeeds.

References

- Alzheimer's Disease International, "The Global Voice on Dementia." Available from <https://www.alz.co.uk/research/statistics> https://www.alzheimers.org.uk/site/scripts/documents_info.php?documentID=2766
- Bredesen, D. E. et al. (2018). "Reversal of cognitive decline: 100 patients." *Journal of Alzheimer's Disease & Parkinsonism*, 8(5):1-6. <https://doi.org/10.4172/2161-0460.1000450>
- Chalfont, G. & Walker, A. (2013). *Dementia Green Care Handbook of Therapeutic Design and Practice*. Arizona: safehousebooks. Download www.chalfontdesign.com
- Chalfont, G. (2009). *Naturgestützte Therapie: Tier- und pflanzen-gestützte Therapie für Menschen mit Demenz planen, gestalten und ausführen*. Bern: Hogrefe.
- Chalfont, G., Milligan, C. & Simpson, J. (2018). "A mixed methods systematic review of multimodal non-pharmacological interventions to improve cognition for people with dementia." *Dementia: The International Journal of Social Research and Practice* 0(0), 1-45. <https://doi.org/10.1177/1471301218795289>
- Ngandu, T. et al. (2015). "A 2 year multidomain intervention of diet, exercise, cognitive training, and vascular risk monitoring versus control to prevent cognitive decline in at-risk elderly people (FINGER): a randomised controlled trial." *Lancet (London, England)*, 385(9984):2255-2263. [https://doi.org/10.1016/S0140-6736\(15\)60461-5](https://doi.org/10.1016/S0140-6736(15)60461-5)
- Whear, R. et al. (2014). "What Is the Impact of Using Outdoor Spaces Such as Gardens on the Physical and Mental Well-Being of Those With Dementia? A Systematic Review of Quantitative and Qualitative Evidence." *Journal of the American Medical Directors Association*, 15(10), 697-705.



Dr. Garuth Chalfont ist Landschaftsarchitekt, Lehrer und Forscher, spezialisiert auf die Lebenswelt demenziell erkrankter Menschen