## **Prevention of Cognitive Decline**

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While some degree of cognitive change is natural with aging,

many factors can help slow or even prevent significant decline.

It's is very optimistic news that the risk of dementia can be significantly reduced when individuals focus on a combination of lifestyle strategies that promote brain health and overall well-being.

# All the preventive lifestyle interventions are attractive,low-cost, free of side effects,wide ranging positive effects on both mental and physical health.



#### **Strategies**

Mental stimulation

Physical Exercise

Stress Management

Quality Sleep

Social Engagement

Lifelong Intellectual Engagement

Diet & supplement

Prevent chronic conditions

Limit harmful substances

Regular health screenings



#### Cognitive Reserve

The ability of an individual to demonstrate no cognitive signs of ageing despite an ageing brain is called **cognitive reserve.** 

Done regularly makes neurons fire and wire and create reserve.



### **Mental Stimulation**

#### Build your vocabulary:

Research shows that many more regions of the brain are involved in vocabulary tasks particularly in areas of visual and auditory processing.



## **Reading a good book**

Reading a good book

It can reduce stress by around 68%

It can bring about inner peace, relaxation and tranquility.

Reading spiritual texts can lower blood pressure and bring about an immense sense of calm.

Self-help books shown to help people suffering from certain mood disorders and mild mental illnesses.



## Reading brings clarity and helps you to become more articulate and well-spoken.



- Keep a notebook with you when you read.
- Write down one unfamiliar word, then look up the definition.
- Try to use that word five times the next day.



#### Mental Stimulation for Dementia

 Playing card games emerge as a multifaceted approach, not only stimulating the brain but also fostering social interaction and cognitive wellbeing in older adults with dementia.





Photo Credit to internet

Li, D. (2024). The Cognitive Benefits of Playing Contract Bridge in Elderly Patients with Dementia. International Journal of Psychiatry, 1-8.

### GAMES & ACTIVITIES FOR LOVED ONES WITH DEMENTIA

#### social games thinking games physical activities • Jigsaw Puzzles Parachute Game • Bingo Dominoes Gardening Card Games Board Games Sudoku Dancing • Charades • Tai Chi Chess Walking Arts & Crafts Trivia Games

#### benefits

- Delays the decline of one's memory
- Important source of socialisation and interaction



Photo Credit to internet

1. Lockett, E. (2022). Brain games for dementia: Why they help, which games to play. [online] Healthline. Available at: <u>https://www.healthline.com/health/alzheimers-dementia/memory-games-for-dementia</u>.

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2. Anon, (n.d.). 32 Therapeutic Activities for Patients with Dementia. [online] Available at: https://neuraleffects.com/blog/therapeutic-activities-for-dementia-patients/.

## Examples of Quick Card Games for Dementia

- 1. Go Fish
- 2. Solitaire
- 3. Match the Photos with Fun Facts Discussion Guide Card Game
- 4. Memory
- 5. War
- 6. Expressions Card Game
- 7. Blackjack
- 8. Hearts



Keeping Busy. (2023). 6 Easy Card Games for Dementia Patients [2023]. [online] Available at: https://keepingbusy.com/blogs/dementia/easy-card-games?srsltid=AfmBOoq7OaOEuyz\_clfiDdNYI5YZmI05clX5budFGFgsXlwN94LDKhU3 [Accessed 5 Nov. 2024].

#### **Physical Exercise**

Effect of exercise on cognitive decline is partially mediated by myokines and brainmuscle crosstalk.

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Potential mechanisms include increased cerebral blood flow; production of neurotrophic factors(BDNF, insulin-like growth factor 1), reduction of neurotoxic factors(C-reactive protein, cortisol, interleukin-6) lower inflammation; better control of chronic disease(stroke, diabetes,cardiovascular disease); and the prevention of depression.  Positive association between physical activity and cognition seems to relate to the sparing of gray matter volume in brain regions susceptable to agerelated atrophy including frontal and prefrontal lobes, and the hippocampus and temporal lobes.







Exercise is particularly beneficial for improving executive function by promoting neuroplasticity and increasing blood flow to the brain.



These benefits occured in both healthy individual, those with MCI or Alzheimer's disease.



Mind-body exercise(e.g., Tai-chi) significantly improved attention and processing speed,



Baduanjin(i.e.,movement exercise) enhance memory and its subdomains(immediate memory and delayed memory), executive function, and processing speed. Multicomponent exercise programs combining aerobic, resistance, balance and flexibility exercises seem appropriate strategies





#### Stress management

Mildfulness and meditation, Yoga and Relaxation.

Meditation can calm your body, slow your breathing and reduce stress and anxiety.

It increase brain ability to process information.



## Stress Management

Meditation,	
Breathing exercise,	
Gentle Yoga based poses	
Stretching	
Progressive relaxation,	
Listening theta frequency of 7.85 Hz plus music	
Encourage adequate sleep	
All these are total one hour per day	
Purpose for these exercises are to increase the patients's sense of relaxation, concentration and aw	areness

### Listen to or play music



Listening to happy tunes helps generate more innovative solutions compared to being in silence.

Music learning, listening and singing engages the brain in bihemisphereic activity and favourable changes in neurotransmitter environment

## **Quality sleep**

Sleep hygiene: ensure 7-9 hr of quality sleep per night.

Consistent sleep schedule support memory consolidation. i.e- it help regulate your circadian rhythm.

Address sleep disorders: condition like sleep apnoea can contribute to cognitive problem.



#### Social Engagement

Staying connected with friends and family improve mental health.



#### **Social engagement**

#### **Diet & supplements**

Omega 3 fatty acids with curcumin,

Curcumin target inflammatory and antioxidant pathways as well as amyloid aggregation although there may be problems with bioavailability and crossing the blood-brain barrier.

Multivitamin and minerals, combinational formulations demonstrate improvements in cognitive performance.



Minimally processed foods including plant-based (vegan)

High in complex carbohydrate(whole grains, legumes, soy products ,vegetables and fruits, seeds and nuts)

Low in harmful fat, sweetners and refined carbohydrates



#### EGALITARIANISM

The philosophical idea that all people are born equal and are all of equal worth.



If Cognitive performance is a product of the strength and pattern of neural connections, it stands to reason that individual variation in neural connections should be associated with varied cognitive performance.



### **Cognitive Egalitarianism?**

Cognitive Training and Rehabilitation Training is expected to fortify the neuromodulatory systems controlling cognitive functions and greater **activation of a group of neurons** 

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This is based on neural plasticity

Residual memory available is used to enhance specific tasks needed for ADL

Training is applicable in mild to moderate degrees of disease



# How do you train your brain?

- Think of your brain like a muscle.
- Neurones are like the muscle fibres of the brain and create pathways that contribute to thinking pattern and behaviours.
- Pathways are developed over time through practice and experience.
- Creating new thinking patterns and new behavior are more challenging: like forming a new path in the bush.

Deliberate practice of behaviour and thinking patterns such as optimistic or resilient thought patterns change your brain.

Different focuses of physical training leads to different results in your body.

In the same way, brain training needs to be targeted and goal-oriented.



#### ➤Think laterally

Lateral thinking, a concept introduced by Edward de Bono, involves looking at problems from new and unusual angles, in a more freedom manner.

i.e : thinking out of the box



#### Break it Down

When faced with complex problem, breaking them down into smaller, manageable parts can make them less daunting.





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**Brain Endurance Training** 

- 1. It can actually change the way your brain processes fatigue.
- 2. Improved synaptic efficiency, increased mental resilience, enhanced cognitive control.





When you regularly train your brain under mental stress, your brain start to adapt and become more efficient at maintaining cognitive performance, even when the rest of your body is screaming for a break.



## Final tips and takeaways

1) Stay cognitively engaged

2) Stay physically fit and get quality sleep

3)Take care of your vision, hearing and diet

4)Practise ways and means to lessen stress & mental cloudiness



## "May you find serenity and tranquility in a world you may not always understand."

- Sandra Sturz

Thank You