



Dr. Nilesh Shah





*Measures to prevent
cognitive decline
and
dementia
in later life*

Conflict of interest

I would like to
disclose that I own
stocks in the pharma
companies whose
drugs I am going to
recommend



Preamble

This presentation is based on:

- ❑ Prospective, non-randomized, uncontrolled trial
- ❑ Duration: 20 years (2016 – 2036)
- ❑ Sample size: 1
- ❑ Results: Will be known in due course of time



Neurocognitive impairment (Dementia)

- ❑ Aging
- ❑ Cognitive decline
- ❑ Cognitive reserve
- ❑ Cognitive exercises



Brain Departments	Functions	Areas
House Keeping Maintenance & Servicing	Vital functions, Sleep, Appetite, Sex	Hypothalamus, ANS
Purchasing, Processing & Marketing Input, Production & Output	Perception & Physical Activities	Sensory & Motor Systems
Logistics & Planning Cognitive Activities	Executive Functions	DLPFC
Human Resource (HR) Emotions	Feelings – Reception & Expression Love, Bonding, Marriage	Limbic System
Public Relationship	Interpersonal Relationship	Orbitofrontal Parts of the Frontal Lobes (Social Brain)

Measures to prevent dementia & cognitive decline

Life style measures

- Meditation,
- Sex, Sleep & Diet
- Marriage
- Physical activities
- Mental activities
- Emotional exercises
- Social engagements

Multitasking



Medications

- Lithium
- Antihypertensive, Antidiabetic
- Steroid hormones
- NSAIDs,
- Cholinesterase inhibitors
- Nutritional supplements, Vitamins, Others

Discuss world problems while walking with friends

Meditation to gain control over autonomic nervous system



*Regular
Indulgence
In
Sex
In Reality
Or
Fantasy*

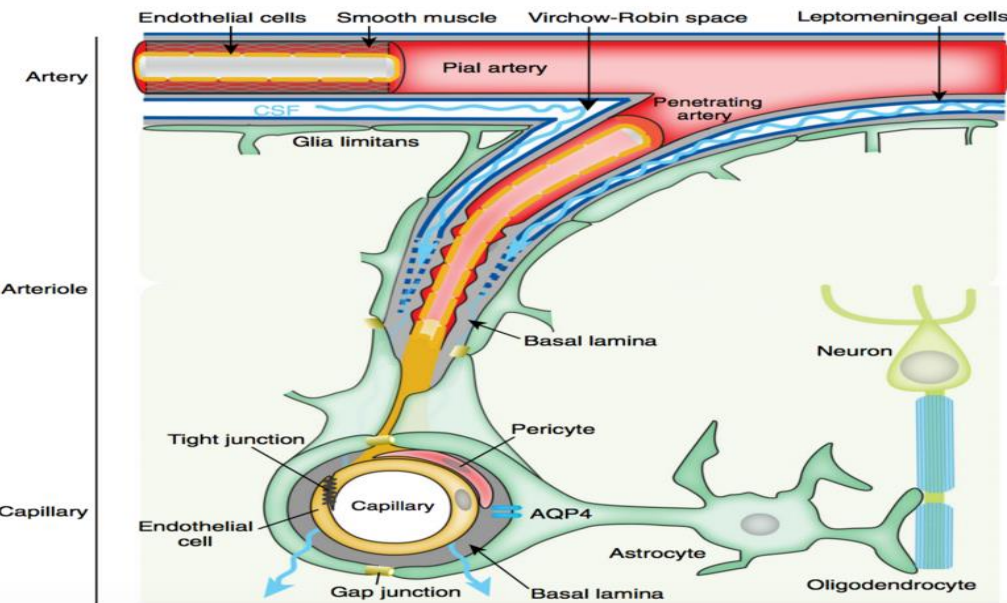
ICECREAM MOVIES



Sleep and Dementia

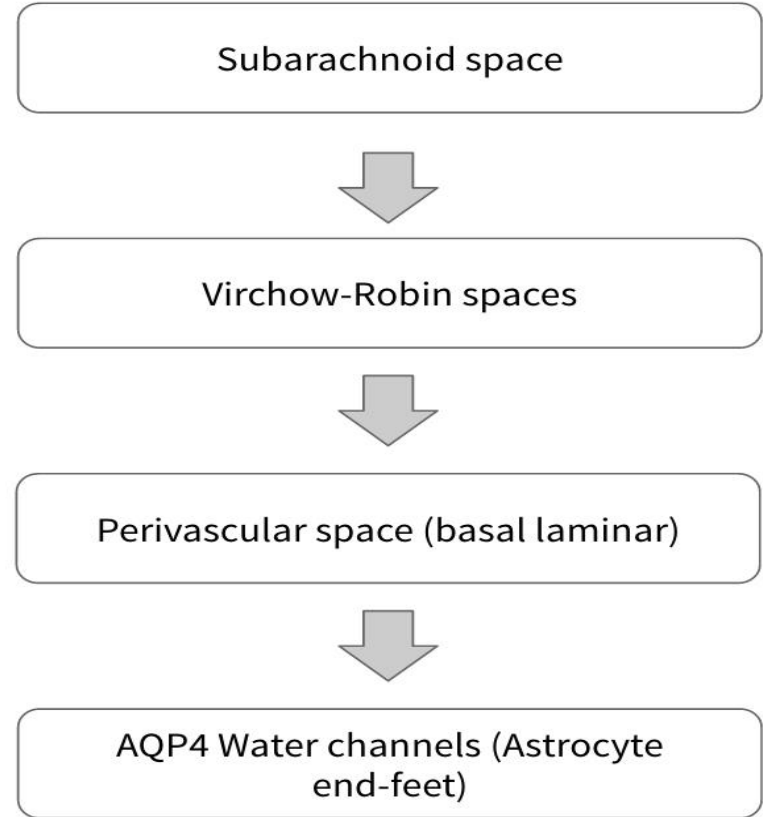
GLYMPHATIC SYSTEM PHYSIOLOGY

CSF is the main fluid that travels throughout brain to remove toxins



Jessen et al., 2015.

A functional waste clearance pathway



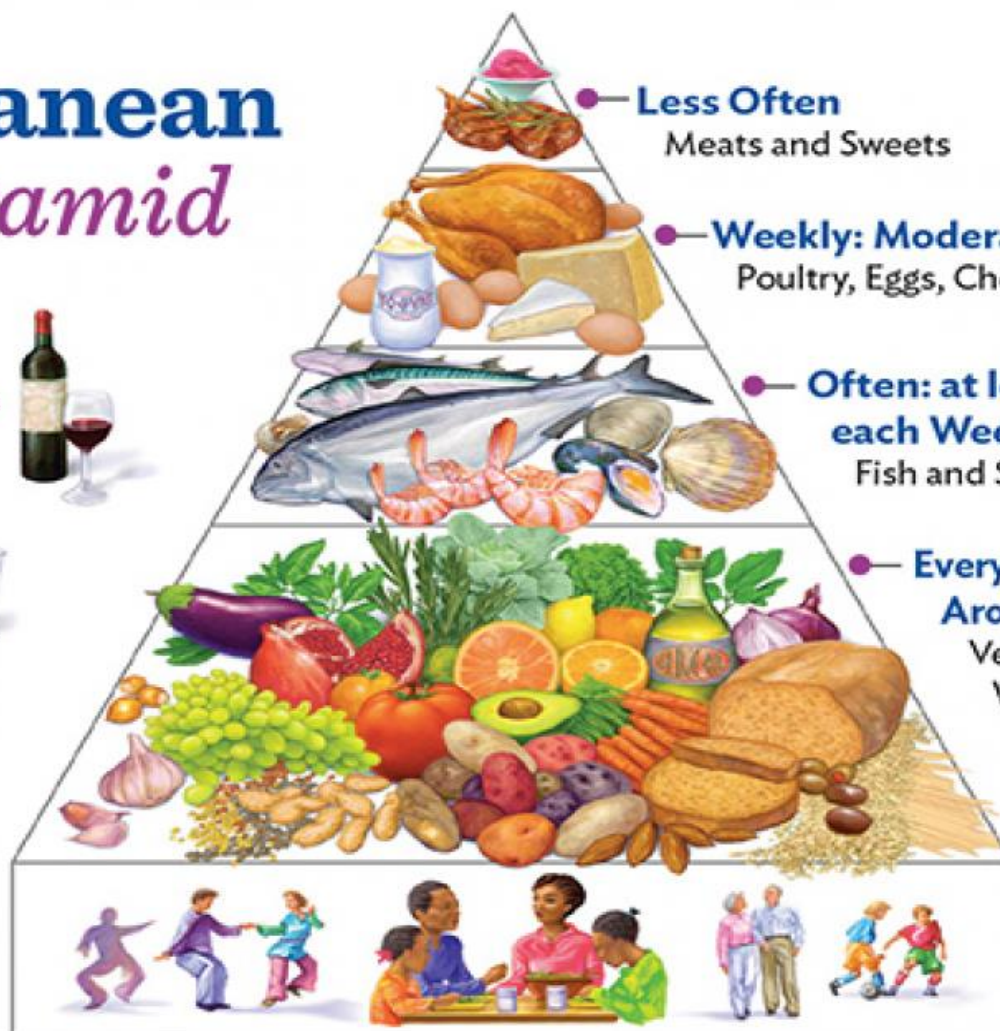
Clears Amyloid plaques

Mediterranean Diet Pyramid

In Moderation
Wine



Every Day
Water



Less Often
Meats and Sweets

Weekly: Moderate Portions
Poultry, Eggs, Cheese and Yogurt

Often: at least Twice
each Week
Fish and Seafood

Every Day: Base Each Meal
Around these Foods
Vegetables, Fruits, Whole
Wheat Grains, Olive Oil,
Beans, Nuts, Legumes
and Seeds, Herbs
and Spices

Every Day
Be Physically Active;
Enjoy Meals with
Others

Illustration by George Middlemore

12 Health Benefits of Dark Chocolate



1. Slows the signs of aging.
2. Lowers your blood pressure.
3. Helps control blood sugar.
4. Reduces the risk of diabetes.
5. Rich of vital vitamins and minerals.
6. Increases blood flow to the brain and heart.
7. Contains anti-depressant agents.
8. Prevents heart diseases.
9. Contains antioxidants that can protect your cells.
10. Lowers your cholesterol levels.
11. Improves your mood.
12. Reduces your stress.



MAKE GIFS AT [GIFSOUP.COM](https://www.gifsoup.com)



THANKS EVERYONE!

Salsa



Physical activities

Regular dancing reduced the risk of dementia by 76%, twice as much as reading.

Doing crossword puzzles at least four days a week reduced the risk by 47%, while cycling and swimming offered no benefit at all.



IG: @Daquan

<http://bestelectrichoverboard.com>





Mental Activities

$$8 = 56$$

$$7 = 42$$

$$6 = 30$$

$$5 = 20$$

$$3 = ?$$



Cognitive Exercises

- Cooking
- Acting
- Travelling
- Puzzle
- Crossword
- Anagram



- Reading
- Games
- Maths
- Technology
- New language : 'Ayyo'

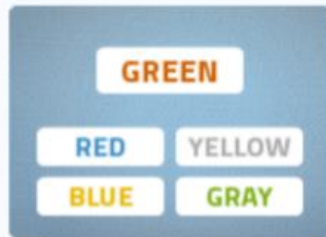
Neuro Nation brain games



Alphabet Soup



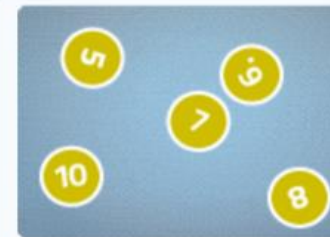
Clockwise



Color Confusion



Color Craze



Eagle Eye



Flash Glance



Focus Master



Form Fever



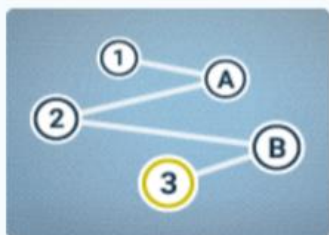
Form Fever Speed



Polaroid Picture



Quick Count



Quick Switch



Split Second



Turnabout



Turning Tables

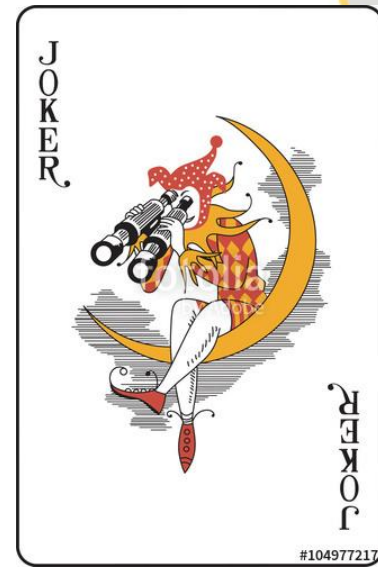
Cognitive exercises with playing cards

- ❑ Cognitive exercises with playing cards
- ❑ Sorting
- ❑ Scanning and sequencing
- ❑ Memorizing
- ❑ Planning and organizing
- ❑ Higher cognitive abilities (Games like 'Judgment', 'Poker', 'Napoleon')



Cognitive Exercises

- ❑ Easy availability
- ❑ Affordable / Not very expensive
- ❑ Familiarity / Entertaining
- ❑ Useful for a variety of cognitive exercises
- ❑ Different level of difficulty
- ❑ Individual and group
- ❑ Language and culture free
- ❑ No additional manpower required
- ❑ Testing & quantifying
- ❑ Safe & harmless



Science Project



Using smell to enhance memory

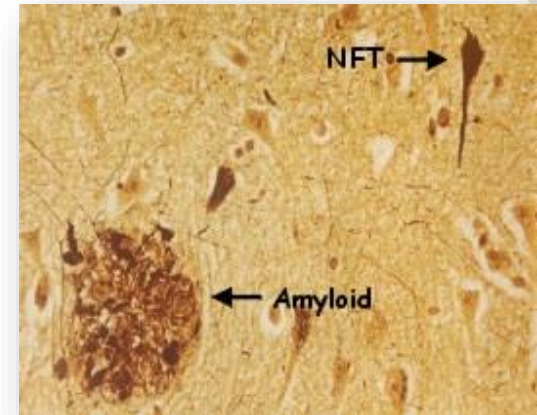
Social Engagement

Meaningful Participation in group activities



Strategies to Slow Brain Aging and Dementia

- ❑ To inhibit and reverse the structural changes and damages that occur in brains cells as part of normal aging
- ❑ Beta amyloid peptide accumulation: (neurotoxic plaques) damage the neuron and impede memory consolidation
- ❑ Neurofibrillary tangles: which develop when tau proteins are dysfunctional (hyperphosphorylation of tau)
- ❑ Immune/inflammatory responses
(Activated microglia) (macrophages)
- ❑ Mitochondrial impairment and increased oxidative stress



Medicines for prevention of dementia

- ❑ Lithium
- ❑ Statin
- ❑ Metformin
- ❑ Homotaurine
- ❑ Coenzyme Q10
- ❑ Folic acid, B12 and other supplements
- ❑ Omega-3-fatty acid
- ❑ Aspirin

Medicines for prevention of dementia

- ❑ Lithium
(Inhibit GSK-3) (Beta amyloid plaques & Neurofibrillary tangles)
- ❑ Statin
(Decrease cholesterol, increase Gama-secretase activity)
- ❑ Metformin
(CNS insulin resistance, DM-III), (CRM effect), (Slows aging)
- ❑ Homotaurine
(GAG mimetic) (Beta amyloid plaques & Neurofibrillary tangles)

Medicines for prevention of dementia

- ❑ Coenzyme Q10
(Stabilizes mitochondria, decrease oxidative stress)
- ❑ Folic acid, B12 and other supplements
(Decrease homocysteine), (Neurotoxicity)
- ❑ Omega-3-fatty acid
(Anti-atherogenic, anti-inflammatory, anti-oxidant, anti-amyloid and neuroprotective)
- ❑ Aspirin
(Upregulation of TFEB and lysosomal biogenesis), (lysosome clear debris)

Pharmacotherapy to prevent cognitive decline and dementia in later life

In short:

- ❑ The evidence for the usefulness of medicines to prevent cognitive decline and dementia is inconclusive
- ❑ As they are safe one may recommend them to
 - Individuals having MCI
 - Individuals at a higher risk of developing dementia
 - These molecules are also useful in preventing coronary and cerebral artery events





Thank You

*Let's prevent
dementia*



Thank You

*Let's prevent
dementia*