

Treatment of Mild Cognitive Impairment

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Learning Objectives

- ▶ 1 - Understand the definition of MCI and how it is related to dementia
- ▶ 2 - Appreciate various factors that contribute to the worsening of MCI
- ▶ 3 - Be able to develop a systematic clinical approach to the patient with MCI

Definition of Mild Cognitive Impairment

- ▶ A syndrome of cognitive dysfunction that exceeds losses with normal aging but does not meet criteria for dementia and does not interfere with ADLs

MCI/Dementia can include losses in :

Memory

Executive function

Language

Visual/Spatial skills

Behavior

Subjective cognition

MCI frequency

Age 60 - 64 --- 6.7 %

Age 65 - 69 --- 8.4 %

Age 70 - 74 --- 10.1 %

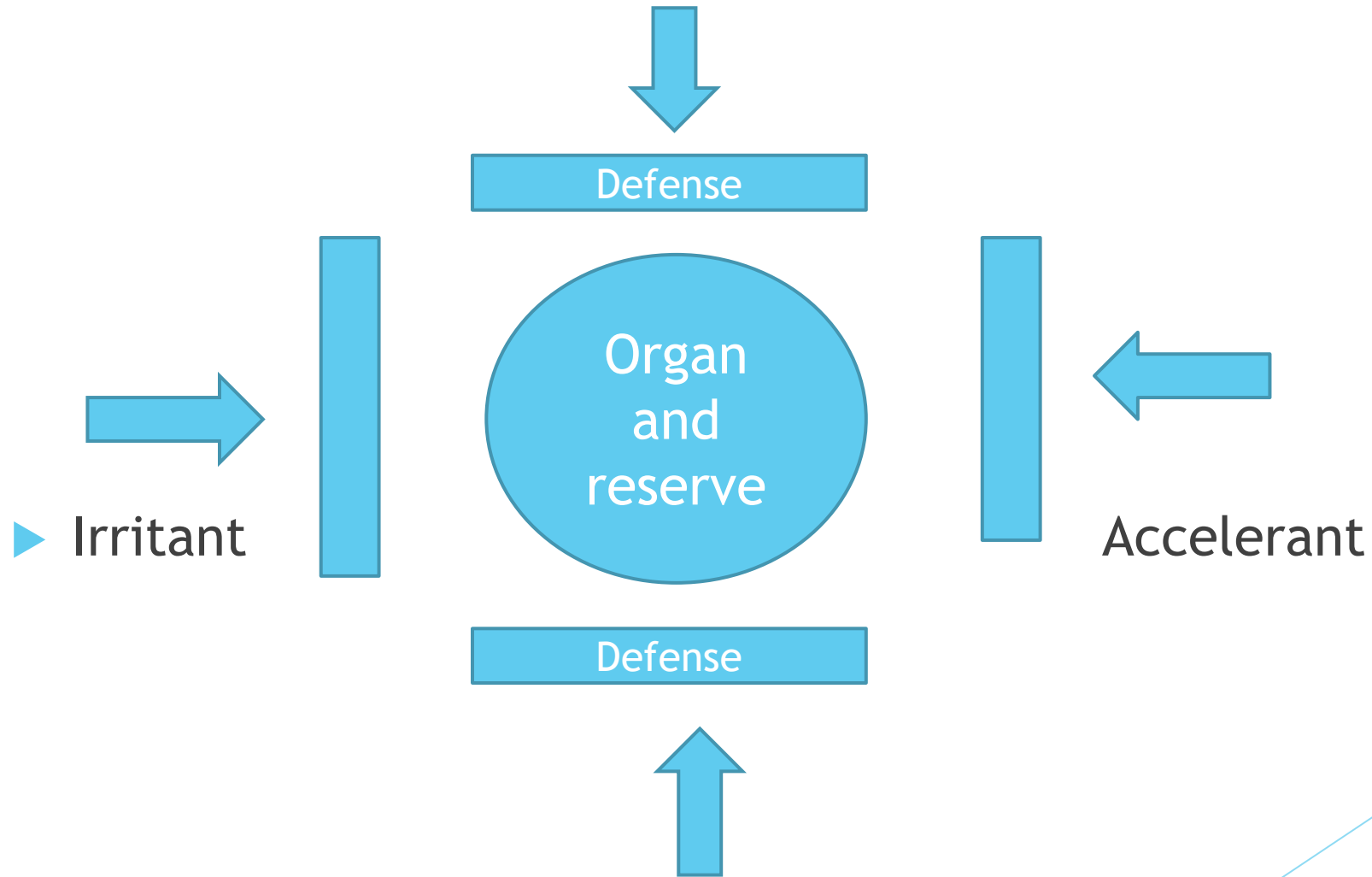
Age 75 - 79 --- 14.8 %

Age 80 - 84 --- 25.2 %

Diagnosis of MCI

- ▶ Folstein Mini-mental status exam
- ▶ MMSE
- ▶ Montreal Cognitive Assessment test
- ▶ MoCA
- ▶ General Practitioner Assessment of Cognition
- ▶ GPOC
- ▶ Self Administered Gerocognitive Exam - SAGE

Association is not causation



Paradigm Shift

- ▶ Prolonged prodrome of Alzheimers Dx
- ▶ Existence of MCI as pre dementia
- ▶ Factors can delay/accelerate progression of MCI/Dementia
- ▶ Unique motivation for change???

Old treatment of Dementia

1. Start Meds (minimally effective)
2. Anticipatory guidance

New treatment of MCI/Dementia

1. Treat like a chronic disease with the goal of preventing end organ (brain) damage
2. Anticipatory guidance

Ideas regarding dementia progression

- ▶ 1 - Use it or lose it
- ▶ 2 - If it's bad for arteries, it's bad for the brain
- ▶ 3 - Inflammation

American Heart Association - Life's simple 7 for brain health

- ▶ 1- BP control
- ▶ 2- No smoking
- ▶ 3- Physical activity
- ▶ 4- Healthy diet
- ▶ 5- Weight control
- ▶ 6- Lipid control
- ▶ 7- Decrease DM risk

In 2020 updated to Essential 8 by adding

8- Healthy sleep

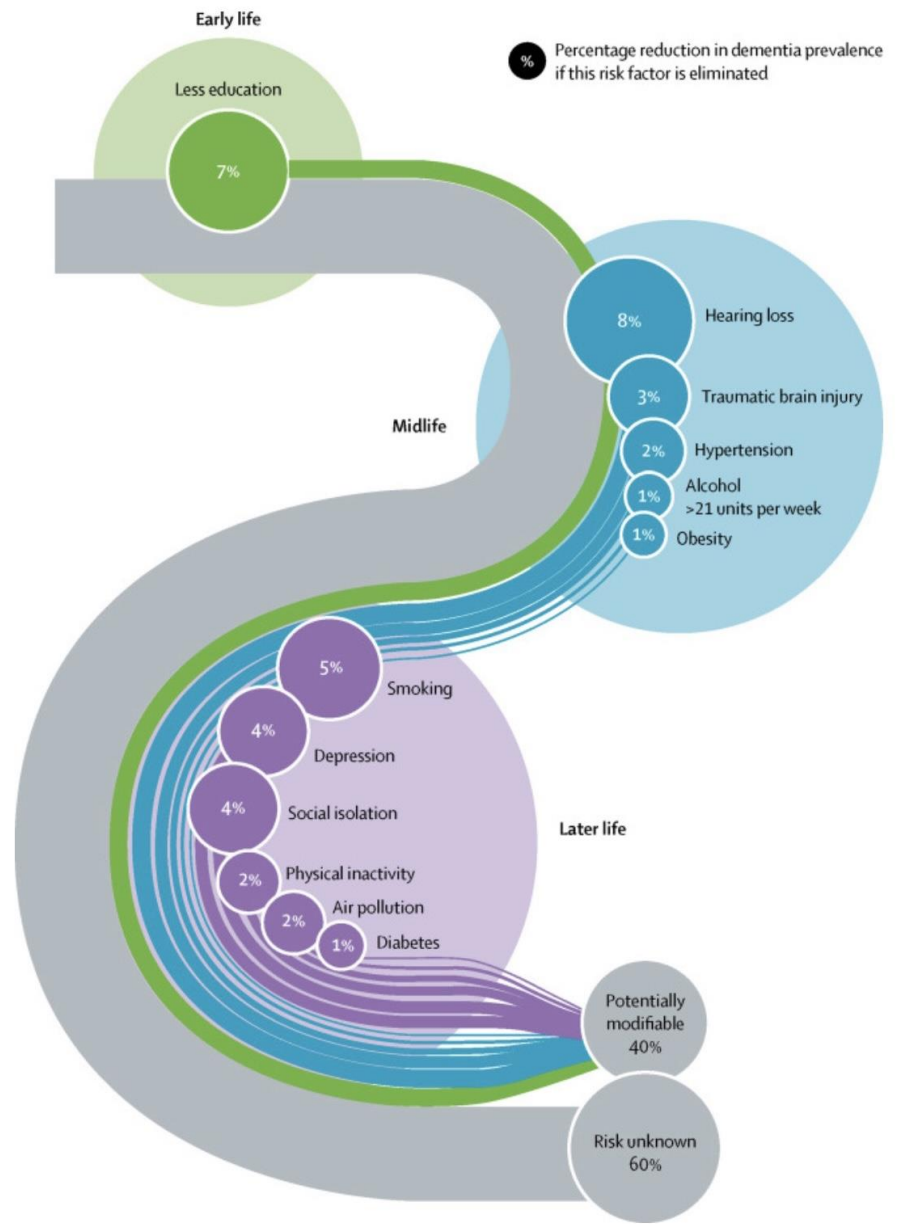
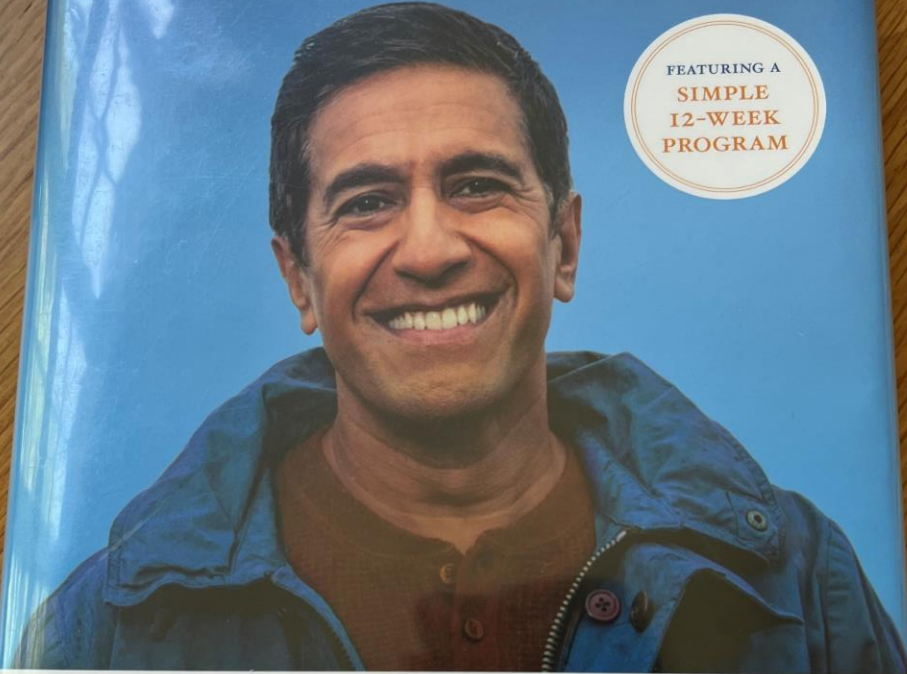


Figure 7 Population attributable fraction of potentially modifiable risk factors for dementia

CNN CHIEF MEDICAL CORRESPONDENT
Sanjay Gupta, MD

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"This is a frontier where we can dramatically improve human life, and *Keep Sharp* is a helpful primer for anyone who wants to better understand brain function and how to preserve it." —BILL GATES

Hypertension

ALLHAT Study - BP targets

Sprint-Mind Study - dementia
risk reduction

Smoking

- ▶ 30 - 50 % increased risk
- ▶ Possible underestimation due to increased premature deaths of smokers

Diabetes

- ▶ Meta analysis of 14 studies/2 million people
- ▶ Increased RR 1.6 - 1.8 depending upon duration and control
- ▶ ? Prediabetes
- ▶ Association btw severe hypoglycemia and dementia

Depression

- ▶ Probably bidirectional
- ▶ Remember pseudodementia?

SSRIs may be a good choice

Medication

- ▶ Polypharmacy
- ▶ Psychoactive drugs
 - Narcotics
 - Benzodiazepines
 - Anticholinergics

Anticholinergics

Nested case controlled study

1.29–1.70 increased RR of dementia
in patients taking anticholinergic
antidepressants, antipsychotics,
antiParkinson meds, antiepileptics,
bladder antimuscarinics

Other Meds???

- ▶ ? PPIs
- ▶ ?Antibiotics

Alcohol

- ▶ Nothing good!
- ▶ Excessive use/misuse is causative
- ▶ Don't stress a weak system!

Sleep

- ▶ Obstructive Sleep Apnea is causative

Hygiene

< 6 hours and > 9 hours are associated with increased risk of dementia

Diet

- ▶ The MIND diet (Mediterranean/DASH)

Intervention for neurodegenerative
delay diet

The better it was followed, the better
the cognition

Mind diet

- ▶ Green leafy vegs 7-14x/week
- ▶ Other fruits/vegs 7-21x/week
- ▶ Nuts/beans 3-4x/week
- ▶ Whole grains 14-21x/week
- ▶ Berries 2 or more x/week
- ▶ Poultry 2x/week
- ▶ Fish 1x/week

Limits on butter, fried foods, fast foods and red meat.
Avoid unsat fats and processed foods

Exercise

- ▶ Higher levels are associated with better cognition
- ▶ 150 minutes moderate exercise/week
- ▶ Vigorous or strength exercise 2x/wk
- ▶ Continued benefit up to 4x minimal recommended amount

Hearing

- ▶ Hearing loss of at least 25 dB showed RR 1.9 (1.4-2.7) over 9-17 years
- ▶ Meta-analysis of 3 studies showed increased RR of dementia of 1.3 per 10 dB loss

2020 Lancet commission report

Hearing

- ▶ 25 year prospective study: 3777 people 65 and older. Increased dementia with self reported hearing loss except in those with hearing aids
- ▶ Cross sectional study: Cognitive decline associated with hearing loss except in those using hearing aids
- ▶ 2040 people 50 and older x 18 years: hearing aid use protective from cog decline

Vision

- ▶ Association of visual decline and cognitive decline
- ▶ 3308 people older than 65 (mean 74) without dementia with dx of cataract or glaucoma. Over 7.8 years, 46% had cataract surgery and HR was 0.71 for developing dementia

Social Connections

- ▶ Divorced twice as likely to develop dementia (widowed and never married in the middle)
- ▶ Study done in Sweden - 1905 asked “Do you feel lonely?”

Yes answer had 51% increase in dementia over 20 years

Cognitive training/Life long learning

- ▶ ? Computer games
- ▶ Multidomain intervention showed improved global cog/executive fx/memory/verbal fluency than single domain intervention
- ▶ Meta analysis of 28 studies with 2711 patients with MCI

Lifelong learning

- ▶ Learn a new language
- ▶ Revive an old hobby
- ▶ Take (or teach) a class
- ▶ Learn a musical instrument
- ▶ Practice art
- ▶ Join a book club
- ▶ Adopt a pet

Periodontal disease

- ▶ Associated with CV dx, DM, RA, Inflammatory Bowel dx, atherosclerosis, Alzheimers dx
- ▶ Porphyomonas gingivitis - releases gingipains which increase inflammation

Flu shot?

- ▶ Single study of 935,887 greater than 65. Look back 6 years and followed 46 months.
- ▶ Those with 6 flu shots had a 40 % decreased incidence of development of Alzheimers
- ▶ 5.1 % vs 8.5 %
- ▶ # needed to treat - 29.4

Inspire your patients to change!

- ▶ HTN
- ▶ DM
- ▶ Sleep
- ▶ Meds
- ▶ Smoking
- ▶ Alcohol
- ▶ Hearing
- ▶ Vision
- ▶ Gingivitis
- ▶ Mind Diet
- ▶ Exercise
- ▶ Social enrichment
- ▶ Life long learning plan