

Merging Mentation and What Matters: Brain Health in Aging

Indian + Country ECHO Dementia – March 24, 2022

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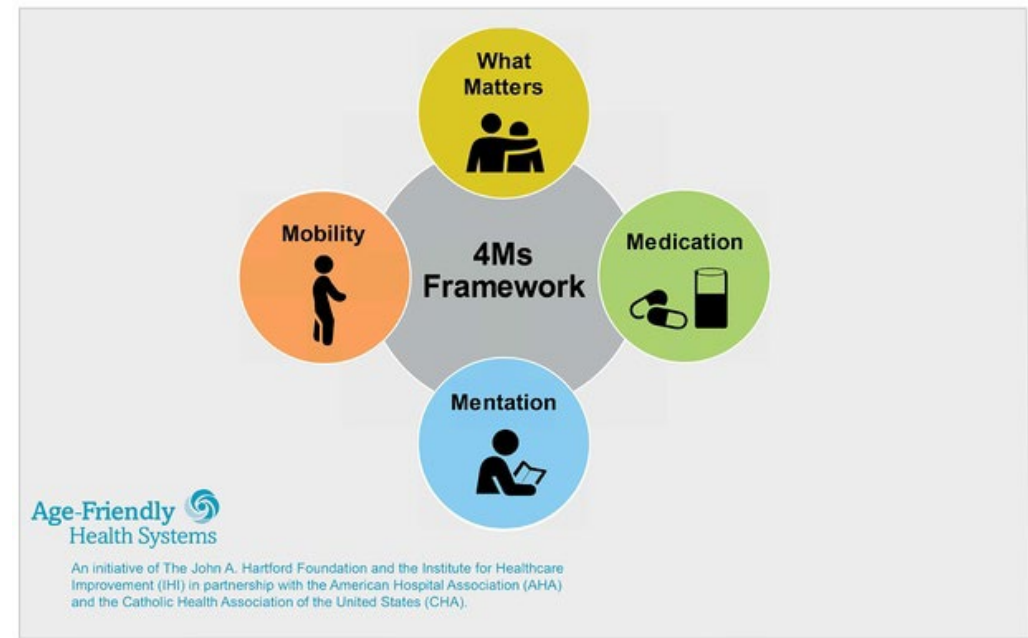
U.S. Department of Veterans Affairs

Veterans Health Administration
Geriatric Research, Education, and Clinical Centers

Brain Health in Aging

4Ms of Aging

- Mentation
- Mobility
- Medicines
- Matters (as in What Matters)



Flip our perspective

- Euro-centric Western medicine has operated within a disease-focused framework
 - Identify the cause and stop it/fight it/treat it . . .
 - “Forward thinking” is to prevent it
- Person-centric care should be our real goal
 - Individualized health plans
 - What Matters for your quality of life, for your values, for what you care about?

Brain Health in Aging

Can we prevent dementia?



Image: PenCLAHRC - NIHR

Approaches to Dementia Prevention

What are the top risk factors?

- Can't change **age**
- Can't change **genetics**
- Focus on modifiable risk factors

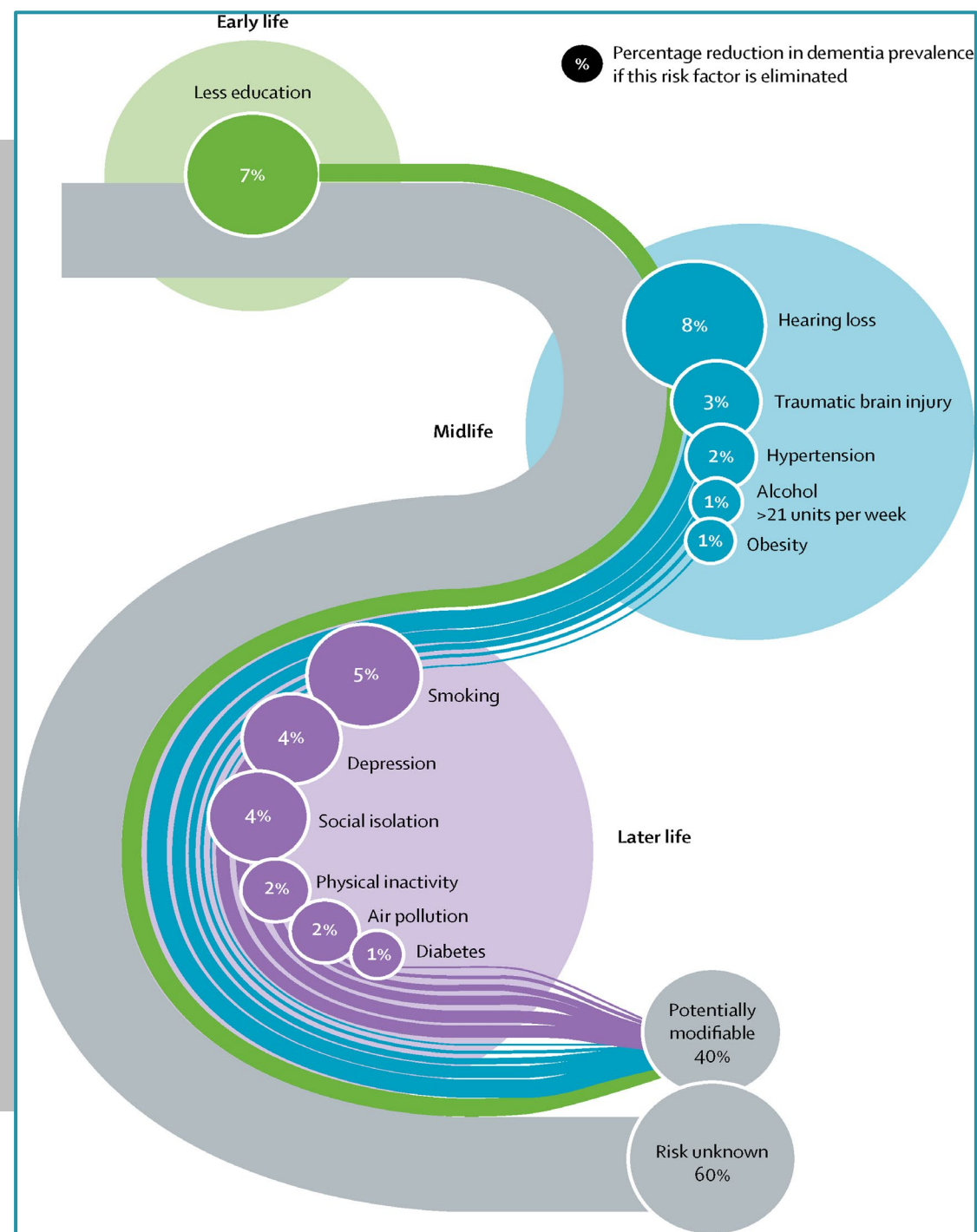
Dementia prevention, intervention, and care: 2020 report of the Lancet Commission

Prof Gill Livingston, MD, Jonathan Huntley, PhD, Andrew Sommerlad, PhD, Prof David Ames, MD, Prof Clive Ballard, MD, Prof Sube Banerjee, MD, Prof Carol Brayne, MD, Prof Alistair Burns, MD, Prof Jiska Cohen-Mansfield, PhD, Prof Claudia Cooper, PhD, Sergi G Costafreda, PhD, Amit Dias, MD, Prof Nick Fox, MD, Prof Laura N Gitlin, PhD, Prof Robert Howard, MD, Prof Helen C Kales, MD, Prof Mika Kivimäki, FMedSci, Prof Eric B Larson, MD, Prof Adesola Ogunniyi, MBChB, Vasiliki Orgeta, PhD, Prof Karen Ritchie, PhD, Prof Kenneth Rockwood, MD, Prof Elizabeth L Sampson, MD, Quincy Samus, PhD, Prof Lon S Schneider, MD, Prof Geir Selbæk, MD, Prof Linda Teri, PhD, Naaheed Mukadam, PhD

The Lancet 2020 396413-446 DOI: (10.1016/S0140-6736(20)30367-6)

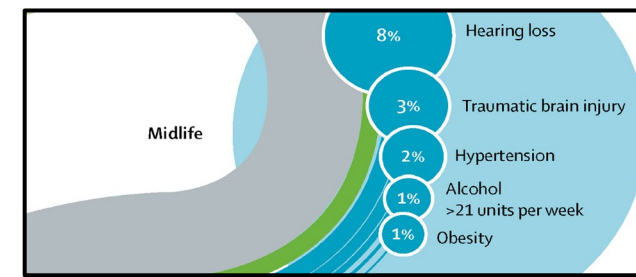
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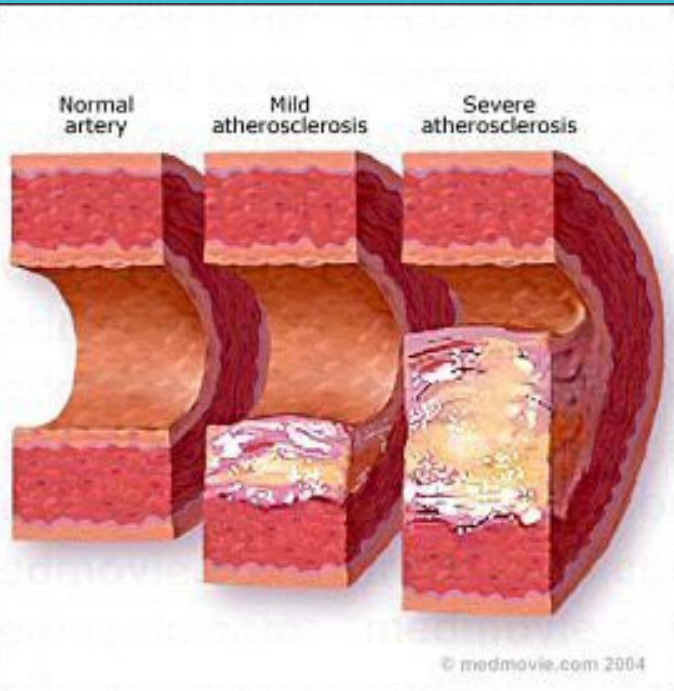


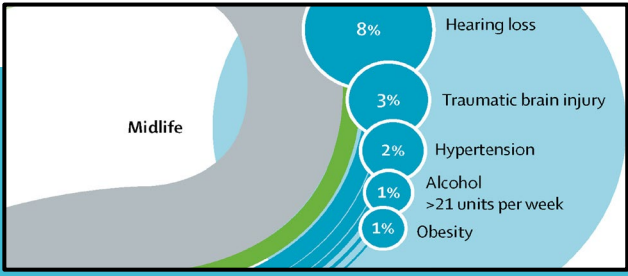
Vascular Disease

Hypertension/Atherosclerosis



- Longitudinal studies have suggested that high blood pressure in midlife is associated with a higher incidence of both AD and VaD in later life.
- Some studies suggest that hypotension; especially low diastolic blood pressure in late-life is also associated with an increased risk of AD.
- Long-standing hypertension may lead to severe atherosclerosis and impaired cerebrovascular autoregulation.
- Decline in BP in later life may contribute to diminished cerebral perfusion which may in turn lead to increased beta-amyloid



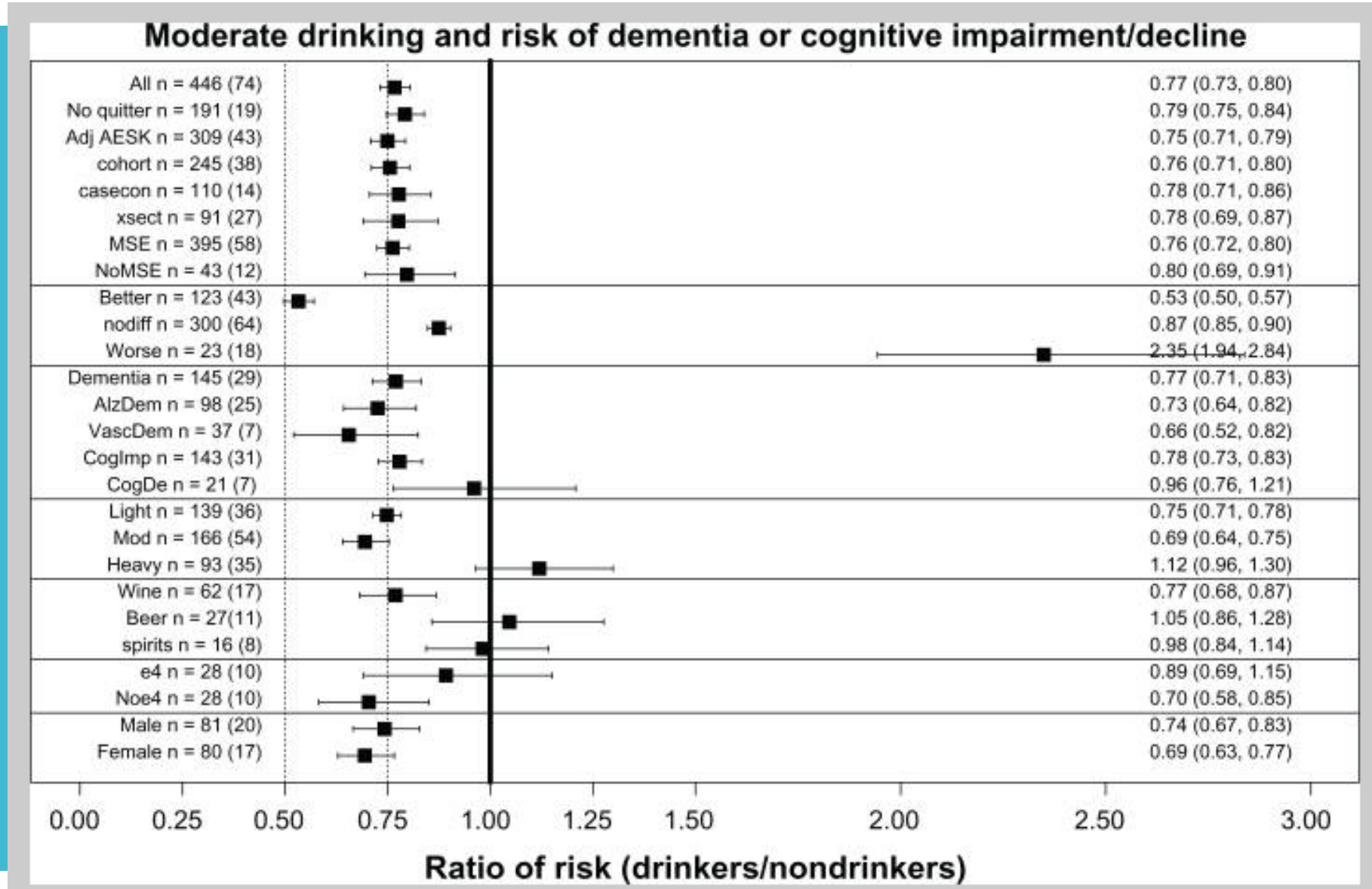


Alcohol & Aging



- **Alcohol can be a Primary or Secondary cause of dementia**
- Long-term, excessive drinking of alcohol is known to cause damage to the brain – resulting in neurological damage and impaired cognitive function
 - Alcohol-related dementia
 - Wernicke-Korsakoff syndrome
- Drinking more than recommended amounts increases risk of developing common types of dementia (AD and VaD)
- Increases risk of stroke and heart disease
- 2-10% of older adults abuse alcohol or are alcohol dependent
- At-risk drinking found in ~15% of adults 65+
- Potential interaction of alcohol and medications
- Increases the risk of many other potential geriatric syndromes: falls, head injury, delirium
- **Recommended Drinking Limits for Older Adults**
 - *No more than 1 standard drink per day or 7 per week*
 - *No more than 2-3 drinks on any drinking day*
 - *Stricter limits for older women*

Light to Moderate Alcohol

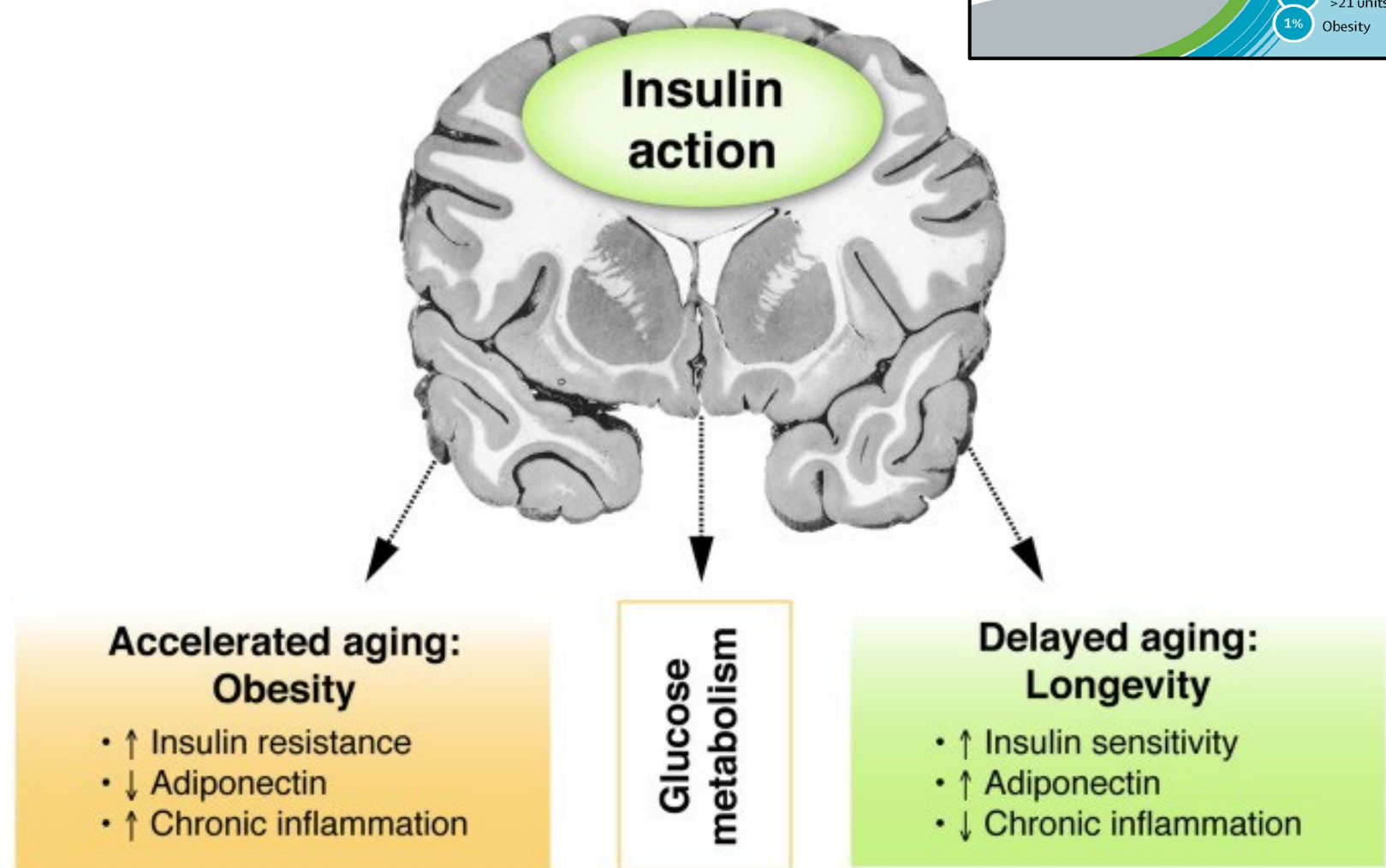
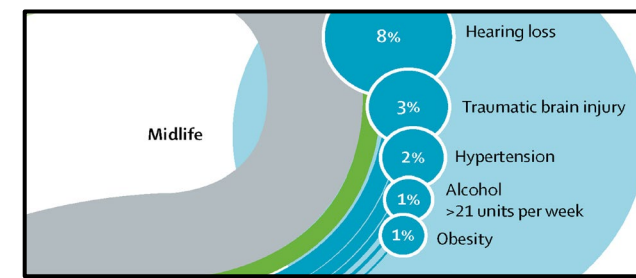


Obesity: Insulin and Glucose Metabolism

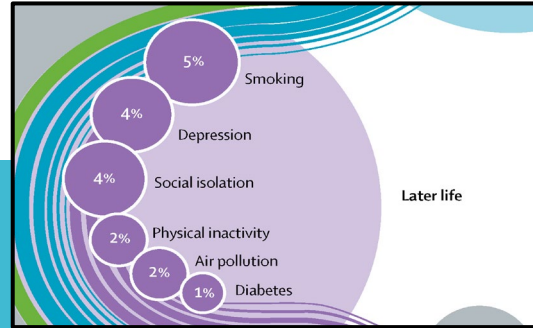
Putative relationship between central insulin action and glucose metabolism in models of accelerated or delayed aging.

Obesity as a model for accelerated aging is associated with peripheral insulin resistance, decreased adiponectin levels, and enhanced chronic inflammation.

The opposite is observed in healthy longevity.



Smoking



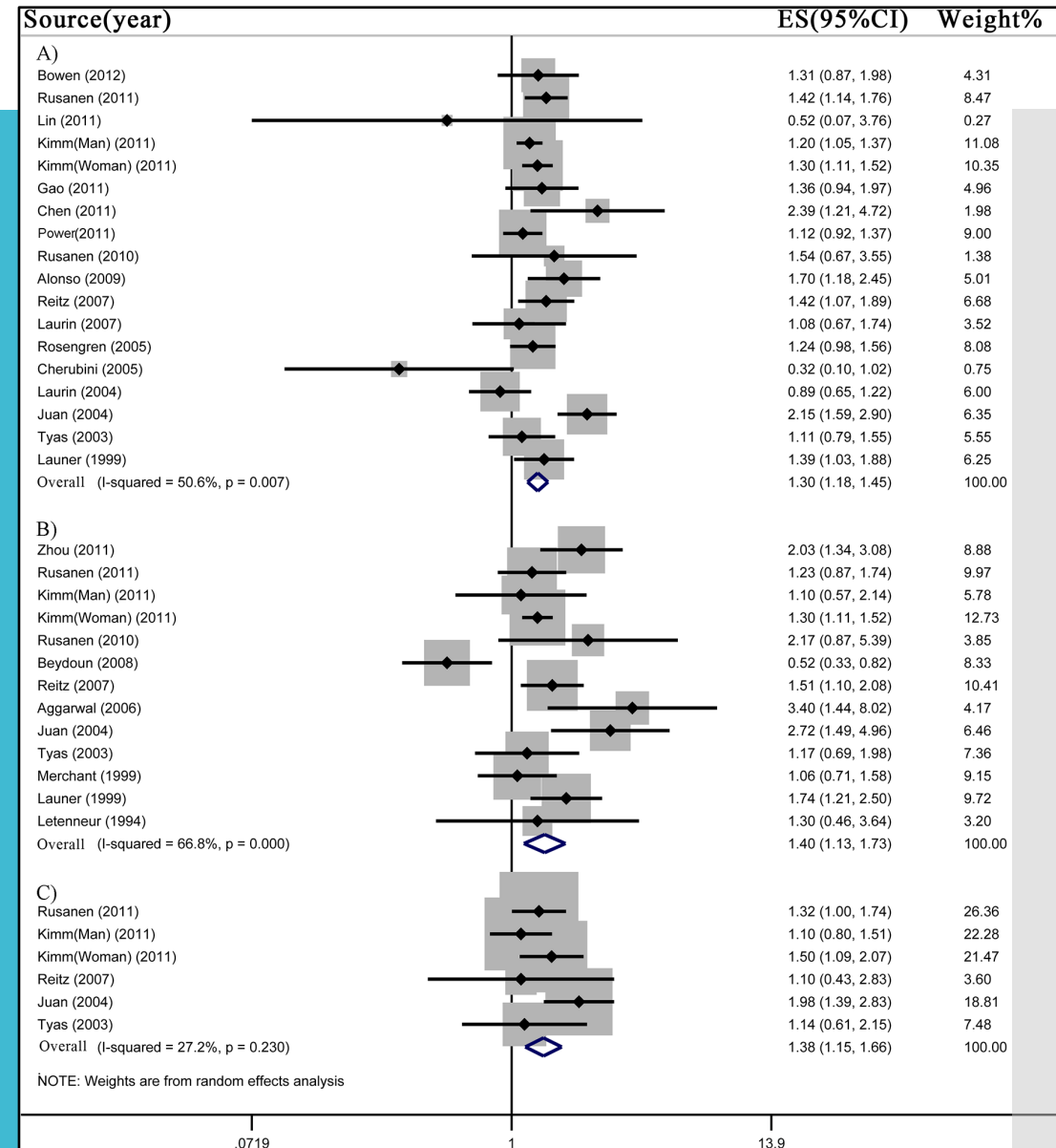
Prospective cohort studies (n=37 high quality)

Versus never smokers, current smokers had an increased risk of all-cause dementia (risk ratio (RR) 1.30, 95% CI 1.18–1.45), AD (RR 1.40, 95% CI 1.13–1.73) and VaD (RR 1.38, 95% CI 1.15–1.66). For all-cause dementia, the risk increased by 34% for every 20 cigarettes per day (RR 1.34, 95% CI 1.25–1.43). Former smokers did not show an increased risk of all-cause dementia (RR 1.01, 95% CI 0.96–1.06), AD (RR 1.04, 95% CI 0.96–1.13) and VaD (RR 0.97, 95% CI 0.83–1.13). Subgroup analyses indicated that (1) the significantly increased risk of AD from current smoking was seen only in apolipoprotein E ϵ_4 noncarriers; (2) current smokers aged 65 to 75 years at baseline showed increased risk of all-cause dementia and AD compared to those aged over 75 or under 65 years; and (3) sex, race, study location and diagnostic criteria difference in risk of dementia was not found.

Smokers had an increased risk of dementia, and smoking cessation decreases the risk to that of never smokers.

Current smoking increased risk of AD in the Apoe ϵ_4 -

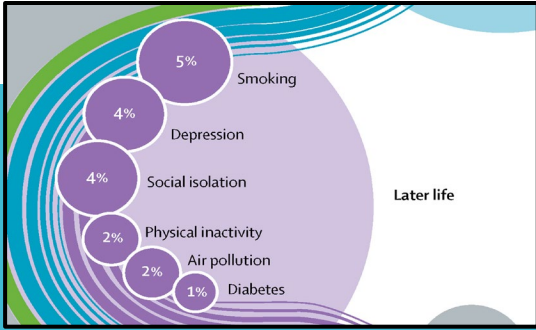
Survival bias and competing risk reduce the risk of dementia from smoking at extreme age.



Mental Health Conditions



Image: www.socialworker.com



Depression

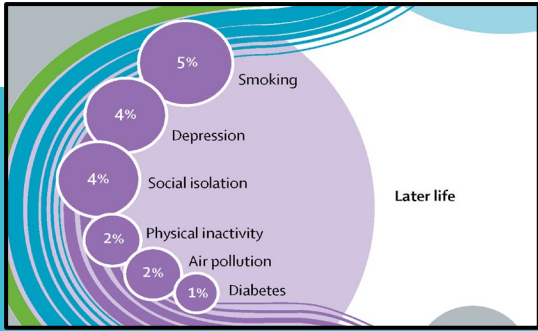
- Early-onset depression before age 65 years and recurrent depression, may constitute long-term risk factors for development of dementia
- Late-onset depressive symptoms may be a feature of prodromal phase of dementia
- Recent studies suggest that long-term treatment with antidepressants may decrease the risk
 - Kessing, *Curr Opin Psychiatry*, 2012

Post-traumatic stress disorder

- Double the risk in Veteran groups studied
 - Yaffe, et al, 2010; Quereshi, et al, 2010

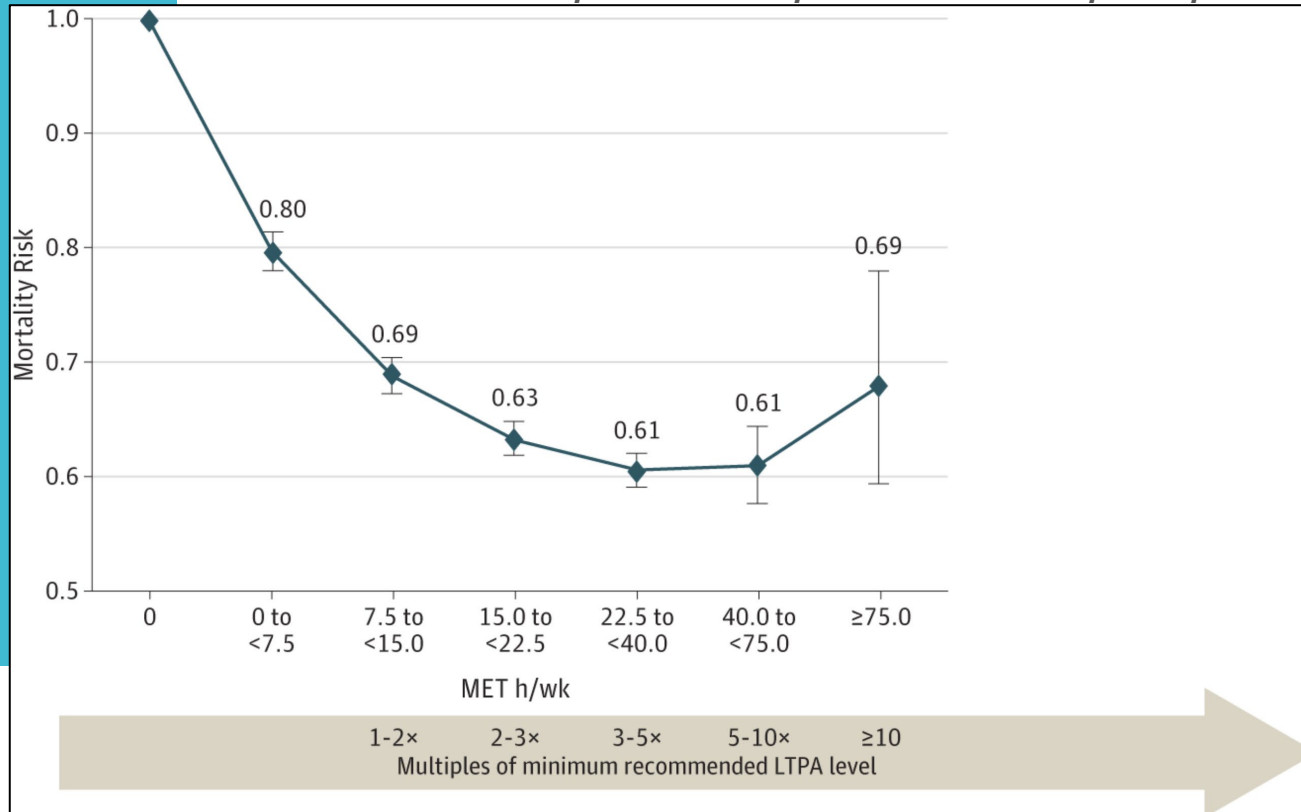
Anxiety

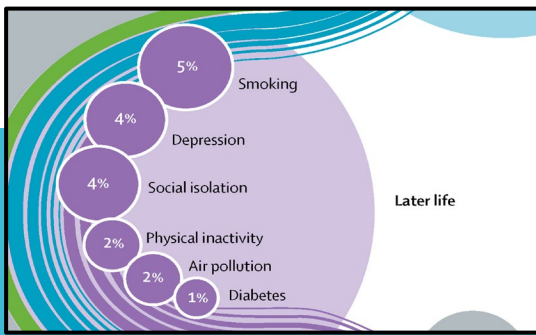
- Not associated with the risk of dementia or cognitive decline: the Rotterdam Study.
 - de Bruijn, et al, *Am J Geriatr Psychiatry*, 2014



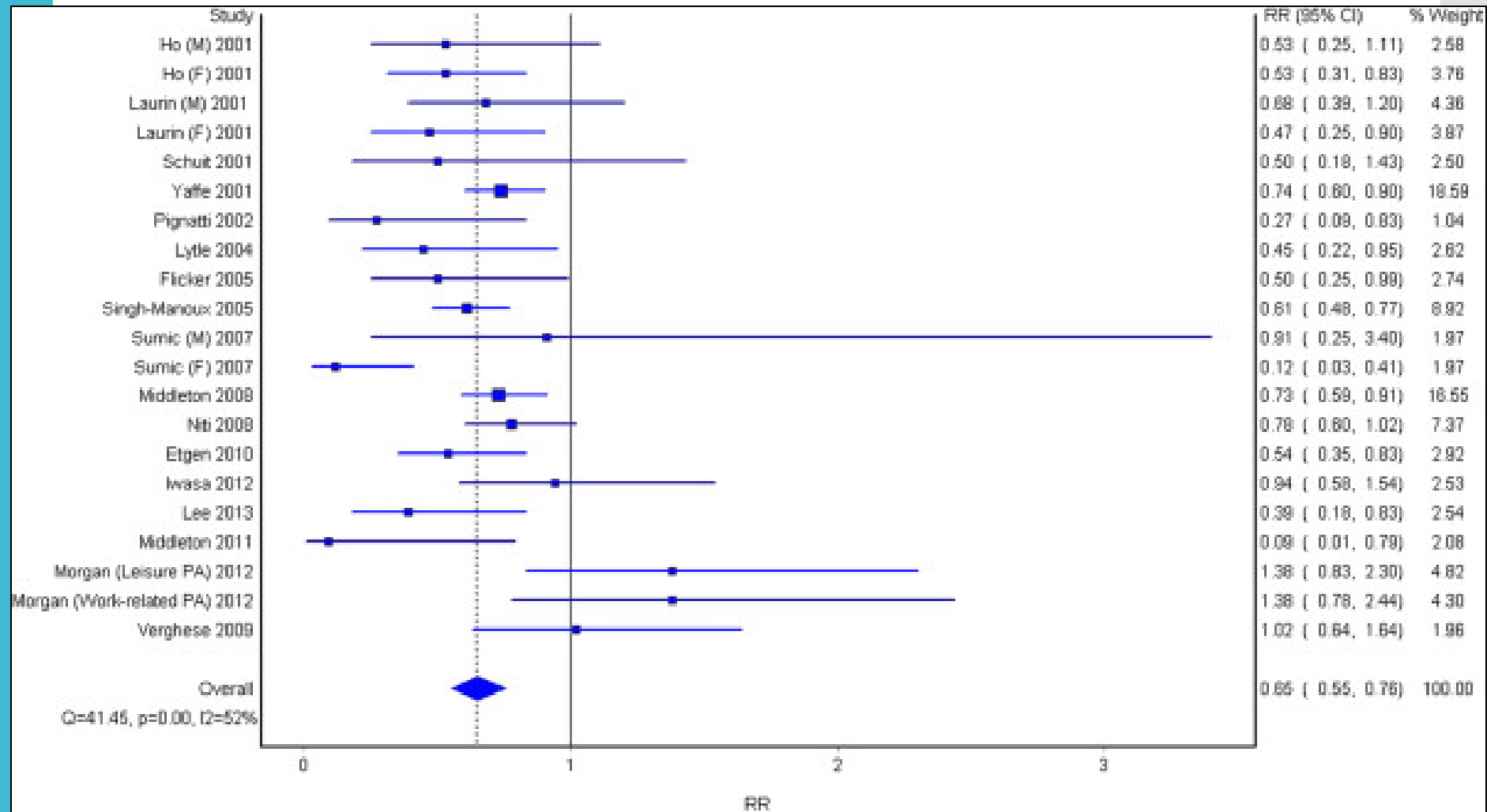
- 2008 Physical Activity Guidelines recommended 75 vigorous or 150 moderate intensity minutes/weekly (7.5 METS weekly)
- Dose response? Pooled analysis of 6 prospective, pop-based studies
- N > 660,000; Median age = 62 (range 21-98); > 116,000 deaths over 11 years
 - Cox Proportional Hazards Regression for overall mortality; Similar for cardiovascular and cancer-related deaths; Model adjusted for gender, smoking, alcohol use, education, marital status, BMI, and medical comorbidities

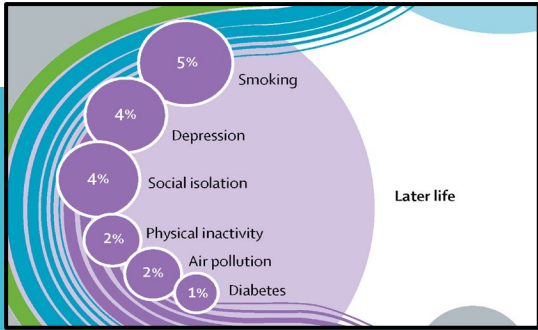
Physical Activity



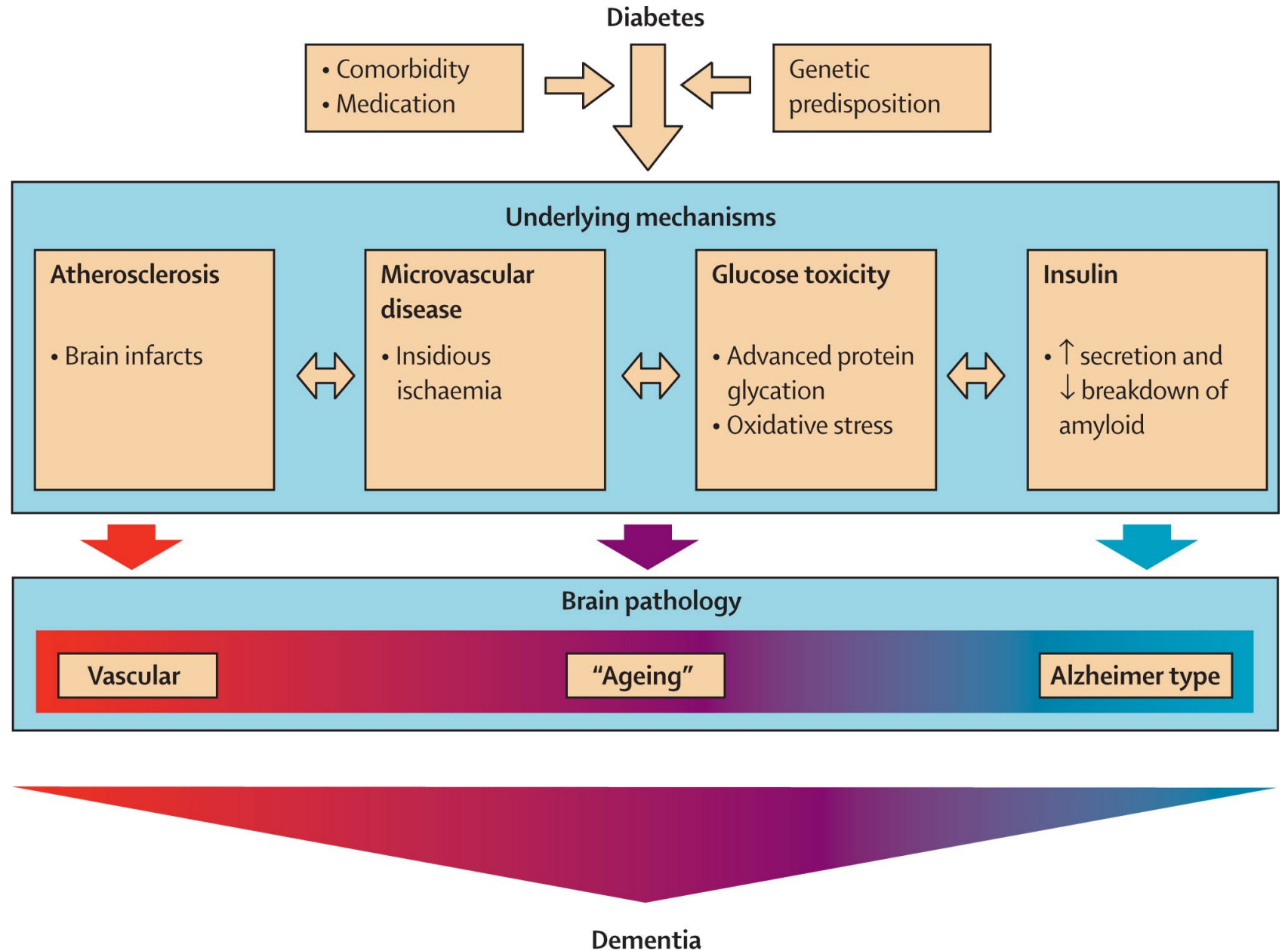


Physical Activity in Older Adults





Diabetes



Healthy Brain?

OR

Latest Fad?

OR

False Promises?

- Expensive brain imaging
- Ginkgo biloba
- Omega-3 fatty acids
- Coconut oil
- Red wine (resveratrol)
- Statins
- Diet manipulations
- Brain games
- Vitamin E & selenium
- What else have you heard?

My Mindset when Asked about Healthy Brain Aging Ideas

#1 Be Composed

- Try to avoid a strong positive or negative response
- Keep up with the literature
- Pay attention to the popular press
- Show, don't tell, when providing education
- The “inverted U” or “J-shaped curve” when discussing doses
- Provide guidance on where to find reputable information
- Big claims and asking for big money? Get suspicious
- HOPE – don't squash it

Healthy Brain Aging

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