



**KANSAS INITIATIVE FOR
STROKE SURVIVAL**
A PROJECT BY AND FOR KANSANS

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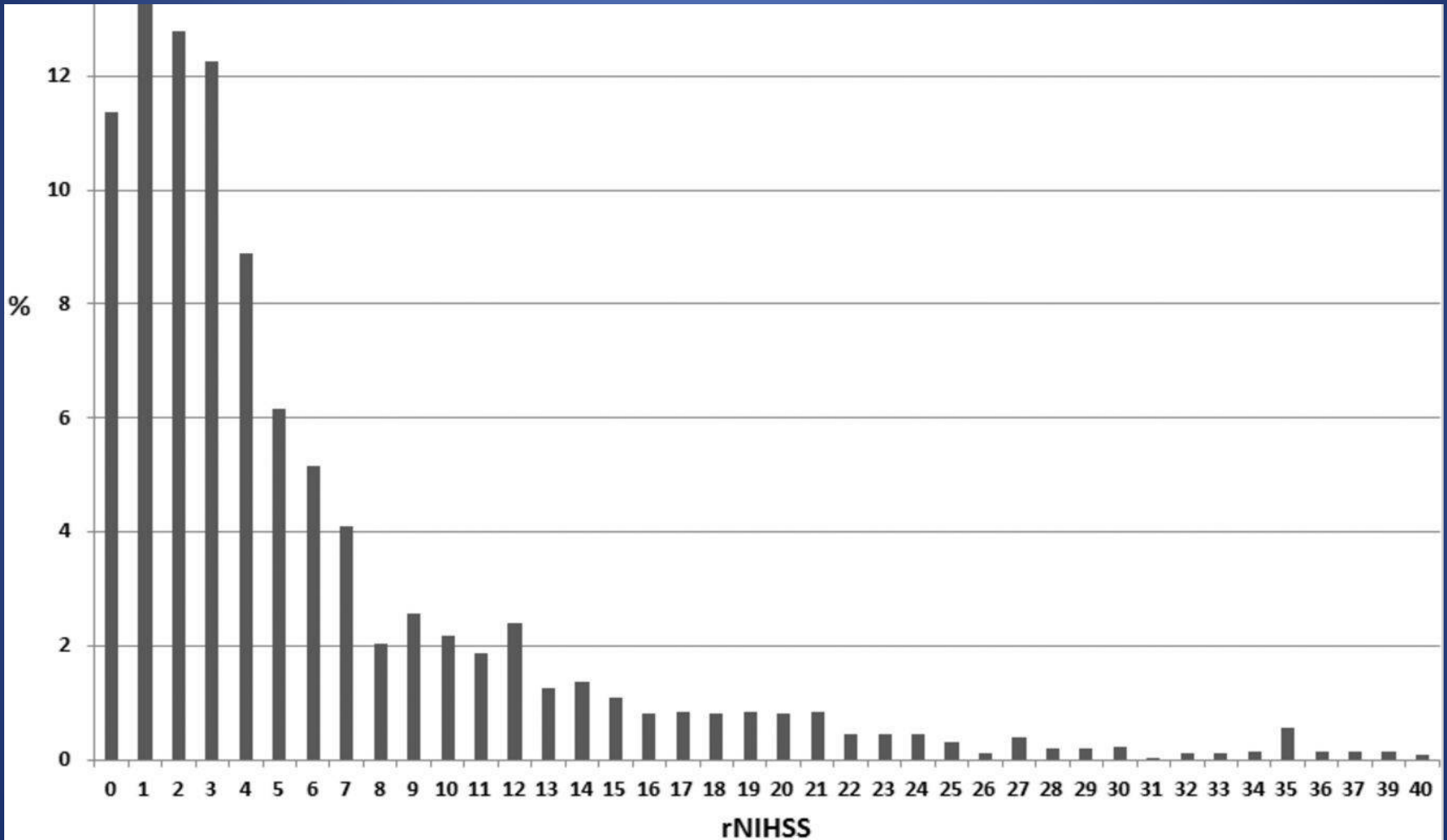
Cognitive and mood impairment
post stroke

“First Tuesdays” Lecture Series
Sabreena Slavin, MD

Introduction and Goal of “First Tuesdays”

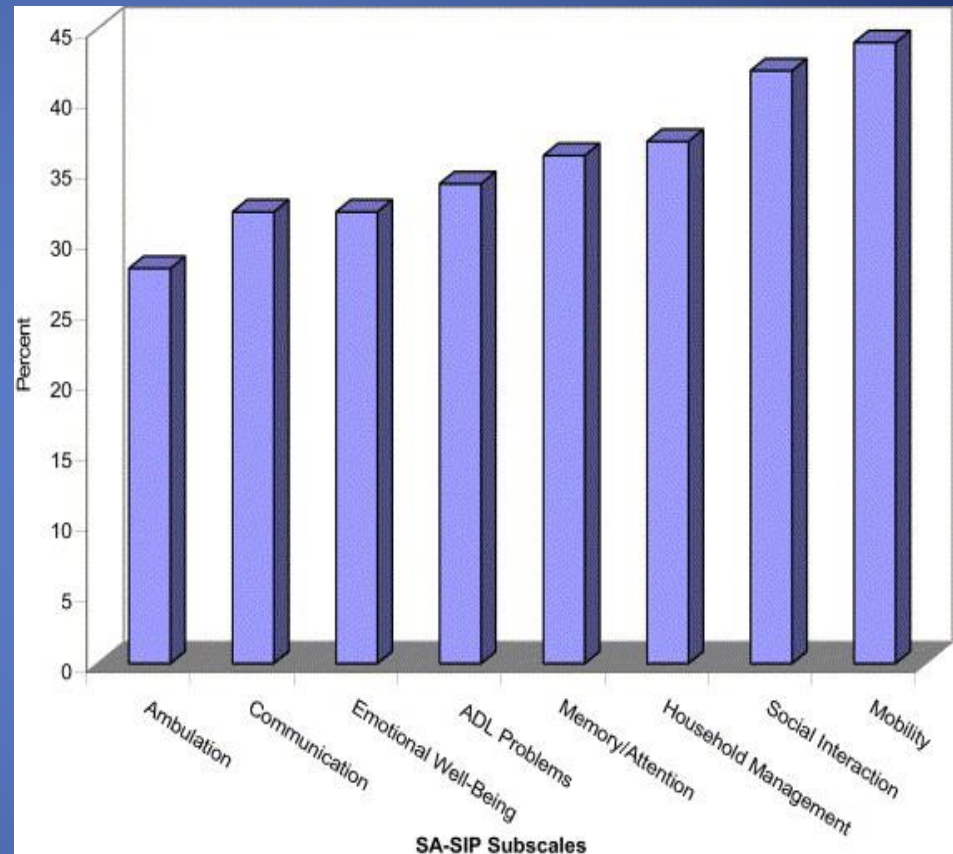
- Didactic lecture series as part of the Kansas Initiative for Stroke Survival (KISS)
- Updates in Practice and FAQ’s on Acute Stroke Care
- 30 minutes for didactics and questions/discussion

Majority of strokes have lower NIHSS



Disability in mild stroke patients

- Study interviewed 219 patients who had a NIHSS ≤ 5 and were living independently at 6 months.
 - 62% decreased employment and volunteer activities
 - 36% reduced social activity
 - 30% concentration problems
 - 22% mood problems
 - 18% decreased driving

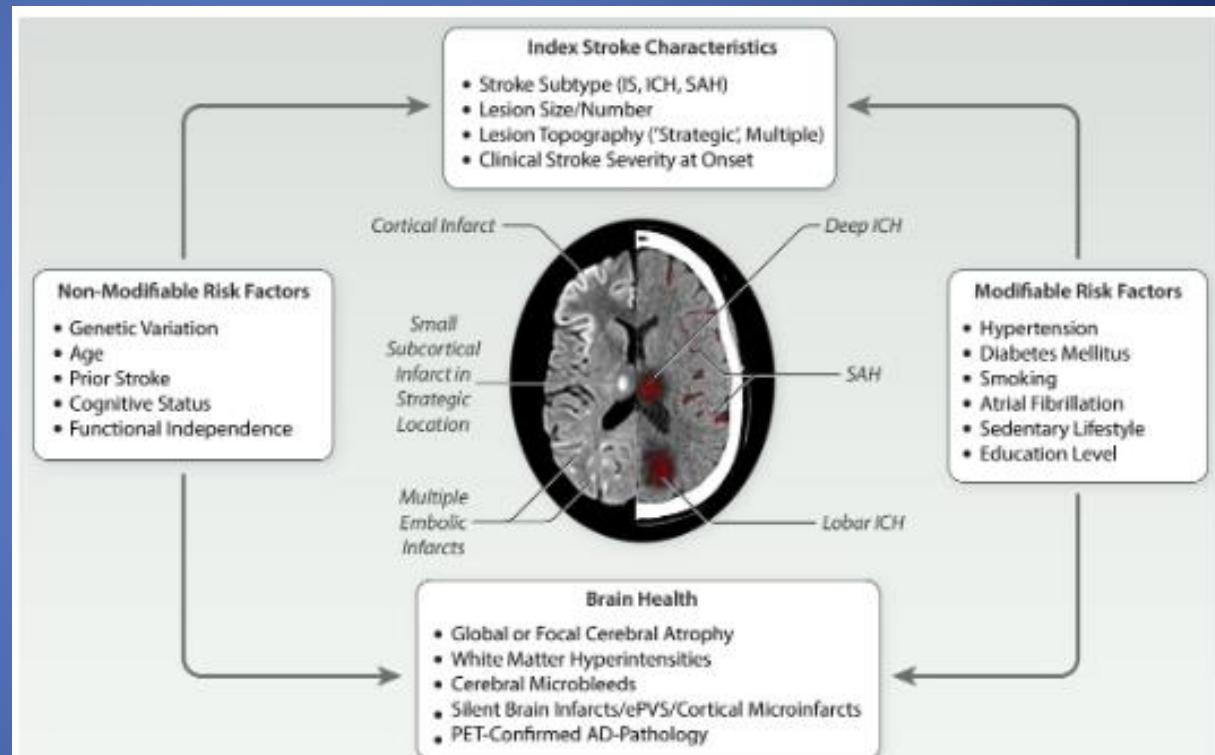


Cognitive deficits in mild stroke

- Various studies show prevalence between 35-70% of cognitive impairment several months after all stroke.¹
- Patients with mild stroke (NIHSS < 6) were assessed at 1 week using neuropsychological battery: 66% had deficit in at least one measure of executive function.²
- Patients with mild stroke (average NIHSS 3.6) were assessed between 6-9 months using neuropsychological battery: 59% were diagnosed with mild cognitive impairment or dementia.³

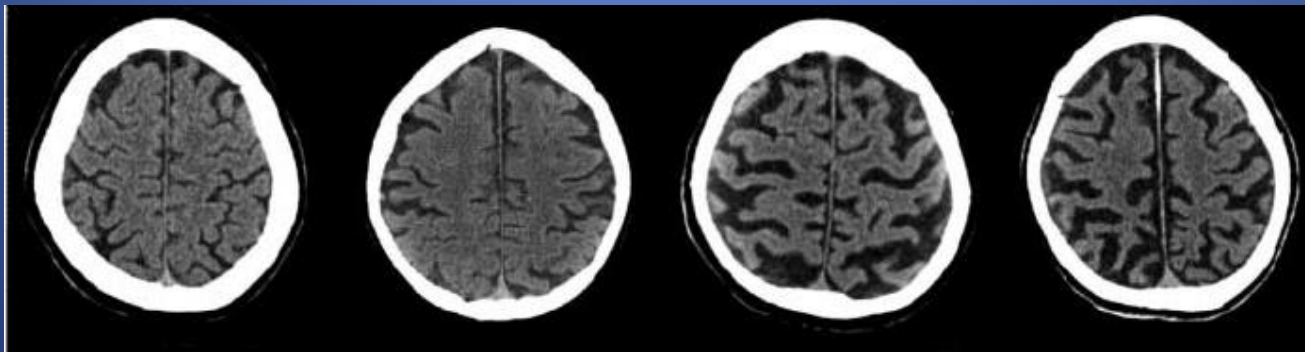
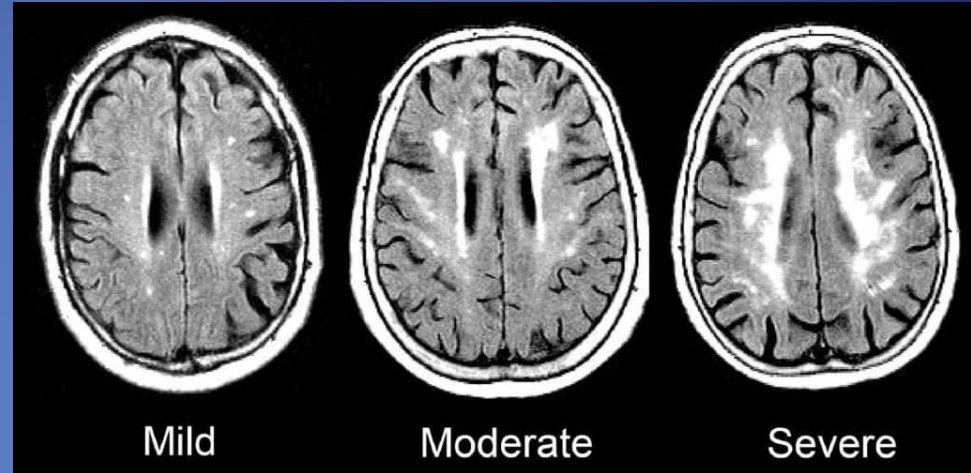
Predictors of post-stroke cognitive impairment

- Older age
- Female gender
- Lower education
- Psychiatric morbidity
- Lower Social Connection/Engagement^{2, 3}
- 3 or more CV risk factors
 - diabetes and atrial fibrillation



Imaging with cognitive impairment

- White matter lesion burden is associated with greater cognitive decline.¹
- Global atrophy is associated with greater cognitive impairment stroke.²
- Anterior circulation strokes and L hemispheric strokes more predictive of cognitive decline.^{3,4}

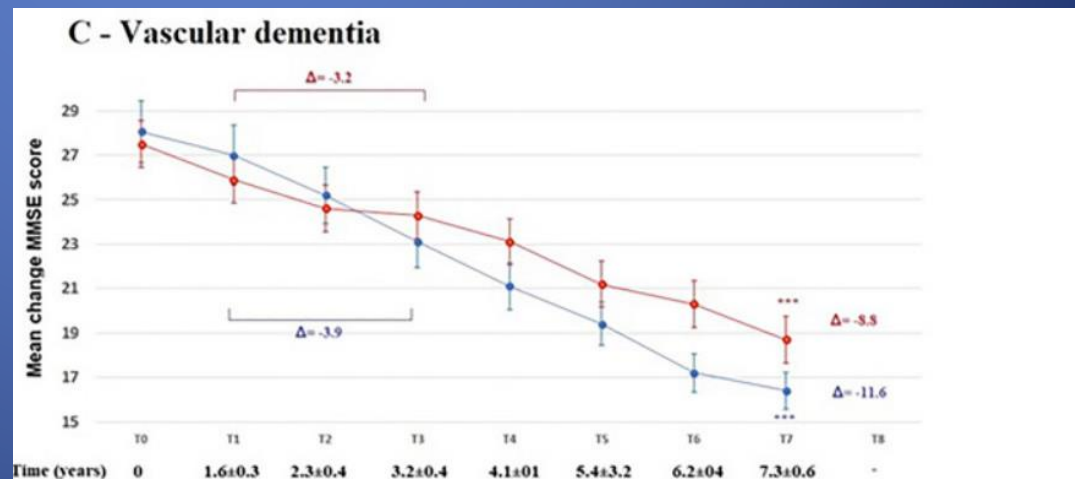
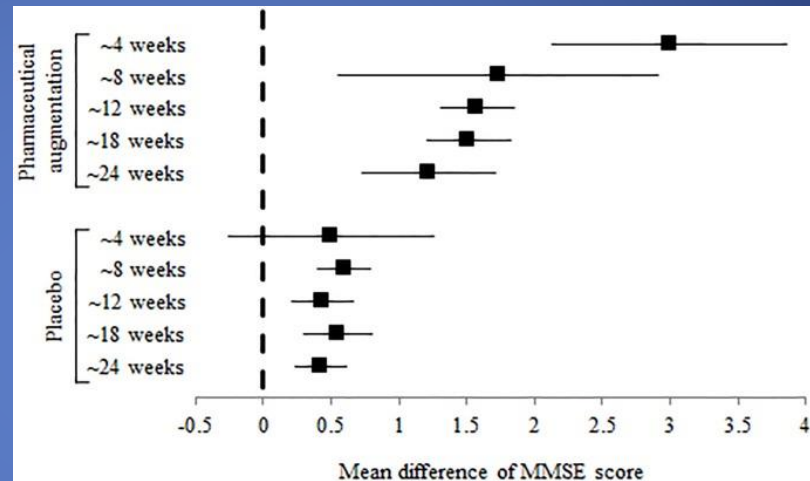


Silent infarcts and risk factor modification

- Silent infarcts (strokes on imaging without clinical symptoms) were associated with functional and cognitive decline.
- Aggressive risk factor modification needed for both TIA/stroke and for subclinical radiographic infarcts

Medications: acetylcholinesterase inhibitors (Donepezil, Rivastigmine)

- Studies have shown benefit in MMSE scores with AChE inhibitors vs placebo.

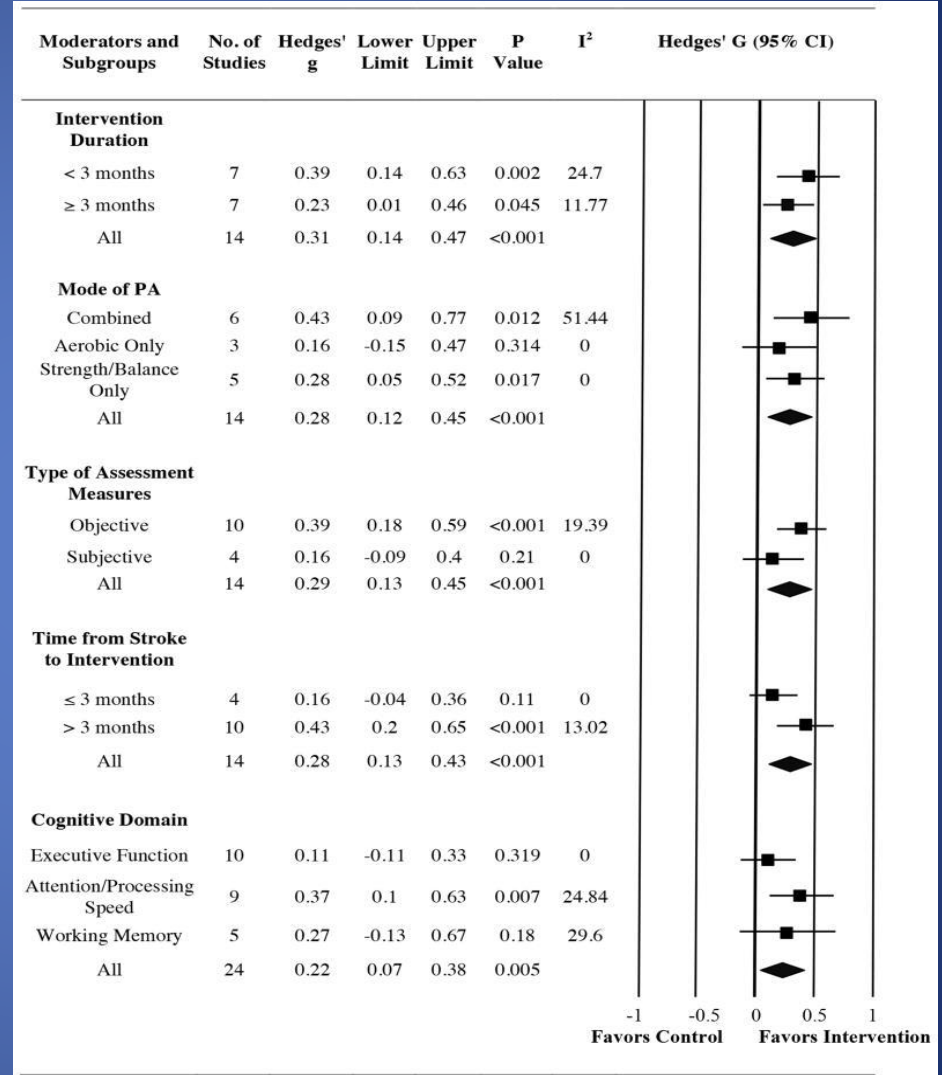


Medications: SSRI's

- Open label study with 50 patients with vascular dementia randomized to receive fluoxetine vs no fluoxetine: SSRI group found to have improvement on some cognitive tests (Clock drawing, Trail making)
- No consistent findings in other studies

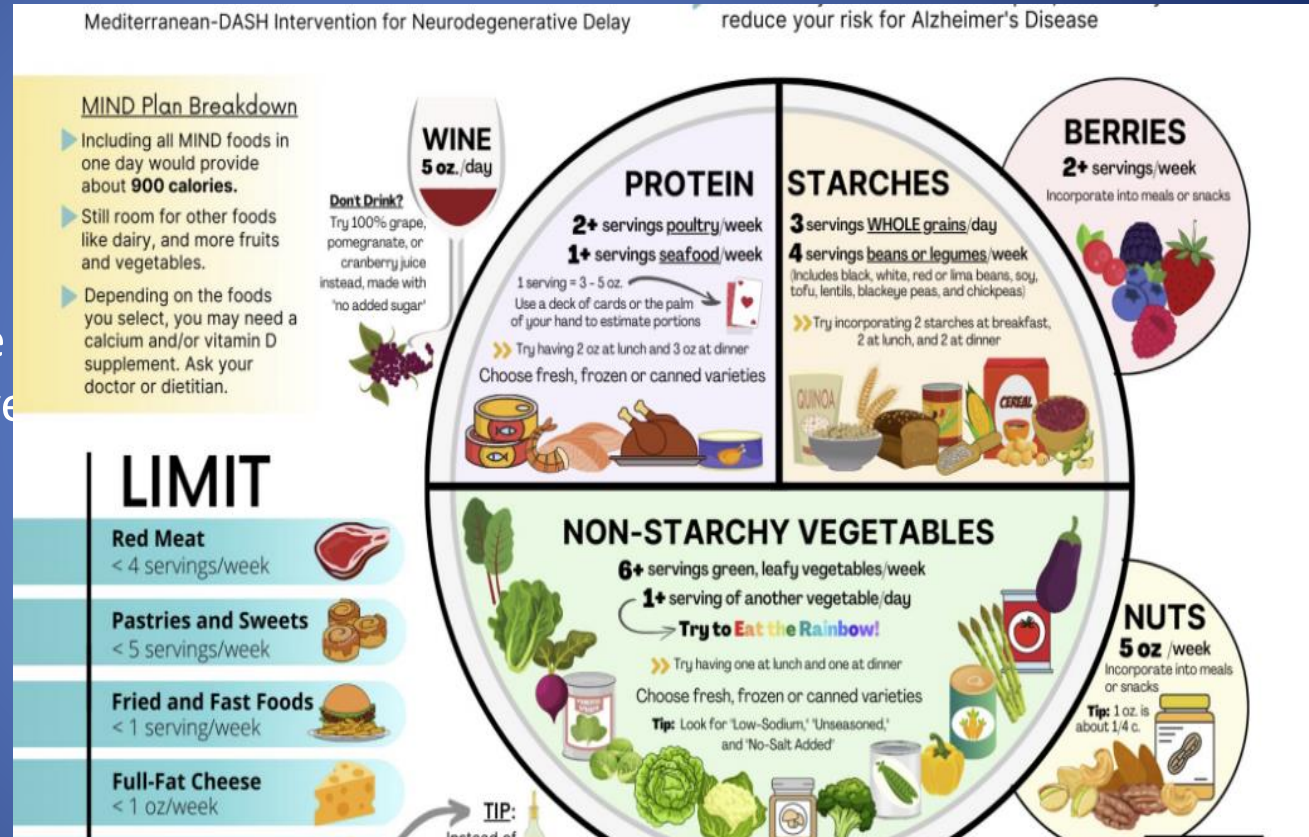
Exercise

- Meta-analysis of 14 trials showed that physical activity, especially combined aerobic and strength training programs, resulted in improvement in cognition.



Diet

MIND diet (hybrid of Mediterranean-DASH diet): 106 patients post stroke over 6 years showed slower cognitive decline with diet. Positive outcome was seen in global cognition and semantic memory.



Cognitive therapy

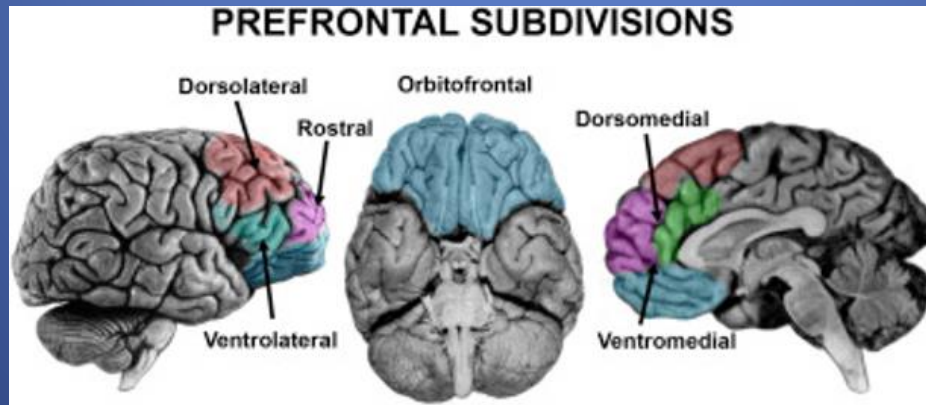
- Meta-analysis on multiple component intervention (combination of cognitive therapy with physical activity) showed that intervention group had higher MoCA scores than control group.
- 2 recent studies found that in the first 3 months of stroke, listening to vocal music vs instrumental music or spoken audiobooks induced improvement in verbal memory scores.²
- Further studies ongoing for specialized therapy targeting driving and return to work and programs to improve community participation such as support groups.

Mood impairment post stroke

- Meta-analysis of over 25K patients found prevalence of post stroke depression of 31% at some point within 5 years, mostly in acute phase and decreasing over time. Physical disability increases risk of depression.
- Review of over 4700 patients found prevalence of post stroke anxiety of 24% at some point within 5 years.
- Treat both with SSRI's.

Personality changes: frontal lobe strokes

- Dorsolateral – apathy, abulia
- Ventromedial – impulsivity, disinhibition
- Orbitofrontal – impaired decision-making/executive function



Personality changes post stroke

- Pseudobulbar affect (PBA): uncontrollable episodes of inappropriate crying or laughing. Can occur with lesions in internal capsule/basal ganglia, thalamus, and ventral brainstem. Treat with SSRI's, levodopa, amantadine, or Dextromethorphan/quinidine.
- Post stroke aggression: Can occur with similar lesions as PBA. Treat with SSRI's.

Summary

- For mild stroke and cognitive impairment, good evidence to treat with aggressive risk factor modification, AChE inhibitors, exercise, diet, and multimodal therapies
- Screen for mood and emotional disorders and treat with SSRI's and other medications.

Questions?

- <http://www.kissnetwork.us/>
- BAT phone: 913-588-3727