Neuropsychology

Your Medical Home Neighbor

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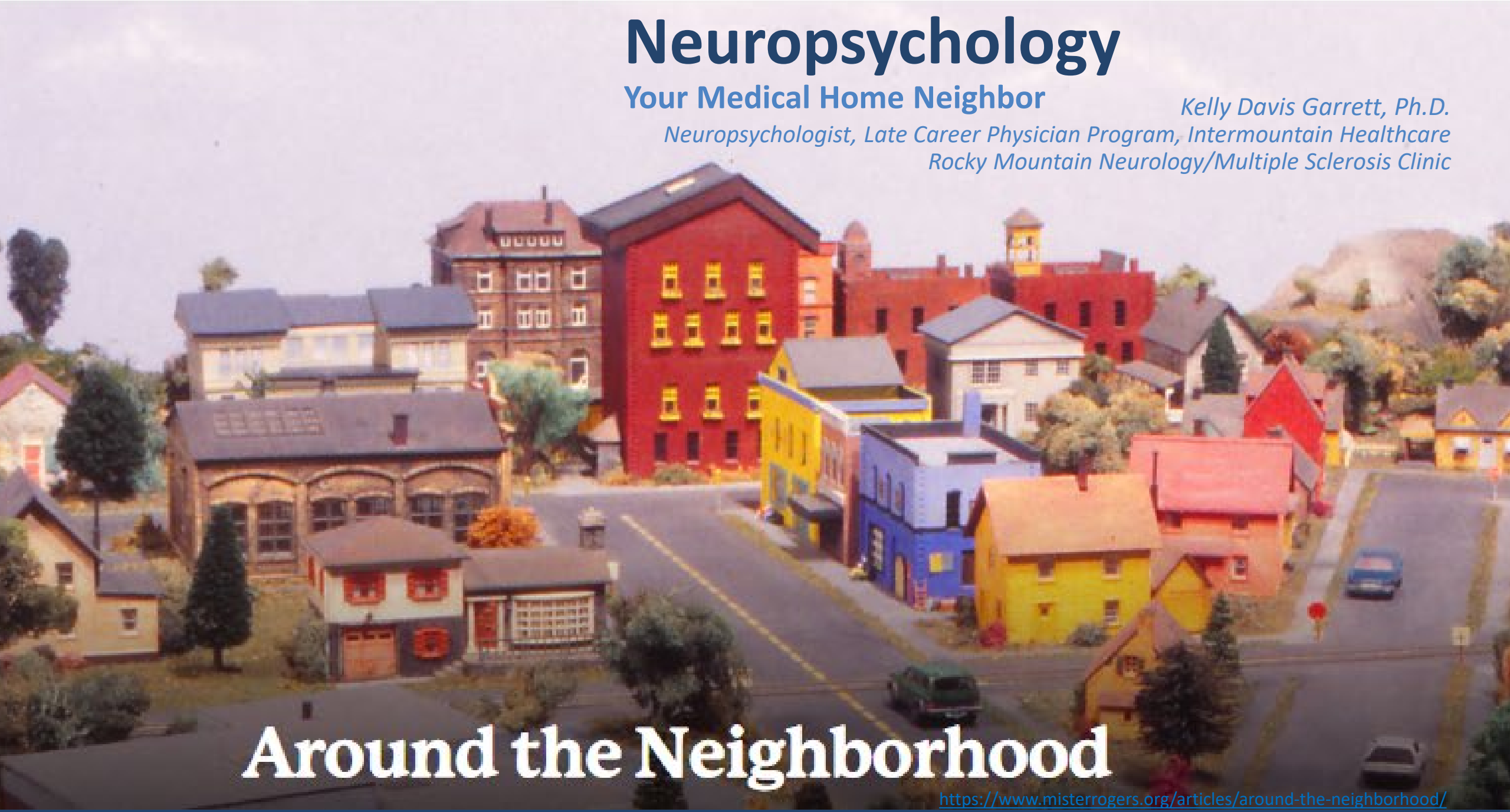
Neuropsychologist, Late Career Physician Program, Intermountain Healthcare
Rocky Mountain Neurology/Multiple Sclerosis Clinic



https://www.misterrogers.org/articles/around-the-neighborhood/

Learning Objectives

Improve familiarity with how neuropsychology is a resource in your medical practice

Identify the benefits and pitfalls of cognitive screening

Identify a cognitive screening tool that fits best for your patient population & setting

Know the pre-referral medical work-up: what to do before sending to npsych

Identify 5 ways you can participate in excellent cognitive care

- *(Beers list, run appropriate labs, know RED flags, ask and teach about sleep, exercise, loneliness, therapuetic journaling, carepartner support)*

Resources for your own cognitive care

Outline

- Neuropsychologists & How they think about thinking
- Referral to & Interventions of Cognitive Care teams
- The anatomy of a neuropsych consultation & report
- Recent epiphanies in neuropsychology
- Cognitive Performance of Physicians

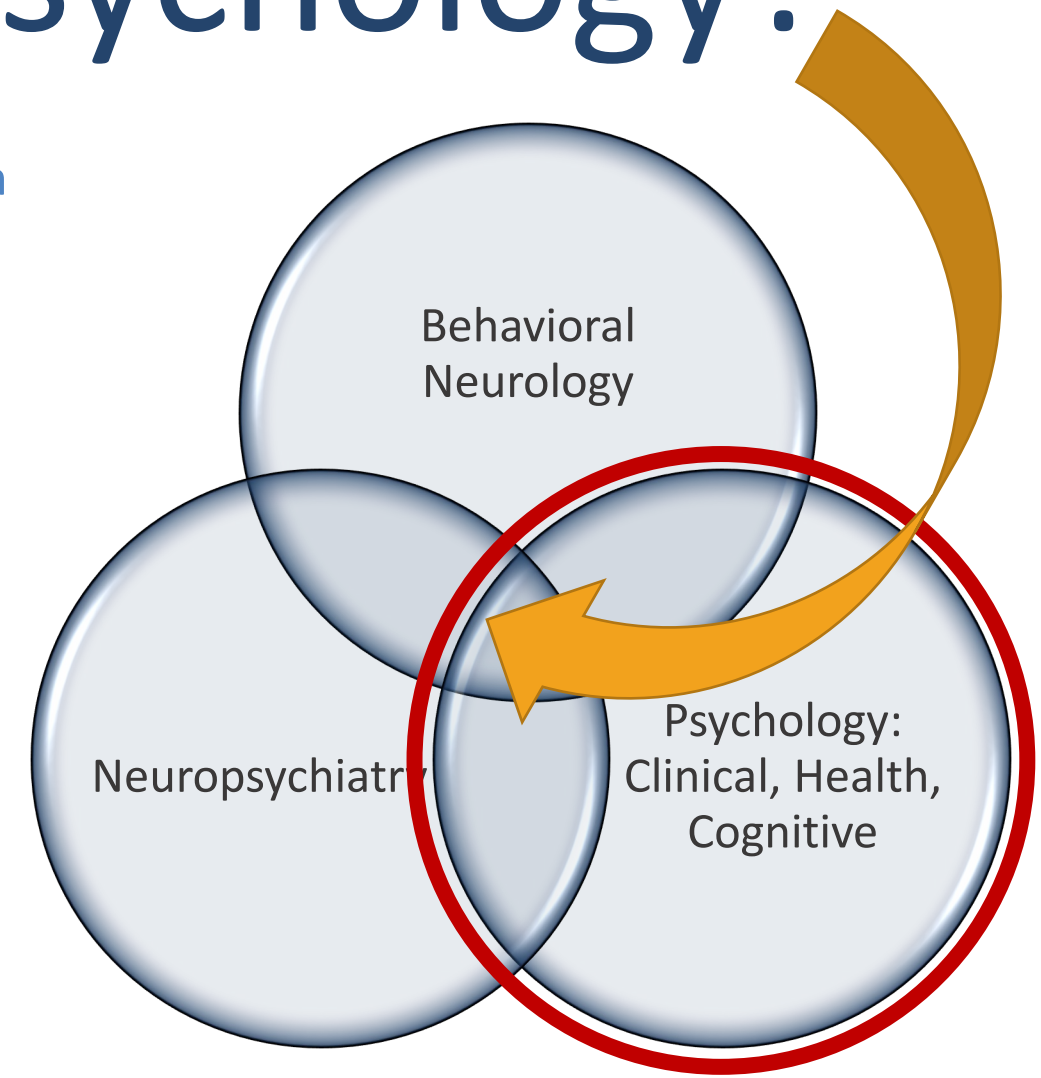
What is neuropsychology?

… a branch of psychology that is concerned with how the brain and the rest of the nervous system influence a person's cognition and behaviors. More importantly, professionals in this branch of psychology often focus on how injuries or illnesses of the brain affect cognitive functions and behaviors.

particular focus on assessment of thinking abilities, but also emotional responses, affect, self-regulation and other behaviors.

Clinical Neuropsychologists are licensed psychologists, with a doctoral degree, internship and post-doc fellowship in neuropsychology.

Increasingly, they are board certified, but not required to practice. Two boards, third board credential for pediatrics.



https://en.wikipedia.org/wiki/Neuropsychology

How do neuropsychologists think about thinking?

Bio-Psycho-Social Model

Typical Lifespan Development

Atypical trajectories or events and impact on brain, cognition, behavior, self, …

Cognitive profiles of strengths & weaknesses, by cognitive domain

Mental wellness, self-efficacy (believing “I’ve got this.”)

Functional impact of disease/ injury & how it impacts brain

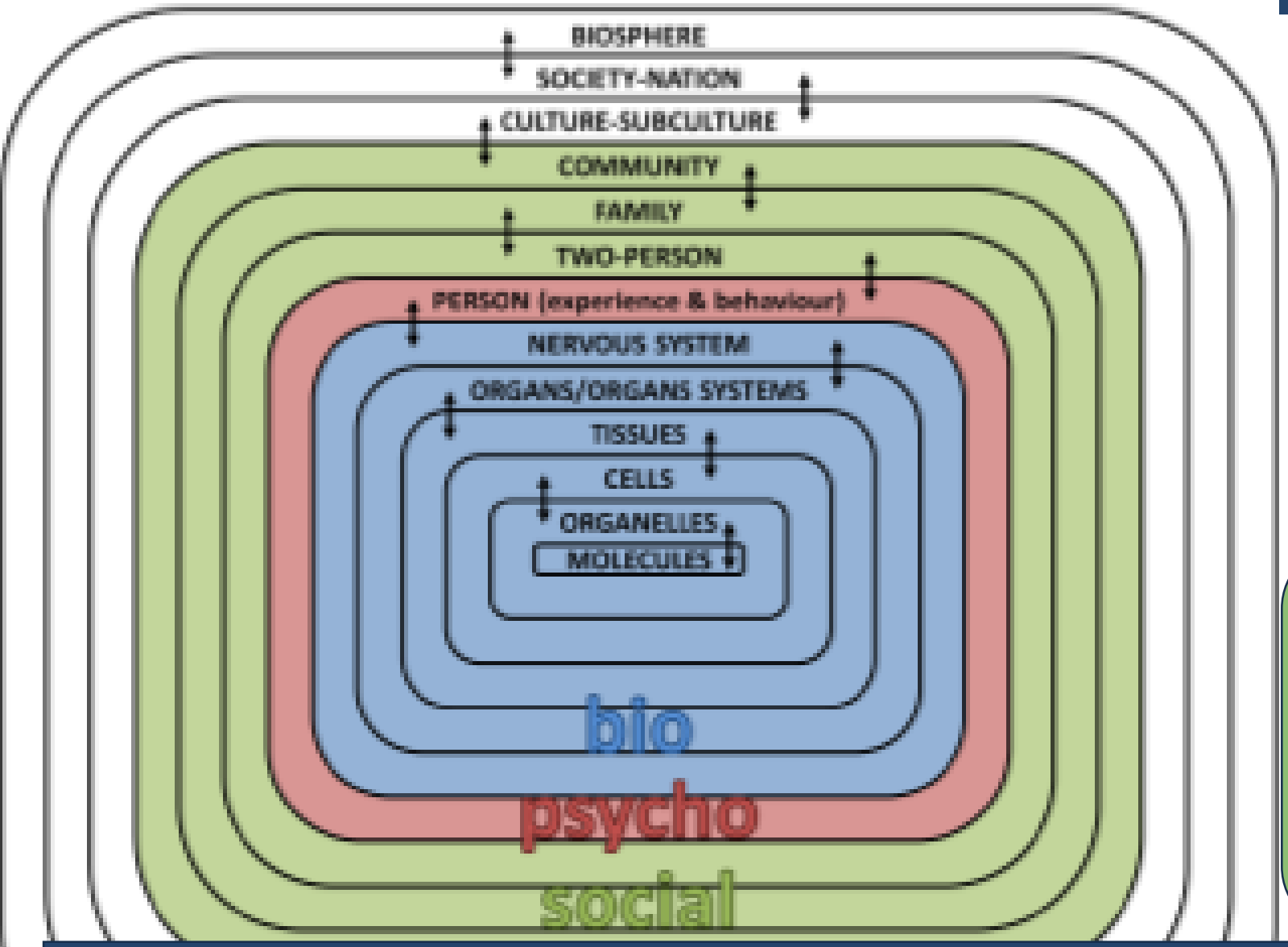
Task demands < Cognitive capacities

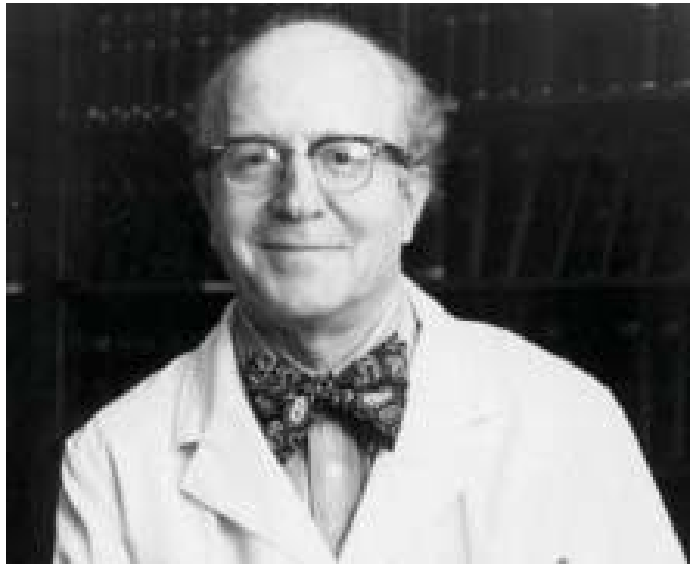
Decision making capacity

General Health and Wellbeing

Values, Goals, Motivations

Search for, affirm, strengthen/ support allies





GEORGE ENGEL (1913-1999)

Therapeutic writing:

- Improves immune system, wound healing, cardiac, wellbeing, employment
- Reduces clinic visits, inflammation

The body and the soul or psyche are reciprocally connected through the individual's temperament and consequently influence each other"; separation between them does not exist.

Aristotle in Roccatagliata, 1997

What is cognition?

Domains include:

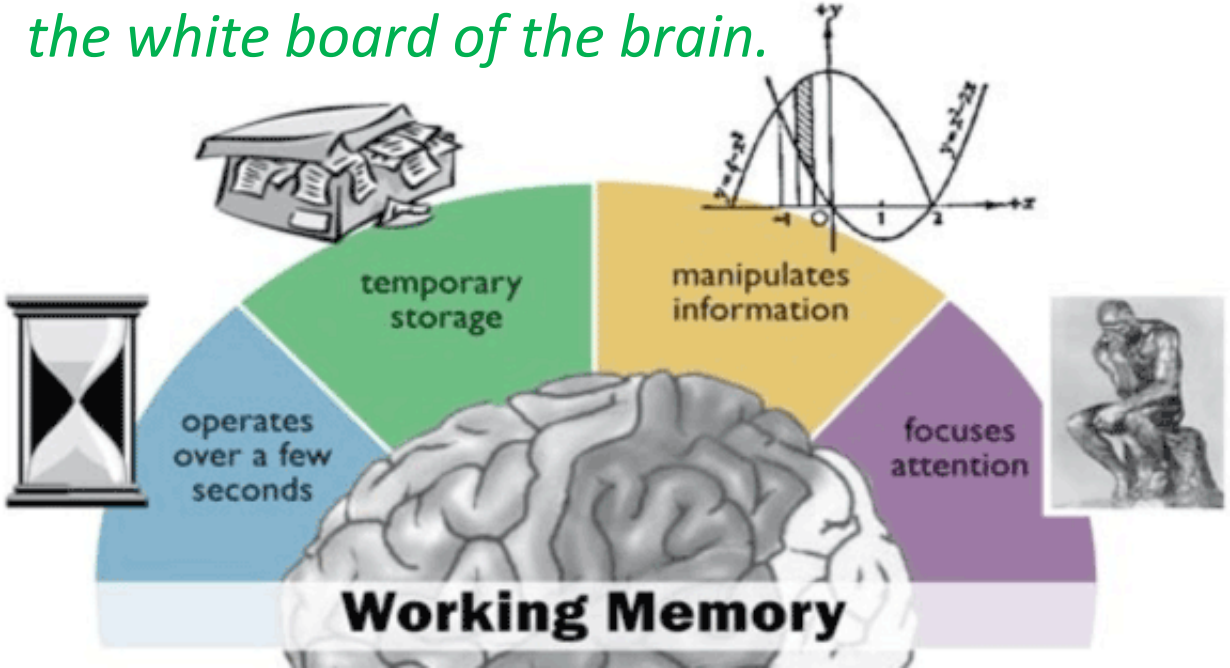
attention, processing speed, working memory, learning, memory, visuospatial, language, executive functions (aka cognitive control), problem solving, risk/reward assessment

Academic/achievement skills: literacy, comprehension, numeracy

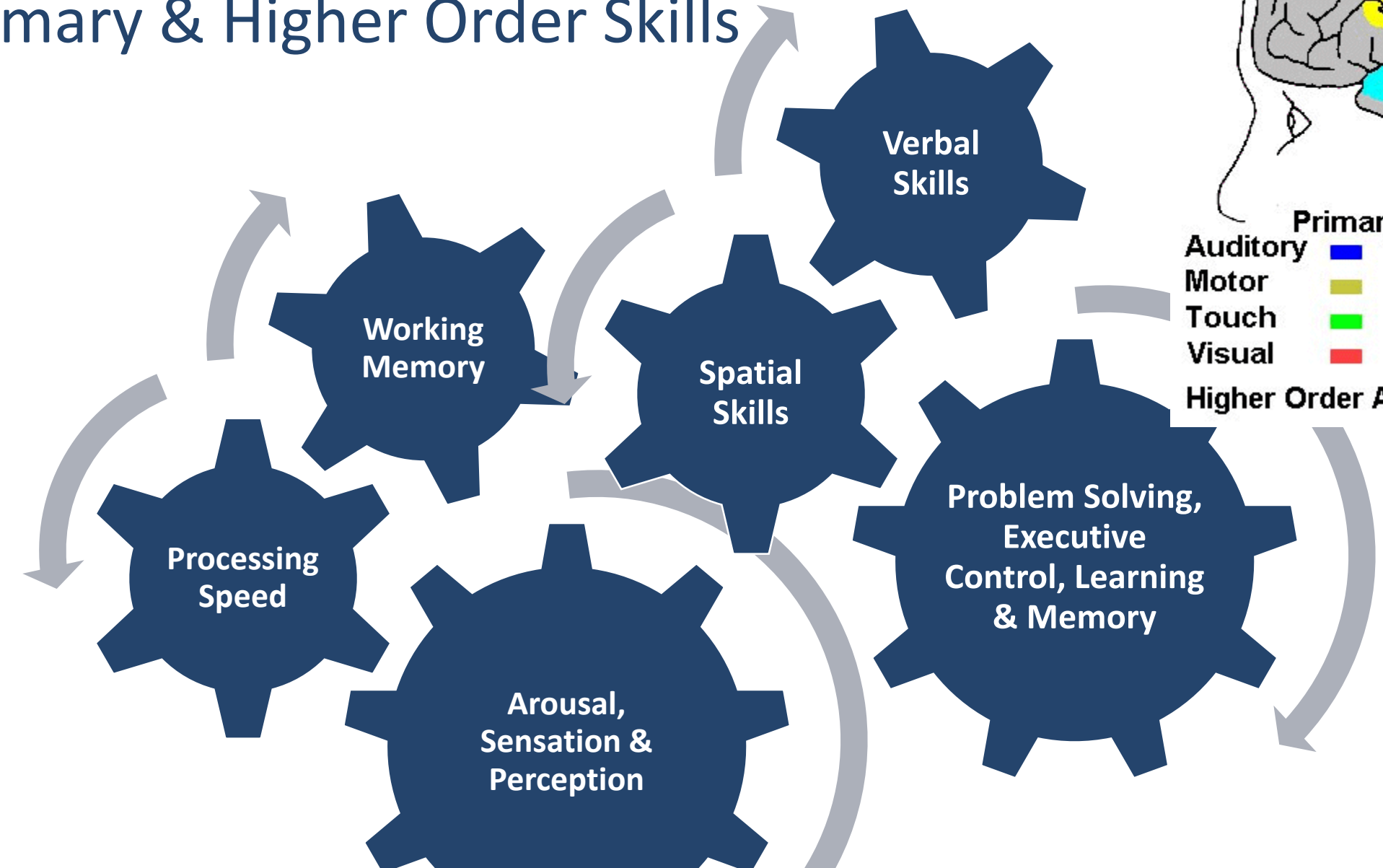
Assessment includes consideration of sensory acuity (hearing, seeing), verbal comprehension, and the role of fine motor speed and acuity

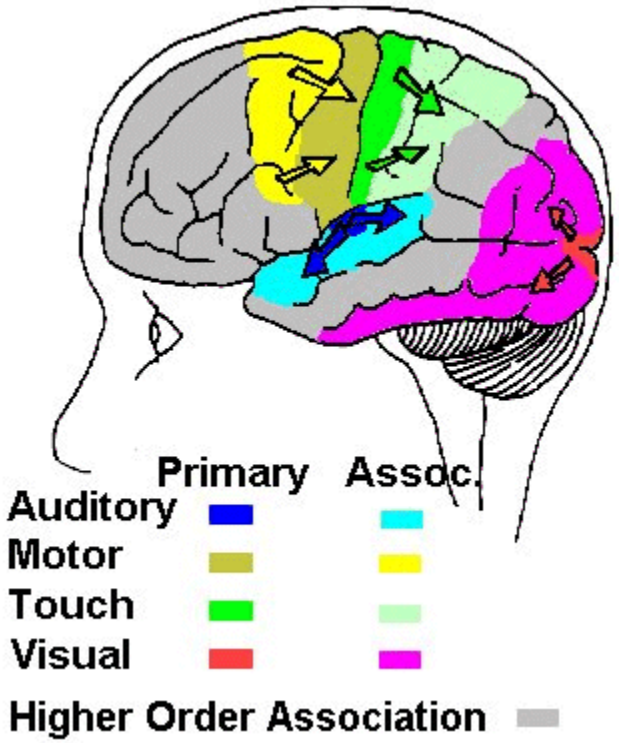
Executive Functions: a set of cognitive processes that are necessary for cognitive control of behavior: selecting & successfully monitoring behavior that facilitate the attainment of chosen goals. skills a CEO needs for success.

Working memory: cognitive system to hold information available for processing (reasoning, decision-making). the white board of the brain.



Primary & Higher Order Skills





Typical lifespan cognitive development

Infancy: secure attachment important, HPA axis, amygdala

Toddlerhood: receptive and expressive language (delayed for polylinguals)

School Age: attention, working memory, memory, literacy

Adolescence: executive functions, assessment of risk/reward

Young Adulthood: myelination complete at age 25-27

Middle Adulthood: processing speed slows, face-name recall

Young-Old, Middle-Old, Oldest-Old: working memory capacity shrinks, learning capacity recesses, semantic knowledge grows, ?benign forgetfulness (AAMI)

something goes awry… risk factors for cognitive decline

prematurity, autism, learning disabilities, ADHD

concussion, TBI, psychological trauma, substance abuse, hypoxia, CO poisoning, psychiatric d/o, ICU admit, infections (encephalopathy, HIV)

Multiple Sclerosis, cancer, chemo, diabetes, thyroid, sleep (apnea, insomnia, RLS)

mild cognitive impairment (subtypes), vascular (micro-, CVA), Alzheimer's, Parkinson's spectrum, progressive aphasias, ALS, Frontal Temporal Lobar degeneration, CTE

delirium, bereavement (retirement, disability, status, routine)

Increasing age, APO-e4 allele, BDNF, Vitamin D, B12, amyloid

Impact of Cognitive Decline on your practice

Adherence:

- Missed medications
- Poor monitoring
- Missed refills
- Missed appointments
- Miss deprescribing recommendations

Poor understanding of medical condition

Poor memory of medical counsel & teaching

RESULT? Worsening of self-management of disease… worsening of cognition & function.

Association between cognitive impairment and poor antihypertensive medication adherence in elderly hypertensive patients without dementia

Mi Hee Cho, Dong Wook Shin, Sung-A Chang, Ji Eun Lee, Su-Min Jeong, Sang Hyuck Kim, Jae Moon Yun & Kiyoung Son

Scientific Reports **8**, Article number: 11688 (2018) | Cite this article

Consider: Treatment you gave for problem X now has cognitive SEs (or disrupts sleep which ↓ cognition)

Care Process Model FEBRUARY 2017

DIAGNOSIS AND MANAGEMENT OF

Mild Cognitive Impairment (MCI) and Dementia

COGNITIVE ASSESSMENT TOOLKIT

alzheimer's association

A guide to detect cognitive impairment quickly and efficiently during the Medicare Annual Wellness Visit

Team developed this care process model (CPM) to improve the diagnosis and
cross the staging continuum from mild impairment to advanced dementia. It is
teams in making the diagnosis of dementia and in providing optimal treatment
CPM is based on existing guidelines, where available, and expert opinion.

The null hypothesis: DELIRIUM. Any cognitive change is delirium until proven otherwise.

COGNITIVE CONCERN

- From patient or family
- From clinician
- Positive MiniCog at annual wellness visit (AWV)

Code R41.9

Scan Clock Drawing!

Delirium present? See DSM V criteria (a)

yes → FIND and TREAT cause of delirium ***Code R41.0*** → RE-EVALUATE in 1–4 weeks

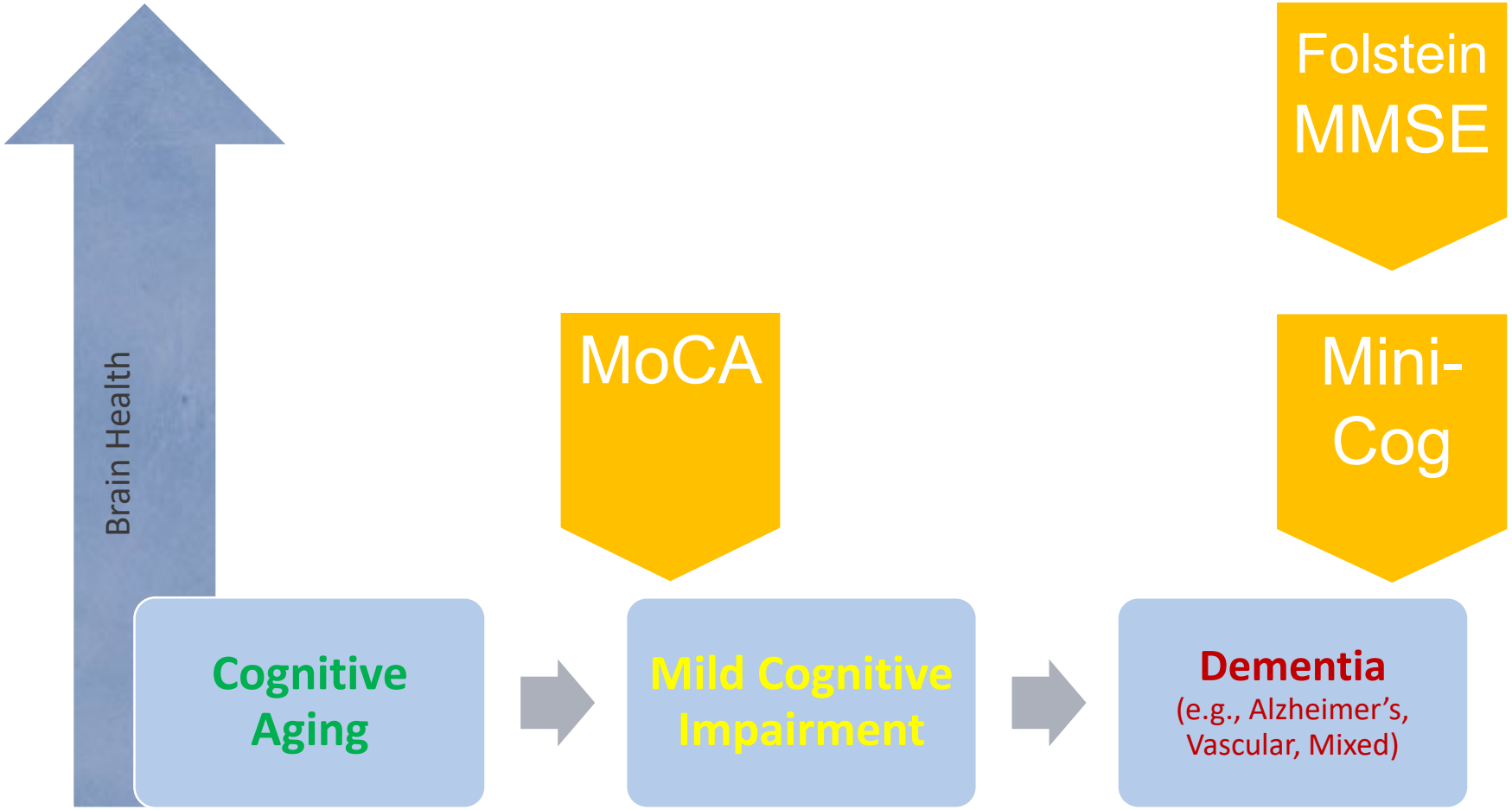
no ↓

EVALUATE FOR COGNITIVE CONCERN

History & Physical	RECONCILE med list	Labs	ASSESS functional status	Cognitive Testing
• OBTAIN history from • **Also OBTAIN histo family member or** • Personality changes • Weight changes • Peripheral neuropatl • Hearing/vision • Dysphagia/dysarthri • Language comprehe • SCREEN for OSA • SCREEN for depressi	ACB calculator Diazepam Score: 1 Medicine: Diazepam Brands: Valium™ Sleepeaze™ Score: 3 Medicine: Diphenhydramine Brands: Benadryl™, Nytol™, Sleepeaze™ Detrol™ Score: 3 Medicine: Tolterodine Brands: Detrol™ + Add new medicine Reset Total ACB Score: 7 **High Risk** Your patient has scored ≥3 and is therefore at a higher risk of confusion, falls and death. Please review their medications and, if possible, discuss this with the patient and/or relatives/carers. Please consider if any of these medications could be switched to a lower-risk alternative.	• B12 • TSH • CBC • CMP • HIV (if indicated) • RPR (if indicated) • **UA**	• iADLs shopping, meals, finances, housekeeping, transportation, other daily duties at work or home • ADLs bathing, dressing, toileting, continence, walking, transferring	• ADMINISTER MoCA (c)

Scan MoCA !

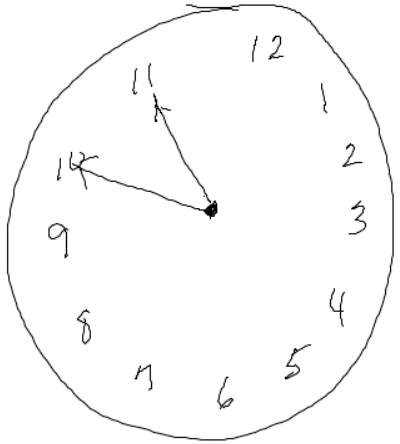
What's the difference?



MCI is a risk factor for, not a stage of dementia

General Taxonomy	Mild cognitive impairment (MCI)	Dementia
Cognitive impairment	• Decline from previous • Not due to delirium	• **SAME**
Functional impact	Cognitive deficits **do not interfere** with iADLs	Cognitive deficits **interfere** with iADLs
Screening tool	MoCA 10-15 minutes www.moca.org	Mini-Cog 5 minutes www.alz.org
Subtype/etiology	@ full assessment	@ full assessment

Clock drawing?



Useful, if done properly

GERIATRIC ANESTHESIA: ORIGINAL CLINICAL RESEARCH REPORT

Feasibility and Rationale for Incorporating Frailty and Cognitive Screening Protocols in a Preoperative Anesthesia Clinic

Amini, Shawna MPH[*,†,‡]; Crowley, Samuel MS[*]; Hizel, Loren MS[*]; Arias, Franchesca PhD[*,‡]; Libon, David J. PhD[§,‖,¶]; Tighe, Patrick MD, MS[†,‡]; Giordano, Chris MD[†]; Garvan, Cynthia W. PhD[†]; Enneking, F. Kayser MD[†]; Price, Catherine C. PhD[*,†,‡]

Author Information

Anesthesia & Analgesia: September 2019 - Volume 129 - Issue 3 - p 830-838

GERIATRIC ANESTHESIA

Considerations for Clock Drawing Scoring Systems in Perioperative Anesthesia Settings

Frei, Bailey W. BS[*]; Woodward, Kristen T. BS[*]; Zhang, Mitchell Y. BSE[*]; Amini, Shawna MPH[*,†]; Tighe, Patrick MD, MS[*]; Garvan, Cynthia W. PhD[*]; Giordano, Chris MD[*]; Price, Catherine C. PhD[*,†] Author Information

Can J Anesth/J Can Anesth (2011) 58:267–274
DOI 10.1007/s12630-010-9448-4

REPORTS OF ORIGINAL INVESTIGATIONS

The clock drawing test is a poor screening tool for postoperative delirium and cognitive dysfunction after aortic repair

Le test du dessin de l'horloge est un outil de dépistage médiocre pour le delirium postopératoire et le dysfonctionnement cognitif après une chirurgie de l'aorte

Gregory L. Bryson, MD · Anna Wyand, MD · Denise Wozny, BA · Laura Rees, PhD · Monica Taljaard, PhD · Howard Nathan, MD

Best Practices for Referral to Neuropsychology

- Request HIGH PRIORITY for RED FLAGS or safety concerns (consider concurrent neurology referral)
- Rule out delirium: Med Rec then deprescribing
- Lab work up complete and addressed (ok to wait on MRI)
- Engage with family for collateral information, prepare for consult & to support patient
- Challenge: Specific referral question, go beyond "eval & treat."

Red Flags:

< age 65

Rapid progression (not delirium)

Upper motor neuron signs

Parkinsonism

Focal neuro deficit

Significant gait abnormality

Psychiatric/behavioral disturbance

Receptive or Expressive Aphasia

Table 2. Comparison of levels of cognitive screening and assessment with neuropsychological assessment.

	Cognitive screening	Cognitive testing	Neuropsychological assessment
Level of Complexity and Integration of Contextual Information	*Low:* No use of contextual information, test scores interpreted in isolation	*Medium:* Use of normative standards for demographic correction (e.g. age, gender, ethnicity, and/or education)	*High:* Use of many contextual qualitative information sources as well as currently accepted normative standards/corrections
Scope of Testing	*Narrow:* Cursory screening measures, emphasis on global cognitive functioning	Testing of circumscribed cognitive domains and/or absence of deeper probing and consideration of contextual factors	*Broad:* Comprehensive assessment and integration of cognitive, emotional, and behavioral domains in consideration of contextual factors
Example Scenarios	(1) Emergency medical screening (2) Physician in-clinic screening (3) Sideline concussion screening	(1) Academic skills testing (e.g. reading) (2) Brief inpatient testing	(1) Diagnostic formulation (2) Pre/post-surgical assessment
Potential for Diagnostic Errors	Highest	Moderate	Lowest

Slide (and addendum) courtesy of Mark Bondi, UCSD

Block et al. (2017). *The Clinical Neuropsychologist.*

Neuropsychology Consultation: Visit 1

Diagnostic Interview, usually with knowledgeable informant. Scheduled for 90 minutes.

Hx of cognitive complaints and functional status (work, driving, medication management, ADLs). Course of decline. Insight. Beliefs and values.

Current sleep, mood, typical day, pleasurable activities

Medical and psychological history (development, education, work, family, caregiving)

Determine readiness for goals for cognitive care (motivational interviewing):

- Possible goals: Labs, consultations, sleep hygiene, delirium, go-no go decision on cognitive assessment, make invitations for family feedback session

Neuropsychology Consultation: Visit 2

- Cognitive testing 1:1 with patient
- 2-3 hours
- May be done with technician, trainee/grad student, or neuropsychologist
- Assessment is standardized, but always brings opportunity for intervention
- Prepare for visit 3: results are analyzed using benchmarks, typically age-based normative data

Neuropsychology Consultation: Visit 3

(family) feedback session; 60-90 minutes

review goals and concerns for all present: This sets agenda, affirms patient goals

- "I want a diagnosis." "…a plan." "…my kids to know this is real."

review cognitive strengths and weaknesses

diagnostic impressions: causes, contributors, mitigators

COLLABORATE ON COGNITIVE CARE PLAN

Agree on plan for follow-up, if any, with neuropsych and with referring doc:

- Next month (especially if goal for psychotherapy with new therapist)
- Quarterly: goal to monitor plan, encourage accountability, smooth out speedbumps
- Biannually: to track stability/progression

A User's Guide to Neuropsychology Documentation

Variable between clinicians (sorry!)

Written for different audiences

Diagnostic Impressions, Prognosis

Concerns

Cognitive Care Plan:

- Medical (treatment, referrals)
- Decision Making (driving, PoA)
- At home Plan/success at work
- Recommendations for Care Partners

What happened (patient & family reaction) at feedback session

Will neuropsychology follow patient? Who is the cognitive care quarterback?

Please consider: How can I monitor the cognitive care plan in future visits?

- How's Tai Chi going at the Rec Ctr?
- How do you feel about your therapist?
- How often do you miss/forget to take your medications?

Cognitive Care Plan for Diabetes & MCI

Optimize medical management of chronic conditions

- Chronicity of DM & A1c related to risk of dementia (2-3x)

Compensatory strategies

- Calendars, alarms, notetaking, organizational strategies get around the skill deficit or the high volume of information to be processed.

Cognitive training

- Builds skills: processing speed, working memory, errorless learning.

Engage care partner (Feil et al., 2011).

Consider modifying goals/reducing task demands, then building on successes.

Compensatory Strategies

Processing Speed

Slow it down task demands

Text, Email or Vmail preferred

Provide notes to patient, point to the key points on the page

Simplify message from HCPs, plan multiple visits

Prospective Memory

remember to remember

Pair new behavior to existing routine, practice

Pair: put on glasses, check glucose

Pair: Evening prayer before meal— "Amen", take medication

Working memory

Reduce number of elements in message: chunk

Take notes or draw: get more on the page, less in the head

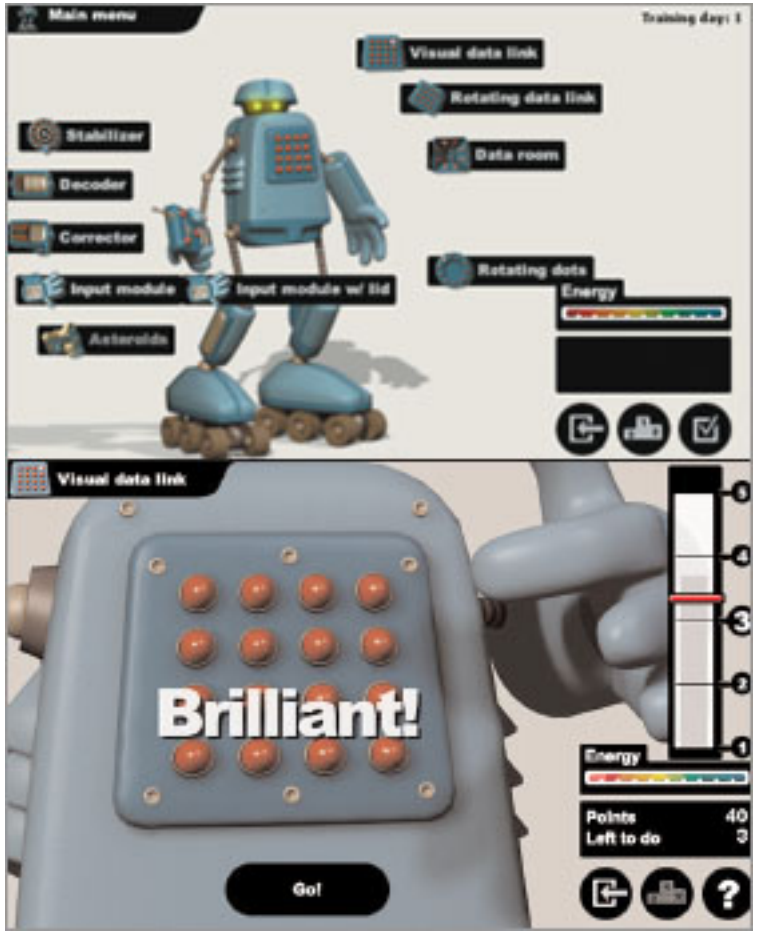
Whiteboards, multiple computer screens

Cognitive Training: Processing Speed (Brain HQ)

Iowa Healthy and Active Minds Study ACTIVE (Advanced Cognitive Training for Independent and Vital Elderly) *n=681*

Cognitive Training: Working Memory

PLOS | ONE



RESEARCH ARTICLE

Benefits of a Working Memory Training Program for Inattention in Daily Life: A Systematic Review and Meta-Analysis

Megan Spencer-Smith[1,2]*, Torkel Klingberg[1]

1 Department of Neuroscience, Karolinska Institutet, Stockholm, Sweden, 2 School of Psychological Sciences, Monash University, Melbourne, Victoria, Australia

COGMED

Risk for dementia onset, progression, death

Mortality risk greater than smoking.

Risk for MCI, dementia, functional disability.

Effective interventions mitigate.

Loneliness

How often do you feel that you lack companionship?

How often do you feel left out?

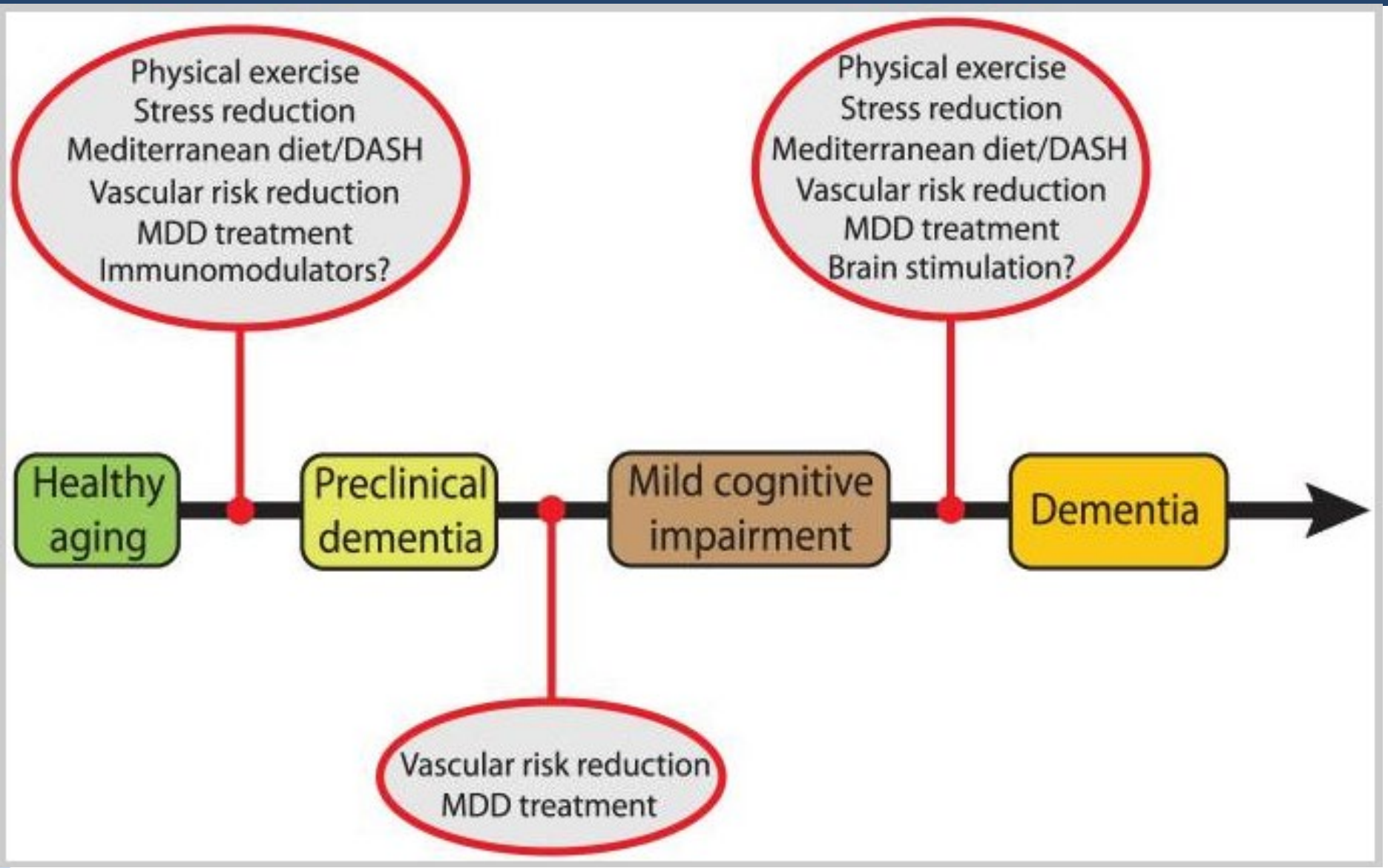
How often do you feel isolated from others?

High purpose in life (Boyle et al., 2010 *Arch Gen Psychiatry*)

- doubled likelihood being cognitively healthy.
- reduces the effects of Alzheimer's pathology on cognitive function.

Loneliness can be mitigated, purpose in life increased (Tang, 2015)

- Experience Corps boosts cognitive scores (Carlson, et al., 2008 *Gerontologist*)
  - Poorly educated NH residents who did Experience Corps
  - More activated left prefrontal cortex and anterior cingulate cortex
  - Better performance on Flanker task (Working memory/inhibition)



Strength of Evidence

Physical Activity

Tx Vascular Risk

Diet

Tx Depression

Cognitive Retraining

Stress Reduction

Immunomodulators

Brain Stimulation (TC)

PHYSICAL ACTIVITY… MENTAL ACTIVITY…COGNITIVE ACTIVITY

Intermountain® Healthcare

Rakesh, G., Szabo, S. T., Alexopoulos, G. S., & Zannas, A. S. (2017)

PHYSICAL ACTIVITY… MENTAL ACTIVITY…COGNITIVE ACTIVITY

Journal of the International Neuropsychological Society (2015), **21**, 768–779.

doi:10.1017/S1355617715001083

Aerobic and Cognitive Exercise (ACE) Pilot Study for Older Adults: Executive Function Improves with Cognitive Challenge While Exergaming

JAMA Network | Open

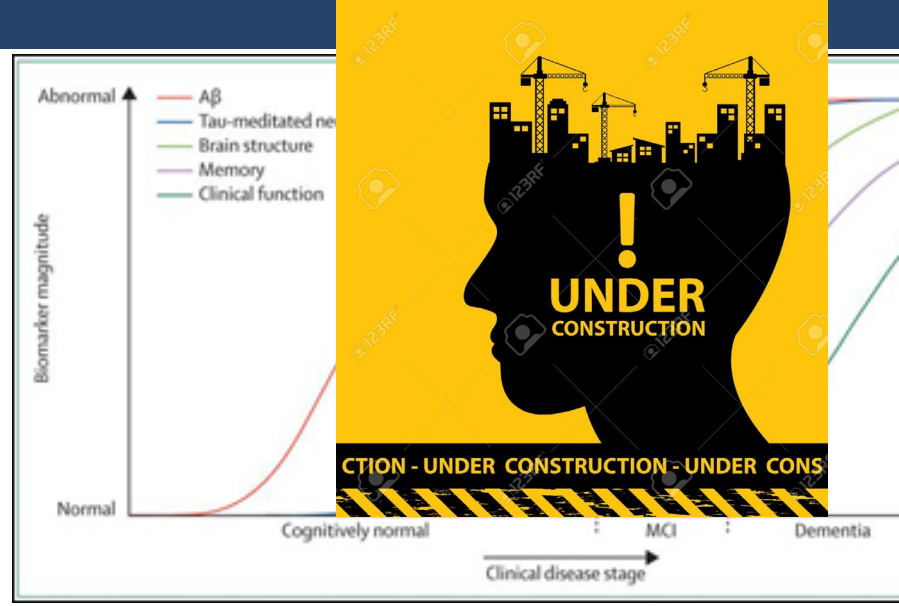
Original Investigation | Geriatrics

Comparative Effectiveness of Behavioral Interventions on Quality of Life for Older Adults With Mild Cognitive Impairment

A Randomized Clinical Trial

Melanie J. Chandler, PhD; Dona E. Locke, PhD; Julia E. Crook, PhD; Julie A. Fields, PhD; Colleen T. Ball, MS; Vaishali S. Phatak, PhD; Pamela M. Dean, PhD; Miranda Morris, MS; Glenn E. Smith, PhD

Recent Epiphanies in Neuropsychology



Cognitive Screening => High False Positives in Mild Cognitive Impairment/Dementia

- Aricept is effective in MCI for the right patients

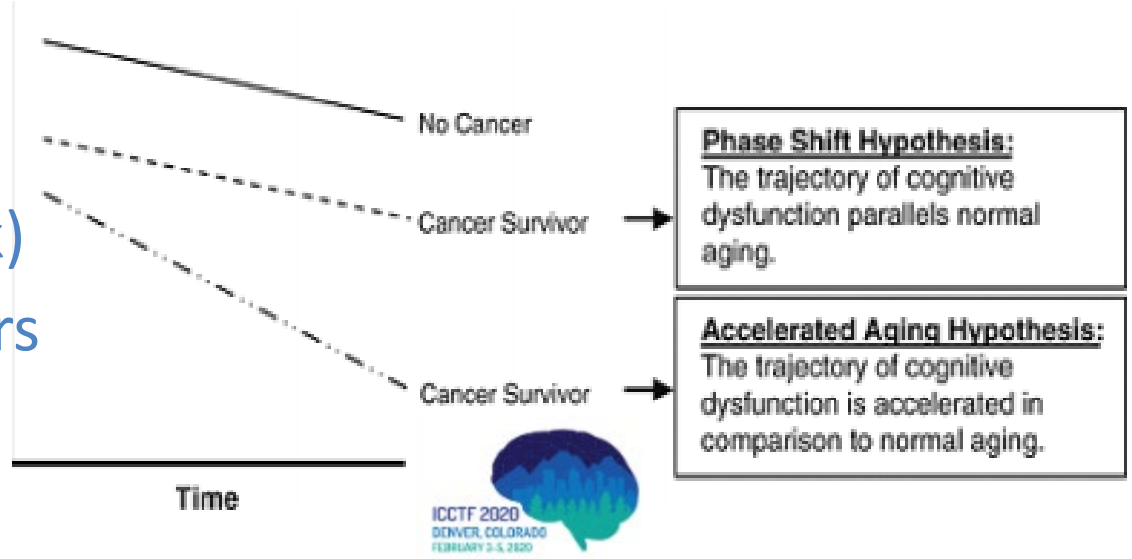
Amyloid Hypothesis of Alzheimer's is admitted to Hospice

Non-CNS cancer related to cognitive declines:

- at pre-treatment? Perhaps?
- During treatment (combos & dosage↑ risk)
- 20 years s/p Tx, accelerated aging by 6 years

The other little brain… Gut microbiome

CTE is difficult and complicated



ELSEVIER

Check for updates

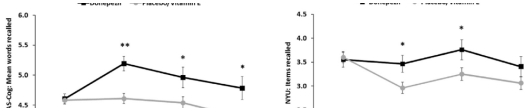
Alzheimer's & Dementia: Translational Research & Clinical Interventions 4 (2018) 11-18

Alzheimer's & Dementia

Featured Article

Unmasking the benefits of donepezil via psychometrically precise identification of mild cognitive impairment: A secondary analysis of the ADCS vitamin E and donepezil in MCI study

Emily C. Edmonds[a,b,*], M. Colin Ard[c], Steven D. Edland[c,d], Douglas R. Galasko[a,b,c], David P. Salmon[c], Mark W. Bondi[a,b]



ELSEVIER

CrossMark

Alzheimer's & Dementia 11 (2015) 415-424

Alzheimer's & Dementia

Susceptibility of the conventional criteria for mild cognitive impairment to false-positive diagnostic errors

Emily C. Edmonds[a], Lisa Delano-Wood[a,b], Lindsay R. Clark[c], Amy J. Jak[a,b], Daniel A. Nation[d], Carrie R. McDonald[a], David J. Libon[e], Rhoda Au[f,g], Douglas Galasko[a,b,h], David P. Salmon[h], Mark W. Bondi[a,b,*], for the Alzheimer's Disease Neuroimaging Initiative[1]

Systematic review: The authors searched PubMed for studies related to diagnosis of mild cognitive impairment (MCI) for clinical trials. Results revealed that MCI is routinely diagnosed based on subjective complaints, an impaired score on a single objective memory test, clinical judgment of cognitive decline, and intact functional abilities. However, recent research suggests that this diagnostic approach may be overinclusive.

Interpretation: Our study supports previous findings showing high rates of diagnostic errors based on conventional criteria, as one-third of our sample was misclassified as MCI. Results further show that this misdiagnosed subgroup had different CSF profiles, *APOE* allelic frequencies, and rates of progression to dementia compared with other MCI subtypes.

Interpretation: Our results support previous findings showing high rates of diagnostic errors based on conventional criteria, as approximately one-third of MCI participants in the Alzheimer's Disease Cooperative Study donepezil trial were identified as cognitively normal based on actuarial methods applied to multiple cognitive tests. Removal of "false-positives" unmasked beneficial effects of donepezil on cognition and rate of progression to Alzheimer's disease.

Ketogenic Diet Improves Gut Microbiome and Alzheimer's Disease Markers (FS09-02-19)

Ravinder Nagpal, Shaohua Wang, Bryan Neth, Mohammad Kawas, Suzanne Craft, and Hariom Yadav

Wake Forest School of Medicine

Objectives: To compare the gut microbiome and short-chain fatty acids (SCFAs) in subjects with or without mild cognitive impairment (MCI) and study the effect of a modified Mediterranean-ketogenic diet (MMKD) and a low-fat American Heart Association Diet (AHAD) on gut microbiome, SCFAs, and cerebrospinal fluid (CSF) biomarkers of AD.

Methods: A randomized crossover study of MMKD and AHAD interventions is performed on 17 subjects (mean age 63.4 yr) with ($n = 11$) or without ($n = 6$) MCI. Subjects undergo MMKD and AHAD intervention for 6-weeks separated by 6-weeks washout. Gut microbiome at the beginning and end of each intervention is analyzed by 16S rRNA gene sequencing and QIIME analysis. Fecal SCFAs are measured by HPLC, and AD biomarkers like amyloid β-40 (Aβ40) and Aβ42, total tau and phosphorylated tau-181 (ptau) are measured in CSF.

Results: At baseline, subjects with or without MCI show no notable difference in microbiome diversity but show specific microbial signatures associated with MCI status. MCI^{+ve} subjects have higher abundance of *Firmicutes*, *Proteobacteria*, *Enterobacteriaceae*, *Coriobacteriaceae*, *Mogibacteriaceae*, *Phascolarctobacterium* and *Coprococcus* that correlates with lower Aβ40 and Aβ42 and higher tau and ptau. Proteobacteria correlate positively with Aβ42:Aβ40 while propionate correlates negatively with Aβ42 in MCI^{+ve}subjects. The abundance of *Enterobacteriaceae*, *Akkermansia*, *Slackia*, *Christensenellaceae* and *Erysipelotriaceae* is increased while that of *Bifidobacterium* and *Lachnobacterium* is reduced by MMKD; whereas AHAD increases *Mollicutes*_Rf39. MMKD slightly reduces lactate and acetate while increasing propionate and butyrate. Conversely, AHAD increases acetate and propionate while reducing butyrate.

Conclusions: Specific gut microbial signatures can present as markers of MCI. MMKD can modulate the gut microbiome and metabolites in association with improved AD biomarkers, suggesting that MMKD could ameliorate MCI or AD in humans.

Funding Sources: National Institutes of Health; US Department of Defense; Center for Diabetes, Obesity and Metabolism at the Wake Forest School of Medicine.

Study Coordinator 801 507 4898
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Intermountain Medical Center Heart Institute

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Fasting - The WONDERFUL Trial

Can Fasting Once or Twice a Week Reduce Cholesterol?

Inclusion Criteria

Mod-high LDL, no statin

21-70 y.o.

PLUS another risk factor (DM, pre-DM, overweight, HTN, dyslipidemia)

- Is your blood pressure high?
- Do you have pre-diabetes or diet-controlled diabetes?
- Are you overweight?
- Is your HDL (good) cholesterol too low?
- Are your triglycerides too high?

You may be eligible to participate in the WONDERFUL Trial: A Randomized Trial of Intermittent Fasting among 128 People at Risk of Cardiovascular and Metabolic Diseases.

Study Goal

The goal of this study is to determine how effective repeated fasting is at improving certain health factors, like high blood pressure and high triglycerides. These factors, among others, predict the development of chronic cardiovascular diseases, metabolic problems like diabetes, and cognitive impairments.

Cognitive Performance of Physicians

Accuracy of Physician Self-assessment Compared With Observed Measures of Competence

A Systematic Review

David A. Davis, MD
Paul E. Mazmanian, PhD
Michael Fordis, MD
R. Van Harrison, PhD
Kevin E. Thorpe, MMath
Laure Perrier, MEd, MLIS

Context Core physician activities of lifelong learning, continuing medical education credit, relicensure, specialty recertification, and clinical competence are linked to the abilities of physicians to assess their own learning needs and choose educational activities that meet these needs.

Objective To determine how accurately physicians self-assess compared with external observations of their competence.

Data Sources The electronic databases MEDLINE (1966-July 2006), EMBASE (1980-July 2006), CINAHL (1982-July 2006), PsycINFO (1967-July 2006), the Research and Development Resource Base in CME (1978-July 2006), and proprietary search engines were searched using terms related to self-directed learning, self-assessment, and self-reflection.

Study Selection Studies were included if they compared physicians' self-rated assessments with external observations, used quantifiable and replicable measures, included a

SELF-ASSESSMENT AND SELF-directed, lifelong learning have long been mainstays of the medical profession—they

Conclusions While suboptimal in quality, the preponderance of evidence suggests that physicians have a limited ability to accurately self-assess. The processes currently used to undertake professional development and evaluate competence may need to focus more on external assessment.

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cate,[4] which is based on CME participation, meets the CME requirements of the Joint Commission on Accreditation of Healthcare Organizations

odological rigor. Of the 20 comparisons between self- and external assessment, 13 demonstrated little, no, or an inverse relationship and 7 demonstrated positive associations. A number of studies found the worst accuracy in self-assessment among physicians who were the least skilled and those who were the most confident. These results are consistent with those found in other professions.

"recommended that, **starting at age 65 to 70**, surgeons undergo voluntary and confidential baseline physical examination and visual testing by their personal physician for overall health assessment. Regular interval reevaluation thereafter is prudent for those without identifiable issues on the index examination. Surgeons are encouraged to also voluntarily assess their neurocognitive function…. Interpretation requires the skills and knowledge of a trained neuropsychologist."

Statement on the aging surgeon

The American College of Surgeons (ACS) Board of Governors Physician Competency and Health Workgroup developed the following statement. The ACS Board of Regents approved the statement at its October 2015 meeting in Chicago, IL.

The average age of the practicing surgeon is rising along with that of the American population. Approximately one-third of all practicing surgeons are older than age 55. For the more than 100 years since its founding, the ACS has emphasized the importance of high-quality and safe surgical care. To address concerns that advanced age may influence competency and occupational performance, the ACS has developed the following guidelines:

- The ACS maintains that it is in the best interests of the surgeon to adhere to a lifestyle that promotes wellness. As such, the ACS stresses the importance of a lifelong approach to physical, mental, and emotional wellness for personal and professional well-being.

- Surgeons are not immune to age-related decline in physical and cognitive skills. Even so, the ACS does not favor a mandatory retirement age because the onset and rate of age-related decline in clinical performance varies among individuals. Furthermore, a mandatory retirement age may have a deleterious impact on access to experienced surgical care, particularly in rural and underserved areas. Objective assessment of fitness should supplant consideration of a mandatory retirement age.

- Surgeons may not, on their own, recognize deterioration of their physical and cognitive function and clinical skills with age. Colleagues and coworkers are

- Although age-related deterioration varies from in vidual to individual, gradual decline in overall heal physical dexterity, and cognition generally occurs af the age of 65. For this reason, it is recommended th starting at age 65 to 70, surgeons undergo voluntary a confidential baseline physical examination and vis testing by their personal physician for overall hea assessment. Regular interval reevaluation thereaf is prudent for those without identifiable issues on t index examination. Surgeons are encouraged to a voluntarily assess their neurocognitive function usi confidential online tools. As a part of one's professio obligation, voluntary self-disclosure of any concerni and validated findings is encouraged, and limitation activities may be appropriate.

- Colleagues and staff must be able to bring forward a freely express legitimate concerns about a surgeo performance and apparent age-related decline to gro practice, departmental and medical staff, or hospi leadership without fear of retribution. In addition, t surgeon's quality and outcomes of patient care is t ultimate measure of ongoing competence and saf for surgeons of all ages. As such, peer-reviewed me ods, including ongoing professional practice evaluati should be performed commonly as part of recredent ing. If a potential issue is identified, additional meth of evaluation may include chart reviews, peer revi of clinical decision making, 360-degree reviews a patient feedback, observation or video review of oper

ACOG COMMITTEE OPINION

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The American College of Obstetricians and Gynecologists
WOMEN'S HEALTH CARE PHYSICIANS

Committee on Patient Safety and Quality Improvement

This Committee Opinion was developed by the American College of Obstetricians and Gynecologists' Committee on Patient Safety and Quality Improvement in collaboration with Ilana Addis, MD, MPH.

psychomotor performance (3, 4). Decreased cognitive efficiency is seen, in particular, beyond 75 years of age (4, 5), with resulting confusion and memory loss being self-reported to interfere with daily life and work (3).

Among physicians, the physiologic changes can present as a decrease in efficiency and can affect response time and performance, potentially leading to job difficulties. These changes may result in adverse events because of issues with technical skills, cognitive processing and reasoning, planning, or attention (6). In a physician with cognitive impairment, one might see more prescription errors, irrational business decisions, and loss of skills, and there may be dissatisfied patients, patient injuries, and even lawsuits. In fact, a systematic review showed that in a majority of studies, measures of quality of care decreased with increasing physician's length in practice (7).

Understanding the aging process and its effect is especially important when addressing its effect within the physician community. It is essential to consider all factors in context and balance the important benefits of wisdom, knowledge, and experience that come with age. Data show that most surgeons reach performance peak at 45–50 years (8). Aging physicians may have decreased analytical ability and difficulty incorporating new knowledge, but they also may have better nonanalytical, experience-based decision-making skills (9).

Individual physicians suffering from cognitive impairment may be more likely to minimize their health problems, not take time off, poorly understand and distrust occupational health services, and self-diagnose and self-prescribe (6). Other physicians, family, colleagues, and institutions may consciously or unconsciously protect the physician at the expense of patient care.

Late Career Physician programs

- LCP programs are linked to credentialing at hospitals, medical groups, and insurers.
- Not for cause, prospective screening of an asymptomatic group at risk.
  - With a goal of primary prevention, fewer for-cause complaints/errors
- Screening initiates further assessment: no one data point is actionable.
- Programs support physicians: practice modifications recommended to keep doc's working & maintain quality of care.

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Cognitive Testing of Older Clinicians Prior to Recredentialing

Leo Cooney, MD[1]; Thomas Balcezak, MD[2]

Bottom Line

1. Cognitive testing applied by a skilled neuropsychologist is likely an effective approach to identifying individuals with impaired cognitive skills that could affect their ability to practice medicine.
2. The MSRC must be prepared to take action to ensure patient safety when clinicians are identified as cognitively impaired.
3. At Yale New Haven Hospital, a substantial proportion (12.7%) of clinicians aged 70 years or older were found to have impaired cognition, raising concerns about their clinical abilities.

	Full assessment	No actionable concerns	Physicians screened
Intermountain	12%	88%	97
UCSD-PACE	29%	29%	62

Recent Threats to Late Career Physician Screening Programs

IN THE UNITED STATES DISTRICT COURT
FOR THE DISTRICT OF CONNECTICUT

EQUAL EMPLOYMENT OPPORTUNITY COMMISSION, Plaintiff, v. YALE NEW HAVEN HOSPITAL, INC. Defendant.	)	CIVIL ACTION NO. 3:20-cv-187

Utah statute now outlines the aspirational principles of the practice of screening

- *e.g., driven by principles of medical ethics, public & patient safety, optimize performance with remediation…*

UTAH STATE LEGISLATURE Legislators Bills Code Committees

151 from the division notification from the division that the applicant's application for licensure
152 has been filed.
153 (4) The division shall issue a temporary license under Subsection (3) within 15
154 business days after the applicant satisfies the requirements of Subsection (3).
155 (5) The division may not require the following requirements for licensure:
156 (a) a post-residency board certification; or
157 (b) a cognitive test when the physician reaches a specified age, unless[~~ the test reflects~~
158 ~~nationally recognized standards adopted by the American Medical Association for testing~~
159 ~~whether an older physician remains able to provide safe and effective care for patients.~~]:
160 (i) the screening is based on evidence of cognitive changes associated with aging that
161 are relevant to physician performance;
162 (ii) the screening is based on principles of medical ethics;
163 (iii) physicians are involved in the development of standards for assessing competency;
164 (iv) guidelines, procedures, and methods of assessment, which may include cognitive
165 screening, are relevant to physician practice and to the physician's ability to perform the tasks
166 specifically required in the physician's practice environment;
167 (v) the primary driver for establishing assessment results is the ethical obligation of the
168 profession to the health of the public and patient safety;
169 (vi) the goal of the assessment is to optimize physician competency and performance
170 through education, remediation, and modifications to a physician's practice environment or
171 scope;
172 (vii) a credentialing committee determines that public health or patient safety is
173 directly threatened, the screening permits a physician to retain the right to modify the
174 physician's practice environment to allow the physician to continue to provide safe and
175 effective care;
176 (viii) guidelines, procedures, and methods of assessment are transparent to physicians
177 and physicians' representatives, if requested by a physician or a physician's representative, and
178 physicians are made aware of the specific methods used, performance expectations and
179 standards against which performance will be judged, and the possible outcomes of the
180 screening or assessment;
181 (ix) education or remediation practices that result from screening or assessment
182 procedures are:
183 (A) supportive of physician wellness;
184 (B) ongoing; and
185 (C) proactive; and
186 (x) procedures and screening mechanisms that are distinctly different from for cause
187 assessments do not result in undue cost or burden to senior physicians providing patient care.

Tips for your cognitive care

See your doctor regularly (or get one!)

Do health screenings

Optimize sleep

Prioritize exercise

Lifelong learner, collaborate

Consider training processing speed & working memory

Seek out neuropsychologist for screening and assessment

- Tip: be sure they know what the task demands of your practice are

Ask for executive job coaching from a neuropsychologist or cognitive rehabilitation specialist

- Given Strengths & Weaknesses, how can we adapt workflow to optimize performance?

Referrals: FAX 801.408.5704

(I read, but don't write on iCentra.)

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