

We would like to acknowledge that we are gathered today on the traditional territories of the Musqueam, Squamish and Tsleil-Waututh peoples.

Source: [www.johomaps.net/na/canada/bc/vancouver/firstnations/firstnations.html](http://www.johomaps.net/na/canada/bc/vancouver/firstnations/firstnations.html)





Providence Health Care  
**St. Paul's Hospital**



# Cognitive Rehabilitation for Mild Cognitive Impairment (MCI) and Early Dementia

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# Disclosure

- Presenters have no direct financial relationship with industry
- Dr. Lee involved in REB approved clinical trials
  - ENGAGE/EMBARC trial - clinical trials investigating aducanumab for treatment of Alzheimer's disease
    - Clinical care for subjects
    - No involvement in data collection, interpretation of results or publication of research

# Learning Objectives:

By the end of this presentation, you will be able to:

- Apply diagnostic criteria for mild cognitive impairment and dementia.
- Provide lifestyle recommendations for brain health
- Provide practical strategies to address three common cognitive concerns
- Identify resources to support people with MCI and early dementia

# Case Presentation

- Mrs. H., 63 year old, retired research assistant
- 2 year history of word retrieval problems and episodic memory loss
- Other cognitive domains relative well preserved
- History of depression, but mood stable
- Independent with ADL's and IADL's.
  - Will ask her husband more than once about plans for the day or clarify a decision they made together about vacation planning
  - Frustrated by difficulty recalling why she went into a room and recalling the names of new people in her ukulele class

MoCA 25/30, -1 on verbal fluency, 2/5 on delayed recall, -1 on exact date

# Clinical Presentation

## Normal Aging

Cognition WNL for age

Independent with ADL's and IADL's

## MCI

Cognitive decline greater than expected for age

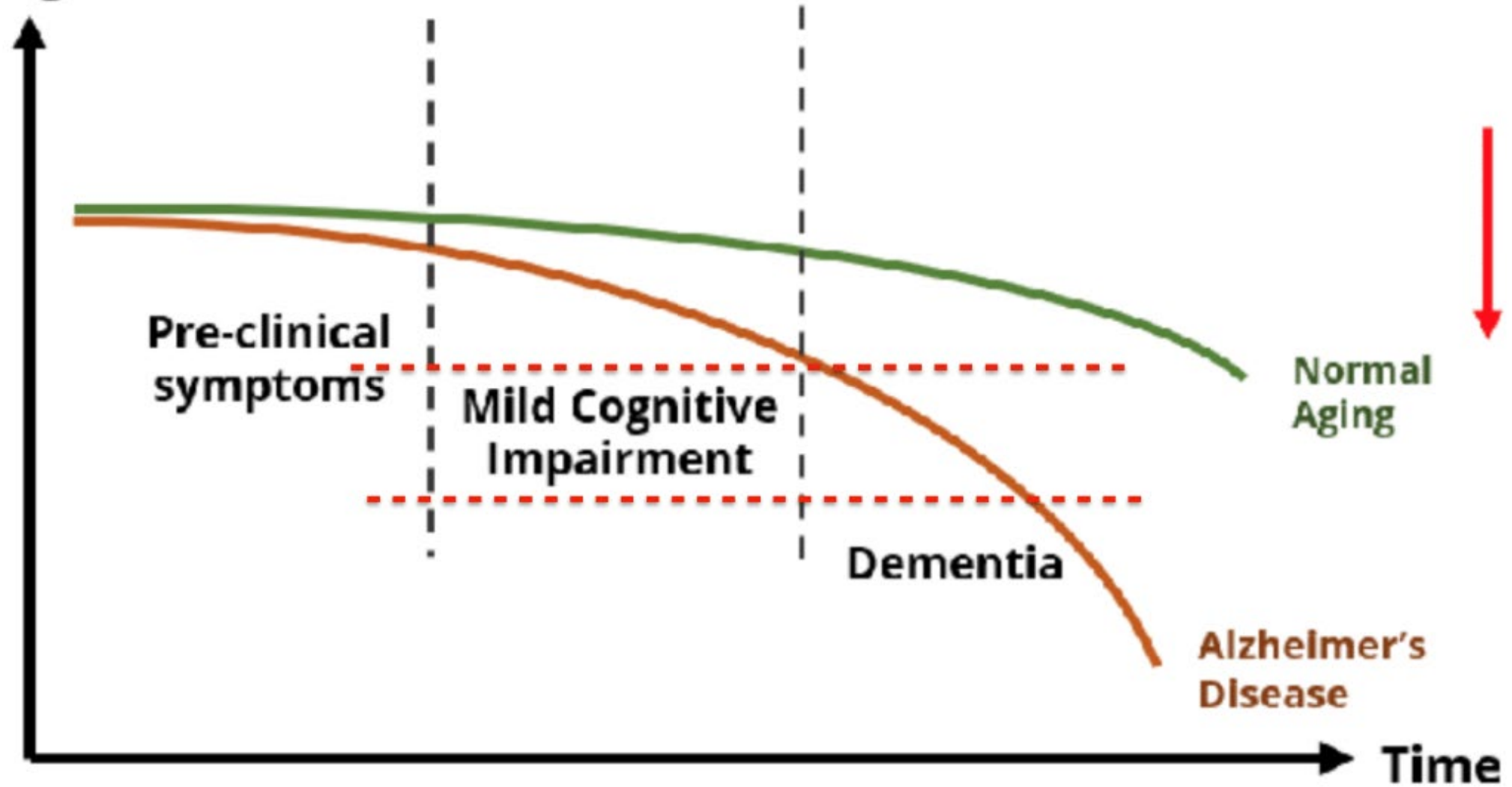
Independent with ADL's and IADL's. Subjective concerns re: decline common

## Dementia

Cognitive decline below age-related norms

Support needed for ADL's and/or IADL's

# Cognitive functions



-The current consensus on the continuum of Alzheimer's disease vs. Normal aging (concept is adopted from (Gale and Acar, 2012; Sperling et al., 2011))

# Evolving Diagnostic and Treatment Techniques

- Biomarkers for different neurodegenerative diseases may offer unparalleled insight into pathological changes
- Disease modifying treatments
  - Neuroimaging
  - Functional imaging - PET scan
  - CSF biomarker studies - Amyloid and Tau protein
  - Blood tests - Amyloid and APOE4



# “Treat the treatable”, “reverse the reversible”, when possible

- MCI can be associated with medical problems or mood changes
  - Modifiable vascular risks
  - Diabetes and metabolic syndrome associated with increased incidence of dementia in MCI
- Hearing, vision, sleep
- Review the medications

# Medication treatments for MCI

- No medications approved for treatment of MCI (\*in Canada, ?yet)
- Clinical trials have demonstrated mixed results
- Supplements - no definitive proven benefit, unless proven deficiency



# Multi-pronged approach is best

- FINGER study (Ngandu N et al. Lancet 2015)
  - n=1260, Age 60 - 77, raised dementia risk
  - Randomized 2 years intensive program - nutritionist, physiotherapist, psychologist
  - Change in diet; regular progressive muscle strength, aerobic exercise and balance training; Cognitive training, computer based activities 3x per week
- World Wide FINGERS network (<https://fbhi.se/>)
- CAN-THUMBS UP

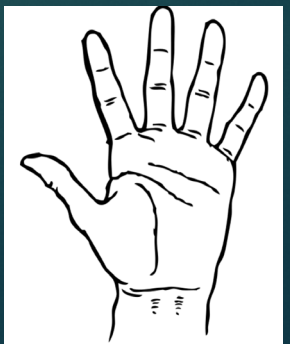
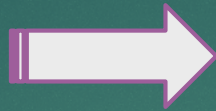




Illustration: Martina Krona from the book "Brain Health" (Miia Kivipelto, Mai-Lis Hellénus)

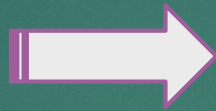
# Healthy Brain Habits in a Nutshell:

Exercise



150 min/week of moderate exercise  
2 strength training sessions

Cognitive Stimulation



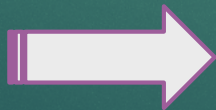
Variety and novelty in activities  
Do more of what you love to do. Find meaning and purpose.

Social Connection



Meaningful social engagement.  
Reduce isolation.

Manage Stress and Anxiety

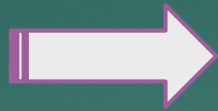


Understand your condition. Know you are not alone in your experience.  
Explore strategies and practices that help you to feel settled.



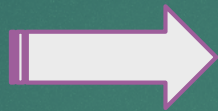
# Healthy Brain Habits in a Nutshell:

Healthy Diet



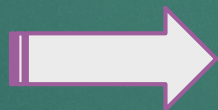
MIND diet

Sleep



Regular sleep routine, exercise, daylight exposure. Avoid sedatives.

Manage Medical Conditions



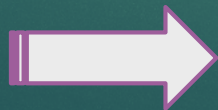
See your doctor regularly. Vascular risk factors, sleep apnea,

Protect Your Head



Avoid falls, ladders, wear bike helmet

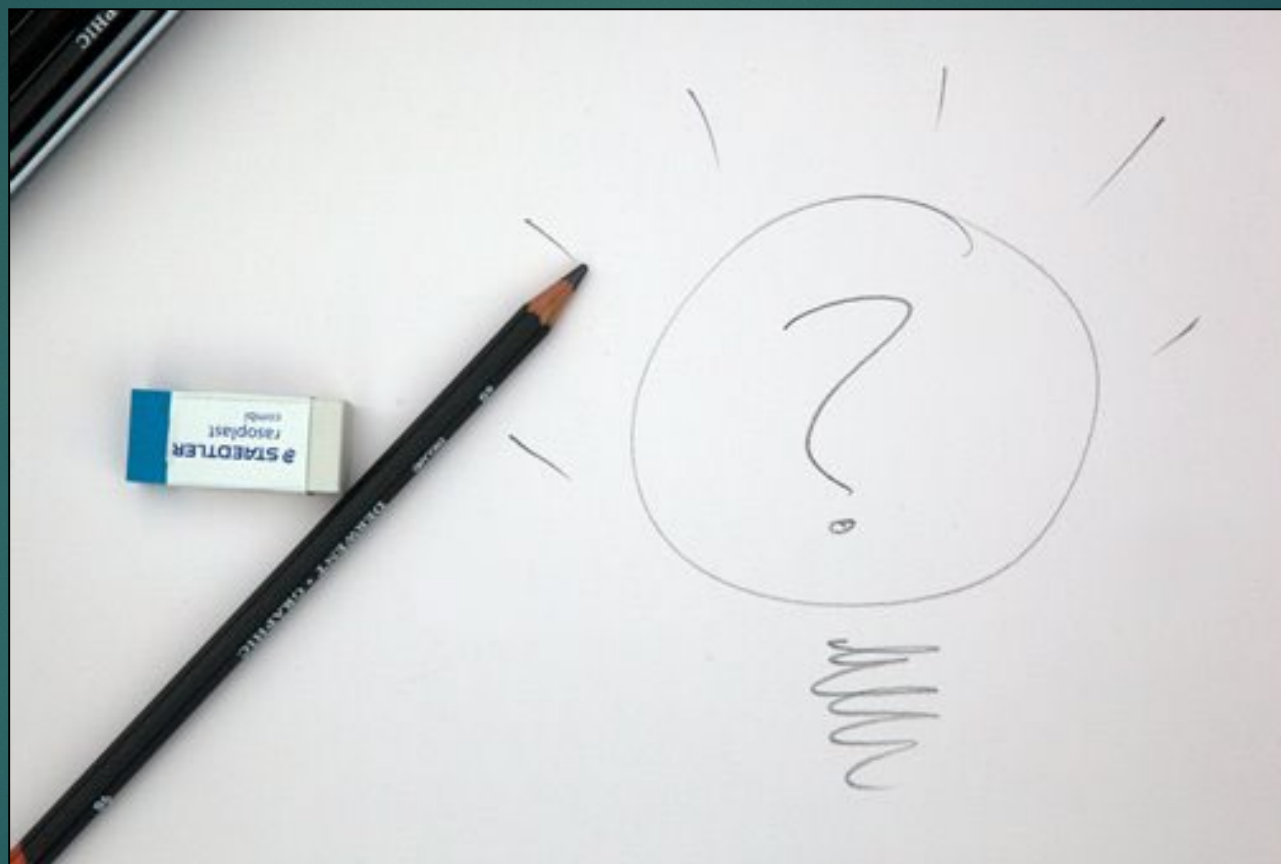
Hearing and Vision



Regular assessments; use aids regularly



# “What else can we do?”



# What is Cognitive Rehabilitation?

- Personalised intervention
- One-to-one sessions with a practitioner, often in their own home.
- People identify everyday activities and tasks that they would like to manage better or do more independently.
- Practitioner suggests strategies and works with them to help achieve these improvements in the activities that are important to them.
- Family members are often involved as well



# Cognitive Training vs Rehabilitation

**Table 1. Selected differences between cognitive training and cognitive rehabilitation**

	<b>Cognitive training</b>	<b>Cognitive rehabilitation</b>
<b>Target</b>	Impairment	Participation restriction
<b>Context</b>	Structured tasks and environments	Real-world setting
<b>Focus of intervention</b>	Isolated cognitive abilities and processes	Groups of cognitive abilities and processes required to perform everyday tasks
<b>Format</b>	Individualised or group	Individualised
<b>Proposed mechanism of action</b>	Mainly restorative; sometimes combined with psychoeducation and strategy training	A combination of restorative and compensatory approaches combined with psychoeducation and strategy training
<b>Goals</b>	Improved or maintained ability in specific cognitive domains	Performance and functioning in relation to collaboratively set goals

# The Efficacy of Cognitive Intervention in Mild Cognitive Impairment

Neuropsychology Review, Sherman et al, 2017

- Meta-Analysis, 26 RCT's, 1995-2017
- Inclusion of cognitive intervention, training, stimulation, rehabilitation, or treatment



Improvements seen with multicomponent training or interventions targeting multiple domains (including lifestyle changes)



Memory and multi-domain content particularly helpful, with memory-based approaches possibly being more effective than multi-domain methods.



Other factors, such as program duration, appear to have less of an influence on intervention outcomes.

# Effectiveness of cognitive rehabilitation on mild cognitive impairment using tele-neuropsychology

Dementia Neuropsychology, Canyazo et al, 2023

- n=60, mild cognitive impairment
- 10 cognitive tele-rehabilitation sessions (45 min, once/week)
- At week 10, treatment group had:



better scores in memory, fluency, ADL's,



better satisfaction with memory performance and use of memory strategies



reduction of affective symptoms (depression, neuropsychiatric symptoms, forgetfulness, and stress)

# Cognitive training and cognitive rehabilitation for mild to moderate dementia

Cochrane review (Bahar-Fuchs et al; June 2013)

- 11 trials of cognitive training and a single trial of cognitive rehabilitation



Found no evidence for the efficacy of cognitive training



Preliminary indications of potential benefits of CR in improving activities of daily living in people with mild Alzheimer's disease.



More high-quality trials of both cognitive training and cognitive rehabilitation are needed

# Cognitive Rehabilitation for people with mild to moderate dementia

Cochrane review (Kudlicka et al; June 2023 )

- 6 eligible RCTs (2010-2022), though findings based mostly on one large study
- 1702 participants; age 76 to 80; AD most common diagnosis
- 8 - 14 sessions with a cognitive rehabilitation practitioner compared with usual care
- Completed between 3-12 months

# Results:



People got better at doing their chosen tasks or activities and felt more confident



Improvement was seen by the people with dementia and by their care partners straight after intervention



Remained 3-12 months after AND care partners had better psychological well-being.



May not be any differences in

- how well people with dementia manage other tasks or activities
- how confident or depressed they feel overall
- their wellbeing

# MCI - common functional goals

Recall what someone has told me

Bring needed items when going out

Take my medications when away from home

Recall why I went into a room

Locate items in my home (keys, glasses)

Arrive at correct time for appointments

# MCI - common functional goals

Operate my cell phone

Recall plans made over the phone

Recall what I have read

Recall the important activities of the day

Complete one activity before moving onto the next

Recall my PIN codes



# Early dementia – red flags

Changes in hygiene

Medication errors

Cooking mishaps

Purchasing duplicate items

Not keeping up with with house cleaning

Missed bill payments

Difficulty handing money



# Early dementia – red flags

Driving errors or accidents

Repeated questions

Difficulty participating in or understanding conversation

Disoriented in unfamiliar environments

More socially withdrawn or lack of social awareness

Difficulty with logic or reasoning



# Case Presentation –Mrs. H

- Occasionally will ask her husband more than once about their plans for the day or about a decision they have made about an upcoming vacation
- She is frustrated by time spent retracing her steps in order to recall what she was heading to do
- She is having difficulty remembering the names of people in her ukulele class

# Optimizing Function: Adapt what you have control over

**Person** - Consider strengths/stressors, emotions, energy, routines

**Environment** - Reduce demands (visual, auditory, social), distractors

**Task** – Complexity, familiarity, organization

## Compensatory Strategies:

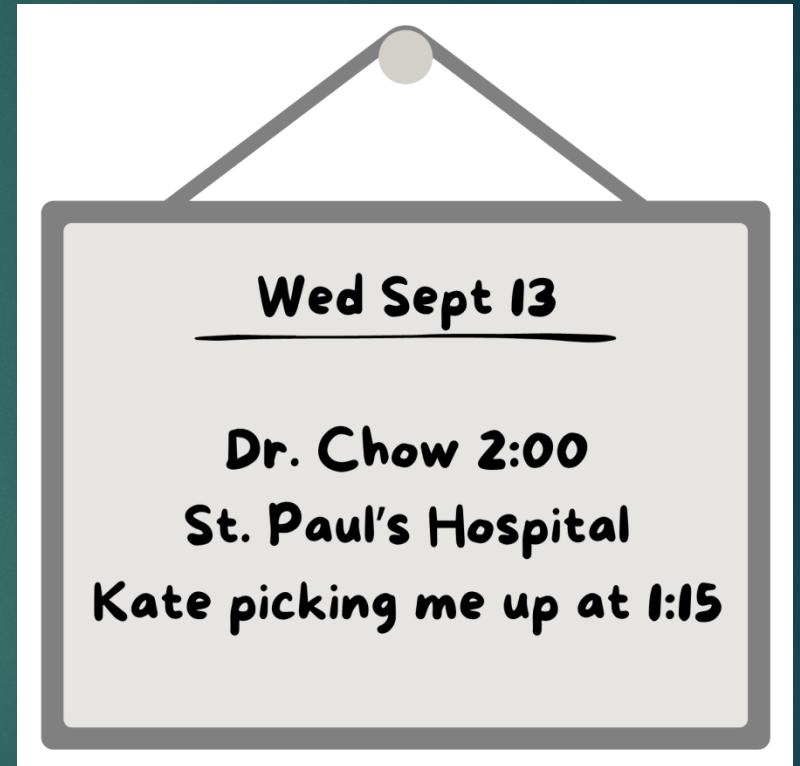
Internal - Need insight and memory ability for internal strategy use

External - Habit-form early and/or support from family to modify environment

Find the “just right challenge”

# Goal: Recall important activities of the day

- White board – often helps reduce repeated questions and gives person access to 'need to know' information for the day
- Daytimers, calendars, notebooks, shopping lists
- Memory book with sections – helpful for retrospective details



# Goal : Recall an intended task

## Stop. Say it. See it.

Do you ever go into a room and think “what did I come here for?” Do you ever leave the house and wonder halfway down the street if you’ve locked the door?

- ❑ Enhances working memory
- ❑ Uses verbal and visual processing
- ❑ Useful for recall of intended action or completed action

# Goal: Recall names of new people

## □ Spaced retrieval

- Rehearse information to be learned
- Gradually space out the repetitions over longer and longer intervals
- The act of repeatedly retrieving the information (with some "space" in-between) strengthens encoding



# Living Well with MCI Group:

6 weeks

8 -10  
people

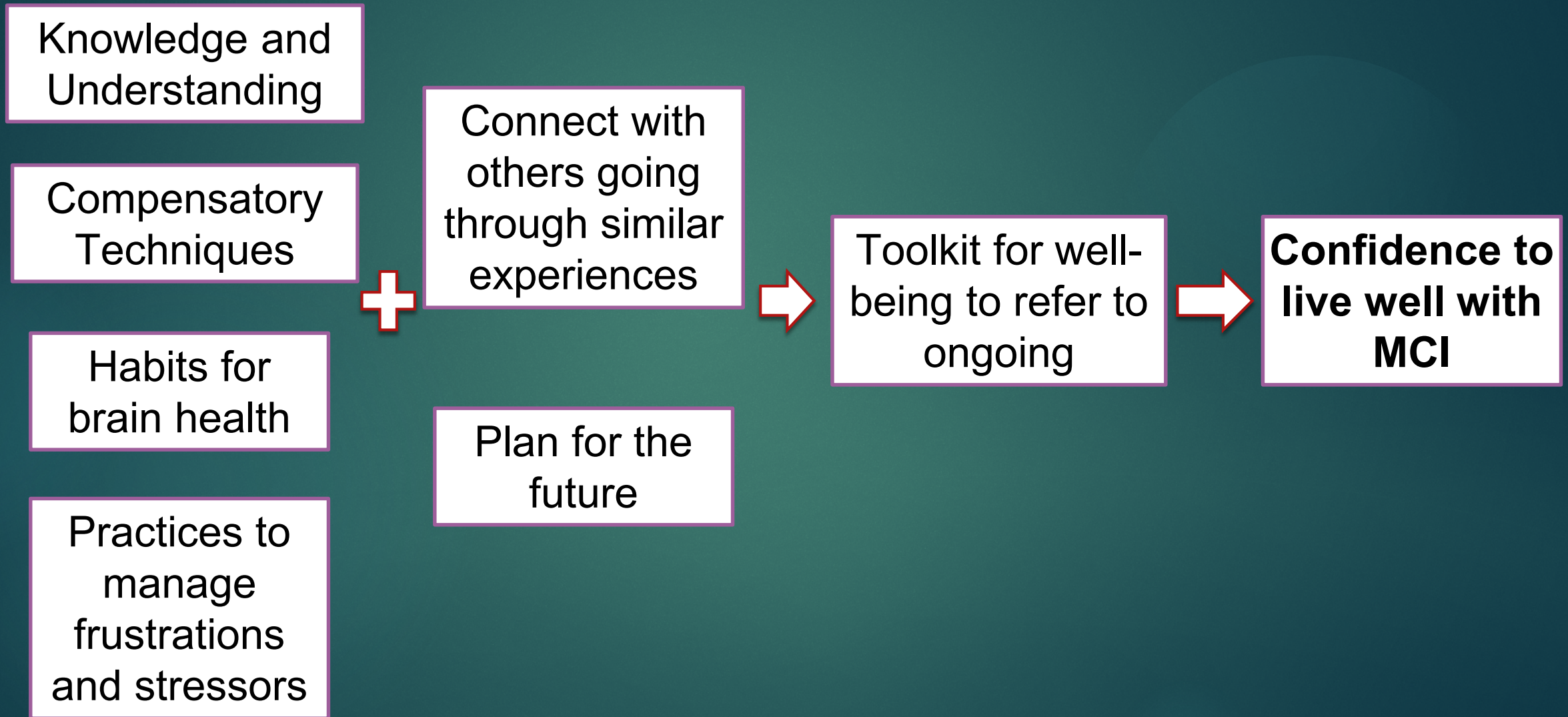
Psycho-  
educational

Multi-  
disciplinary

Support to  
apply  
practices  
and develop  
habits



# MCI Group Objectives:



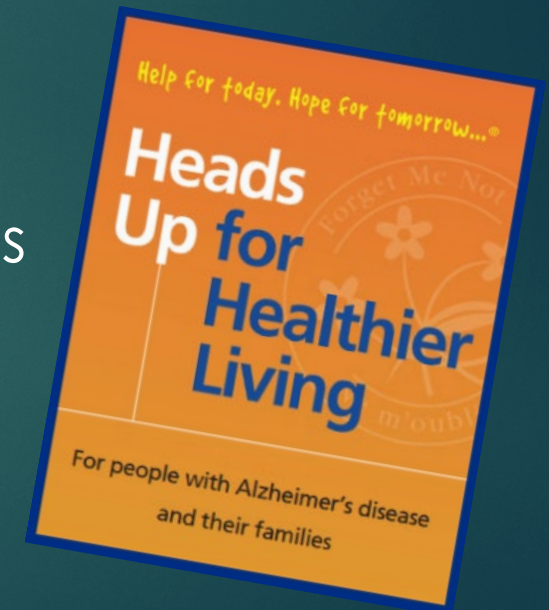
# MCI Group Outcomes

- Increased knowledge
  - about MCI, habits for brain health, future planning
- Increased confidence to live well with MCI
- Increased satisfaction with coping
- Less distress, but ongoing worry; related to fear of developing AD



# Resources

- Living Well with MCI Group – SPH
- Referral to multi-disciplinary programs to support
  - Cognitive strategy development
  - Lifestyle habits
- Community Centres and Senior Centres
- Alzheimer Society
- Minds in Motion
- Adult Day Programs



# Take Away Messages

## Treat the treatable

- And “reverse the reversible”, when possible

## Lifestyle factor education

- Multi-pronged approach is best

## Cognitive strategies

- Identify people who may benefit
- Individualize recommendations based on needs and abilities

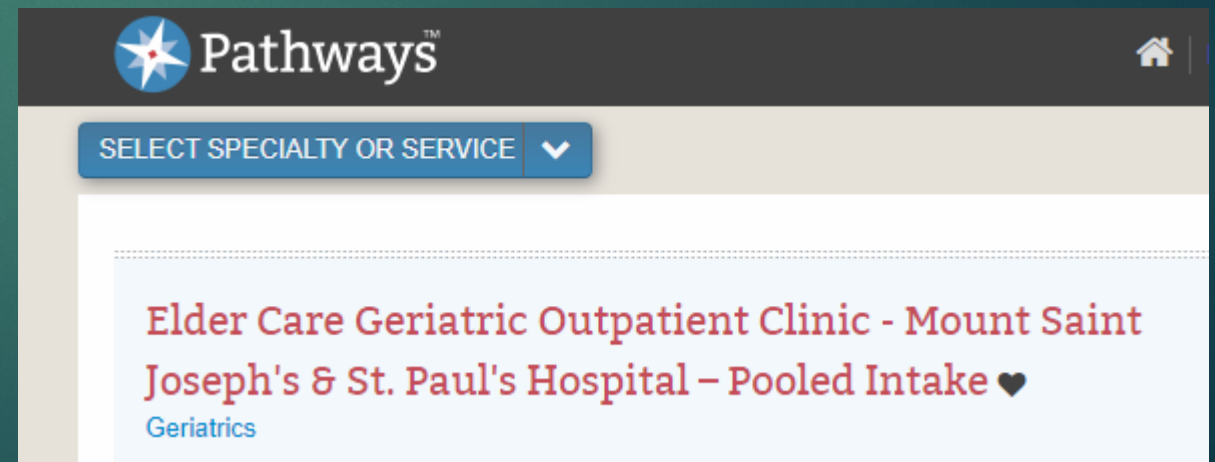
## Resource referral

- Cognitive rehabilitation support
- Community supports

# How to refer to SPH Elder Care Clinic

[www.providencehealthcare.org/elder-care-geriatric-out-patient-clinic](http://www.providencehealthcare.org/elder-care-geriatric-out-patient-clinic)

Also on Pathways!



# Questions?

