Dealing with Concentration and Memory Problems Workshop Booklet

CARING FOR THE BODY,
MIND & SPIRIT SINCE 1869

Concentration and Memory Workshop Booklet

Resource Developers:

Denise Kreutzwiser, Pharmacist

Joanne Andrews, Regional Acquired Brain Injury System Navigator

Scott McLean, Brain Injury Outreach Clinical Consultant

Aliya Syed, 2021 University of Waterloo PharmD Rotation Student

Gillian Fish, Occupational Therapist

Resource Booklet Creator:

Alice Xiao, 2022 University of Waterloo Co-op Pharmacy Student

This booklet is intended to complement the discussion had during the concentration and memory group workshop.

Date of Creation: Summer 2022
Updated: December 2024

Contact information for booklet development team:
painmanagementclinic@sjhc.london.on.ca

Table of Contents

What is “normal” memory and cognitive decline?

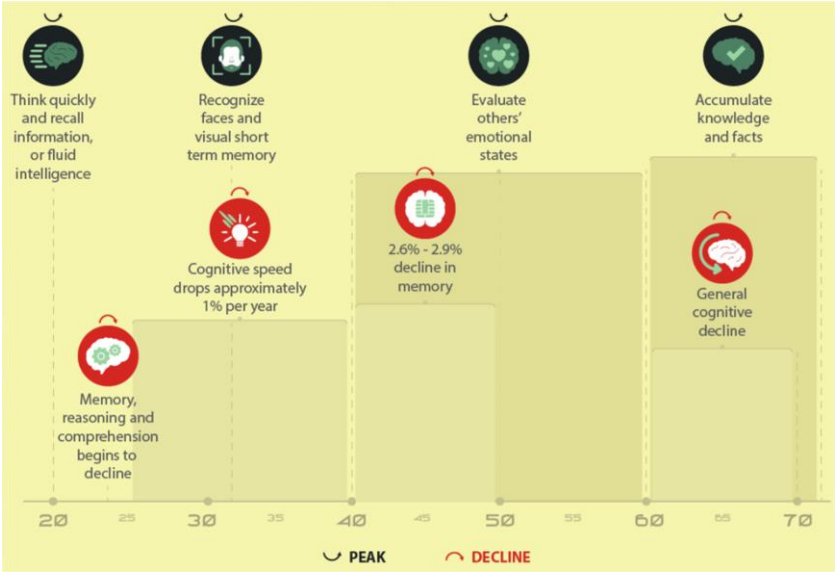
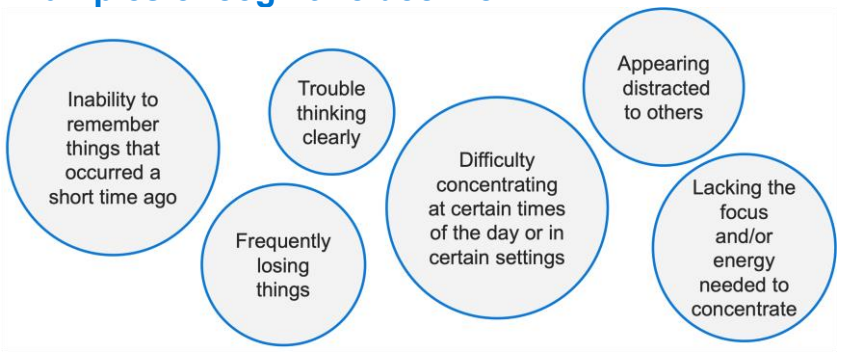


Image source: University of Florida Online. The Science of Memory & Aging. https://ufonline.ufl.edu/infographics/science-of-memory-and-aging/

While some cognitive functions peak over time (black in figure), others decline with age (red in figure). In addition, cognitive changes and their timing differ across people.

Examples of cognitive decline



Tips to maintain your memory and brain health

	Eat a balanced diet high in fruits and vegetables Include dark chocolate
	Limit alcohol intake
	Be physically active: at least 120 minutes of moderate intensity exercise a week
	Do **NOT** smoke
	Maintain a healthy weight
	Meditate
	Socialize, cognitive stimulation activities such as puzzles, crosswords and activities where you learn new information
	Treat pain, depression, anxiety, stress and insomnia
	Address medication-induced cognitive impairment

When should someone seek professional help?

If any of these apply:

- Difficulty planning or solving problems
- Memory loss that disrupts daily life
- Confusion with time or place
- Misplacing things or losing ability to retrace steps
- Changes in mood and personality
- Trouble with visual understanding (images, spatial relationship)
- Decreased or poor judgment
- Difficulty completing familiar tasks
- Problems in speaking or writing
- Withdrawal from work, home and/or social activities

Your health care provider will look for treatable causes of memory loss. Some of these may include addressing:

- Sleep deprivation
- Depression
- Unhealthy lifestyle/dietary habits
- Vitamin B12 deficiency
- Underactive thyroid
- Medication side effect

Connection between memory/concentration and chronic pain

Research shows that people with chronic pain perform worse on memory and concentration tests compared to people without chronic pain.

Some troubles that people with chronic pain may experience include:

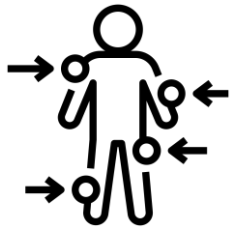
- Needing more time to think
- Having a hard time focusing
- Difficulty processing, retaining and recalling information

These problems occur across different pain conditions and are typically worse in women and older adults.

- Living with chronic pain increases risk for depression, anxiety, stress and/or poor sleep

- Some medical conditions that cause pain may also cause neurological problems (e.g., multiple sclerosis)

- Accidents/injuries that cause body pain can also involve blows to the head or damage to the brain (e.g., sport injuries, car accidents)



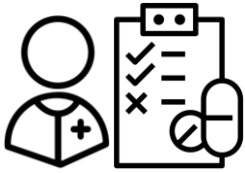
- Some pain medications are sedating or interfere with concentration

- Pain itself interferes with how people process information

What is medication-induced cognitive impairment?

When the thinking and memory functions are not working normally due to a medication side effect.

This condition is often reversible if you know which medication(s) may be contributing to the thinking/memory problems. This can sometimes be challenging to sort out when a lot of medications are taken. Some medications are more likely than others to cause these problems.



In addition, certain people are more prone to medication-induced cognitive impairment including:

- Older adults
- People with cognitive impairment or dementia

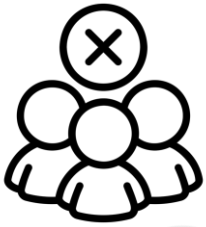
Did you know?

Cognitive decline in older adults is typically due to normal age-related changes in the central nervous system and does not necessarily mean dementia.

It is important to note that some of the cognitive decline may be the result of a medication side effect.

What is the Beers Criteria® list?

- A list of medications that older adults should generally avoid or use carefully.
- The Beers Criteria® list is intended for adults 65 years of age and older, unless in palliative care settings.
- The American Geriatrics Society updates this list every few years.



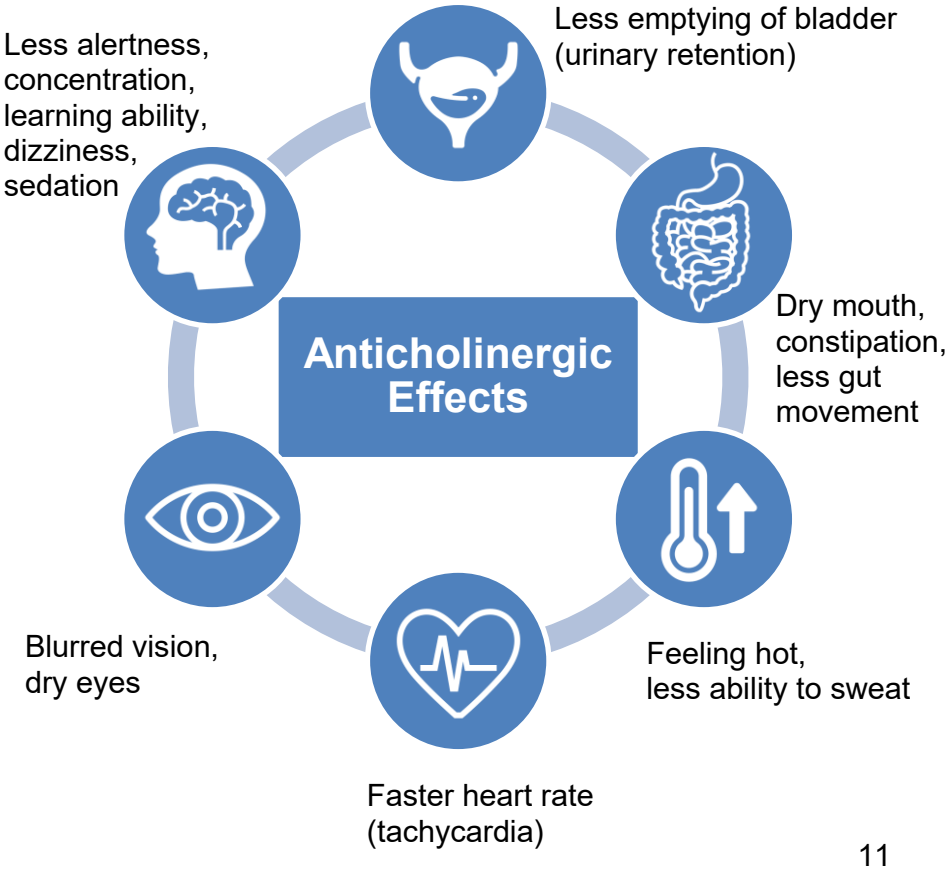
Beers Criteria® list examples

- Anticholinergic medications
- Opioids
- Certain medications used for anxiety and insomnia
- Topiramate
- Pregabalin and gabapentin

Anticholinergic effects and medications

Key point: Anticholinergic medications can contribute to cognitive decline.

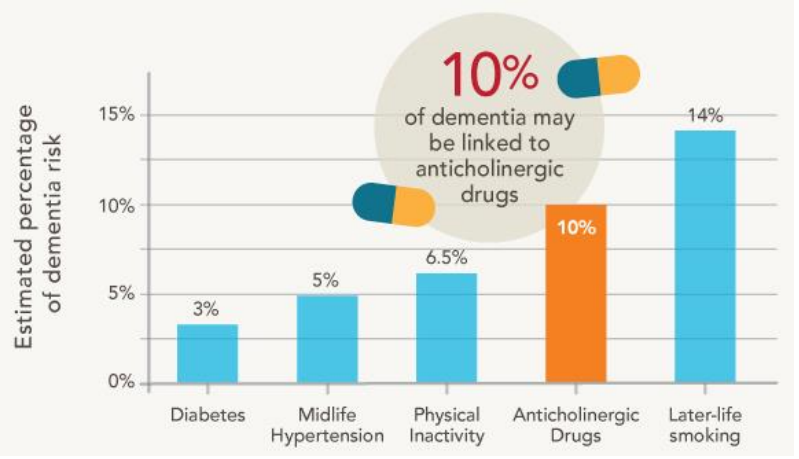
Anticholinergic medications stop a chemical called acetylcholine from doing its job in the nervous system. This chemical helps send messages in the body. When acetylcholine is blocked, it can cause several changes, like:



Anticholinergic medications are typically used to manage symptoms rather than treat the underlying disease.

Examples of anticholinergic medications and uses:

- Amitriptyline for nerve pain
    - Beers Criteria® list description: “Very anticholinergic and sedating. Can cause a drop in blood pressure from sit to stand position (orthostatic hypotension). Recommendation: avoid in elderly.”
- Oxybutynin or tolterodine for urinary urgency
- Gravol® (dimenhydrinate) for nausea
- Benadryl® (diphenhydramine) for allergies



Reference: Coupland et al. JAMA Intern Med. 2019;179(8):1084-1093.

This means anticholinergic medications may be a **modifiable dementia risk factor.**

In other words, you and your health care providers can change that risk!

Opioids and cognitive impairment

Opioids are also on the Beers Criteria® list because their use has been linked to:

- Reduced reaction times
- Impaired attention
- Issues with memory and balance

Opioid dose reduction can improve cognitive function!

Sedative-hypnotic medications for anxiety and insomnia

Sedative-hypnotic medications are not the best long-term treatment for anxiety or insomnia.

This is because they cover up the symptoms rather than solve the problem and can cause many side effects.

Putting risks into perspective

Individuals who take sedative-hypnotic medications are:

	…more likely to:
5 times	have memory and concentration problems
4 times	feel very tired during the day
2 times	experience falls and fractures (hip, wrist)
2 times	have a motor vehicle accident

Beers Criteria® list examples of sedative-hypnotic medications

Benzodiazepines (AKA "benzos" or "-pam" drugs)

Generic Name	Brand Name
Lorazepam	Ativan®
Clonazepam	Rivotril®
Diazepam	Valium®
Temazepam	Restoril®
Oxazepam	Serax®
Alprazolam	Xanax®
Bromazepam	Lectopram®
Clobazam	Frisium®
Flurazepam	Dalmane®
Nitrazepam	Mogadon®
Triazolam	Halcion®

"Z-Drugs"

Generic Name	Brand Name
Zopiclone	Imovane®
Eszopiclone	Lunesta®
Zolpidem	Sublinox®

Topiramate (Topamax®)

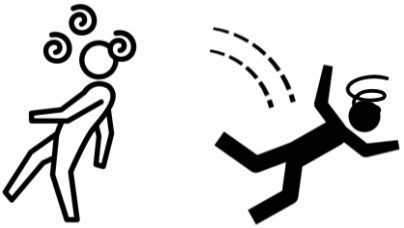
This medication is used to manage seizures and prevent migraine headaches.

"Topiramate fog" is often used to describe the side effect of this medication because it causes trouble concentrating, slower thinking, memory struggles, and word-finding issues.

Topiramate's cognitive side effects are a common reason why patients stop taking this medication. These side effects go away after patients stop taking the drug.

Pregabalin (Lyrica®) and Gabapentin (Neurontin®)

Pregabalin and gabapentin were originally developed to treat seizure disorders but are also used to manage pain from damaged nerves (neuropathic pain) and fibromyalgia.



Both pregabalin and gabapentin are on the Beers Criteria® list because they can increase the risk of falls and fractures due to their side effects of **dizziness, drowsiness and impairment of concentration, attention and balance.**

The role of pharmacists

Pharmacists perform many important roles in patient care. One of them is educating patients and health care providers about appropriate medication routines.

If you have trouble with concentration or remembering things and wonder if your medications may be worsening your symptoms, **ask your pharmacist for a medication review!**

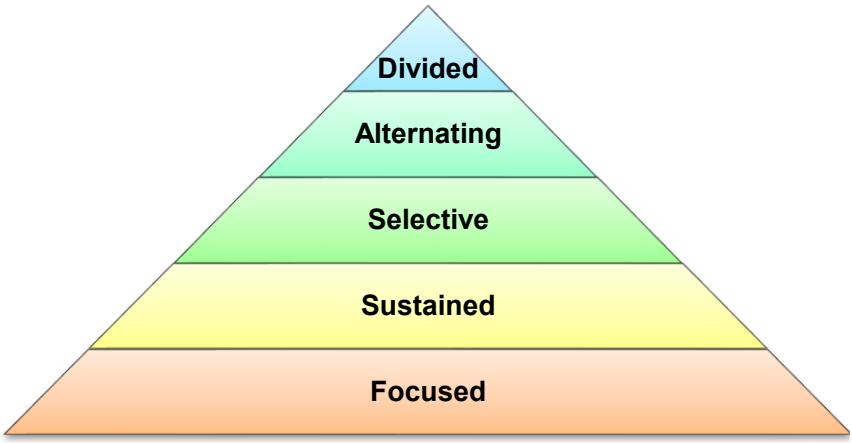
Did you know?

Sometimes people report concerns with:

- Paying attention or concentrating for any length of time
- Getting easily distracted
- Losing track of the goal of a session or topic of discussion
- Needing to frequently have information repeated
- Recalling information
- Responding to questions
- Shifting from one topic to another
- Appearing restless, disinterested and/or fatigued

The attention ladder

Attention is needed for just about everything!



1. Focused attention

- Most basic and automatic level of attention (i.e., a response that we don't think about)
- Ability to be aware of and respond to objects, events and stimuli in the environment
- Example: you hear a siren and turn to look in the direction of the noise

2. Sustained attention

- Also called ‘concentration’
- Ability to maintain attention over time (i.e., sticking with a task)
- Examples: reading a book, participating in a conversation

3. Selective attention

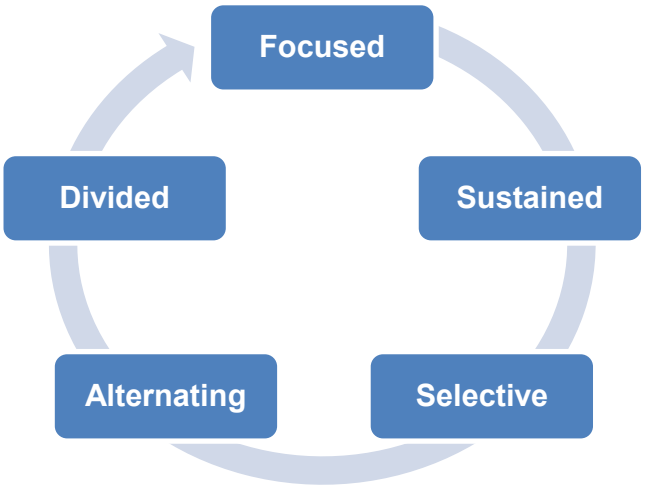
- Ability to ignore distractions and pay attention to important information
- Example: being able to remain focused on what the presenter is saying and filter out movement and conversations of other participants, noises in the room and objects seen through the window

4. Alternating attention

- Higher level of attention
- Ability to switch your attention from one task to another
- Example: cooking – chopping and stirring pot on stovetop

5. Divided attention

- AKA “multi-tasking”
- Highest, most demanding level of attention
- Ability to pay attention to two or more things at the same time and respond appropriately
- Examples: driving a car and participating in a conversation, writing notes while listening to a speaker



Strategies to improve attention

Be proactive

- Being aware of the issues you may have with attention allows you to anticipate some challenges

Make and maintain eye contact during conversations

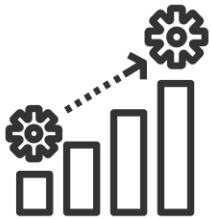
- Be sure you have the individual's attention before giving or receiving information

Reduce/remove distractions before activity begins

- Turn off television or radio, put the cell phone away or on silent mode, strategically seat self in restaurant

Give yourself lots of time

- To get things done
- To ask questions or have info repeated



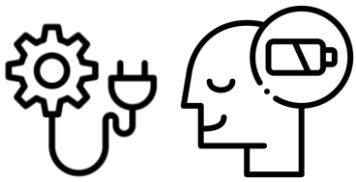
Fatigue affects attention

Let go of the "all or nothing" mentality

Instead, try:

Pacing

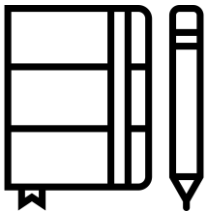
- Split up larger tasks into smaller tasks so that you can sustain your attention for shorter periods of time and don't get so tired
- Adjust length of activity to facilitate your ability to sustain your attention
- Build breaks into your day – use a timer if necessary
- Plan appointments and important activities for the best time of your day
- Alternate between cognitive and physical activities to increase alertness
    - Mix it up! This can help with both energy conservation and attention



How to stay on topic and remember to ask/say something

☑ **Write down what you want to talk about so you can refer to it**

- Go into appointments with priorities identified and written down
- Keep the agenda visible
- Write down questions you want to ask – use lists, check off as you ask the question
- Take notes or write down key words during appointments



It always circles back to being proactive!

What do short-term memory issues look like?

"I used to be able to remember everything.
I never needed to write anything down, but now I need to write everything down or I forget!"

"I miss a lot of appointments.
I try to use a calendar but sometimes I still forget."

"I forget what I was talking about,
especially when I'm talking to more than one person."

"I can't recall important information that I've been given."

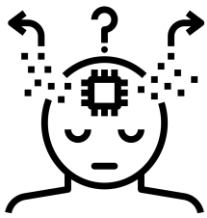
"I don't follow through on what I said I was going to do because I forget."

"I'm always losing my phone or my keys."

"I keep forgetting to take my medication."

"I try to use a calendar but sometimes I still forget."

Types of memory



Type of Memory	Description
Long-term	Transfer of information from short-term memory into long-term storage to create memories that last
Short-term	Ability to store and remember a small amount of information for a short period of time
Visual	What you read or see
Auditory	What you hear
Episodic	Memory of past events; often personal events with attached emotion
Semantic	Memory for knowledge we have (e.g., colours, geography, vocabulary)
Prospective	Memory for future events (e.g., appointments, birthdays)
Working	Ability to hold onto and remember information for short times while doing a related task (e.g., finding the right amount of change for an amount of money we owe)
Procedural	Memory for how we do things; usually habitual activities (e.g., biking)

General strategies to support memory

Memory strategies need to focus on the information coming in as well as how the information gets processed. The goal is to put fewer demands on your memory and make it easier for you to remember.

- ☑ **Pay attention to one thing at a time**
- ☑ **Remove distractions**
- ☑ **Structure, routine and consistency**
- ☑ **Have a place for everything and stay organized:**
  - Do not throw down your belongings → properly put them away!
    - E.g., papers in labeled folders, keys and phone have a 'home'
  - Put frequently used things together or in a place that makes sense and put these items in the same place each time they are used
- ☑ **Repetition, repetition, repetition**

Medication strategies

Tips to help you remember your medications

- Use a pill box/dossette that you can fill each week
    - This will help you to easily see if you have already taken your medication that day
- Consider having your pharmacy put medications in a blister pack to reduce the mental burden of filling your pill box
    - This will help you to easily see if you have already taken your medication that day
- Keep your medications where you take it each day. For example, if you take your medication at breakfast, you could place it next to the coffee maker or kettle
- Medication reminder apps can be helpful
- Medication dispensing devices are another option

Visual and auditory cues

Ideas to try!

- Keep a journal, use a calendar or day planner
    - Keep these items where you can see them. For calendars, the bigger the better!
- Use cell phone applications – calendar, timers/alerts, notes, camera, etc.
- Post-it notes and lists - brightly coloured paper can help
    - Get rid of or cross out notes after you've completed or no longer need the reminder
- Ask for a written summary or handout of important information
- Keep a pad of paper next to the phone to write down messages immediately, before transferring them to your planner or calendar

Internal memory strategies

Relying on yourself to do something.

- Repetition, repetition, repetition
  - Repeating things to yourself
  - Asking for something to be repeated
- Say it out loud
- Use associations
  - E.g., I will take my medication every day with breakfast
- Use acronyms
- Visualize or use visual imagery
  - Picture what the person is telling you
  - Take a mental picture of something you want to remember
- Use all senses to help you remember
  - You know how sometimes a specific song or smell reminds you of a particular person or event?
- "Chunk" information and check for understanding
  - Done by the person providing the information
  - For example:

    No chunking: 15125551212

    Chunking: 1 (512) 555 1212

References

1. University of Florida Online. The Science of Memory & Aging. https://ufonline.ufl.edu/infographics/science-of-memory-and-aging/

2. Higgins et al. Clin J Pain. 2018; 34(3):262-275.

3. Dhingra et al. Pain Med. 2015;16(1):37-43.

4. Schmand et al. J Neurol Neurosurg Psychiatry. 1998;64(3):339-343.

5. Jamison et al. Int J Psychiatry Med.1988;18(2)183-91.

6. Coupland et al. JAMA Intern Med. 2019;179(8):1084-1093.

7. The 2023 American Geriatrics Society Beers Criteria® Update Expert Panel. J Am Geriatr Soc. 2023;71(7):2052-2081.

8. Kurita et al. Supportive Care Cancer. 2009;17(1):11-21.

9. Tannenbaum et al. You May Be at Risk. http://www.criugm.qc.ca/fichier/pdf/BENZOeng.pdf