



Clinician Information

The Ontario Drug Policy Research Network (ODPRN) conducted multiple studies on the effectiveness, safety, and accessibility of cognitive enhancers for the treatment of Alzheimer's disease using multiple research methods.

Cognitive enhancers available in Canada

	Donepezil	Galantamine	Memantine	Rivastigmine
Indicated for Mild Alzheimer's disease*	✓	✓	✗	✓
Indicated for Moderate Alzheimer's disease*	✓	✓	✓	✓
Indicated for Severe Alzheimer's disease*	✓	✗	✓	✗
Available on the Ontario drug formulary	✓	✓	✗	✓

* Approved by Health Canada

Efficacy of cognitive enhancers for patients with Alzheimer's disease

- ← A left facing arrow indicates that the **row cognitive enhancer is significantly (statistically) better** than the column cognitive enhancer
- A dot indicates that there is no statistically significant difference between the "row" and "column" cognitive enhancers
- ↓ A downward pointing arrow indicates that the **column cognitive enhancer is significantly (statistically) better** than the row cognitive enhancer
- / A slash indicates that the outcome was not available for analysis

Cognition (all levels of severity)

The activities of thinking, understanding, learning, and remembering as measured by the Mini Mental State Exam.

Donepezil	←			
Galantamine	•	•		
Rivastigmine	←	•	•	
Memantine	•	•	•	•
	Placebo	Donepezil	Galantamine	Rivastigmine

Global status

Evaluation of a patient's overall status as measured by the Change Plus Caregiver Input test.

Donepezil	←			
Galantamine	←	←		
Rivastigmine	←	•	↓	
Memantine	/	/	/	/
	Placebo	Donepezil	Galantamine	Rivastigmine

Along with cognition and global status, we also looked at the outcomes of function and behaviour, but no significant differences were observed between the agents.

Safety

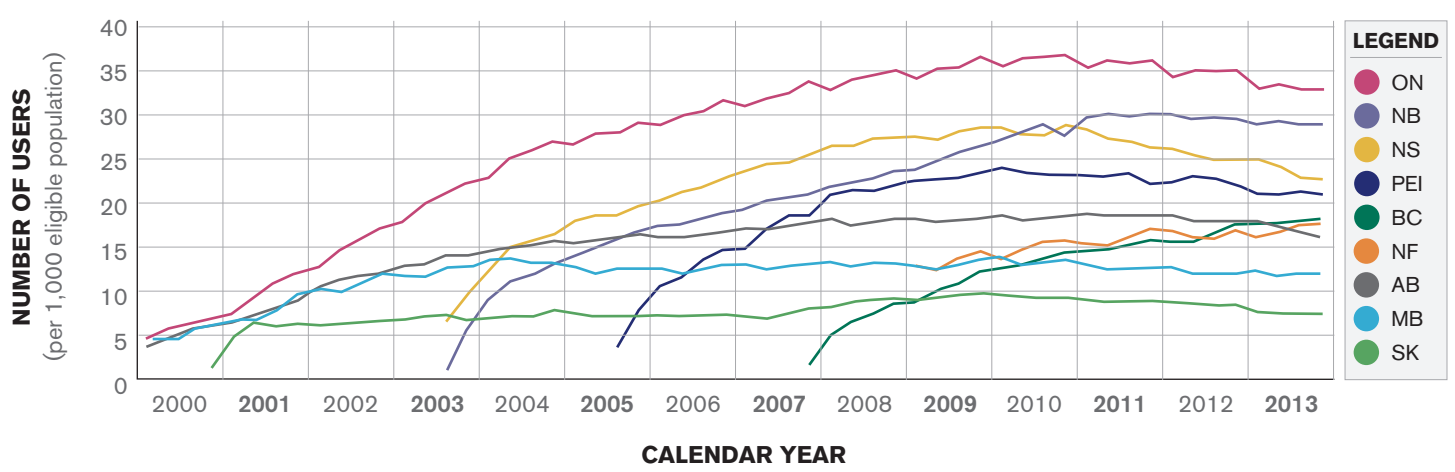


- All cholinesterase inhibitors (donepezil, galantamine, and rivastigmine) caused more gastrointestinal adverse effects compared to placebo.
- Galantamine was most likely to cause nausea and rivastigmine (oral) most likely to cause vomiting compared to all others.

Use in Canada

Ontario has the highest rate of publicly funded cognitive enhancer use in the country.

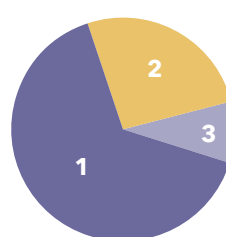
Between 2000 and 2013, the number of users increased almost 7-fold, from **5 users per 1,000 elderly population** to **33 users**.



In 2013, there were 146,593 cognitive enhancer users aged 65 and older in Ontario:

Total expenditure = \$49 million

BREAKDOWN OF USERS BY DRUG TYPE



- GALANTAMINE**
38,440 users (26.2%)
- RIVASTIGMINE**
12,836 users (8.8%)
- DONEPEZIL**
95,317 users (65.0%)

What do we recommend?

- Limited Use for oral cholinesterase inhibitors for initiation of patients with mild to moderate Alzheimer's disease (with updated clinical criteria).
- Listing of rivastigmine patch on the Exceptional Access Program should be explored, provided a price reduction of approximately 55% is negotiated.