



The objective of this session is to provide you some basic information and terminology related to few disease and drugs. This material is compiled from a practical, common man's perspective. It is not intended to replace specialist medical advice or serve as a complete medical reference.

## Common memory related disorders

### Agnosia

This is the inability of a person to identify specific types of stimulus such as certain objects, certain sounds, certain arrangements etc. Agnosia is not a memory disorder itself, but a perceptual disorder that can look similar to a memory problem

### Alzheimer's Disease

This state is generally associated with progressive degeneration of portions of brain, particularly the cell the cell connections, which is usually considered irreversible. Medical science currently has no cure for Alzheimer's disease. However, long-term cognitive training, nutrition, and lifestyle interventions may support better daily functioning.

### Amnesia

In this state memory is particularly affected. One type is Retrograde Amnesia, where past memories are lost. This is commonly called the "Memory Loss" and many movies depict such patients. Another type is Anterograde amnesia where past memories are present but forming latest memories are difficult. Brain injuries by any incidence are common cause of amnesia.

### Confabulation Disorder (associated with memory impairment)

Confabulation disorder is a condition in which individuals unintentionally produce false or distorted memories without any intent to deceive. It commonly occurs in memory disorders like Korsakoff Syndrome or certain types of brain damage that affect frontal lobe functioning. People fill memory gaps with invented details or misremembered events, believing them to be accurate. This happens because the brain tries to "complete the picture" when memory pathways are damaged, blurring the boundary between real and imagined experiences.

### Dementia

Dementia is an umbrella term for a group of conditions characterized by a progressive decline in memory, cognitive abilities, and daily functioning. It is not a normal part of aging, although it occurs more frequently among older adults. People with dementia may struggle with memory, problem-solving, communication, and behavioral changes that interfere with independence. Alzheimer's disease is the most common form of dementia, but other forms also exist, such as vascular and Lewy body dementia.



### **Korsakoff Syndrome**

Korsakoff Syndrome is a chronic memory disorder caused by a severe deficiency of Vitamin B1 (Thiamine), often linked to prolonged alcohol misuse or malnutrition. The condition leads to significant difficulty in forming new memories and retrieving old ones, and individuals may unconsciously fill memory gaps with fabricated stories, a behavior known as confabulation. Despite this, other cognitive functions may remain relatively preserved, making the syndrome specifically notable for its profound impact on memory.

### **Mild Cognitive Impairment (MCI)**

Mild Cognitive Impairment (MCI) is a condition in which an individual experiences noticeable problems with memory or thinking that go beyond normal age-related changes but are not severe enough to interfere significantly with daily activities. People with MCI may forget appointments, misplace items more often, or struggle with complex tasks, yet still maintain independence. MCI can remain stable, improve in some cases, or, for some individuals, progress to dementia over time.

### **Parkinson's Disease**

Although not exactly a memory related problem, but effect of Parkinson's disease which affects motor movements, can also affect the memory adversely. However people with this disease can also be trained well to have marked improvement in their memory and using it effectively.

### **Abnormal Stress Condition**

Abnormal Stress is something which can make a person age much faster. In this case neural age advances much more than the biological age and memory impairments starts occurring. To a large extent this conditions can be reversed with proper training, diet and exercise.

## **Common memory related drugs**

We do not recommend any medicines to be taken for memory improvement, but some drugs are marketed with claims of memory improvement. Knowing the terminology related to these drugs is important. The drugs to improve brains cognitive ability and memory functionality are also called the 'Smart Drugs' or Nootropics.

### **Amphetamine**

Low doses are reported to increase memory consolidation. It is still not recommended, as memory training is a better and non-habit forming alternative. Used clinically for ADHD, not for healthy individuals; risk of dependence and cardiovascular side-effects.

### **Ashwagandha**

Linked to reduction in anxiety and stress, which may help indirectly with memory performance. Not a direct memory enhancer but can support the conditions required for good memory functioning.



### **Brahmi (*Bacopa monnieri*)**

This is one of most researched plant these days as its brain related positive aspects have been explained in Indian Ayurveda Literature. Strong evidence of its properties related to protection of neural cells have been found. As a memory trainer we still discourage taking any preparations externally as training can do much more than external preparations. Benefits are usually seen after 6–12 weeks in studies; not an instant enhancer.

### **Caffeines (Xanthines)**

Often found in tea and coffee can impact alertness in low doses. Over use may be habit forming and can make a person dependent. It does not improve memory directly; improves alertness which indirectly supports memory tasks.

### **Curcumin (Turmeric extract)**

Research shows anti-inflammatory and antioxidant effects, may support memory in aging populations. But variability in absorption (bioavailability) makes findings inconsistent.

### **Donepezil (and other Acetylcholinesterase Inhibitors)**

Medicines like Donepezil, Rivastigmine, Galantamine are prescribed medically for Alzheimer's and Dementia to slow cognitive decline. They do not create new memory, only help preserve existing cognitive function in disease settings, and must not be used without medical indication.

### **Eugeroics (armodafinil and modafinil)**

Promotes wakefulness artificially. May be useful only with people with sleep disorders. Not to be experimented for memory improvement. Long-term effect on cognitive health unclear, may disrupt natural sleep architecture.

### **Ginkgo biloba**

This is one of the most popular recommendation by herbalists to improve attention deficit and memory functions. Mixed reports have come regarding its effectiveness. Large meta-analyses show mixed/no significant impact in healthy adults.

### **Ginseng**

Portions of ginseng plant are highly advertised for anti ageing and memory improvement. Conclusive evidence of its advertised purpose is still missing. Quality of extracts varies; many studies are small or low methodological quality.

### **L-Theanine**

Present in tea, can increase calm attention/alpha waves. Useful with caffeine for balanced alertness, but limited direct memory benefit.

### **Melatonin**

Not for memory but sleep-regulation. Better sleep → better consolidation of memory.



Important point to add: "Sleep is the natural memory drug."

### **Memantine**

Used specifically in moderate to severe Alzheimer's to reduce symptoms by modulating glutamate activity in the brain. It is not a memory booster for normal brains and should not be used off-label for "enhancement."

### **Methylphenidate**

Can improve performance on difficult tasks, but it can have side effects on other parts not involved in the task. Used medically for ADHD; off-label use is discouraged.

### **Nicotines**

This is the compound you ingest while smoking. It can affect your attention and alertness initially, but its bad aspects make you addictive and it has also been a known carcinogenic (Cancer causing entities). Short-term cognitive alertness benefits are outweighed by long-term harm.

### **Omega-3 Fatty Acids (DHA/EPA)**

Not a drug but a widely used supplement. They support brain health structurally, but memory improvement is modest and long-term; not an immediate enhancer.

### **Piracetam & Racetams**

These are "nootropic" compounds often marketed for memory and mental clarity. Clinical results remain inconsistent; some small benefits reported in cognitive impairment but no proven advantage in healthy individuals, making them unreliable as memory enhancers.

### **Tolcapone/Levodopa/Atomoxetine**

Can improve selective functions of memory, but they are a sort of experimental drugs not recommended by us for memory improvement as such. Primarily for Parkinson's disease; altering dopamine for healthy cognition can be risky.

*"These substances are not recommended as memory enhancers for healthy individuals. Most benefits, where proven, apply only to specific medical conditions and under professional supervision. Habit formation, side effects, and unpredictable neurochemical changes make memory training, sleep regulation, exercise, and cognitive practice far safer and more effective long-term strategies."*