

## What is memory?

Simply put, memory is the mental activity of recalling information that you have learned or experienced. That simple definition, though, covers a complex process that involves many different parts of the brain. Memory can be short-term or long-term.

### Short-term memory

In **short-term memory**, your mind stores information for a few seconds or a few minutes: the time it takes you to dial a phone number you just looked up or to compare the prices of several items in a store.

Such memory is fragile, and it's meant to be; your brain would soon read "disk full" if you retained every phone number you called, every dish you ordered in a restaurant, and the subject of every ad you watched on TV. Your brain is also meant to hold an average of seven items, which is why you can usually remember a new phone number for a few minutes but need your credit card in front of you when you're buying something online.

### Long-term memory

**Long-term memory** involves the information you make an effort (conscious or unconscious) to retain, because it's:

- Personally meaningful to you (for example, information about family and friends).
- You need it (such as job procedures or material you're studying for a test).
- Or it made an emotional impression on you (a movie that had you riveted, the first time you ever caught a fish, the day your uncle died).

Some information that you store in long-term memory requires a conscious effort to recall:

- Episodic memories, which are personal memories about experiences you've had at specific times.
- Semantic memories (factual data not bound to time or place), which can be everything from the names of the planets to the color of your child's hair.

Another type of long-term memory is procedural memory, which involves skills and routines you perform so often that they don't require conscious recall.

#### **Areas of the brain important in the formation and retention of memory:**

- The **hippocampus** plays the single largest role in processing information as memory.
- The **amygdala** helps imprint memories that involve emotion.
- The **cerebral cortex** stores most long-term memory in different zones, depending on whether the information involves: language, sensory input, problem-solving, and so forth.
- In addition, memory involves communication among the brain's network of **neurons**, millions of cells activated by **brain chemicals called neurotransmitters**.

## Stages of memory foundation and maintenance

There are three stages that the brain goes through in forming and retaining memories.

<b>Acquisition →</b>	<b>Consolidation →</b>	<b>Retrieval</b>
<p>New information enters your brain along pathways between neurons. The key to encoding information into your memory is concentration; unless you focus on information intently, it goes “in one ear and out the other.” This is why teachers are always nagging students to pay attention!</p>	<p>If you’ve concentrated well enough to encode new information in your brain, the hippocampus sends a signal to store the information as long-term memory. This happens more easily if it’s related to something you already know, or if it stimulates an emotional response.</p>	<p>When you need to recall information, your brain has to activate the same pattern of nerve cells it used to store it. The more frequently you need the information, the easier it is to retrieve it along healthy nerve cell connections.</p>