

**This information courtesy of:**

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**Types of Memory:**

Two important types of memory are visual (the things we see and recognize) and auditory (what we hear and process, in particular language). While visual memory is stored in the right hemisphere of the brain, auditory memory is stored in the left hemisphere. We also have memory for sensations such as texture, taste, and smells. We can identify objects we have never seen before such as a new bicycle, a pencil, or a book and we recognize people we know even if we haven't seen them for a long time and they have aged and and/or changed physically.

**Categories of Memory**

*Immediate Memory:* Something that is remembered for a brief time such as a phone number you have looked up and are about to dial. Head injuries can affect immediate memory.

*Short Term Memory:* Information that is retained anywhere from 30 minutes to several days (e.g. where you parked the car while shopping, the time of a dental appointment made several days earlier, what the teacher asked you to bring to class at the end of the week). This is the type of memory that is the biggest problem following a head injury.

*Long Term Memory:* Information retained over long periods of time, e.g. the name of our second grade teacher, an address we had five years ago, our sister's birthday.

**Loss of Memory**

Losing the memory you once had is called amnesia. The loss of memory prior to an accident is called *retrograde amnesia* and it can be a few seconds, a few minutes, or longer. Longer retrograde amnesia often correlates with more serious head injuries. Memory lost following the accident is referred to as *anterior grade amnesia*. Many patients have difficulty recalling the extensive time they spend in the hospital post-injury.

**Why Memory is Impaired:**

Before information is stored, it is filtered and channeled through the middle of the brain, an area that is often sheered or torn during an accident. Swelling occurs, brain chemistry is imbalanced and information gets lost, misplaced or jumbled. The middle of the brain also retrieves information; so patients not only have difficulty storing information, they have difficulty retrieving it. With time, the chemistry normalizes and the patient's memory should improve.

## **Things That Can Affect Memory**

*Fatigue and Sleep Disorders:* Being tired affects memory. For people with a head injury learning is easier in the morning than in the late afternoon. Chronic fatigue needs to be addressed and should be discussed with your physician.

*Emotions:* Everyone's memory is affected by emotional stress. This can be a serious problem for children who suffer anxiety in school, especially when they are called on or take an exam. Parents need to work with the school and in the home environment to reduce stress induced memory problems.

*Medications:* A medication itself can affect memory or a side-effect of a medication, such as drowsiness, can affect memory. Medications should always be considered when evaluating memory problems.

## **Tips for Improving Memory**

*Work with a professional:* The parents and child should work with a professional (usually a speech therapist) to develop strategies for improving memory. It's important to determine exactly what type of memory is impaired in order to find the most effective approach to improving memory.

*Develop organizational routines:* This should apply to the child as well as the parent. Keep things such as school supplies in the same place; develop a routine for daily activities like getting ready for school and preparing for bedtime.

*Avoid multi-tasking:* Do one thing at a time. This can be very challenging in today's culture where kids listen to music, talk on the phone, and try to do homework all at once. If the child is doing math homework then only the math book should be on the table and there should not be any distractions such as TV, radio, phone calls.

*Break information down into smaller bits:* Concepts should be broken down into small chunks and studied one at a time. Avoid mental fatigue; study more frequently for shorter periods of time.

*Consider creating a calendar or schedule:* This can assist the child in visualizing a day, a week or a month, reminding them of up and coming activities, appointments, etc.

*Write short to-do lists:* A concise to-do lists can assist in organization and make a task more doable. To-do lists should not be lengthy or too broad.

## **WHAT CAN I DO TO IMPROVE MY MEMORY?**

**Work with a Specialist in Memory**--One of the most important things is to get help from people who specialize in head injury. Every head injury program has a specialist who teaches memory strategies. In most cases, this is a Speech Therapist (they don't just help people who have slurred speech). In the Neuro-Recovery program, our Speech Therapist teaches 15 different memory strategies and helps you to pick the 2 or 3 that

work best for you. There is often a fair amount of testing in order to figure out the best memory strategy for each head-injured person. For some people, one type of memory may be impaired (verbal recall) but another type be intact (remembering visual information). If I know that my verbal memory is not very good, I write things down and encourage visual memory systems to work. Specialists can help you pick out the best memory strategies to help you. Once you find an effective strategy, keep working on it. Think of memory like a muscle. The more you use it, the stronger it gets.

**Get Organized**--We learn better if we are organized. Many people have told me that, prior to their head injury, they had incredibly messy desks with papers all over. But if someone came in and said, "*I need this particular paper*", they could pull it out of a big pile and say "*here it is.*" After a head injury, though, the ability to organize gets really messed up. One symptom of not being organized is when someone says, "*I've started 50 projects and haven't finished one of them.*" If you organize information, it tends to help you recall it. For example, if you are constantly losing your car keys or constantly forgetting where you put your wallet, there's one simple technique to use. Put things in the same place. Always put your car keys in one spot on the dresser. Always put your purse in one spot in the house and nowhere else. Being organized helps your memory and you will be less likely to lose things.

**Break It Down**--Another thing that we can do to help memory is to break it into small bits. If you have something really tough to learn, try to break it down into small bits and then learn each one little bit at a time. Some people call this "chunking;" you are memorizing little "chunks" of information. For example, your brand new VCR has a remote control with 50 buttons on it. Reading the entire manual in one sitting to learn what all of the 50 buttons do is very hard. So, learn one function and then play with that feature for awhile. Once you've learned that, go on to the next button. We've been using this technique for years to learn simple information like a phone number. The wonderful folks at Bell Labs (they invented the phone) figured out that people will learn a 7 digit phone number if you group 3 digits together and then group 4 digits together (a "chunk" of 3 numbers and a "chunk" of 4 numbers).

**Using Association**-- Association is really important for retrieving important information. For example, you are taking a literature course and you need to remember a famous essayist--Francis Bacon. You might associate the image of a piece of bacon with the name of this person. So if you're trying to think of this explorer, an image of a piece of bacon will come to you. This approach is particularly helpful with learning names. Remembering names is a difficult task for most people in the world; it is especially hard for most people with a head injury.

**Get a Daily Planner**--Probably one of the best things you can do to help your memory is to use a daily planner. This brings up two important points:

- The First Rule of Memory--write everything down in one spot (your daily planner).
- The Second Rule of Memory--write it down when it's fresh in your mind.

For example, you go to your doctor's office and you are asked to return for another appointment. Many people have a calendar stuck on their refrigerator or on a wall at home. By the time you get back home, you've forgotten the date or lost the appointment card. Next time, bring a planner to the doctor's office and write your appointment in it just after the doctor tells you the date. Get a medium size planner or something called an organizer. Don't get something that's too small--you're going to be doing a lot of writing. Write complete notes! Some people make notes so short that they later can't figure out what the note means.

**Make A "To Do" List**—Consider using short to-do lists. For example, you may have a number of chores to do around the house but none of them in any particular order. What you can do is get a small pad of paper and write down the things that they have to do. Once you have this list, decide which task to do first, second, third, and so on. This will work if your list doesn't get too long. If the list gets too long, you're going to run into problems.

**Make a "Modified To Do" List**--I commonly hear the same problem, *"I've got 50 projects going but I haven't finished any of them."* This is a combined problem of memory deficits and organizational deficits. One solution is to buy a small dry-erase board and put it up in the home (or office). On the board, you are only allowed to list five items on the "To Do" list. You cannot add another item to the board until you have completed one of the items already on the board. Make a "Modified To Do List" and put it somewhere in your house where the whole family can see it. Family can also offer suggestions to help you to get projects organized. This will in turn help family members get a better understanding of what the head-injured person has to deal with. When you get organized and use the Planner/To Do List, you'll feel better about yourself because you will be getting things accomplished.

## **THINGS THAT CAN AFFECT MEMORY**

**Fatigue and Sleep**--Memory can be affected by a number of things. Some of these influences can affect even people without a head injury. If you do have a head injury, these effects are multiplied. For example, if you're tired, your memory tends to be poor. If you have to learn something really important, it's best to learn it when you're fresh. Generally, most people with head injuries learn better in the morning than in the late afternoon. So if you've got something really important (a test for school), studying the night before the exam may not be very useful. The best time to study is in the morning. In addition, people with head injuries commonly have sleep disorders. It's very important that you talk with your doctor about getting your sleep pattern back to normal. If you wake up tired, you're going to make memory problems worse. (See the sections of this book on Sleep Disorders and Fatigue.)

**Strong Emotions**--Very emotional situations will distort your memory. If someone comes into a bank and waves a gun at you, this will create a very emotional situation (intense fear). Even though there are five people looking at the same person, you will get five different descriptions of the robber (that's one reason why they have cameras in banks). Being afraid, mad, or anxious will alter your memories. What should you do in emotional situations? You can't always control your emotions, but there are situations

where you will need to recall important information. For example, going to a doctor's office can be a very emotional experience (many people are afraid or anxious). Most head-injured people find this a very stressful situation. One approach is to bring a family member or friend along. Another approach is to tell your doctor of your memory problems and ask the doctor if you can write down important information.

Keep a Memory Sheet for Doctors' Appointments. When you get to the doctor's office, you may be so nervous that you forget to tell your doctor ALL of your problems. The next time you see your doctor, you may recall some of the old problems that you forgot on the first visit. A common complaint of doctors who work with head-injured patients is, "*Every time I see this person, I hear a new problem.*" Using a Memory Sheet can help you organize your thoughts. Doctors deal better with information when it is presented in a quick and organized form. For each problem, write down what the doctor recommends. In this way, you can bring your memory sheet to future appointments and keep track of your progress. For example, maybe you're not sleeping and one medication approach is being tried. If that approach doesn't work or has a limited effectiveness, you will want to keep track of that and bring it up the next time you see your doctor. If you don't write these problems down and monitor them, you'll be less likely to make progress with them.

Certain types of medications (pain killers, for example) can affect memory. In the hospital, people can be on fairly significant amounts of pain killers because they have broken bones or other injuries. Some medications can make you tired, which in turn makes your memory worse. It is important to have an ongoing dialogue with your doctor about your medications. People have told me, "*I'd rather be in a little bit pain so I can be more alert.*" Sometimes the goal of pain medication is not to get rid of all the pain, but to control it. Talk with your doctor about your medications and the possible effect of medications on memory.