Impaired Cognition in Multiple Sclerosis

Is thinking affected in multiple sclerosis?
In most cases, people with MS function effectively in their daily life. However, many people notice some kind of problem with their thinking at some time during the disease. Some notice problems with their memory, particularly finding words or remembering events from the past. Some find that they have trouble doing more than one thing at a time (multitasking), or that they take longer to process information. Some people find they have problems learning new tasks. All of these are symptoms of “impaired cognition,” difficulties with the process of thinking. When measured carefully in research studies, most people with MS will have some measurable problem with cognition.

Who can get cognitive problems?
Measurable cognitive problems can occur at all stages of MS. They do not correlate very well with duration of MS, or with the amount of change seen on the MRI scans. People with cognitive problems may notice one or more of the following symptoms:

- problems remembering events or conversations.
- problems remembering names
- problems with multitasking
- problems with learning new materials
- problems with attention span
- problems with learning directions
- problems with decision making

How do we assess cognitive problems?
There is no one test that measures cognitive problems in MS. Some screening tools are available, but none are perfect. Research studies often use a test called the PASAT. This takes a few minutes and consists of a task that measures addition and recall of prior numbers. It may be moderately stressful. Other tests include the mini mental status examination which is used often in neurology, but is not very sensitive to cognitive problems in MS.

A formal neuropsychological examination is the best test to evaluation troublesome cognitive changes in MS. During a neuropsychological evaluation multiple tests are used to measure memory, attention, and many other parts of cognition. This allows a full assessment of the kinds of problems with thinking that are present and whether these may be due to depression or another complicating factor.

Are there any medications that can interfere with thinking?
Many people with multiple sclerosis are on medication for their symptoms. Many medications can cause problems with thinking. During an evaluation for cognitive problems, the patient’s
medications should be checked to see if they could be interfering with cognition. The following medications may affect thinking:

- Steroid medications
- Muscle relaxants
- Some antidepressants
- Major tranquilizers
- Some seizure medications (e.g., topiramate)
- Anti-cholinergics
- Cholesterol-lowering medications

If one of more of your medications could be causing cognitive problems, it makes sense to discuss these with your physician to see if they can be reduced or stopped, or if there are alternative treatments that can be used.

**Are there other things than can interfere with thinking?**
There are many factors than can interfere with thinking. People who are suffering from depression may find it hard to concentrate or to remember things. This may improve with treatment of their depression. People who drink alcohol excessively or who used drugs may have altered thinking. People with sleep disorders may experience memory problems related to sleep deprivation. People with some medical conditions such as a low thyroid may also have problems with memory. These other factors should be considered when there are cognitive problems.

**Are there any treatments for cognitive impairment in MS?**
Two of the standard FDA-approved medications for MS have been shown to slow a worsening in cognition in MS compared with placebo (Avonex® and Betaseron®). One medication used in MS treatment improved measures of cognitive compared with placebo (natalizumab). In addition, a medication used for Alzheimer's disease, donepezil, has been shown to measurably improve cognition in MS. Other medications are presently under study for this problem.