

# Concentration, Memory, Mental Alertness

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*by Allan Wohrnitz (BSc)*

When it comes to exams, the stress associated to exams, or the need to focus while reading or driving or the need to work late to study without falling asleep, what can one do to ensure one's nervous system and nerves in the brain are able to cope. What about the physically normal child who cannot concentrate who is then labelled a psychiatric "disease" (ADHD) and is then rapidly drugged with mind altering psychiatric drugs?

The transmission of messages throughout the nervous system can occur smoothly if the body is provided with the correct foods and nutrients. There is no need for drugs to accelerate or reduce the normal processes in the nervous system. The body is designed to adjust and repair itself provided it is given the correct nutrients when needed. If the body is well fed, it will have adequate reserves of essential nutrients to provide when called for.

The nervous system transmits its electrical messages (impulses) between the nerve endings by means of neurotransmitters. For concentration, mental sharpness and memory, it requires the production of acetylcholine. It is known as the "memory neurotransmitter". It is known to elevate mood, increase memory, increase intelligence and physical energy. A god send for those who are losing their memory!

The main building material for acetylcholine is choline which is found in abundance in lecithin. Choline is a key nutrient of the nervous system as it is used to as a building material for the nerve cells, the protective shield of the nerve cell and nerves and for the production of receptor sites. A receptor site is attached to the nerve ending to receive a neurotransmitter. It allows the neurotransmitter to dock at the site and then transmit the electrical impulse it carries to the next nerve.

Choline however does not readily pass through the blood brain barrier to enter the brain. It so happens that when choline levels are low in the brain, the body will grab choline from the nerve cells to build acetylcholine. It cannibalises the nerve cells, which is the onset of Alzheimer's disease. Alzheimer's disease is from a deficiency of acetylcholine.

The nutrient DMAE (Di Methyl Amino Ethanol) passes readily through the blood brain barrier. It then converts to choline in the brain. Vitamin B5 (pantothenic acid) is needed as part of an enzyme to convert DMAE to acetylcholine. Reports have shown that DMAE and Vit B5 is twice as effective than drugs in treating kids with attention and concentration problems.

There are another two nutrients which are essential to the production and reception of acetylcholine:

Phosphatidyl Choline (PC) – it works together with DMAE to produce acetylcholine. PC, DMAE, the amino acids glutamine and carnitine and B vitamins are essential nutrients to ensure acetylcholine is made. PC is obtained from lecithin.

Phosphatidyl Serine (PS) – forms part of the structure of the receptor site. PS, Omega 3 oils and an amino acid glutamine are essential nutrients for the receptor sites. Their availability boosts the number of receptor sites for acetylcholine. PS is sourced from organ meats, hence vegetarians need supplementation of PS.

To ensure the smooth production of acetylcholine and constant metabolism for energy production in all the cells, use herbs like Ginko Biloba to improve the blood circulation in the brain so nutrients and oxygen do arrive at all the cells when called for. Green tea to help prevent any toxic build up to damage the nerve cells and neurotransmitters. If any nervousness or anxiety due to exam stress, use Ginseng to calm one down and relax. Avoid junk foods (list available on request), eat good proteins to provide the needed amino acids, supplement with a good multivitamin and mineral and Omega 3 and 6 oils.

Avoid alcohol as it dissolves the essential fats in the brain and blocks the conversion of fats for essential metabolic processes in the brain.

Avoid processed cooking oils (triple refined oils – e.g. canola and sunflower – commonly found in French fries, fried fish, doughnuts, packaged chips – they block the conversion of omega 3 and 6 oils and messes up the thinking process.

Drug treatments are very risky. They use up nutrients rapidly creating almost instant deficiencies, hence the side effects. Drugs deplete Calcium and Magnesium which results in

anxiety, edgy feelings, nervous, irritable and aggressive. There are numerous reports of aggressive behaviours in children who have taken psychiatric drugs for learning or behaviour problems which in the worst of cases resulted in school shootings and murders.

Suicide is also a deadly side effect and the FDA has recently ordered drug manufacturers to label their drugs as such warning of suicide tendencies – it is labeled with a black square on the packaging.

**Ref:** Optimum Nutrition for the Mind – Patrick Holford