

# **Differential Analysis and Herbal Treatment of Memory Loss**

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Recent products in the market place have focused on the properties of *Gingko biloba* as a memory enhancer and mental stimulant. Indeed it does this, when properly prescribed for appropriate conditions but the question must be asked "Why is there memory loss in the first place"? It is not enough to simply open up the circulation in the brain, which is essentially what ginkgo does, if there is some underlying pathology that is not being addressed. The differential assessment of memory loss should follow the standard approach to any medical investigation. Some of the possible causes include: trauma (emotional or physical), Alzheimers, dementia, schizophrenia, *Candida albicans*, allergic reactions, malnutrition, AIDS, Chronic Fatigue Syndrome and substance abuse. Tertiary syphilis is a very rare cause in our society.

In physical trauma the memory loss may be partial or global. Blows to the head can fracture skull bones and cause bleeding in the meninges. This will lead to raised intra-cranial pressure which may manifest as impaired memory as well other pathognomic symptoms. These include throbbing headache, worse on lying down, sneezing, coughing or straining, drowsiness, nausea, vomiting, bradycardia, cranial nerve palsies and possibly sensory or motor impairment.

In extra-dural haemorrhage where the middle meningeal artery has ruptured the bleeding may be quite slow so that symptoms of raised ICP occur gradually over several hours or days. A sub-dural haemorrhage may not manifest for weeks or even months. A sub-arachnoid haemorrhage, on the other hand, has a very sudden onset and the person may never regain consciousness never mind their memory!

In emotional trauma the memory loss is usually selective - only painful or frightening memories are blocked. If you suspect this is the case with a patient you should think carefully about your ability to deal with the outcome before probing too deeply. If you have counselor training then it may be appropriate but if you are not skilled in this area it might be best to refer the patient to a professional counselor.

The memory loss of Alzheimers disease and dementia is very insidious. It creeps up over many years and is coupled with other specific signs and symptoms. Typically the early symptoms include personality changes such as unprovoked anger, hoarding and emotional lability. Declining intellectual function occurs along with progressive loss of recent memory loss and eventually the patient reverts to a child-like state.

In schizophrenia there may be *thought block* where the patients mind goes completely blank for variable periods of time. There may also be patchy memory loss that is erratic and shifting. There are also disordered or deluded thought processes, inappropriate or blunted emotional responses, disturbances of speech, auditory hallucinations and paranoia. This condition tends to affect younger people. Be aware of memory loss induced by electro-convulsive therapy which is still not uncommon as a treatment for various psychoses.

In both *Candida albicans* and allergies the memory loss will tend to be erratic and shifting. Usually recent memory and details such as names, dates or telephone numbers will be lost. Actual memory loss

is frequently less of a problem than is confusion and lack of mental clarity - so called 'brain fog'. Difficulty in concentrating is also common. Other signs and symptoms might include bloating, gas, diarrhoea, skin rashes, fatigue, yeast infection (Candida), breathing difficulties (allergies) and a multitude of others. Don't forget that Candida and allergies can co-exist in the same person and either one may predispose to the other.

In malnutrition many mental processes may be adversely affected. The neurotransmitters are synthesized from amino acids: dopamine and nor-adrenalin from tyrosine and phenylalanine, serotonin from tryptophan and acetylcholine from choline. If any of these amino acids are missing from the diet then mental dysfunction can occur. Interestingly, a high protein meal will raise the brain level of dopamine which may have depressing or stimulating effects on different areas of brain function, while a high carbohydrate meal will raise the brain level of serotonin which tends to have a depressing effect on brain function. Proteins such as meat or eggs that are rich in choline will raise the brain level of acetylcholine.

Vitamin deficiencies can be a significant factor in memory loss. Folate and B12 deficiencies are associated with sleeplessness, impaired memory and irritability which generally disappear within 24 hours of starting vitamin replacement therapy. All the complex of B vitamins are important to correct mental functioning.

Extreme protein deficiencies may also cause memory loss but this is very rare in our society.

In AIDS the memory loss occurs as part of the last stages of the disease, along with dementia and wide-spread health breakdown. This patient is very unlikely to respond to herbal treatment although palliative care can certainly incorporate herbal therapies to minimise discomfort.

In Chronic Fatigue Syndrome the memory loss may come and go as the disease process goes through remissions and exacerbations. Typically it resembles the memory loss of Candida albicans and allergies: recent memory and details being lost accompanied by confusion and loss of powers of concentration.

Substance abuse may cause temporary or isolated memory loss as in the drunk who can't remember how he got home last night, or with repeated abuse may cause breakdown of global memory function. Careful questioning may be required to elicit the correct information from the patient who may wish to hide the extent of their addiction.

Questions to ask when assessing memory loss include:

- \* How severe is the memory loss (patchy, global, detail etc)?
- \* How long has it lasted?
- \* Is it continuous or does it come and go?
- \* Is there any known underlying pathology?
- \* Has there been any accident or blow to the head?
- \* Is there headache?
- \* Is there any cranial or peripheral nerve palsy?
- \* Are there any emotional changes in the person?
- \* Is there confusion of thought process or difficulty concentrating?

\* What is the diet and the nutritional picture?

\* Is there an accumulation of aluminum measurable on hair analysis which might indicate the presence of Alzheimer's disease?

#### Holistic and Herbal approaches to memory loss

Obviously it is essential to complete a thorough case history and a physical examination of the nervous system. Blood tests may be used to determine nutrient and toxin levels. Hair analysis may be used to determine mineral content in the body, looking especially for aluminum toxicity which may be implicated in Alzheimers. A psychological examination may be required.

Any underlying pathology that is discovered must be treated adequately by herbal or other means. Beyond that, several herbal agents may be used to stimulate mental functions and enhance memory.

Caffeine has a historic and cultural position as a pre-eminent brain stimulant. The effect of caffeine on the nervous system is to activate and stimulate all mental processes both directly and via stimulation of the adrenal glands and consequent release of adrenalin. It gives a short term effect which tends to be followed by a significant slump in mental activity and a craving for more of the stimulant. Thus coffee may be temporarily useful in a person who has a specific need to briefly enhance brain power, but cannot be used for any length of time before side effects occur. Anxiety, irritability and insomnia are frequent effects of coffee abuse.

Yerba mate is marketed as a caffeine-free brain stimulating herb. What is frequently not recognised, though, is that mateine, a major alkaloid in the herb is structurally and pharmacologically identical to caffeine, it simply has another name!

Paullinia cupana (Guarana) and Kola vera are other herbs rich in caffeine which are traditionally used for their stimulating properties.

Nicotine and cocaine are other plant alkaloids with a markedly stimulating effect on the brain, again being followed by a 'let down' period where brain function slumps and memory and concentration may be impaired.

Ginkgo biloba has been shown through thousands of years of clinical use, as well as by much scientific research, to enhance blood flow to the head. It cleans the arteries of atheromatous accumulations, regulates neurotransmitters and brain metabolism, enhances the integrity of the myelin sheath so speeding up impulse transmission, and increases the uptake and utilization of glucose by all cells of the body.

Vincamine, an indole alkaloid found in *Vinca major* and *minor*, has been shown to increase cerebral blood flow and cerebral uptake of oxygen and glucose. This may make it therapeutically useful as an equivalent of *Ginkgo biloba*.

The volatile oil of Rosmarinus off. contains notable amounts of borneol which is structurally similar to camphor. This is a peripheral circulatory stimulant, encouraging circulation in the head, hands and feet and exhibiting a significantly stimulating effect in the central nervous system. Shakespeare immortalised rosemary as the herb of remembrance and in Roman times students wore wreaths of rosemary to enhance their learning capabilities. Herbal students today are often seen going into exams with a bottle of essential oil of rosemary to sniff!

Another effective peripheral circulatory stimulant is Zingiber off. although its effect is most marked in the limbs and the pelvic basin.

Capsicum minimum is primarily a central circulatory stimulant, enhancing blood flow within the trunk and improving perfusion of the heart, liver, kidneys and digestive tract. Its secondary action is peripheral circulatory stimulation by virtue of its stimulating action on the heart.

Allium sativum may be beneficial in memory loss caused by impaired circulation because it aids in the removal of cholesterol deposits in the blood stream.

Both Hypericum perforatum and Avena sativa may be used to enhance memory and mental functioning by their effect of tonifying, regulating and balancing the nervous system as a whole.

Equisetum arvensis may be effective in memory loss because of its general fortifying and tonic effects upon connective tissue of which the brain is a type.

Frequently memory can be enhanced by gentle stimulating and toning of the whole body. Herbs such as Urtica dioica, Turnera diffusa and Glycyrrhiza glabra may be useful here. *Urtica dioica* and other herbs rich in chlorophyll may be beneficial because the body can use chlorophyll as the raw ingredient to rapidly make new haemoglobin which improves the blood's ability to deliver oxygen to the brain.

Centella asiatica has been shown to improve all mental functions. A water extract of the fresh leaves regulates dopamine and serotonin levels in the brain and experiments in rats have shown retention of learned behaviour as much as 60 times greater than in untreated rats. An alcoholic extract was sedative in rats. Interestingly, Centella is said to be a favourite food of the Indian elephant and we all know how an elephant never forgets!

In summary, then, memory loss is a complex and multi-faceted problem with many variables to consider. The facile use of a single herb to treat this disorder may be a considerable dis-service to the patient who may thus not be treated for a serious underlying condition. Any central nervous stimulant or peripheral circulatory stimulant should only be used as a part of a wider treatment picture that takes into account the patient's social and cultural background as well as their dietary and overall health position. In any case of memory impairment or derangement of mental processes it is not recommended to use caffeine-containing herbs because the powerful stimulation that occurs is always followed by the let down phase with an aggravation of the initial problem and the danger of developing an addiction to the substance.