Your Monthly Update

Dear Colleague

Welcome to the March 2010 newsletter from Pure Bio Ltd.

Did you know:

When the effects of spirulina on cholesterol were studied on 30 men, it was found that 4.2g/day markedly reduced levels of LDL cholesterol after 8 weeks (Nutr Rep Int, 88; 37: 1329-37); and also increased HDL cholesterol (Evid Based Complement Altern Med 2008 Sep 14)

The chosen topic for this month is:

Memory Decline / Age-related Cognitive Decline

Protocol Summary

Ranking	Nutritional Supplements	Botanical Medicine
Primary	Acetyl-L-carnitine Phosphatidylserine (bovine brain PS only; soy-derived PS does not appear to be effective) Vinpocetine	Ginkgo biloba
Secondary	Beta-carotene Folic acid (for people with high homocysteine levels) Vitamin B12 (for treating people with B12 deficiency only) Vitamin B6	Bacopa Huperzine A
Other	Melatonin Vitamin C	

	Vitamin E	

Primary – Reliable and relatively consistent scientific data showing a substantial health benefit.

Secondary – Contradictory, insufficient, or preliminary studies suggesting a health benefit or minimal health benefit.

Other – An herb is primarily supported by traditional use, or the herb or supplement has little scientific support and/or minimal health benefit.

Symptoms

Short-term memory provides a small storage space for daily tasks and lists and is more likely to be affected with age. Forgetfulness is not a symptom of a clinical problem, unless it becomes debilitating or is accompanied by other symptoms of mental instability such as confusion or behavioural changes.

Memory is also affected by lack of sleep or by stress and anxiety. Conversely, if the mind is dulled by depression or boredom, short-term memory becomes impaired due to lack of use. Long-term memory tends to remain stable with age.

Causes

There are many pathological causes for patches of memory to be lost e.g. a high fever, epilepsy, severe alcohol intoxication or surgery can erase memory. A passing loss of short- term memory, or ischaemic attack, lasts only a few minutes and can precede a stroke. Alzheimer's disease and senile dementia (ARCD) are sources of memory loss in older people and are associated with the gradual erosion of the personality.

Many substances affect memory, including prescription drugs e.g. sleeping pills and antidepressants; and chronic alcohol abuse. Nutritional deficiencies should also be evaluated, especially in older people who do not always eat well. Problems with memory are often associated with physical fatigue that leads to inattention. Some women experience memory loss in conjunction with menopause as a result of hormonal imbalances. Usually, simple short-term memory loss is a side-effect of too much stress and an overload of information. There are many illnesses related to fatigue and poor attention span, including anaemia and under- or over-active thyroid. If a complete period of life has been forgotten, it is usually the result of blocking out psychological or emotional pain, as a coping mechanism.

Dietary Modification

In the elderly population of southern Italy, which eats a typical Mediterranean diet, high intake of monounsaturated fatty acids (e.g., olive oil) has been associated with protection against age-related cognitive decline (ARCD) in preliminary research. However, the monounsaturated fatty acid content of this diet might only be a marker for some other dietary or lifestyle component responsible for a low risk of ARCD.

Caffeine may improve cognitive performance. Higher levels of coffee consumption were associated with improved cognitive performance in elderly British people in a preliminary study. Older people appeared to be more susceptible to the performance-improving effects of caffeine than were younger people. Similar but weaker associations were found for tea consumption. These associations have not yet been studied in clinical trials.

Animal studies suggest that diets high in antioxidant-rich foods, such as spinach and strawberries, may be beneficial in slowing ARCD. Among people aged 65 and older, higher vitamin C and beta-carotene levels in the blood have been associated with better memory performance, though these nutrients may only be markers for other dietary factors responsible for protection against cognitive disorders.

Adding unrefined, cold-pressed nut and seed oils (flax seed oil, walnut oil or sesame oil) to the diet can assist in an improved memory. These oils have a high content of lecithin, which plays an essential role in the transmission of nerve impulses that control memory. Other food sources of lecithin are egg yolks, soy beans and raw wheat germ. Unroasted almonds, hazelnuts and fresh walnuts are an ideal food source.

The B vitamins are also important for good brain function. Vitamin B6 particularly plays a vital role in the recollection of dreams. Nutritional yeast, raw wheat germ, milk, eggs and cabbage are good sources of vitamin B6 and also provide the other B vitamins.

Lifestyle Modification

People with high levels of education appear to have some protection against ARCD. The reason for this association is unclear.

A large, preliminary study in 1998 found associations between hypertension and deterioration in mental function. Research is needed to determine if lowering blood pressure is effective for preventing ARCD.

A randomized, controlled trial determined that group exercise has beneficial effects on physiological and cognitive functioning, and well-being in older people. At the end of the trial, the exercisers showed significant improvements in reaction time, memory span, and measures of well-being when compared with controls. Going for walks may be enough to modify the usual age-related decline in reaction time - faster reaction times were associated with walking exercise in a UK study. The results of these two studies suggest a possible role for exercise in preventing ARCD.

Psychological counselling and training to improve memory have produced improvements in cognitive function in persons with ARCD.

Nutritional Supplement Treatment Options

Several clinical trials suggest that acetyl-L-carnitine delays onset of ARCD and improves overall cognitive function in the elderly. In a controlled clinical trial, acetyl-L-carnitine was given to elderly people with mild cognitive impairment. After 45 days of acetyl-L-carnitine supplementation at 1,500 mg per day, significant improvements

in cognitive function (especially memory) were observed. Another large trial of acetyl-L-carnitine for mild cognitive impairment in the elderly found that 1,500 mg per day for 90 days significantly improved memory, mood, and responses to stress. The favourable effects persisted at least 30 days after treatment was discontinued. Controlled and uncontrolled clinical trials on acetyl-L-carnitine corroborate these findings.

Phosphatidylserine (PS) derived from bovine brain phospholipids has been shown to improve memory, cognition, and mood in the elderly in at least two placebo-controlled trials. In both trials, geriatric patients received 300 mg per day of PS or placebo. In an unblinded trial of ten elderly women with depressive disorders, supplementation with PS produced consistent improvement in depressive symptoms, memory, and behaviour after 30 days of treatment. ***Note:*** Most research has been conducted with PS derived from bovine tissue, but what is available commercially is made from soy. The soy- and bovine-derived PS, however, are not structurally identical. However, preliminary animal research shows that the soy-derived PS does have effects on brain function similar to effects from the bovine source.

Inositol (IP6) and choline are B vitamins necessary for memory, brain function and reducing stress. Lecithin also contains high amounts of both these vitamins.

In a double-blind trial, supplementing with 50 mg of beta-carotene every other day for 18 years appeared to slow the loss of cognitive function in middle-aged healthy males. Short-term supplementation (1 year) was not beneficial.

In a double-blind trial, elderly people with high homocysteine levels received 800mcg of folic acid per day or a placebo for three years. Compared with placebo, folic acid supplementation significantly slowed the rate of decline of memory and of other measures of cognitive function.

A double-blind trial found both 30 mg and 60 mg per day of vinpocetine improved symptoms of dementia in patients with various brain diseases. Another double-blind trial gave 30 mg per day of vinpocetine for one month, followed by 15 mg per day for an additional two months, to people with dementia associated with hardening of the arteries of the brain. Significant improvement in several measures of memory and other cognitive functions was reported. Other double-blind trials have reported similar effects of vinpocetine in people with some types of dementia or age-related cognitive decline.

Vincamine, the unmodified compound found naturally in *Vinca minor*, has also been tested in people with dementia. A large double-blind trial found 60 mg per day of vincamine was more effective than placebo for improving several measures of cognitive function in patients with either Alzheimer's disease or dementia associated with vascular brain disease. A small double-blind study of vascular dementia also reported benefits using 80 mg per day of vincamine.

Vitamin B6 (pyridoxine) deficiency is common among people over the age of 65. A Finnish study demonstrated that approximately 25% of Finnish and Dutch elderly people are deficient in vitamin B6 as compared to younger adults. In a double-blind trial, correcting this deficiency with 2 mg of pyridoxine per day resulted in small

psychological improvements in the elderly group. A more recent double-blind trial of 38 healthy men, aged 70 to 79 years, showed that 20 mg pyridoxine per day improved memory performance, especially long-term memory.

Supplementation with vitamin B12 may improve cognitive function in elderly people who have been diagnosed with a B12 deficiency. Such a deficiency in older people is not uncommon. In a preliminary trial, IM injections of 1,000 mcg of vitamin B12 were given once per day for a week, then weekly for a month, then monthly thereafter for 6 to 12 months. Researchers noted "striking" improvements in cognitive function among 22 elderly people with vitamin B12 deficiency and cognitive decline. Cognitive disorders due to vitamin B12 deficiency may also occur in people who do not exhibit the anaemia that often accompanies vitamin B12 deficiency.

Melatonin is a hormone secreted by the pineal gland in the brain. It is partially responsible for regulating sleep-wake cycles. Cognitive function is linked to adequate sleep and normal sleep-wake cycles. Cognitive benefits from melatonin supplementation have been suggested by preliminary research in a variety of situations and may derive from the ability of melatonin to prevent sleep disruptions. A double-blind trial of ten elderly patients with mild cognitive impairment showed that 6 mg of melatonin taken two hours before bed significantly improved sleep, mood, and memory, including the ability to remember previously learned items. ***Note:*** The long-term effects of regularly taking melatonin supplements remain unknown, and its use on a long term basis should therefore be supervised by a healthcare practitioner.

Use of vitamin C or vitamin E supplements, or both, has been associated with better cognitive function and a reduced risk of certain forms of dementia (not including Alzheimer's disease). Both are powerful antioxidants which inhibit free-radical damage of cells and improve circulation, both of which are necessary for mental activity.

Niacin stimulates brain function and promotes blood flow by dilating the arteries and veins, an action which usually causes a harmless flush.

Evening primrose oil contains a hormone-like substance called gamma-linolenic acid (GLA), an essential fatty acid which is required for all brain functions.

Botanical Treatment Options

Most trials, many of them double-blind, have found ginkgo supplementation to be a safe and effective treatment for ARCD.

Huperzine A, an isolated alkaloid from the Chinese medicinal herb huperzia*(Huperzia serrata)***,** has been found to improve cognitive function in elderly people with memory disorders. One double-blind trial found that huperzine A (100 to 150 mcg BID–TID for four to six weeks) was more effective for improving minor memory loss associated with ARCD than standard prescription medication.

Animal studies have found the Ayurvedic herb bacopa has constituents that enhance several aspects of mental function and learning ability. A controlled study found that bacopa given to children improved several measures of mental performance.

Homeopathy

As homeopathy is specific for every person, the list is only a sample of the many prescribed remedies. Take the 6c strength four times daily for up to fourteen days. If the condition persists, consult an experienced homeopath.

- Take Anacardium for absent-mindedness caused by inner, conflicting personalities; the memory for names is most affected.
- Calcarea is recommended for an elderly person with childish behaviour. The attention wanders and words are difficult to remember.
- Take Plumbum for an anaemic, colicky person who cannot remember words and may be suffering from a nervous complaint.
- Sulphur is used for problems in remembering names and words.

Tissue Salts

Take 4 tablets four times daily under the tongue for several days or one week if needed.

- Kali phos is helpful in cases of poor memory associated with nervousness, anxiety and poor sleep.
- Calc phos will remedy when there is general weakness, with wandering thoughts and difficulty in focusing the mind.
- Nat mur is an excellent remedy for poor memory associated with lasting low spirits or grief and desire to be alone to weep.
- Nat sulph should be used in cases where poor memory occurs after a head injury.

Additional Suggestions

A calm environment can influence memory dramatically. A poor memory is often related to doing too many things at once. Try to avoid a hectic lifestyle. Turn off the television and radio when doing something else. Free the mind daily with a walk. Get sufficient rest and sleep. Use pen and paper to write things down as and when they are thought of.

For further information, contact:

Tracy S Gates

Director, PURE BIO LTD.

01403 730342

info@purebio.co.uk