



Your Monthly Update

Dear Colleague

Welcome to the May newsletter from Pure Bio Ltd.

Our topic for this month is depression. A recent survey estimated that one in five children under the age of fifteen suffers with some degree of depression. Many of these will be taking prescription medication. Nutritional, dietary and lifestyle changes can, in many cases, effectively eradicate the need for pharmaceutical drugs.

Depression

Ranking	Nutritional Supplements	Botanical Medicine
Primary	Eicosapentaenoic acid EPA Folic acid (for folate deficiency) Iron (for iron deficiency) Vitamin B12 (for B12 deficiency) Vitamin B6 (with oral contraceptives)	
Secondary	5-HTP Acetyl-L-carnitine (for elderly people) DHEA (this supplement requires supervision by a healthcare professional) Fish oil (EPA/DHA) Inositol dl-phenylalanine L-tyrosine Melatonin SAmE Selenium Vitamin B6 (for premenstrual syndrome) Vitamin D	Gingko biloba (elderly people) St. John's wort
Other	Calcium NADH Phosphatidylserine (bovine brain PS only; soy-derived PS does not appear to be effective)	Damiana Pumpkin Vervain Yohimbe

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.

Dietary Modification

Although some research has produced mixed results, double-blind trials have shown that **food allergies** can trigger mental symptoms, including depression. People with depression who do not respond to other natural or conventional approaches should consult a doctor to diagnose possible food sensitivities and avoid offending foods.

Restricting sugar and caffeine in people with depression has been reported to elevate mood in preliminary research. Researchers have reported that psychiatric patients who are heavy coffee drinkers are more likely to be depressed than other such patients. However, it remains unclear whether caffeine can cause depression or whether depressed people were more likely to want the “lift” associated with drinking a cup of coffee. Nonetheless, a symptom of caffeine addiction can be depression. People with depression may want to avoid caffeine as well as sugar for one week to see how it affects their mood.

There is evidence that people with major depression may have insensitivity to insulin and **impaired glucose tolerance**.

The amount and type of dietary fat consumed may influence the incidence of depression. The connection has to do with the **balance of fats in the diet**. A high intake of omega-6 fatty acids relative to omega-3 fatty acids and an inadequate intake of omega-3 fatty acids (e.g., from fish and fish oils) have been associated with increased levels of depression.

Lifestyle Modification

Exercise increases the body’s production of endorphins—chemical substances that can relieve depression. Scientific research shows that routine exercise can positively affect mood and help with depression. As little as three hours per week of aerobic exercise can profoundly reduce the level of depression. One trial compared the effects of an exercise training program with those of a prescription antidepressant drug in people over 50 years of age. The researchers found the two approaches to be equally effective after 16 weeks of treatment.

Nutritional Supplement Treatment Options

Iron deficiency is known to affect mood and can exacerbate depression. Iron should not be self prescribed, but only taken under the guidance of a healthcare practitioner or following confirmed deficiency by blood test.

Deficiency of vitamin B12 can create disturbances in mood that respond to B12 supplementation. Significant vitamin B12 deficiency is associated with a doubled risk of severe depression.

Depression caused by vitamin B12 deficiency can occur even if there is no B12 deficiency-related anaemia. Supplying the body with high amounts of vitamin B12 is most efficiently achieved by injection. However, levels can be maintained with oral supplementation (1 mg per day), even when the cause of the deficiency is a malabsorption problem such as pernicious anaemia.

A deficiency of folic acid can also disturb mood. A large percentage of depressed people have low folic acid levels. Folic acid supplements appear to improve the effects

of lithium in treating manic-depressives. Anyone suffering from chronic depression should be evaluated for possible folic acid deficiency.

Inositol - Preliminary evidence indicates that people with depression may have lower levels of **inositol**. Supplementation with large amounts of inositol can increase the body's stores by as much as 70%. In a double-blind trial, depressed people who received 12 grams of inositol per day for four weeks had a significant improvement in symptoms compared to those who took placebo. In a double-blind follow-up to this trial, the antidepressant effects of inositol were replicated. Half of those who responded to inositol supplementation relapsed rapidly when inositol was discontinued.

Vitamin B6 - Oral contraceptives can deplete the body of **vitamin B6**, which is necessary for maintenance of normal mental functioning. Double-blind research shows that women who are depressed and who have become depleted of vitamin B6 while taking oral contraceptives typically respond to vitamin B6 supplementation.

Several clinical trials also indicate that vitamin B6 supplementation helps alleviate depression associated with premenstrual syndrome (PMS), although the research remains inconsistent.

Selenium - Less than optimal intake of **selenium** may have adverse effects on psychological function, even in the absence of signs of frank selenium deficiency. In a preliminary trial of healthy young men, consumption of a high-selenium diet (226.5 mcg selenium per day) was associated with improved mood (i.e., decreased confusion, depression, anxiety, and uncertainty), compared to consumption of a low-selenium diet (62.6 mcg selenium per day.)

Vitamin D supplementation may be associated with elevations in mood. In a double-blind trial, healthy people were given 400–800 IU per day of vitamin D3, or no vitamin D3, for five days during late winter. Results showed that vitamin D3 significantly enhanced positive mood and there was some evidence of a reduction in negative mood compared to a placebo. In another double-blind trial, people without depression took 600 IU of vitamin D along with 1,000 mg of calcium, or a placebo, BID for four weeks. Compared to the placebo, combined vitamin D and calcium supplementation produced significant elevations in mood that persisted at least one week after supplementation was discontinued.

Omega-3 fatty acids found in fish oil, particularly DHA, are needed for normal nervous system function. Depressed people have been reported to have lower omega-3 fatty acid levels (e.g., DHA) than people who are not depressed. Low levels of the other omega-3 fatty acid from fish, EPA, have correlated with increased severity of depression. In a double-blind trial, people with manic depression were given a very high intake of supplemental omega-3 fatty acids (enough fish oil to contain 9.6 grams of omega-3 fatty acids per day) for four months. Ten of 16 people in the placebo group eventually were forced to discontinue the trial due to worsening depression compared with only 3 of 14 taking omega-3 fatty acids. Some scores of depression levels fell as much as 48% in the omega-3 fatty acids group.

EPA alone has also been reported to be beneficial. In a double-blind study, supplementation with EPA for 12 weeks was significantly more effective than a placebo at relieving symptoms of depression.

L-tyrosine can be converted into norepinephrine, a mood-enhancing neurotransmitter. Women taking oral contraceptives have lower levels of tyrosine, and some researchers believe this to be related to depression caused by birth control pills. L-tyrosine metabolism may also be abnormal in other depressed people and is always worth investigating.

DL-phenylalanine (DLPA) is another amino acid that converts to mood-affecting substances (including phenylethylamine and norepinephrine). DLPA (or the D- or L-form alone) reduced depression in 31 of 40 people in a preliminary trial.

Acetyl-L-carnitine may be effective for depression experienced by the elderly. A preliminary trial found that acetyl-L-carnitine supplementation was effective at relieving depression in a group of elderly people, particularly those showing more serious clinical symptoms. These results were confirmed in another similar clinical trial. In that trial, participants received either 500 mg TID of acetyl-L-carnitine or a matching placebo. Those receiving acetyl-L-carnitine experienced significantly reduced symptoms of depression compared to those receiving placebo. At least two other clinical studies of acetyl-L-carnitine for depression in the elderly have reported similar results. The amount typically used is 500 mg TID.

Some studies have reported lower ***DHEA*** levels in groups of depressed patients. However, this finding has not been consistently reproduced.

Despite confusion regarding which depressed people might be DHEA-deficient, most double-blind trials lasting at least six weeks have reported some success in treating people with depression. After six months using 50 mg DHEA per day, “a remarkable increase in perceived physical and psychological well-being” was reported in both men and women in one double-blind trial.

Melatonin might help some people suffering from depression. Preliminary double-blind research suggests that supplementation with small amounts of melatonin (0.125 mg BID) may reduce winter depression and reduce sleep disorders often seen in association with depression.

S-adenosyl methionine (SAME) appears to raise levels of dopamine, an important neurotransmitter in mood regulation. Higher SAME levels in the brain are associated with successful drug treatment of depression, and oral SAME has been demonstrated to be an effective treatment for depression in most, but not all, clinical trials. Most trials used 1,600 mg of SAME per day. While it does not seem to be as powerful as full applications of antidepressant medications or St. John’s wort, SAME’s effects are felt more rapidly, often within one week.

5-HTP - Disruptions in emotional well-being, including depression, have been linked to serotonin imbalances in the brain. Supplementation with ***5-hydroxytryptophan (5-HTP)*** can increase serotonin synthesis.

Phosphatidyl serine (PS), a natural substance derived from serine, affects the levels of neurotransmitters in the brain related to mood. In a preliminary trial, elderly women suffering from depression who were given 300 mg of PS per day for 30 days experienced, on average, a 70% reduction in the severity of their depression. Most research has been conducted with PS derived from bovine brain tissue. The soy- and bovine-derived PS are not structurally identical, and there is evidence that soy-derived PS may not have the same beneficial effects as bovine PS.

NADH - An isolated preliminary trial suggests the supplement ***NADH*** may help people with depression. Controlled trials are needed, however, before any conclusions can be drawn.

Botanical Treatment Options

St. John’s wort extracts are among the leading medicines used in Germany by medical doctors for the treatment of mild to moderate depression. Using St. John’s wort extract can significantly relieve the symptoms of depression. People taking St. John’s wort show an improvement in mood and ability to carry out their daily routine. Symptoms such as sadness, hopelessness, worthlessness, exhaustion, and poor sleep also decrease.

In a double-blind trial using standard amounts of fluoxetine (Prozac®)—20 mg per day—St. John's wort extract at a dose of 400 mg BID was equally effective at relieving depression in people aged 60–80 years. Another trial found that 250 mg of St. John's wort extract BID was also as effective as 20 mg of fluoxetine in treating adults with mild to moderate depression. In both trials comparing St. John's wort to fluoxetine, there were far fewer side effects reported by people taking St. John's wort.

One clinical trial compared a higher amount of the St. John's wort extract (1,800 mg per day) with a higher amount of imipramine (150 mg per day) in more severely depressed people. Again, the improvement was virtually the same for both groups with far fewer side effects for the St. John's wort group.

Recent European trials have successfully treated mild to moderate depression using 500 to 1,050 mg of St. John's wort per day. As an antidepressant, St. John's wort should be taken for four to six weeks before judging its effectiveness.

Ginkgo biloba (240 mg per day) may alleviate depression in depressed elderly people not responding to antidepressant drugs. It is not yet clear whether ginkgo alleviates depression in other age groups.

Damiana has traditionally been used to treat people with depression. Yohimbine (the active component of the herb yohimbe) inhibits monoamine oxidase (MAO) and therefore may be beneficial in depressive disorders.

Pumpkin seeds contain L-tryptophan, and for this reason have been suggested to help remedy depression. However, it is unlikely the level of L-tryptophan in pumpkin seeds would be sufficient to relieve depression, without additional use of supplements.

Vervain is a traditional herb for depression; however, there is no research to validate this use.

Integrative Options

Acupuncture may improve depression by affecting the synthesis of neurotransmitters that control mood. Controlled trials have found electro-acupuncture (acupuncture accompanied by electrical currents) equally effective as antidepressant drug therapy without causing side effects. However, another controlled trial found that both real and fake acupuncture improved depression equally well compared to no treatment. It is well known that placebo effects are common in the treatment of depression, so more controlled trials are needed before accepting the usefulness of acupuncture for depression.

Many people who are depressed seek counselling with a psychologist, analyst, psychiatrist, or other form of counsellor. An analysis of four properly conducted trials of severely depressed patients comparing the effects of one form of counselling intervention - cognitive behaviour therapy - with the effects of antidepressant drugs was published in 1999. In that report, cognitive behaviour therapy was at least as effective as drug therapy.

We always welcome feedback and suggestions.

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