



PRODUCT DOCUMENTATION

CELITIN



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Text of the leaflet

Celitin is an original combination of lecithin and ginkgo biloba, enriched with a bioinformation component.

Use:

The balanced ratio of Celitin active substances has beneficial effects particularly on those areas of the brain which are involved in the processes of long-term **planning, concentration and attention**. Its use improves the **memory**, and the product helps to combat **stress** and prevent **fatigue and exhaustion**. In combination with other active substances and gentle energies, bioinformation contained in the product harmonises the information field of the body.

Other positive effects of Celitin:

- It supports fat metabolism;
- It regulates blood cholesterol levels;
- It nourishes nerve fibre sheaths;
- It prevents the development of atherosclerosis;
- It prevents hair loss and production of dandruff;
- It influences hair and nail metabolism.

Composition:

Lecithin

Lecithin is present in all cells of the human body, where it is involved in vital processes. It has an important role in cholesterol metabolism. It converts “harmful” cholesterol to its “harmless” form, thus helping to prevent atherosclerosis and heart attack. The use of lecithin was evidenced to enhance memory and activate the mind.

Ginkgo biloba

Ginkgo biloba has positive effects on a wide range of disorders. It enhances blood flow in the brain, helping nervous cells to absorb more oxygen. It protects the vessels from spasm and loss of elasticity and has relaxing effects on vessels walls. It acts as a barrier from abnormal formation of blood clots in arteries and veins. Its clinical application includes the treatment of senility, deafness, diabetic vascular conditions, and some eye disorders.

Bioinformation

Bioinformation represents frequencies which simulate the control frequencies of subcortical brain centres, which regulate the vegetative nervous system and the function of viscera. Bioinformation acts to offset negative information and induce a new regenerative process. The presence of bioinformation in Energy products is essential – compared to other products of similar nature the effects of Energy products are several times higher.

Recommended dosage: 1 capsule once a day
Do not exceed the recommended daily dose.

Warning: The product is not intended for children under 3 years of age. Not recommended for persons with bee and soy product hypersensitivity. Dietary supplements must not be used to substitute all-day varied diet. Store at 10–25°C in a dry and dark place.

Celitin composition

Product form: soft gelatinous capsule

Capsule size: 1644 mg

Active substances

Ingredient	Quantity per capsule
Lecithin	1000 mg
Ginkgo biloba (extract)	40 mg

Excipients

Soy and hydrogenated oil, bee wax

Recommended dosage

When using Celitin, a substantial enhancement of brain activity may be expected; if you wish to avail of this effect during the day, take one capsule in the morning after breakfast. It is, however, equally possible to use Celitin at night; in such a case expect livelier and more colourful dreams. The ideal duration of uninterrupted use is 3–4 weeks, followed by a break, after which Celitin application may be resumed.

Recommended daily dose: 1 capsule once a day

Do not exceed the recommended daily dose.

Warning:

The product is not intended for children under 3 years of age. Not recommended for persons with bee and soy product hypersensitivity. Dietary supplements must not be used to substitute all-day varied diet.

Storage method

Celitin does not require any special storage conditions; it is, however, advisable to protect the product from severe frost and excessively high temperatures. The ideal storage temperature is 10–25°C.

Approval of the Czech Ministry of Health

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Description of effects of individual ingredients

LECITHIN

Chemically, lecithin is a fatty substance with bound residues of phosphoric acid molecules. More precisely, lecithin is a phospholipid, specifically phosphatidylcholine (PC). Each cellular membrane in the body needs this substance, nervous and brain cells in particular need high amounts of PC for their repair and maintenance necessary to sustain their structure and function. PC also enhances fat metabolism, regulates blood cholesterol levels, and nourishes the sheaths of nerve fibres, so called myelin sheaths. PC is the principal source of acetylcholine, a substance transferring nervous impulses. Acetylcholine is, apart from other, used by those areas of the brain, which are involved in the processes of long-term planning, concentration and attention. It controls a number of stimuli coming both to and from the brain, motor activity, learning and memory, the input of stimuli in sleep, sex and other functions. Additional PC increases the amount of acetylcholine available to memory and thought processes. It has been shown that increasing acetylcholine levels enhance one's performance in various intelligence and memory tests. Acetylcholine is also essential for maintaining the structure of brain cells.

How do brain cells communicate?

Neurons communicate by means of structures called synapses. When a neuron transfers an impulse to

another neuron, the synapse releases a transfer chemical substance, so called neurotransmitter. As much as 42% of lipids in brain synaptic membranes consist of phosphatidylcholine. Acetylcholine is one of the neurotransmitters which are used by brain cells for mutual communication. The ageing process results in weakened synaptic connections and dendritic spines and reduces the level of neurotransmitters such as acetylcholine. The ageing process limits the ability of the brain to produce acetylcholine. It also induces increased levels of those enzymes which degrade acetylcholine. Lack of acetylcholine is one of the causes of memory disorders caused by the ageing process. Additional choline and phosphatidylcholine help to offset acetylcholine insufficiency. The lack of choline may be also associated with high cholesterol levels, some types of cardiac symptoms, skin problems – e.g. psoriasis, reduced food fat tolerance, gastric ulcers, high blood pressure, gall stones and kidney disorders. Newborns have extremely high blood choline levels. It seems that such a high level is necessary for the production of myelin, which is a material that insulates and protects the nervous system.

Behaviour and memory

Numerous studies have shown that supplementing diet with choline enhances the central cholinergic activity. A study conducted in 10 normal healthy volunteers has discovered the effects of a single

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orally administered dose of choline upon two types of memory. One of them was a short-term memory test, the other a test measuring the ability to remember specific words such as “table” against the ability to remember abstract words such as “truth”. The test has detected enhanced short-term memory capacity following the administration of choline to the members of the test group. Moreover, the ability to remember abstract words was also increased.

In a double-blind study, students of the Massachusetts Institute of Technology in Boston were given a daily dose of 3g of choline. These students exhibited improved memory parameters and they were able to remember longer wordlists than the control group of students who were given placebo (non-active substance). A double-blind study means that neither the person administering the medicine, nor the tested subject knows who gets placebo and who gets the active substance. This method prevents the perceived effects of the drug to be biased by initial expectations.

In another study a single 10g dose of choline improved the ability to remember wordlists. Similar results were reported by a study conducted in individuals who were given 80 grams of lecithin. A group of Italian scientists has found evidence that apart from the metabolism of acetylcholine, choline may also improve other brain functions. They examined the little brain of ageing mice whose diet was supplemented with a dose of choline. Neurons in the little brain which control body coordination

usually do not use acetylcholine in the function of a transmitter. The scientists discovered that the number of synaptic contacts was rapidly decreasing in the ageing mice and that the duration of these contacts was significantly extended.

Experimental mice, however, which were given choline in the course of their life, did not experience any decrease in the number of synapses. As the little brain controls body coordination, impaired little brain synapses may explain the loss of coordination with the progressing age.

This study assumes that the use of choline supplementation in the course of life may help prevent the loss of coordination and that the ageing process brings along also the loss of membrane function in the nervous cells, where the permeability of membranes growth with the advancing age.

Diseases treated with phosphatidylcholine

Choline and lecithin have been, to a certain degree, successfully used in the treatment of Huntington’s disease, tardive dyskinesia, (a central nervous system disorder characterised by involuntary face and body movements), Parkinson’s disease, and other nervous system disorders. Choline and lecithin are often therapeutically used in the treatment of diabetes, problems associated with gall stones, in the treatment of liver disorders, muscular dystrophy, glaucoma, atherosclerosis, senility and memory disorders. The ageing brain has the tendency to grow smaller. It has a higher content of lipofuscin (the “age pigment”)

and exhibits signs of senility – neuritic plaques and neurofibrillar tangles. Although the brain of the elderly not affected by dementia is not as damaged as the brain of those suffering from senile dementia, a certain degree of wear is present in any ageing brain. These findings suggest that any ageing person suffers, to a certain degree, by at least a mild form of senile dementia. A significant percentage of people over 65 years of age suffer from a severe loss of memory.

Additional phosphatidylcholine requirement

Food contains only trace quantities of free choline. Most of the choline present in our normal diet occurs in the form of lecithin, in oils obtained from seeds and in untreated food containing oil.

Very few people obtain sufficient amounts of choline and phosphatidylcholine solely from their diet. That is why lecithin supplements are so popular.

Signs of lecithin insufficiency in the body:

- Increased cholesterol and lipid levels
- Improper HDL / LDL cholesterol ratio
- Atherosclerosis
- Liver conditions, gall stones
- Cardiac problems and blood circulation disorders
- Short-term memory, forgetting
- Poor concentration
- Despondence, anxiety, depression

- Irritability, nervous weakness
- Fatigue
- Sleep disorders, restless sleep
- Alzheimer's disease
- Headache
- Tinnitus
- Dandruff, hair loss
- Eczema, skin inflammations
- Constipation
- Dry mucosa
- Male infertility
- Eye diseases
- Motor disorders

GINKGO BILOBA

Neurological benefits of ginkgo

Ginkgo has become one of the most popular dietary supplements in the U.S. Several widely published studies from 1997 confirm the ability of ginkgo to improve the memory of healthy individuals and of patients with neurological disorders.

At present, the number of published studies has exceeded one thousand. Some of them suggest that strong flavonoids obtained from ginkgo could be effective in combating the ageing process in all parts of the human body. Ginkgo extract is the most often prescribed herbal drug all over the world. It has strong therapeutic effects in the treatment

Description of effects of individual ingredients

of numerous diseases, including Alzheimer's disease, asthma, impotence, tinnitus and hearing loss, headache, blood circulation disorders and haemorrhoids. Since times immemorial, ginkgo has been the principal plant of Chinese herbal medicine. It is also contained in the Soma elixir, which is a traditional Hindu medicine.

Ginkgo enhances blood flow in the brain and thus enables nervous cells to absorb more oxygen. This extends the ability of brain cells to withstand oxygen deficiency periods. This ability is used in the treatment of stroke. It also protects cells from damage caused by intoxication. Ginkgo protects vessels from spasms and loss of elasticity, it has relaxing effects on vascular walls and prevents capillaries to become too fragile; it also prevents blood passing into tissues caused by increased vascular permeability. It also acts as a barrier to abnormal blood clot formation in arteries and veins.

Clinical applications of ginkgo include the treatment of transitory ischemic stroke, senility and brain oedema caused by irradiation. Other disorders the treatment of which avails of the beneficial effects of ginkgo include vertigo, deafness, embolism and some eye disorders, including dry macular degeneration, and diabetic vascular disorders. In healthy individuals, ginkgo, especially in higher doses, induces pronounced improvement of alertness and ability of the brain to respond to stimuli. For instance, during a study conducted in 216 patients who were given the dose of 240mg of ginkgo extract or placebo

on a daily basis, the results of patients given ginkgo were improved in tests evaluating attention, memory, behaviour and everyday activities.

In the last few years, ginkgo in Europe has been often prescribed for organic brain damage caused by age, for hearing and eyesight disorders, and for brain and peripheral blood circulation dysfunctions. German authorities have approved it for the treatment of dementia, for enhancement of blood circulation in individuals suffering from lower limb arterial embolism, for alleviation of vertigo and tinnitus caused by internal ear conditions. No evidence whatsoever has been found of ginkgo adversely affecting or interacting with other concomitantly taken medicines. In Germany, it is the most often sold herbal medicine with more than five million medical prescriptions annually.

Unique composition of ginkgo extract

The standardised ginkgo biloba extract is a highly purified mixture made of the leaves, fruit and branches of the tree called Ginkgo Biloba. A pharmaceutical-quality ginkgo produces 24% of flavonoid glycosides (this is said to be the ideal quantity for achieving its therapeutic effect) and at least 6% of the terpenes ginkgolides A, B and C, and bilobalide. A number of other components make the extract soluble. Flavonglycosides, which belong to the bioflavonoid family, are flavonoid molecules which occur only in ginkgo.

This normalised mixture of biologically active natural products vastly extends the scope of effects of the

entire extract. For example, flavonoids work as antioxidants and uptake free radicals and terpenes, particularly ginkgolide B, obviously inhibit or totally block the activity of platelet (thrombocyte) activation factor – PAF, which causes abnormal platelet aggregation. It has its role in the pathophysiology of asthma, graft healing and such immune disorders as the toxic shock syndrome. The formation of both free radicals and PAF may impair vascular membranes, which results in increased vascular permeability that may cause worsening of blood flow in the brain, as is often seen in the elderly. It is becoming obvious that in addition to the protection of cellular membranes, ginkgo extract also influences other factors which contribute to the development of brain insufficiency, such as impaired vascular tone and altered metabolic processes in the brain.

Alzheimer's disease

Ginkgo extract is likely to delay and decelerate brain degeneration in the initial stages of Alzheimer's disease. It may help to reverse some of the handicaps associated with this disease and hence allow patients to conduct a normal life without the need for hospitalisation.

A study published in the Journal of American Medical Association has concluded that ginkgo extract alleviates symptoms associated with a number of cognitive disorders and that it has positive effects on the treatment of dementia. The study adds that the extract was safe and seemed to stabilise and,

in a significant number of cases also improve the cognitive process and social functioning of patients with dementia for the period of 6 to 12 months. Positive effects were at least adequate to those of Tacrin and Aricept, two prescription medicines authorised for the deceleration of dementia in patients with Alzheimer's disease. Compared to Tacrin and Aricept, however, ginkgo offers several extra benefits. First of all, it does not have any adverse effects, it is available as a dietary supplement and it is cheaper than prescription medicines.

Multiple possibilities of ginkgo application

Ginkgo biloba seems to have positive effects on a wide range of disorders.

1. Migraine headaches

Ginkgo extract was administered to patients suffering from migraine headaches. In 80% of cases the condition much improved or the patients were nearly cured (in patients suffering from other types of headache the results were not as pronounced).

2. Use in organ transplantations

One of the most promising methods of ginkgolide use may be seen in their immunosuppressive effect. In future they could be used as a cheaper alternative to the immunosuppressive medicine cyclosporine in suppressing immunity during organ transplantations. In experimental heart transplantations of various strains of laboratory rats it was discovered that

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ginkgolide B prolongs the survival of transplanted hearts in rat recipients. Without the ginkgo extract the immune system of these animals would very quickly reject their new hearts. With respect to this experiment, it may be presumed that ginkgo can be used also in human organ transplantations.

3. Treatment of asthma

Ginkgo has also effects on asthma, a condition which often develops as early as in childhood. In tests on animals, the presence of ginkgolides working as the platelet activation factor (PAF) antagonists prevented bronchial constriction. Several other studies confirm these results and hence suggest the possibility of therapeutic application of ginkgo extract in the treatment of asthma.

4. Hearing and balance disorders

Ginkgo has demonstrated to be an effective therapeutic substance in the treatment of patients suffering from balance disorders and tinnitus. In a study ginkgo administered in split doses from 60 to 160mg/day eliminated or significantly alleviated symptoms in 40–80% of treated volunteers compared to the placebo group. The extract was specifically successful in the treatment of patients suffering from the inflammation of nervous cells in the internal ear. Researchers treating 49 patients suffering from vertigo and hearing loss of various degrees have achieved the overall success rate of 85%. The extract is recommended also for neurosensor disorders of

the internal ear, which are of vascular origin and demonstrate as headache and dizziness.

5. Treatment of impotence

As ginkgo has been successfully used for the control of blood pressure and various other vascular conditions, it is not surprising that it has positive effects also on the treatment of male impotence. During erection, the penis is filled with blood and blood vessels become enlarged or dilated to enable the increased blood flow. Due to the fact that the nervous system is controlled by the brain, medicines influencing the brain have also effects on erection. Sixty patients with arterial erectile dysfunction whose body did not respond to papaverine injections (papaverine is one of the vasodilators, often prescribed by doctors to increase blood flow in the penis), were given ginkgo extract. A certain improvement was seen in the course of 6–8 weeks. The daily dose was 60mg. In the following 6 months of ginkgo therapy 50% of the patients were able to maintain erection and 25% showed signs of improved blood flow. Approximately 45% of the remaining men reported certain improvement in achieving erection, especially after the supplement was administered together with papaverine. Papaverine is not recommended for patients with angina pectoris, glaucoma, ischemic heart disease, myocardial infarction and immediately after apoplexy (stroke). Moreover, it is not suitable for patients suffering from Parkinson's disease, especially those who take Levodopa (alpha adrenergic receptor blocker). In peripheral arterial conditions, reduced

blood flow causes hypoxia (lack of oxygen), which increases the production of toxic metabolites and free radicals in cells. The effect of ginkgo, however, is decreased by cigarette smoking.

6. Regulation of blood pressure and blood flow in the brain

Other studies concluded that ginkgo extract decreases blood pressure and dilates peripheral vessels, including capillaries, in patients with post-thrombotic syndrome. A study conducted in 1977 in 20 patients examined the effects of ginkgo on blood flow in the brain. The age of patients ranged from 62 to 85 years and all were diagnosed with age-induced cerebral circular insufficiency and atherosclerosis. Patients were treated orally and intramuscularly for the period of 15 days. With respect to the age and health of the volunteers, the researchers applied minimum doses of ginkgo and did not expect any significant improvement. Yet the results demonstrated that cerebral hemodynamics significantly improved in 15 cases.

7. Eye disorders

One of the main causes of blindness in people over 65 years of age is macular degeneration. The insufficient blood supply and subsequent chronic hypoxia causes macula to degenerate, which is followed by blurred central vision. Vitamin A, vitamin C and ginkgo extract were studied as potential means to combat macular degeneration because of their

ability to uptake free radicals. French researchers administered ginkgo extract to 20 elderly patients with the diagnosis of macular degeneration. In ginkgo recipients, long-distance vision in the worst affected eye improved by 2.3 dioptres (refraction effect assessment), while in placebo patients the average improvement ranged only around 0.6 dioptre.

8. Other

Other studies conducted in animals suggest that ginkgolide B could be effective also in regulating blood pressure, in the treatment of kidney dysfunctions and various forms of shock, in alleviating inflammations and in the treatment of eye diseases. It could be also used as an antidote to certain toxins.



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