

COLDSTORM® DROPS

NPN: 80079905

1 mL of Oral Tincture contains:

Garlic (*Allium sativum*, bulb, fresh) - 660 mg

Non-medicinal ingredients:

glycerin, ethanol, cherry juice, natural mint flavour.

Directions of Use:

Adults, nursing mothers, and adolescents take 2-3ml up to 3 times daily. Children 2-9 years old; take 1ml up to 3 times daily.

Indication:

Traditionally used in Herbal Medicine to help relieve the symptoms associated with upper respiratory tract infections and catarrhal conditions.

Detailed Information:

Coldstorm® is formulated with fresh garlic bulb using a proprietary extraction method. The recommended daily dosage of **Coldstorm®** drops can be taken by the whole family, including:

- Pregnant women*
- Nursing mothers*
- Children 2-9 years old
- Adolescents 10-18 years old
- Adults >19 years old

Plants of the genus *Allium* are known for their production of organosulfur compounds, which possess interesting biological and pharmacological properties. Among these, garlic is considered one of the most important herbal medicines, with widespread antimicrobial properties and immune boosting and anti-inflammatory effects¹. The chemistry of garlic is complex. It contains more than 2000 biologically active substances, including volatile, water-soluble and oil-soluble organosulfur compounds, along with essential oils, dietary fiber, sugars, flavonoids and pectin².

The Natural and Non-prescription Health Products Directorate (NNHPD) of Health Canada has published a monograph recognizing the traditional use of **garlic bulb** in Herbal Medicine at 0.5-12 g/day to help relieve the symptoms associated with upper respiratory tract infections and catarrhal conditions, as well as to help reduce elevated blood lipid levels/ hyperlipidemia and maintain cardiovascular health in adults³. Additionally, the WHO Monograph on *Allium sativum* recognizes its

use in the treatment of respiratory and urinary tract infections, ringworm, and rheumatic conditions. The herb is also recognized for its traditional use as a carminative for dyspepsia⁴. **Garlic bulb** is a recognized source of antioxidants in the form of organosulfur compounds that help protect against the oxidative damage caused by free radicals^{5,6}. Oxidative stress is a phenomenon caused by an imbalance between production and accumulation of oxygen reactive species in cells and tissues and the ability of a biological system to eliminate or detoxify these reactive products.

Free radicals are generated from sources inside and outside of the body. Immune cell activation, inflammation, ischemia, infection, cancer, excessive exercise, mental stress, and aging are all responsible for endogenous free radical production. Exogenous free radical production can occur as a result of exposure to environmental pollutants, heavy metals (Cd, Hg, Pb, Fe, and As), dental metals, certain drugs (e.g. cyclosporine, tacrolimus, gentamycin, bleomycin), vaccines, pesticides, chemical food preservatives, chemical solvents, oxidized cooking oil and hydrogenated fat, cigarette smoke, alcohol, and radiation. When exogenous oxidative compounds enter or penetrate the body, they are degraded or metabolized, and free radicals are generated as by-products. If not strictly controlled, oxidative stress can be responsible for the induction of diseases, both chronic and degenerative, and speed up aging processes in the body, and cause acute pathologies (i.e. trauma and stroke)⁷.

Excessive exposure to toxic heavy metals from plants in the diet or persistent organic pollutants (POPs) from the environment is inevitable with increased industrialization and environmental pollution. Oxidative stress and pro-inflammatory actions are the common mechanisms for heavy metal or POP toxicities. However, phytonutrients can counteract these cellular insults by anti-oxidation, upregulation of anti-inflammatory pathways, and chelation⁸. For example, toxic metals have great affinity for sulphur containing peptides. Thus, diets rich in sulphur-containing foods such as alliums (e.g. garlic) have been suggested for symptomatic improvement and enhanced excretion of toxic metals from the body. Animal models have been used to demonstrate the use of garlic to prevent cadmium-induced kidney damage, and to decrease oxidative damage due to lead⁹. Pre-treatment with garlic also prevents degenerative changes otherwise induced by lead, by reducing oxidative stress

and the production of cytokines and inflammatory mediators, and by restoring/normalizing biochemical processes occurring in tissues¹⁰. In a clinical study in humans to investigate therapeutic effects of garlic compared with the commonly used chelator d-penicillamine in patients with chronic lead poisoning, after 4 weeks clinical improvement was significant only in the garlic- treatment group, and for a number of clinical manifestations of lead poisoning, including irritability, headache, decreased deep tendon reflex, and mean systolic blood pressure. While blood lead concentrations were significantly reduced in both treatment groups, the frequency of treatment side effects was significantly lower in the garlic treatment group. Treatment with garlic is therefore clinically safer, if not also more effective, than more common chelator treatment for mild-to-moderate lead poisoning in humans¹¹.

The benefits of garlic to health have been proclaimed for centuries; however, only recently have *Allium sativum* and its preparations and constituents been proposed as promising candidates for maintaining or improving immune system function. The complex biochemistry of garlic makes it possible for variations in processing to yield different preparations with differences in final composition and proportion of active constituents. An assessment of the most recent experimental results indicates that garlic enhances the functioning of the immune system by stimulating certain immune cell types, such as macrophages, lymphocytes, natural killer (NK) cells, dendritic cells, and eosinophils, by various mechanisms, including modulation of cytokine secretion, immunoglobulin production, phagocytosis, autophagy and macrophage activation. Immune dysfunction plays an important role in the development and progress of several diseases. Immune system regulation by garlic extracts can thus contribute to the treatment and prevention of pathologies such as obesity, metabolic syndrome, cardiovascular disorders, and gastric ulcer, among others¹.

Many consumers take garlic supplements as a preventive, and report an absence of colds and flu or cold and flu symptoms. Clinical trials are supportive, showing garlic to have a beneficial effect in the prevention, duration, and severity of upper respiratory infections. For example, a randomized, double-blind, placebo-controlled trial involving 146 participants testing the effect of 180mg of a garlic powder supplement per day over 3 months found a significant 37% reduction in the number of colds and a 30% reduction in the duration of symptoms in the group taking garlic compared with the placebo group¹². At the end of the 90- day study, 24 colds were reported in the garlic treatment group compared to 65 in the placebo group, the total number of days of infection were significantly reduced (111 vs. 366), and the duration of symptoms in those who contracted colds was also significantly reduced (1.52 vs. 5.01 days). During the study, the 16 volunteers taking the placebo became re-infected (i.e. they experienced more than one full-blown cold); only 2 volunteers taking the garlic supplement reported a re-infection. The results of this study support garlic supplementation to both prevent attack by the common cold virus, and to reduce duration of symptoms in those that do contract a cold¹². Another placebo-controlled human study involving 120 healthy participants supplemented with 2.56 g/day of an *aged garlic* extract for 90 days during the cold and flu season demonstrated that the reduced severity of the colds and flu reported among participants with dietary garlic supplementation could be at least partly attributed to their enhanced immune cell function. The immune system support, perhaps with less accompanying inflammation^{13,14}, and reduced oxidative stress^{15,16}, and metal and POP toxicity, warrants the intake of garlic-containing supplements such as **Coldstorm®** to combat, if not prevent, cold and flu symptoms.

Cautions and Warnings:

Consult a health care practitioner prior to use if you are pregnant*, have diabetes**, or if you are taking blood thinners or protease inhibitors. Consult a healthcare practitioner if symptoms persist or worsen.

Known Adverse Reactions:

Hypersensitivity/allergic reactions are known to occur; in which case discontinue use.

*Pregnancy & Nursing mothers:

There is no current evidence to suggest that there is any risk of malformation or harmful effects on the foetus with consumption of garlic by pregnant women¹⁷. Out of an abundance of caution based on at least one clinical study¹⁸, garlic consumption is compatible with nursing¹⁹. The study demonstrated that the ingestion of garlic by nursing mothers significantly and consistently increased the perceived odour intensity of the mother's milk, which peaked 2-hours after garlic ingestion. Infants detected these changes, as evidenced by increased time of attachment to the mother's breast and increased suckling when the milk smelled like garlic, resulting in a tendency for infants to ingest more milk²⁰.

**Diabetes:

Garlic has been shown to enhance the hypoglycemic effects of antidiabetic medication²¹ while helping to improve glycemic control and antihyperlipidemic activity, and therefore showing the potential to be a good adjunct in the management of patients with diabetes and hyperlipidemia¹⁹, this action also gives reason to closely monitor blood sugar levels in the event that diabetics can reduce or modify their medication.

Strauss Naturals™ is the sole producer and worldwide supplier of the the clinically-supported^{20,21}. **Strauss Heartdrops®** herbal formula (NPN 80030089), an alcohol-based extract of aged garlic, hawthorn fruit, hawthorn leaf & flower, cayenne, European mistletoe leaf and bilberry leaf in combination with motherwort and white willow bark. The 8th generation family formula follows an ancient yet revolutionary method of aging and extracting garlic. Aged garlic has profound heart health benefits.

**STRAUSS**
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