

PROFESSIONAL INFORMATION

Scheduling status: To be allocated by Council upon registration

D33.7 Complementary Medicine: Health Supplement; Multiple Substance formulation

This unregistered medicine has not been evaluated by the SAHPRA for its quality, safety and intended use. A varied diet is the most effective and safe way to achieve good nutrition, health, body composition as well as mental and physical performance.

1. NAME OF THE MEDICINE

Collagen Xtreme Capsules

2. QUALITATIVE AND QUANTITATIVE COMPOSITION

Each capsule contains:

Hydrolysed Collagen (bovine)	400 mg
Vitamin C (Ascorbic Acid)	25 mg
Copper AAC 10%	2 mg

(Providing 0.2 mg elemental copper)

Sugar free.

For the full list of excipients, see section 6.1.

3. PHARMACEUTICAL FORM

Oblong capsules with a white body and white cap.

4. CLINICAL PARTICULARS

4.1. Therapeutic indications

As per 7.04 CM SE Health Supplements

- Improves skin hydration and elasticity. [1]
- Supports healthy joints. [1][2]
- Source of essential and non-essential amino acids involved in protein synthesis. [2]
- Contributes to normal collagen formation.[3]
- Helps to produce and repair connective tissue. [4]

Collagen Xtreme capsules is indicated in adults only. Do not give Collagen Xtreme to children under 18 years, because the safety has not yet been determined.

4.2. Posology and method of administration

Posology

The usual dose is two (2) capsules daily before bedtime prescribed by a healthcare professional. Do not exceed the recommended dosage.

If you forget to take Collagen Xtreme, do not take a double dose to make up for the forgotten individual dosage.

Paediatric population

Collagen Xtreme capsules is indicated in adults only. Do not give Collagen Xtreme to children under 18 years, because the safety has not yet been determined.[2]

Method of administration

Oral.

4.3. Contraindications

- Known hypersensitivity to any of the ingredients.
- Patients with glucose-6-phosphatase dehydrogenase deficiency should not use large dose of ascorbic acid[5]
- Patients with hemochromatosis should not use large dose of ascorbic acid[6]
- Patients with renal disorders should not use large dose of ascorbic acid[6]
- Supplementation should be avoided in patients with severe hepatic dysfunction or cholestasis. [7].

4.4. Special warnings and precautions for use

- Use for at least 5 months to see beneficial effect for joint pain.[2]
- Patients with hyperoxaluria should use ascorbic acid with caution[5]
- Ascorbic acid is a strong reducing agent. It can thus interfere with laboratory test involving oxidation and reduction reactions where samples were taken from urine, faeces or plasma. This depends on the dose and method of administration of the ascorbic acid[5]
- Copper supplementation should be used with caution in patients with Wilson's disease (mutation in *ATP7B*).[4]

4.5. Interaction with other medicines and other forms of interaction

- The safety and efficacy of the use of vitamin C and other antioxidants during cancer treatment is controversial. There is a possibility that vitamin C and other antioxidants might protect the tumour cells from the action of the radiation of chemotherapy.[3]
- Vitamin C and other antioxidants may attenuate the increase in high-density lipoprotein levels resulting from combination niacin-simvastatin therapy.[3]
- Large doses of ascorbic acid can result in haemolysis in patients with G6PD deficiency.[5]
- Vitamin C can increase the absorption of iron in iron-deficient states. [5]
- Omeprazole may affect the bioavailability of dietary ascorbic acid. [5]
- Ascorbic acid should not be given during the first month of desferrioxamine treatment, as ascorbic acid may worsen the iron toxicity[5].
- It has not been confirmed, but there have been occasional reports that vitamin C can reduce the activity of warfarin.[5]
- Concomitant use of vitamin C and fluphenazine have been associated with a fall in serum concentrations of fluphenazine and deterioration in behaviour.[5]
- Oral ascorbic acid (500 mg twice daily) can increase plasma concentrations of oestradiol.[5]
- Ascorbic acid may contribute to antioxidant protection by maintaining reduced glutathione. [8]
- Ascorbic acid can react with other redox-active trace metals such as iron and copper. [8]
- Smoking can decrease plasma and leukocyte ascorbate levels.[8]
- Concomitant use of any of the following together with copper can inhibit copper absorption to varying degrees: sucrose/fructose, animal proteins, S-amino acids, histidine and ferrous iron [6]
- High levels of zinc have been reported to adversely influence copper absorption and bioavailability. [6][9]
- High doses of ascorbic acid can influence copper absorption negatively.[7]

4.6. Fertility, pregnancy and lactation

Insufficient data available, avoid use or consult a healthcare professional prior to use. [1][2]

4.7. Effects on ability to drive and use machines

Collagen Xtreme is not expected to have an influence on the ability to drive and use machines. It is not always possible to predict to what extent it may interfere with the daily activities of a patient. Patients should ensure that they do not engage in the above activities until they are aware of the measure to Collagen Xtreme affects them.

4.8. Undesirable effects

Mild skin rash and gastro-intestinal side effects (nausea, dyspepsia, diarrhoea, and flatulence) have been reported, but are rare. [1][2]

The most clearly defined adverse effects at high intakes are acute gastrointestinal intolerance including: abdominal distension, flatulence, diarrhoea and transient colon.[6][8]

Reporting of suspected adverse reactions: Reporting suspected adverse reactions after authorisation of the medicine is important. It allows continued monitoring of the benefit/risk balance of the medicine. Healthcare providers are asked to report any suspected adverse reactions to SAHPRA via the “**6.04 Adverse Drug Reaction Reporting Form**”, found online under SAHPRA’s publications: <https://www.sahpra.org.za/Publications/Index/8>

4.9. Overdose

Hydrolysed Collagen

Up to ten grams of hydrolysed collagen have been safely used for up to 5 months. [1]

Vitamin C

Vitamin C has low acute toxicity. Even at high intakes, does vitamin C have low toxicity and is not believed to cause serious adverse effects. The most common complaints after excessive use are: diarrhoea, nausea, abdominal cramps, and other gastrointestinal disturbances due to the osmotic effect of unabsorbed vitamin C in the gastrointestinal tract. Large doses may also result in hyperoxaluria and the formation of renal calcium oxalate calculi. Prolonged or excessive use of chewable vitamin C may cause erosion of tooth enamel. [3][5][6]

Copper

High copper intake for prolonged periods of time can result in liver damage (liver cirrhosis and acute liver failure) and gastrointestinal symptoms including, abdominal pain, cramps, nausea, diarrhoea and vomiting.[4][9]

5. PHARMACOLOGICAL PROPERTIES

5.1. Pharmacodynamic properties

Supplementation with collagen can strengthen bones and by preventing bone loss and improving collagen synthesis. It can also possible play a role in the down-regulation of the expression and activation of matrix metalloproteinases (MMPs), which can have a positive effect on skin wrinkles, elasticity and hydration. [1]

Humans are unable to synthesize vitamin C endogenously, thus it is an essential dietary component. Vitamin C is involved in protein synthesis and is required for the biosynthesis of collagen, L-carnitine and certain neurotransmitters. Furthermore, vitamin C is also an important antioxidant, it plays an important role in immune function and improves the absorption of non-heme iron. [3][6]

Copper is an essential mineral and is a co-factor for several enzymes (cuproenzymes) involved in energy production, iron metabolism, red blood cell production, neuropeptide activation, connective tissue synthesis and neurotransmitter synthesis. Copper is also involved in physiological processes such as, angiogenesis, neurohormone homeostasis, regulation of gene expression, brain development, pigmentation and immune system functioning. [4][6][10]

5.2. Pharmacokinetic properties

Within 12 hours of ingestion, up to 90% of collagen is absorbed. Following absorption from the intestine, collagen is transported in the blood to other organs (dermis, muscle, liver, kidney and brain). Collagen is excreted via the kidneys. [1]

Vitamin C absorption is dose dependant and regulated by at least one specific active transporter. Cells accumulate vitamin C via a second specific transporter protein. Approximately 70-90% of vitamin C is absorbed at moderate intakes of 30-180 mg/day. At doses of 1g/day or higher, the absorption falls below 50%. Absorption takes place in the small intestine via a sodium-dependant active transport mechanism. Ascorbic acid is reversibly oxidized to dehydroascorbic acid, some is metabolised to ascorbate-2-sulfate (inactive) and oxalic acid, which are excreted in urine. Absorbed and metabolized ascorbic acid is excreted in the urine.[5][3]

Leukocytes, eyes, adrenal glands, pituitary glands and the brain maintain high levels of vitamin C. Extracellular fluids such as plasma, red blood cells and saliva contain relatively low amounts of vitamin C. [3]

Copper is primarily absorbed in the small intestine, with small amounts also absorbed from the stomach. Absorption is by a saturable, active transport mechanism at lower doses. Most of the body's copper is located in the muscle and skeleton. Most copper is excreted in bile and small amounts in urine. The majority of absorbed copper is transported to the liver where it is incorporated into newly synthesised caeruloplasmin, metallothionein or cuproproteins. Copper levels are maintained by means of homeostasis between copper absorbed from the intestine and copper release by the liver into the bile. This homeostasis provides protection from copper deficiency and toxicity.[4][6]

5.3. Preclinical safety data

There are no other preclinical safety data of relevance to the prescriber which are additional to that already included in other sections.

6. PHARMACEUTICAL PARTICULARS

6.1. List of excipients

Hard gelatin capsules (bovine)
Magnesium stearate
Silicon dioxide

6.2. Incompatibilities

Not applicable

6.3. Shelf life

Plastic containers: 2 years

6.4. Special precautions for storage

Store below 25°C, in a dry place in the original container
Protect from heat and moisture. [2]

6.5. Nature and contents of container

White PET container with a flip top lid containing 60 capsules (white body, white cap) and a silica gel sachet. The container is sealed with a heat induction seal.

6.6. Special precautions for disposal and other handling

No special requirements.

7. HOLDER OF CERTIFICATE OF REGISTRATION

California Pharmaceuticals, 179 Edison Crescent, Hennospark X7, Centurion, 0157

8. REGISTRATION NUMBER(S)

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9. DATE OF FIRST AUTHORISATION/RENEWAL OF THE AUTHORISATION

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