PROFESSIONAL INFORMATION

Scheduling status: To be allocated by Council upon registration

D34.12 Multiple Substance Formulation, Complementary Medicine: Health Supplement.

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

Triple Action C™ Hard Gelatine Capsules

2. QUALITATIVE AND QUANTITATIVE COMPOSITION

Each capsule contains:

Vitamin C (ascorbic acid)	500 mg
Zinc Gluconate	87,5 mg
(Equivalent to 12,5 mg elemental zinc)	
Selenium AAC 10%	1,35 mg
(Equivalent to 27 µg elemental selenium)	

Sugar free

Excipients:

For the full list of excipients, see section 6.1.

3. PHARMACEUTICAL FORM

Capsules

Hard gelatine capsules, oblong, white cap and white body, no printing.

4. CLINICAL PARTICULARS

4.1. Therapeutic indications

As per 7.04 CM SE Health Supplements [1]

- An antioxidant for the maintenance of good health
- A factor in the maintenance of good health
- Multi-vitamin/mineral supplement
- Helps to maintain immune function

4.2. Posology and method of administration

Posology

Adults and children over 18 years.

The usual dose is two (2) capsules daily with or after meals or as prescribed by a healthcare professional. Do not exceed the recommended dosage.

If you forget to take Triple Action C™, do not take a double dose to make up for the forgotten individual dosage.

Special populations

Patients with renal impairment

Patients with renal disorders or renal failure should consult a health care provider prior to use. Large doses of ascorbic acid and zinc supplementation could be dangerous in these patients.

Paediatric population

As per 7.04 CM SE Health Supplements

The maximum daily dose for adults and children over 18 is two capsules.

Triple Action C™ capsules are indicated in adults and children over 18 years of age.

Selenium supplementation is not permitted in children under 18 years of age. [1]

Method of administration

This medicine is taken orally.

The capsule should be swallowed with water, preferably with or after meals.

4.3. Contraindications

- Known hypersensitivity to any of the active ingredients or other ingredients listed in section 6.1.
- Patients with hyperoxaluria should not use ascorbic acid [2] [3]
- Patients with glucose-6-phospahate dehydrogenase deficiency should not use large dose of ascorbic acid [4]
- Patients with hemochromatosis should not use large dose of ascorbic acid [5]
- Patients with renal disorders should not use large dose of ascorbic acid [5]
- Not permitted for use in children under the age of 18 (Selenium supplementation is not permitted in children under 18). [1]
- Zinc supplementation is contraindicated in patients with copper deficiency. [6]
- Use with caution in patients with renal failure, as zinc accumulation may occur. [6]
- Large doses of ascorbic acid can result in haemolysis in patients with G6PD deficiency. [4]

4.4. Special warnings and precautions for use

- 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. [2] [3]

- Consult a health care practitioner prior to use if you have a history of non-melanoma skin cancer (at doses of 200 mcg daily) [7].
- Use with caution in patients with renal failure, as zinc accumulation may occur. [6]
- If you are taking blood thinners like Warfarin as ascorbic acid can possibly reduce the effectiveness of the drug.

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. [8]
- Vitamin C and other antioxidants may attenuate the increase in high-density lipoprotein levels resulting from combination niacin-simvastatin therapy. [8]
- Large doses of ascorbic acid can result in haemolysis in patients with G6PD deficiency. [4]
- Vitamin C can increase the absorption of iron in iron-deficient states. [4]
- Omeprazole may affect the bioavailability of dietary ascorbic acid. [4]
- Ascorbic acid should not be given during the first month of desferrioxamine treatment, as ascorbic acid may worsen the iron toxicity [4].
- It has not been confirmed, but there have been occasional reports that vitamin C can reduce the activity of warfarin. [4]
- Concomitant use of vitamin C and fluphenazine have been associated with a fall in serum concentrations of fluphenazine and deterioration in behaviour. [4]
- Oral ascorbic acid (500 mg twice daily) can increase plasma concentrations of oestradiol. [4]
- Ascorbic acid may contribute to antioxidant protection by maintaining reduced glutathione. [9]
- Ascorbic acid can react with other redox-active trace metals such as iron and copper. [9]
- Smoking can decrease plasma and leukocyte ascorbate levels. [9]
- Ascorbic acid can increase the renal clearance of amphetamine. [3]
- Concomitant use of ascorbic acid and aspirin can interfere with the absorption of ascorbic acid. [3]
- Concomitant use of ascorbic acid and amygdalin (complementary medicine) can cause cyanide toxicity. [3]
- High-dose prolonged zinc supplementation may decrease copper levels by inhibiting the absorption thereof, thus copper supplementation may be required. [10] [6]
- Concomitant use of zinc and tetracyclines/fluoroquinolones may result in reduced absorption of the antibiotic. Separate doses, either 2 hours before the antibiotics or 6 hours after [10].
- Zinc absorption may be reduced by iron and calcium supplements, penicillamine and phosphorous containing preparations. [2] [6]
- Thiazide diuretics increase the urinary excretion of zinc by as much as 60%. Prolonged use of thiazide diuretics could deplete zinc tissue levels. [11]

4.6. Fertility, pregnancy and lactation

If you are pregnant or breastfeeding, think you may be pregnant or are planning to have a baby, please consult your doctor, pharmacist or other health care provider for advice before taking this medicine.

Vitamin C and Zinc crosses the placenta and is excreted into breastmilk. Selenium is also excreted in breastmilk. [4] [6] [12]

4.7. Effects on ability to drive and use machines

It is not always possible to predict to what extent Triple Action C™ 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 which Triple Action C™ affects them.

4.8. Undesirable effects

The following adverse reactions are classified by system organ class and ranked under heading of frequency using the following convention: very common (≥1/10); common (≥1/100 to <1/10); uncommon (≥1/1,000 to <1/100); rare (≥1/10,000 to <1/1,000); very rare (<1/10,000) and not known – cannot be estimated from the available data.

System organ class	Frequency category		
	Frequency unknown	Common (affecting less than 1 in 10 people)	Uncommon (affecting less than 1 in 100 people)
Blood and lymphatic disorders			Sideroblastic anaemia Leukopenia
Nervous system disorders	Headache		
Vascular disorders	Flushing		
Gastrointestinal disorders	Nausea Vomiting Stomach ache Diarrhoea Flatulence	Gastro-intestinal tract irritation	
Skin and subcutaneous disorders	Redness of skin		

[3] [5] [9] [13]

Large doses of ascorbic acid can result in haemolysis in patients with G6PD deficiency. [4]

Ingestion of 2 grams or more zinc, can result in gastro-intestinal tract irritation and vomiting. Taking it with food can lessen these effects [14].

The use of zinc may cause the following side effects: Abdominal pain, dyspepsia, nausea, vomiting, diarrhoea, gastric irritation and gastritis. Irritability, headache and lethargy has also been observed. [6]

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

Vitamin C

Vitamin C has low acute toxicity. Even at high intakes, does vitamin C has a 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. [8] [4] [5]

Selenium

Acute selenium toxicity, either fatal or near-fatal, has been reported. Acute toxicity may cause severe gastro-intestinal and neurological disturbances, acute respiratory syndrome, myocardial infarction and renal failure. Other symptoms may include hair loss, nail changes, dermatitis, metallic taste, garlic odour of breath, irritability and fatigue [15]. Autopsies also revealed necrosis of the gut and kidney, cardiomyopathy and severe pulmonary oedema. [16] [12].

Chronic toxicity of selenium has been observed in humans with features like hair and nail brittleness and loss Other signs including gastrointestinal disturbances, skin rash, garlic breath odour, fatigue, irritability and nervous symptom abnormalities have also been reported. [16]

Zinc

Acute:

Zinc salts are corrosive in acute overdoses; this is due to the formation of zinc chloride by stomach acids. Treatments consist of giving milk or alkali carbonates and activated charcoal. Excessive zinc supplementation is toxic and signs of toxicity include: nausea, vomiting, loss of appetite, diarrhoea, dehydration, muscle incoordination, dizziness, headaches and abdominal pain. [14] [2] [11]

Chronic:

Excessive zinc supplementation for prolonged times, may lead to copper deficiency with associated sideroblastic anaemia and neutropenia [2]

5. PHARMACOLOGICAL PROPERTIES

5.1. Pharmacodynamic properties

Vitamin C

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. **[8] [5]**

Selenium

Selenium is an essential trace element. Selenium exists in two forms, inorganic (selenite and selenite) an organic (selenomethionine and selenocysteine). Selenocysteine and selenite are reduced to generate hydrogen selenide, which is then converted to selenophosphate for selenoprotein biosynthesis. Selenium is a constituent of more than two dozen selenoproteins that play a critical role in reproduction, thyroid hormone metabolism, DNA synthesis and protection from oxidative damage and infection. Selenium is essential for the regulation of the concentration of the active hormone tri-iodothyronine. Deficiency of selenium is rare but has been associated with an endemic form of cardiomyopathy and an endemic form of osteoarthritis (Keshan disease and Kashin-Beck disease). [17] [12]

Zinc

The divalent ion is most commonly found in the body. Zinc has a relatively fast turnover rate. Zinc is an essential trace element and a constituent of many enzyme systems and is present is all tissues. Zinc is essential for growth and development, protein synthesis, DNA synthesis, immune-competence, neurological function, testicular maturation and wound healing. Zinc also supports normal growth and development during pregnancy, childhood and adolescence. Severe deficiency includes: distorted or absent perceptions of taste and smell and poor wound healing. [14] [2] [18] [11] [6]

5.2. Pharmacokinetic properties

Vitamin C

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 and is widely distributes to all tissue. 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. 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. [4] [8] [3]

Selenium

Selenium is readily absorbed from the gastro-intestinal tract. There after it is stored in red blood cells, the liver, spleen, heart and nails. Selenium is excreted mostly in the urine and to a lesser extent in the faeces. Selenium excretion is dependent on selenium status in the body. Selenium is an integral part of the enzyme glutathione peroxidase, essential in protecting intracellular structures against oxidative stress. [15] [12]

Zinc

Zinc is a cofactor in DNA and RNA synthesis. Zinc is essential for normal cellular immune function, it is also important in the stabilization of membrane structure. The balance between zinc absorption from the small

intestine and excretion in the faeces is efficiently regulated by the body. Only about 10-40% of ingested zinc is absorbed from the gastro-intestinal tract by means of carrier mediated transport. Zinc is distributed throughout the body, the muscle, bone, skin, eyes and prostatic fluids contain the highest concentrations. Zinc is primarily excreted in the faeces, small amounts are lost in urine and perspiration. [14] [2]

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 gelatine capsules (bovine),
Magnesium stearate,
Microcrystalline cellulose,
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

6.5. Nature and contents of container

White PET container with a flip top lid containing 30 capsules (white cap, white body) and a silica gel sachet. The container is sealed with a heat induction seal.

6.6. Special precautions for disposal and other handling

Any unused product or waste material should be disposed of in accordance with local requirements.

7. HOLDER OF CERTIFICATE OF REGISTRATION

California Pharmaceuticals
179 Edison Crescent
Hennopspark X7
Centurion
0157
Tel: 012 653 6218

8. REGISTRATION NUMBER(S)

To be allocated by Council upon registration

9. DATE OF FIRST AUTHORISATION/RENEWAL OF THE AUTHORISATION

To be allocated by Council upon registration.

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