

Vitamin C-Bomb

NUTRICODE

Dr Tomasz Jeżewski MD, PhD Signature Series

Organic Vitamin C supplement
crafted from the purest natural
sources.





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C-Bomb is an organic vitamin C supplement crafted from the purest natural sources, including acerola, Indian gooseberry (amla), wild rose, and Camu-Camu. Unlike synthetic vitamin C, our natural formulation offers enhanced bioavailability, meaning your body absorbs and utilises it more efficiently. This superior absorption is due to the presence of natural bioflavonoids and phytonutrients that work synergistically to maximise the health benefits of vitamin C.

Comparing Natural and Synthetic vitamin C: Key Insights

When choosing a vitamin C supplement or evaluating its sources in foods, it's important to understand the differences between natural and synthetic forms. Several studies highlight the superior benefits of natural vitamin C over synthetic ascorbic acid. Here are some key points:

1. Effectiveness of Natural vs. Synthetic vitamin C: A study by Wolfe et al. (2008) demonstrated that 1,500 mg of synthetic ascorbic acid was equivalent in antioxidant potency to just 5.7 mg of natural vitamin C derived from apple pulp. Moreover, the natural form not only had stronger antioxidant effects but also exhibited anticancer properties and additional health benefits not found in synthetic forms³⁰.

2. Bioavailability of Natural vitamin C: Research by Carr and Vissers (2013) indicates that natural vitamin C, when combined with bioflavonoids (plant compounds found in citrus fruits and other sources), can be up to 35% more bioavailable than synthetic ascorbic acid alone. This means that the body absorbs and utilises natural vitamin C more effectively, providing greater health benefits⁷.

3. Enhanced Antioxidant Capacity in Whole Foods: When vitamin C is consumed as part of a whole food, such as acerola or Camu-Camu, its antioxidant capacity can be up to twice as high compared to synthetic vitamin C taken on its own. This enhanced effect is attributed to the synergistic action of natural co-nutrients present in these foods, which work together to boost the overall antioxidant potential¹⁹.

The Need for vitamin C

- 1. Essential Nutrient:** Vitamin C is crucial for collagen production, skin health, bone strength, and neurotransmitter synthesis.
- 2. Daily Requirement:** The body cannot store vitamin C, requiring a consistent daily intake. The minimal requirement is 100 mg, while the optimal intake is around 200 mg.
- 3. Nutritional Gap:** Many people do not meet the recommended intake through diet alone, especially with the prevalence of heat-processed foods that degrade vitamin C content.

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How vitamin C Works

- **Protein Synthesis - Collagen:** Vitamin C is essential for the synthesis of collagen, a protein crucial for the health of skin, bones, teeth, cartilage, and blood vessels. Collagen provides structural support and aids in tissue repair.
- **Deficiency and Scurvy:** A deficiency in vitamin C leads to scurvy, characterised by swollen gums as one of the most visible signs. However, scurvy can also cause a host of other serious health problems, including fatigue, joint pain, and poor wound healing.
- **Neurotransmitter Synthesis and Balance:** Vitamin C is vital for the synthesis and regulation of neurotransmitters, such as catecholamines like adrenaline. These neurotransmitters play a key role in stress response and mood regulation.
- **Bone Health:** Vitamin C is crucial for strong bones as it supports the synthesis and proper function of osteocalcin, a protein that binds calcium to bones. A deficiency in vitamin C can result in weakened bones and an increased risk of fractures.
- **Blood Clotting:** Vitamin C is important for maintaining thrombolysis balance, which is the body's ability to dissolve blood clots. A deficiency can lead to a higher risk of bleeding and easy bruising.
- **Mineral Absorption:** Vitamin C enhances the absorption of various minerals, particularly non-haem iron (the form of iron found in plant-based foods), increasing its absorption rate by up to six times.
- **Potent Antioxidant:** As a powerful antioxidant, vitamin C helps combat inflammation by neutralising free radicals, thereby protecting cells from oxidative damage.
- **Immune Response:** Vitamin C is a potent immune booster, enhancing the body's response to various infections and supporting the function of immune cells.
- **Anti-Atherogenic:** Vitamin C prevents the oxidation of LDL cholesterol (the „bad“ cholesterol), thereby reducing the risk of atherosclerosis (the buildup of fats and cholesterol in and on the artery walls).

Scientific Analysis of Health-Enhancing Compounds

Fruit extracts such as acerola, amla, wild rose, and camu-camu are gaining popularity for their potent health benefits, largely due to their rich vitamin content, antioxidants, and bioactive compounds.

1. Acerola Fruit Extract (Malpighia Emarginata)

Acerola is a tropical fruit known for its exceptionally high vitamin C content, making it one of the richest natural sources of this essential nutrient. The extract from acerola fruit is packed with antioxidants, including polyphenols, flavonoids, and carotenoids, which contribute to various health benefits.

- **Rich Source of vitamin C:** Acerola contains a high concentration of vitamin C, which is crucial for immune function, collagen synthesis, and protection against oxidative stress. It enhances the body's antioxidant defences, safeguarding cells from damage by free radicals⁴.
- **Antioxidant Properties:** The polyphenols, carotenoids, and anthocyanins in acerola extract contribute to its strong antioxidant properties, potentially lowering the risk of chronic diseases such as cardiovascular diseases and cancer¹².
- **Immune Support and Anti-Inflammatory Effects:** Acerola boosts immune function through its high vitamin C content, enhancing white blood cell activity. Additionally, it exhibits significant anti-inflammatory properties, helpful in managing inflammatory conditions^{23,17}.
- **Skin Health and Anti-Ageing:** The high vitamin C content in Acerola promotes collagen synthesis, essential for maintaining skin elasticity and firmness, while its antioxidant properties help protect the skin from UV damage and premature ageing⁶.
- **Potential Anticancer and Cardiovascular Benefits:** Preliminary studies suggest that acerola may have anticancer properties due to its high antioxidant content. It also supports cardiovascular health by reducing oxidative stress and inflammation, improving endothelial function, and lowering blood pressure^{3,9}.

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2. Indian Gooseberry (Amla, Emblica officinalis)

Amla is a cornerstone of Ayurvedic medicine, known for its high vitamin C content and a variety of polyphenols, which provide multiple health benefits.

- **High vitamin C and Antioxidant Activity:** Amla is a rich source of stable and bioavailable vitamin C, which effectively boosts the immune system and provides potent antioxidant protection^{5,14}.
- **Anti-Inflammatory and Blood Sugar Regulation:** Amla exhibits significant anti-inflammatory effects and has been shown to regulate blood sugar levels in clinical studies, making it beneficial for individuals with diabetes^{20,27}.
- **Heart Health and Digestive Benefits:** Amla improves lipid profiles, reduces cholesterol levels, and supports heart health. It also enhances digestive health, reducing symptoms of indigestion and promoting overall gut health^{1,8}.
- **Skin and Cognitive Function:** Amla has been shown to improve skin elasticity and reduce wrinkles, enhancing skin health. It also has potential cognitive benefits, improving memory and attention in elderly participants with mild cognitive impairment^{22,25}.
- **Potential Anti-Cancer Properties:** Studies suggest Amla's potential in cancer prevention and treatment due to its ability to induce apoptosis and inhibit cancer cell proliferation^{16,18}.
- **Enhances Immune Function:** Amla has long been used in traditional medicine to strengthen the immune system. Its immunomodulatory effects are attributed to its high content of powerful antioxidants and vitamin C, which help enhance the body's capacity to combat infections and illnesses effectively^{24,26}.

3. Wild Rose Fruit Extract (Rosa canina)

Wild rose fruit, also known as rosehip, is renowned for its high vitamin C content and a range of other health benefits²⁹.

- **Joint Health and Anti-Inflammatory Effects:** Rosehip extract has been shown to significantly reduce pain and improve joint mobility in patients with osteoarthritis due to its anti-inflammatory properties^{11,28}.
- **Cardiovascular Health and Antioxidant Benefits:** Rosehip extract improves cardiovascular health by lowering cholesterol levels and blood pressure, enhancing the body's antioxidant capacity^{2,28}.
- **Skin Health and Antibacterial Properties:** Rosehip's antioxidant properties support skin health by improving elasticity and hydration. It also exhibits antimicrobial properties, particularly against bacteria like *Staphylococcus aureus*^{10,13}.

4. Camu-Camu Fruit Extract (Myrciaria Dubia)

Camu-Camu is a small Amazonian berry known for its exceptionally high vitamin C content and powerful antioxidant properties.

- **Superior Source of vitamin C:** Camu-Camu juice is more effective than synthetic vitamin C in reducing oxidative stress and inflammatory markers, offering substantial health benefits¹⁵.
- **Anti-Inflammatory and Cardiovascular Benefits:** Regular consumption of Camu-Camu reduces systemic inflammation and improves cardiovascular health by lowering blood pressure and arterial stiffness^{21,31}.

These fruit extracts offer a wide range of health benefits, primarily due to their rich content of vitamin C, antioxidants, and bioactive compounds. Scientific studies support their potential in boosting immunity, reducing inflammation, improving skin and cardiovascular health, and even offering protective effects against cancer and cognitive decline.

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C-Bomb: More Than Just vitamin C!

In addition to its high vitamin C content, the C-Bomb supplement, which acerola, amla, wild rose fruit, offers a wide range of essential vitamins and minerals:

Nutrient	Acerola (Malpighia Emarginata)	Indian Gooseberry (Amla, Emblica officinalis)	Wild Rose Fruit (Rosa canina)	Camu- Camu (Myrciaria Dubia)
Vitamin C	✓	✓	✓	✓
Vitamin A	✓	✓	✓	
B Vitamins	B1, B2, B3, B5, B6	B1, B2, B3, B5, B6	B1, B2, B3	B2 (Riboflavin), B3 (Niacin)
Vitamin E	✓		✓	
Magnesium	✓		✓	✓
Potassium	✓		✓	✓
Calcium		✓	✓	
Iron		✓		
Phosphorus		✓		

What Makes This Product Unique?

- High Potency and Quality:** C-Bomb contains a potent blend of vitamin C-rich extracts from acerola, Indian gooseberry, wild rose, and Camu-Camu. These natural sources provide a high concentration of bioavailable vitamin C, ensuring maximum absorption and efficacy.
- Organic and Natural:** Unlike many supplements that use synthetic forms of vitamin C, C-Bomb is made exclusively from organic, whole food sources. This natural formulation is free from artificial additives, making it a safer and healthier choice.
- Synergistic Benefits:** The combination of acerola, amla, wild rose, and Camu-Camu extracts offers a unique blend of antioxidants, bioflavonoids, and phytonutrients that work together to enhance the overall health benefits of vitamin C. This synergy results in improved immune support, antioxidant protection, and

anti-inflammatory effects.

4. Multifunctional Health Support: C-Bomb not only boosts the immune system but also supports cardiovascular health, skin health, joint health, and overall energy levels. It's designed to meet the diverse health needs of modern individuals, making it an ideal supplement for everyone from busy professionals to ageing adults and fitness enthusiasts.

5. Clinically Supported Ingredients: Each ingredient in C-Bomb has been carefully selected based on scientific research supporting its health benefits. The formulation is backed by studies that demonstrate the superior bioavailability and efficacy of natural vitamin C from whole food sources compared to synthetic alternatives.

Who Should Use C-Bomb?

- Everyone:** Especially those who want a natural, all-round supplement to boost their health.
- Busy Professionals:** Needing immune support and an energy boost.
- Women:** Seeking hormonal balance and improved skin health.
- Ageing Adults:** Looking to maintain skin elasticity, joint flexibility, and cardiovascular health.
- Fitness Enthusiasts:** Requiring enhanced recovery and powerful antioxidant support.
- People with Nutrient Deficiency:** Needing to fill dietary gaps, especially in vitamins C, A, B, and essential minerals.

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Safety & Interactions

When considering a supplement that combines Acerola, Amla, Wild Rose Fruit, and Camu-Camu, it is important to be aware of potential interactions with medications, other supplements, and certain health conditions. Here are some possible interactions:

1. Blood Thinners (Anticoagulants and Antiplatelets)

- **Interaction:** The high vitamin C content in these fruits may affect blood clotting and could interact with blood-thinning medications such as warfarin, aspirin, and clopidogrel.
- **Effect:** This interaction could either enhance or diminish the effectiveness of these medications, increasing the risk of bleeding or clot formation.
- **Advice:** Individuals on blood thinners should consult their healthcare provider before taking this supplement.

2. Blood Pressure Medications

- **Interaction:** Wild Rose Fruit and Amla have blood pressure-lowering effects. When combined with antihypertensive medications (e.g., ACE inhibitors, beta-blockers, diuretics), this could lead to excessively low blood pressure.
- **Effect:** Hypotension, dizziness, or fainting.
- **Advice:** Those on blood pressure medications should monitor their blood pressure closely and consult their healthcare provider.

3. Diabetes Medications

- **Interaction:** Amla and Camu-Camu may lower blood sugar levels, potentially enhancing the effect of antidiabetic medications (e.g., insulin, metformin).
- **Effect:** Increased risk of hypoglycaemia, with symptoms like dizziness, sweating, and fainting.
- **Advice:** Diabetics should monitor their blood glucose levels and consult their healthcare provider before using this supplement.

4. Iron Absorption

- **Interaction:** High doses of vitamin C can enhance non-haem iron absorption, which may be problematic for individuals with conditions like haemochromatosis.
- **Effect:** Excessive iron absorption, potentially leading to toxicity and organ damage.
- **Advice:** Those with iron overload conditions should avoid high doses of vitamin C.

5. Oestrogen-Based Hormonal Therapies

- **Interaction:** Vitamin C can increase oestrogen levels when taken with oestrogen-containing medications like oral contraceptives or hormone replacement therapy (HRT).
- **Effect:** This may amplify side effects such as nausea, headaches, or an increased risk of blood clots.
- **Advice:** Women on hormonal therapies should consult their healthcare provider before taking this supplement.

6. Chemotherapy Drugs

- **Interaction:** Antioxidants like vitamin C could potentially interfere with certain chemotherapy drugs, which rely on free radicals to destroy cancer cells.
- **Effect:** Reduced effectiveness of chemotherapy.
- **Advice:** Cancer patients undergoing chemotherapy should discuss supplement use with their oncologist.

7. Antacids

- **Interaction:** Vitamin C can increase urine acidity, potentially affecting the excretion of certain drugs, including antacids containing aluminium.
- **Effect:** This may result in higher blood levels of aluminium, which can be toxic.
- **Advice:** Those using antacids should consult their healthcare provider.

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8. Kidney Health

- **Interaction:** High doses of vitamin C may increase the risk of kidney stones, particularly in individuals prone to oxalate stone formation.
- **Effect:** Increased risk of kidney stones, leading to pain and urinary issues.
- **Advice:** Individuals with a history of kidney stones should use this supplement cautiously and consult their healthcare provider.

Active Ingredients

Ingredient	In one capsule	Daily portion 4 capsules
Acerola fruit extract	125 mg (**)	500 mg (**)
Indian gooseberry fruit extract (Emblica officinalis, also known as amla extract)	250 mg (**)	1000 mg (**)
Wild rose fruit extract	50 mg (**)	200 mg (**)
Camu-Camu fruit extract	50 mg (**)	200 mg (**)
Vitamin C (from the above sources)	176.25 mg (220%*)	705 mg (881%*)

Notes:

*NRV — Nutrient Reference Values for the daily intake.

**Reference intake value has not been established.

Full list of ingredients

Indian gooseberry fruit extract standardised to 50% vitamin C; acerola fruit extract standardised to 25% vitamin C; hydroxypropyl methylcellulose (capsule shell); wild rose fruit extract; camu-camu fruit extract standardised to 40% vitamin C; anti-caking agent: magnesium stearate.

Directions

Adults: Take 2 capsules twice a day with a glass of water and a meal. The recommended daily intake should not be exceeded.

Additional Dosage Recommendations by Dr. Tomasz Jeżewski MD, PhD:

- **Teenagers:** 1 capsule daily. Increase to 2 capsules during general infections such as colds.
- **Children (4 to 12 years):** 1 capsule every other day.
- **Warning:** Limit to 1 capsule daily for those with a history of oxalate stones.

Storage conditions:

Store in a tightly closed container in a dry place, out of direct sunlight. Store below 25°C. Keep out of reach of young children.

Frequently Asked Questions

Is C-Bomb suitable for vegetarians and vegans?

Yes, C-Bomb is suitable for vegetarians and vegans. The capsules are made from hydroxypropyl methylcellulose, a plant-based material, and do not contain any animal-derived ingredients.

How long does one package of C-Bomb last?

A single C-Bomb contains 120 capsules. If you follow the recommended dosage of 2 capsules twice a day, one product will last for 30 days.

Can I take the supplement if I am allergic to one of the ingredients the vitamin C is sourced from?

No, if you have a known allergy to any of the ingredients in C-Bomb, such as acerola, Indian gooseberry (amla), wild rose fruit, or Camu-Camu, you should not take the supplement. Always read the ingredient list carefully and consult with a healthcare provider if you have any concerns about allergies.

What is bioavailability?

Bioavailability refers to the proportion of a nutrient that is absorbed and utilised by the body. C-Bomb uses natural sources of vitamin C, which have been shown to offer higher bioavailability compared to synthetic forms. This means that your body can absorb and use the vitamin C in C-Bomb more effectively.

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What is oxidative stress, and how does this supplement help to deal with it compared to other forms of vitamin C?

Oxidative stress occurs when there is an imbalance between free radicals and antioxidants in the body, leading to cell damage. Vitamin C is a powerful antioxidant that helps neutralise free radicals, reducing oxidative stress. The natural sources of vitamin C in C-Bomb, combined with bioflavonoids and phytonutrients, provide enhanced antioxidant protection compared to synthetic vitamin C, offering superior benefits for combating oxidative stress.

Can I open the capsule and mix its contents with water if I have trouble swallowing pills? If so, what amount of water should I use, and will dissolving the contents in water affect the absorption of the nutrients?

Yes, the contents of the C-Bomb capsule can be mixed with water if you have difficulty swallowing capsules. To do this, carefully open the capsule and empty its contents into a glass of water. It's best to use a small amount of water—about 100-150 ml (half a cup)—to ensure that you can drink it all at once, as this helps maintain the concentration of the supplement.

Opening the capsule and dissolving its contents in water should not significantly affect the absorption of the vitamin C and other nutrients. However, it is essential to consume the mixture immediately after preparation to preserve the potency and efficacy of the active ingredients. Some components may start to degrade if left exposed to air or light for extended periods, so drinking the solution right away ensures you get the maximum benefit.

Why does the label indicate that the supplement is for adults, while the product guide provides alternative dosing guidance for teenagers and children aged 4-12?

The label on C-Bomb indicates that the supplement is intended for adults because the standard dosage provided on the label is based on the nutritional needs and tolerance levels of an average adult. The label aims to ensure clarity and safety for general use, particularly since adults are the primary consumers of most dietary supplements.

However, the product guide includes adjusted dosing recommendations for teenagers and children aged 4-12, acknowledging that younger individuals may benefit from vitamin C supplementation under certain conditions. The guide offers lower, age-appropriate dosages to ensure safety and effectiveness for younger users. This is based on the understanding that children and teenagers have different nutritional needs and may require a different amount of vitamin C to support their growth and immune function without exceeding safe intake levels.

Additionally, providing dosing guidance for younger age groups in the product guide allows for flexibility and helps parents make informed decisions about their children's health, particularly in consultation with healthcare professionals. It's important to note that these adjusted dosages are provided as general recommendations and should always be discussed with a healthcare provider to ensure they are suitable for the individual child's needs and health status.

Why does Vitamin C-Bomb contain only 176.25 mg of vitamin C per capsule, while other supplements available in high street stores or pharmacies often contain 1000 mg or more per capsule?

The difference in dosage between Organic Vitamin C-Bomb and other high-dose non-organic vitamin C supplements primarily relates to absorption rate, bioavailability, and how the body processes vitamin C.

With a lower but more potent and effective dose of organic vitamin C, you will receive greater benefits compared to the synthetic form, while also enjoying a significantly better safety profile, particularly in reducing the risk of oxalate stone formation.

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Absorption Rate and Bioavailability

Vitamin C-Bomb uses natural, organic sources of vitamin C, such as acerola, Indian gooseberry (amla), wild rose fruit, and Camu-Camu. These natural forms of vitamin C are combined with bioflavonoids and phytonutrients that enhance their absorption and bioavailability. Studies have shown that vitamin C from whole food sources can be up to 35% more bioavailable than synthetic ascorbic acid found in high-dose supplements. This means that a higher proportion of the vitamin C in Vitamin C-Bomb is absorbed and utilised by the body compared to synthetic forms.

In contrast, high-dose vitamin C supplements containing 1000 mg or more per capsule typically use synthetic ascorbic acid. While they deliver a large quantity of vitamin C, only a fraction of it is effectively absorbed. The body can absorb up to about 200 mg of vitamin C at one time; beyond this, the absorption rate decreases significantly, and the excess vitamin C is simply excreted through urine. For example, with a 1000 mg dose of synthetic vitamin C, the body might only absorb a small portion (around 200-250 mg), and the rest would be flushed out as waste.

Do We Need 1000 mg of vitamin C?

For most people, consuming 1000 mg of vitamin C in one dose is unnecessary. The body does not store vitamin C and will excrete any excess through urine once the maximum absorption capacity is reached. Thus, a high-dose supplement does not necessarily translate to greater health benefits and may lead to wasted nutrients.

Vitamin C-Bomb's dosage of 176.25 mg per capsule is designed to provide an effective amount of bioavailable vitamin C that the body can absorb and use efficiently. This dosage, combined with the natural ingredients, supports optimal health without overwhelming the body with an excess that would simply be excreted.

Balanced Dosage for Maximum Effectiveness

By offering a lower dose of highly bioavailable vitamin C, Vitamin C-Bomb ensures that the body receives a steady supply of this essential nutrient in a form it can effectively utilise. This approach aligns with the body's natural ability to absorb and benefit from vitamin C without overloading the system, making it a more efficient and effective choice for daily supplementation.

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