

WHAT ARE THE POSSIBLE SIDE EFFECTS OF IVC?

Side effects are usually mild, brief, and are not common in most people. Discuss all possible side effects with your healthcare provider. These may include:

- Thirst
- Dry mouth
- Fatigue
- Increased urination
- High blood pressure
- Digestive upset
- Dizziness
- Weakness
- Headache
- Painful or sore at the site of injection

KEY POINTS

- IVC is safe for most people and may lessen symptoms and side effects from cancer and cancer treatments.²⁹
- IVC can lower inflammation and prevent or reverse vitamin C deficiency in people with cancer.
- IVC should not be considered a cure for cancer or an alternative to cancer treatment.
- Before starting high dose (>15g) IVC treatment, all patients should be tested for normal G6PD enzyme levels. People with low G6PD enzyme or kidney failure should not receive IVC.
- More research is needed to better understand the possible benefits of IVC.
- All patients receiving IVC therapy should discuss the treatment with the providers involved in their medical care to ensure safety and communication.

REFERENCES

To download this brochure or view the references, please visit:
<https://bcct.ngo/patient-brochures>



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Version: 02/21/20

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INTRAVENOUS VITAMIN C (IVC) IN CANCER CARE

INTEGRATIVE ONCOLOGY APPROACHES



A COLLABORATION OF
KNOWoncology.org,
BCCT.ngo and OICC.ca

WHAT IS IVC?

Intravenous vitamin C (IVC) therapy is used by some integrative oncology providers to help manage side effects and cancer symptoms. IVC therapy provides vitamin C (ascorbic acid) through an intravenous (IV) drip in the arm or through a central venous catheter such as a PICC line or port. IV therapy allows a much higher amount of vitamin C to circulate in the blood than would be possible by eating foods rich in vitamin C or by taking vitamin C as an oral supplement.^{1,2}

WHAT IS IVC USED FOR?

IVC may be recommended by integrative oncology providers as supportive care for patients with cancer, to help with side effects from cancer and cancer treatments, support energy, lower inflammation, and to prevent or fix a vitamin C deficiency.³ IVC is not a cure for cancer and it should not be used as an alternative to chemotherapy or other cancer treatments.

Discuss your medical history with your healthcare provider to decide if IVC may be safe and potentially supportive for you.



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DOES IVC WORK?

Over a dozen small studies have researched IVC for people with cancer.^{2,4-17} While many of these studies looked at safety and dosing, some looked at symptoms, quality of life, inflammation, tumor response, and survival.

IVC MAY REDUCE SYMPTOMS FROM CANCER OR CANCER TREATMENT

In several clinical trials where people with cancer were treated with IVC, the symptoms of fatigue, pain, nausea and appetite loss were improved, and markers of inflammation in the blood were lowered.⁶⁻⁹ However, not all studies have found that IVC helped quality of life and symptoms.^{10,11} In general, the studies completed are small, and more research needs to be done to further test the promising findings.

IVC CAN CORRECT DEFICIENCY OF VITAMIN C IN THE BLOOD

Low levels of vitamin C in the blood is quite common in people with more advanced cancers.¹⁸ There are a number of reasons why this might happen, including low vitamin C intake from food, poor ability of the body to absorb nutrients, and higher levels of inflammation.³ Vitamin C deficiency can happen due to the cancer itself, and sometimes from side effects of cancer treatments such as surgery, radiation or chemotherapy.³ Side effects of low vitamin C in the blood may include fatigue, muscle aches, weakness, swelling and bleeding in the gums, pain in the back and joints, easy bruising and bleeding, slow wound healing, and swelling in the lower body.¹⁹ IVC can correct low levels of vitamin C in the blood.

IVC'S IMPACT ON CANCER TREATMENT OUTCOMES AND PROGRESSION IS UNCLEAR

Although a few small studies of IVC have suggested improved cancer outcomes including survival,^{2,5,7,8,14} more research is needed.

Given the mixed results of studies on IVC therapy, patients should discuss with their health care providers to understand possible benefits, risks, costs, and alternatives.

HOW MUCH VITAMIN C IS USED, AND HOW OFTEN IS IVC GIVEN?

The IVC studies have used doses ranging from 500 mg (0.5 grams) to over 100 grams. Your health care provider will determine the best dose based on your health, the reason for use, and your body weight. Most studies using IVC for people with cancer administer it one to three times weekly for several weeks to a few months. To correct or prevent a vitamin C deficiency, taking a vitamin C supplement with or without IVC treatments, may be enough. Discuss what might be best for you with your healthcare provider.

IS IVC SAFE?

Studies to date have found that IVC is safe and has few side effects; however there are times when IVC may not be safe. IVC should not be given to patients with kidney failure,^{20,21} or those with low levels of an enzyme called G6PD.^{22,23} Doctors should be cautious using IVC in patients with a history of kidney stones,^{24,25} people with diabetes who are also on insulin (due to falsely elevated blood sugar readings for several hours after IVC treatment),²⁶ iron storage diseases,²⁷ edema or low cardiac output,⁶ or those on warfarin.²⁸ IVC has not been studied in pregnant or breastfeeding women, or in children. IVC should not be used in place of available effective therapies including surgery, hormonal therapy, and other treatments.

