

First do no harm: A guide to choosing wisely in general practice

For patients – Vitamin C infusions



Is this information for you?

This information sheet is for you if you are considering vitamin C infusions for any reason.

About Vitamin C

Vitamin C is an essential nutrient that normally only comes from food. It plays an important role in the nervous system and other functions, including the healing of wounds and energy metabolism.

Because vitamin C is found in foods such as citrus fruits (for example, oranges and grapefruit) and vegetables,¹ most people in Australia get more than enough vitamin C in their regular diet.

Having no vitamin C for months or years leads to scurvy, which results in:²

- weakness
- severe joint and leg pain
- bleeding gums
- bruising.

In the past, sailors sometimes developed scurvy because they didn't have fresh food for months at a time, but it is now very rare.

Some people have suggested that vitamin C is a possible treatment for cancer, sepsis (severe infection) and COVID-19, but there is no evidence that vitamin C infusions deliver any health benefits.

Why GPs do not recommend vitamin C infusions

In line with guidelines from The Royal Australian College of General Practitioners (RACGP), your general practitioner (GP) will only recommend treatments that are well grounded in scientific evidence.

Several research studies³⁻⁷ have tested vitamin C infusions to find out if it is an effective treatment, but found that vitamin C infusions do not seem to provide health benefits for any condition.

In fact, vitamin C infusion is dangerous for some people with kidney disease, particularly those with, or at risk of:

- kidney stones¹
- haemochromatosis⁸
- glucose-6-phosphate dehydrogenase (G6PD) deficiency.⁹

Common questions about vitamin C infusions

Is there evidence that vitamin C infusions benefit patients with cancer?

There is no evidence to prove that vitamin C infusions make tumours smaller or stop them from growing.

Is there evidence that vitamin C infusions help patients with COVID-19?

No high-quality studies have shown that vitamin C infusions provide any benefits to patients with COVID-19.⁵ This is confirmed by the Therapeutic Goods Administration (an Australian Government agency), which issued a statement saying there was no evidence to support the use of vitamin C infusions to treat COVID-19.¹⁰

What are the side effects of vitamin C infusions?

The most common side effects are:⁸

- temporary nausea
- vomiting
- headache
- discomfort at the injection site.

Although most of these side effects are mild, it is important to know that:

- some people with a kidney disease who had vitamin C infusions developed kidney stones and their kidney function got worse^{8,9}
- if you have G6PD deficiency, you should not have vitamin C infusions, as they could cause a breakdown of your red blood cells^{1,8}
- if you have haemochromatosis, you should not have vitamin C infusions, as they could result in more iron-induced tissue damage.¹

Does vitamin C affect cancer treatments?

There are a number of ways in which vitamin C could negatively affect cancer treatments. If you are a cancer patient and you are considering a vitamin C infusion, you should discuss this with your cancer specialist (oncologist).^{11,12}

If you are being treated for multiple myeloma with bortezomib, you should not have a vitamin C infusion, as it may reduce the effectiveness of bortezomib.

Is there a recommended dose and duration of vitamin C infusions?

As current guidelines do not recommend vitamin C infusion for any condition, there is no consensus about the optimal doses, frequency or duration of intravenous vitamin C therapy.¹³⁻¹⁵

Are vitamin C infusions covered by Medicare?

No, you will have to pay for any vitamin C infusions you have.

Alternatives

Based on the available research and evidence, the RACGP does not recommend the use of vitamin C infusions.

We do recommend that you always eat a healthy diet that includes lots of fresh fruit and vegetables. This will provide you with adequate vitamin C, which is essential for your general good health.

Resources

- Chapman K, [Vitamin pills' role in recovering from cancer](#), *The Conversation*
- National Cancer Institute (US), [Intravenous vitamin C \(PDQ®\) – Patient version](#)
- Therapeutic Goods Administration, [No evidence to support intravenous high-dose vitamin C in the management of COVID-19](#)

If you still want to go ahead

If you want to have a vitamin C infusion, tell your treating doctors, so you can discuss the potential risks and harms.

- **If you have haemochromatosis, kidney disease or G6PD deficiency**, we strongly recommend that you do not have a vitamin C infusion.
- **If you are being treated for cancer**, we strongly recommend that you talk with your oncologist about how vitamin C might affect your current and proposed treatments.
- Before you have a vitamin C infusion, arrange a kidney function blood test and a screening for G6PD deficiency.⁸

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Published November 2022.