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Scurvy

What is scurvy?

Scurvy is a condition characterized by general weakness, anaemia, gingivitis (gum disease), and skin haemorrhages caused by a prolonged deficiency of vitamin C (ascorbic acid) in the diet. Vitamin C plays a crucial role in the formation of collagen, a major component of connective tissue. Connective tissue has structural and supportive functions which are indispensable to blood vessels and all tissues within the body. Vitamin C is also important in the proper functioning of the immune system, iron absorption, cholesterol metabolism and other biological activities. Thus scurvy has widespread effects.

Who gets scurvy?

Scurvy was often seen in sailors on long ocean voyages described from the 15th century onwards. Many men died from the disease until it was discovered that scurvy could be effectively cured and prevented by consuming vitamin C through lemons, oranges and limes. The nickname for British sailors of 'limey' derives from the practice of giving British sailors limes.

It is thought that scurvy occurs very rarely in modern societies of today as most people have access to year-round fresh fruits and vegetables which are rich sources of vitamin C. However, several groups of people are at risk. These include:

- People with chronic malnutrition or those that eat less than 2 servings of fruits/vegetables per day
 - Alcoholics
 - Elderly
 - Men who live alone (bachelor or widower scurvy)
 - Children
 - People on peculiar diets or food fads
- People with other medical conditions that may prevent the intake and/or absorption of vitamin C
 - Dialysis patients
 - Inflammatory bowel disease ([Crohns Disease](#))
 - Malabsorption disorders
 - Severe dyspepsia
- Under-developed third world countries where general malnutrition exists. Also, in populations that subsist mainly on cereal grains and without access to fresh fruit or vegetables.

What are the signs and symptoms?

The diagnosis of scurvy is primarily a clinical one, based on a dietary history of inadequate vitamin C intake and the signs and symptoms described below.

Symptoms of scurvy generally develop after at least 3 months of severe or total vitamin C deficiency. Patients initially complain of weakness, fatigue, listlessness and aching limbs, especially in the legs. If left untreated, scurvy can progress to the following more severe problems.

Skin problems - one of the first signs of scurvy is the development of perifollicular hyperkeratotic papules, often

on the shins. These appear as reddish/bluish bruise-like spots surrounding hair follicles. The central hairs are twisted like corkscrews that may break easily. The papules may join together to form large areas of palpable [purpura](#) or ecchymoses (bruises).

Scurvy



Perifollicular haemorrhagic papules



Close-up



Corkscrew hair



Extensive purpura

Oral problems – gums may swell and become red, soft and spongy. Any slight friction may cause the gums to bleed. Often this results in poor oral hygiene and dental diseases.

Musculoskeletal problems – bleeding in the joints causes extreme discomfort and pain. Joints may be swollen and tender and the pain can be so severe that patients cannot walk.

Eye problems – patients may complain of dryness, irritation, light intolerance, transient visual blurring and stickiness. Haemorrhaging (bleeding) beneath the conjunctiva and within the optic nerve sheath may also occur.

Anaemia – this develops in 75% of patients as a result of blood loss into tissue, altered absorptions and metabolism of iron and folate, gastrointestinal bleeding and intravascular haemolysis.

Heart and lung problems – shortness of breath, low blood pressure, and chest pain leading to shock and death.

Treatment and prevention with vitamin C

Treatment of scurvy is simply with vitamin C supplements taken orally. The adult dosage is 800–1000 mg/day for at least one week, then 400 mg/day until complete recovery. Children should be given 150–300 mg/day for one month. Some improvement of symptoms is usually noticed within 24 hours. Except for the loss of teeth through dental disease, permanent damage from scurvy does not usually occur.

Prevention of scurvy is easily achieved by take the recommended daily intake (RDI) of vitamin C. This is between 30–60 mg/day. By following the “5 servings of fruit and vegetables per day” rule, you will be getting the RDI and maintaining sufficient body stores of vitamin C.

Related information

References:

- Book: Textbook of Dermatology. Ed Rook A, Wilkinson DS, Ebling FJB, Champion RH, Burton JL. Fourth edition. Blackwell Scientific Publications.
- Hirschmann JV, Raugi CJ. Adult scurvy. Journal of the American Academy of Dermatology 1999;41:895–906
- [Bystryanyk R. Scurvy Alive and Well? An Investigative Report.](#)
- Healtheries: [RDI table](#)

On DermNet NZ:

- [Signs of systemic disease](#)

Other websites:

- [Scurvy](#) - emedicine dermatology, the online textbook

Books about skin diseases:

See the [DermNet NZ bookstore](#)

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If you have any concerns with your skin or its treatment, see a [dermatologist](#) for advice.

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