



Medicine for Managers

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Scurvy

Those of you who are, well, old will recall on the silver screen and on the emerging television, the late Robert Newton with his iconic portrayal of the one-legged Captain Long John Silver, drinking 'grog' in the Admiral Benbow Inn and calling his crew members 'Scurvy knaves'. I cannot remember whether they were *unprincipled crafty fellows* (def: knave) or whether they had scurvy.

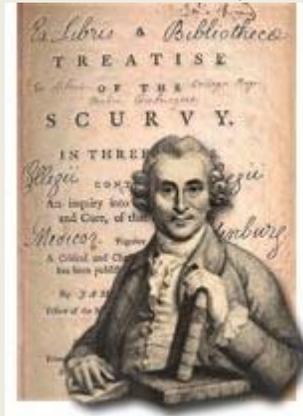


Of course in the eighteenth century, on the galleons plying their trade with the West Indies and the New World, one would certainly have encountered scurvy.

It was all because of the very common deficiency of Vitamin C resulting from the diet of seamen which lacked the vitamin.

James Lind, who qualified from Edinburgh and was appointed physician at the Royal Naval Hospital at Haslar, noticed that the disease was disabling seamen on the long voyages. He therefore carried out some of the first controlled experiments on land and at sea. He suspected that the disorder was a deficiency disease and, in 1747, he took groups of scurvy

sufferers, divided them into six groups and tried various remedies for 14 days. The sailors given two oranges and a lemon every day recovered best. Six years later he published his *Treatise of the Scurvy*, a model of experimental record keeping, and his work led to the radical change of diet on board ship.



Captain Cook kept his crew fit by ensuring they had fresh fruit and vegetables on his circumnavigations.

A naturalist, Joseph Banks, travelling on Cook's ship, *The Endeavour*, reported in 1769 "about a fortnight ago my gums started to swell and some small pimples rose on the inside of my mouth, which threatened to become ulcers. I then flew to the lemon juice which had been put up for me . . . and I took nearly six ounces a

day of it. The effect of this was surprising. In less than a week my gums became as firm as ever.”

His Lordships of the Admiralty took their time evaluating the work of Lind and others and lemon or lime juice was not routinely included in the navy’s diet until 1795.

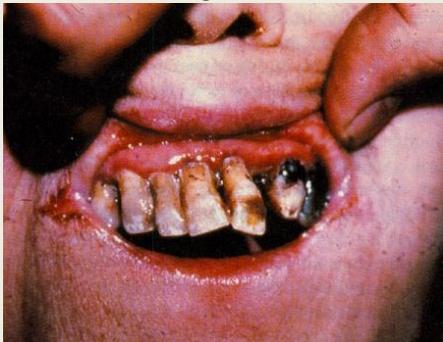
The anti-scorbutic agent was identified as Vitamin C in 1928 and named *ascorbic acid* in 1932 by Hungarian chemist Albert von Szent-Györgyi, for which he received the Nobel Prize in 1937.

Vitamin C is vital because it is involved in the manufacture of collagen, which is incorporated into the fibres which, literally, hold all the parts of the body together. It is in many types of tissue including bones, muscles, blood vessels, cartilage and fibrous sheets.

It is also an antioxidant and may help prevent the development of certain cancers, cardiovascular disease and other diseases in which oxidative stress plays a causal role.

It causes generalised symptoms including:

- Swollen and bleeding gums with loosening and loss of teeth.



- Tiredness and lethargy
- Pain in the limbs and joint pain (caused by bleeding into the joints)
- Failure of wound healing
- Excessive bruising
- The appearance of spots on the skin.

Vitamin C is also involved in the absorption of iron and scorbutic patients may develop iron deficiency anaemia.

Scurvy still occurs even in the United Kingdom. It is most commonly seen in association with deprivation. Sufferers include alcoholics, the homeless, those with extreme diets, sometimes in anorexia nervosa and, in the only cases I personally have ever seen, in the elderly poor living alone and receiving no assistance with any sort of catering, resulting in them having a diet of bread and butter and other foodstuffs where vitamin C was absent. Very occasionally it occurs in patients with gastro-intestinal malabsorption. Fortunately the incidence of scurvy is declining.

Treatment is by the prescription of vitamin C supplements. The symptoms are quick to respond to treatment and problems like joint pains will often resolve within 2-3 days. Recovery can occur in 1-2 weeks.

The disease is normally preventable by the consumption of a balanced diet containing plenty of fresh fruit and vegetables. By way of example, a large orange or a kiwi fruit will provide a day’s requirement (recommended daily allowance, RDA, is 75 (women) to 100 (men milligrammes a day). Vitamin C is present in oranges, lemons, limes, grapefruits and strawberries and vegetables such as sprouts, asparagus, sweet potatoes, cabbage and broccoli.

It should be remembered that vitamin C is easily destroyed by cooking and vegetables are better steamed than boiled.

Next time you are watching a film about buccaneers on the high seas in the eighteenth

century, remember than a good number of them would have had scurvy.



However, after Lind's work the British navy had much less scurvy than the French navy during the Napoleonic Wars (1803-15). This was because the British Navy was supplied with limes (cheaper than lemons) giving rise to the term '*limeys*' to describe British sailors.

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