

# Therapeutic Indications of Vitamin-C

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**T**HE popularisation of various vitamins and their spectacular curative action in certain pathological conditions, undoubtedly resulted in wide acceptance of the vitaminotherapy by the people. The indications at first limited to the true deficiencies have now been extended to numerous and varied pathological conditions.

In the beginning Vitamin C was very successfully used in the treatment of scurvy. What are the other true present day indication of this vitamin ? Before answering this question, let me explain in brief a physiological consideration of vitamin C which seems to be essential.

Vitamin C or ascorbic acid was discovered by Doctor Szent-Gyorgi. It is a white distillant, acid in character and water soluble in nature. Its essential role is to help the formation and maintenance of tissue collagen. Thus it participates in the processes of ossification, the formation of teeth, cicatrization of wounds, and protection against infections. In the course of a prolonged deficiency of Vitamin C, haemorrhages are common due to a loss of collagen support of the vessels. It is distributed through out the organism and particularly in endocrine glands, supra-renal cortex, and the ovaries. Its normal blood level is 12-16 mgs. per 100 ml. The total quantity stored in the organism is small 4-5g. The average elimination is 30 mgs. per day.

## Sources of Vitamin C

The principal source is vegetables and fresh fruits. (1) Vegetables, herbs, cabbages, (120 to 150 mg.) and in general all the green leafy vegetables (salad, spinach, 20-80 mgs./100g). Potatoes contain 5 to 36 mg. per 100 g. but the content decreases with storage. (2) Fruits : specially citrus, oranges, lemons grape fruits, black currants, strawberries, raspberries. But Amla (*Phyllanthus emblica*) contains large quantity of Vitamin C. (3) Meat : calf liver in particular 30 to 700 mgs/100g.

## Effects on Cooking

As already mentioned above it is a water soluble vitamin. It is partly lost in the washing and cooking water. It is oxydised during conservation. The heat during cooking, particularly if it is prolonged accelerates the process of oxidation. Raw fruits and vegetables with every meal, together with a sufficient quantity of cooked foods suffice to saturate the organism with Vitamin C. When the alimentary intake is totally devoid of Vitamin C. the blood level of the Vitamin decreases and becomes nil at the end of 6th week, or later when the storage falls below 1/5 of normal, scurvy, asthenia, gingivorrha-

gias, purpura, infections and difficulty of cicatrization of wound occur. This condition is remedied with small doses of Vitamin C 500 to 600 mg. per day.

In children, infantile scurvy or Barlows disease is common due to artificial alimentation commences between 6 and 18 months, and is manifested by weight decrease, fever, painful subperiosteal haematomas, immobilisation of extremities which may progress to a paralytic condition. This condition can be remedied by 60 to 90 mgs. of Vitamin C per day in the form of orange juice, lemon juice etc.

The following scorbutic syndrome presents in different pathology :

1. *Suprarenal pathology* : In the course of supra-renal insufficiencies, asthenia is an important symptom.

2. *Blood pathology* : In the course of scurvy, purpura is common, along with hypochromic anaemia. Hence Vitamin C has been proposed for the treatment of anaemias and purpura.

3. *Dermatology* : Vitamin C plays an important role in the metabolism of cutaneous pigments. Deficiency of Vitamin C has been held responsible for the various states of hyper-pigmentation, allergic dermatosis, eczemas, toxidermias, urticarias etc. and Vitamin C is usually prescribed.

4. *Digestive Pathology* : Stomatitis, buccal ulceration, gingivitis are cured by Vitamin C. Dr. Charles Derby proposed Vitamin C in high doses for the treatment of gastro-duodenal ulcers as more effective.

5. *Surgical Pathology* : The requirement of an operated individual is increased owing to the surgical intervention, since he is unable to consume food stuffs for a considerable period. Doses of 100-300 mgs. Vitamin C is sufficient per day for such patients.

6. *Infectious Pathology* : Vitamin C is used in the treatment during active phase of an infectious disease both as a bacteriostatic and bacteriocidal. In these cases ascorbic acid rate in urine and blood seemed to be at a low level.

## Requirement of Vitamin C

|                         |                |
|-------------------------|----------------|
| For infant up to 1 year | — 35 mg/day    |
| Children                | — 35—70 mg/day |
| Puberty                 | — 80—90 "      |
| Adult                   | — 75 "         |
| Pregnancy               | — 100 "        |
| Lactation               | — 125 "        |

## Effects of High doses of Vitamin C

When one takes large quantity of Vitamin C, the surplus is rapidly eliminated in the urine, as there is limited storage. Over dose is responsible for diarrhoea, cramps and minor indispositions particularly in sportsmen.