

### Painful and Swollen Joints

Joint swelling and pain could be a result of uric acid deposition in our joints as crystals should our body produce too much of it. The uric acid crystals will induce joint inflammation causing pain. Some people may have no visible symptoms, but a blood test may detect elevated levels of uric acid in the blood. In the case of having symptoms, in the early stages usually only one joint is affected, typically the big toe, knee or ankle. The affected joint will suddenly turn red, swollen, and acutely painful. In severe cases, joints may become deformed, and people suffered may be unable to return to work. Excessive uric acid may also deposit to other parts of the body such as the kidneys and skin. If the kidneys are affected, the results can be serious.<sup>[1]</sup>

### People at High Risk

Uric acid is the metabolite of purine which some food items are rich in. Owing to genetic predisposition, certain people are more prone to produce excess uric acid and hence joint attack if they eat excessive purine-rich food. Occurrence is also affected by age, sex, genetic disposition and dietary habits. People at high risk include:<sup>[2]</sup>

- ★ those aged over 40, especially male
- ★ those with family history of joint problem
- ★ over consumption of purine-rich food or beverages, such as offal, seafood and alcohol
- ★ those who have kidney disease or take diuretics

### Herbal Remedies to Relieve Pain

Proper care and dietary restrictions can lower the risk of recurrent attacks. Herbal remedies with gooseberry or tart cherry have been used by traditional physicians to help patients with joint pain, swelling and some other symptoms.<sup>[3]</sup>

### ~ Amalaki Indian Gooseberry ~

Indian Gooseberry is known as “Amla” in Hindi and “Amalaki” in Sanskrit, meaning “the nurse”. Amalaki fruits have traditionally been used in Ayurvedic (traditional Indian) medicine and are included in herbal preparations. The fruits are reputed to contain large amount of vitamin C, with juices containing nearly 20 and 160 times as much vitamin C as in orange and apple juice respectively.<sup>[4]</sup> Amalaki fruit is also a rich source of polyphenolic compounds, potassium, calcium and amino acids.<sup>[4-6]</sup>

The inflammatory process, which in joints is induced by uric acid accumulation and may ultimately lead to joint swollen or other joint problems, was reported to be associated with the generation of reactive oxygen species (ROS).<sup>[7]</sup> Various researches using Amalaki suggested that components in the fruit could inhibit pro-oxidizing factors.<sup>[8,9]</sup> Vitamin C is one of the powerful antioxidants in Amalaki. Remarkably, properties of vitamin C is preserved by other antioxidants in the fruit, thus ensuring its effectiveness on scavenging ROS and cell-protecting ability.<sup>[9]</sup>

Gallic acid contained in Amalaki is a polyphenolic compound which has been proven to promote joint health.<sup>[6,11]</sup> Together, constituents of Amalaki provide relief against joint pain and oxidation.

### ~ Tart Cherry~

Tart cherry, also called sour cherry, contains antioxidizing anthocyanins, which provide the distinctive red color of the fruit. In addition, it also contains other bioflavonoids such as chlorogenic acid, gallic acid, p-coumaric acid and quercetin.<sup>[12]</sup> Tart cherry anthocyanins possess a wide range of biochemical and pharmacological effects and have been recommended as healthy nutritional supplements.

The predominant mechanism of their biological actions is thought to result from anti-oxidant activity, enzyme inhibition, and the capacity to scavenge free radicals and reduce lipid peroxidation.<sup>[13]</sup> Elevated levels of uric acid are associated with the onset and progression of joint problems. Consumption of tart cherries in diet has been shown to target plasma uric acid level and relieve joint pain.<sup>[14]</sup>

### Benefits of Amalaki Indian Gooseberry and Tart Cherry:

- ★ promote joint health.<sup>[6,11]</sup>
- ★ provide strong antioxidants<sup>[4,9,12]</sup>
- ★ supply essential nutrients for the body<sup>[4-6]</sup>
- ★ blood uric acid level<sup>[14]</sup>
- ★ relieve symptoms of joint problem<sup>[14]</sup>
- ★ speed up muscle recovery after exercise<sup>[15]</sup>

### Recommended daily dose:

For adults, take 1-2 capsules daily with meals or as directed by physicians.

### References:

1. Central Health Education Unit, Department of Health. CHEU Health Zone: Health Information - Non-communicable Disease (Gout). Last update: 25 Feb 2010. Available at: [http://www.cheu.gov.hk/eng/info/otherdiseases\\_04.htm](http://www.cheu.gov.hk/eng/info/otherdiseases_04.htm).
2. Elderly Health Service, Department of Health. Health Problems of the Elderly: Gout. Last update: 1 Oct 2006. Available at: <http://www.info.gov.hk/elderly/english/healthinfo/healthproblems/gout-e.htm>.
3. Martindale: The Complete Drug Reference. [online] London: Pharmaceutical Press. Available at: <http://www.medicinescomplete.com>.
4. Vimala Y, Vijaya Rachel K, Pramodini Y, Umasankar A. Nuts & Seeds in Health and Disease Prevention. Chapter 77: Usage of Indian Gooseberry (*Embolica officinalis*) Seeds in Health and Disease. Boston: Elsevier, 2011.
5. Chalise JP, Acharya K, Gurung N, Bhusal RP, Gurung R et al. Antioxidant activity and polyphenol content in edible wild fruits from Nepal. *Int J Food Sci Nutr*. 2010;61(4):425-32.
6. Poltanov EA, Shikov AN, Dorman HJ, Pozharitskaya ON, Makarov VG et al. Chemical and antioxidant evaluation of Indian gooseberry (*Embolica officinalis* Gaertn., syn. *Phyllanthus emblica* L.) supplements. *Phytother Res*. 2009;23(9):1309-15.
7. Jung HJ, Nam JH, Choi J, Lee KT, Park HJ. Antiinflammatory effects of chiisanoside and chiisanogenin obtained from the leaves of *Acanthopanax chiisanensis* in the carrageenan- and Freund's complete adjuvant-induced rats. *J Ethnopharmacol*. 2005;97(2):359-67.
8. Zhao F, Motita I, Murota S, Yao XS. Anti-inflammatory activities of *Phyllanthus emblica* and *Betula alnoides* through transcription factor NF- $\kappa$ B pathway. *J Tradit Med*. 1999;16:155-62.
9. Scartezzini P, Antognoni F, Raggi MA, Poli F, Sabbioni C. Vitamin C content and antioxidant activity of the fruit and of the Ayurvedic preparation of *Embolica officinalis* Gaertn. *J Ethnopharmacol*. 2006;104(1-2):113-8.
10. Anila L, Vijayalakshmi NR. Antioxidant action of flavonoids from *Mangifera indica* and *Embolica officinalis* in hypercholesterolemic rats. *Food Chem*. 2003;83:569-74.
11. Kroes BH, van den Berg AJ, Quarles van Ufford HC, van Dijk H, Labadie RP. Anti-inflammatory activity of gallic acid. *Planta Med*. 1992;58(6):499-504.
12. Wang H, Nair MG, Strasburg GM, Booren AM, Gray JI. Antioxidant polyphenols from tart cherries (*Prunus cerasus*). *J Agric Food Chem*. 1999;47(3):840-4.
13. Mulabagal V, Lang GA, DeWitt DL, Dalavoy SS, Nair MG. Anthocyanin content, lipid peroxidation and cyclooxygenase enzyme inhibitory activities of sweet and sour cherries. *J Agric Food Chem*. 2009;57(4):1239-46.
14. Jacob RA, Spinuzzi GM, Simon VA, Kelley DS, Prior RL et al. Consumption of cherries lowers plasma urate in healthy women. *J Nutr*. 2003;133(6):1826-9.
15. Howatson G, McHugh MP, Hill JA, Brouner J, Jewell AP et al. Influence of tart cherry juice on indices of recovery following marathon running. *Scand J Med Sci Sports*. 2010;20(6):843-52.

