

## Supplement Sampler

### Nattokinase

#### Best Indications

DVT prevention



#### Mechanism of Action

Nattokinase is a fibrinolytic enzyme derived from a Japanese food called natto. It is isolated from boiled soybeans fermented with the bacteria, *Bacillus Subtilis*. Nattokinase works by inactivating plasminogen activator inhibitor 1.

#### Best Evidence

##### ***Deep Venous Thrombosis:***

204 subjects were randomized into 2 groups (treatment and placebo) to evaluate the effectiveness of *Flite tabs* (a mix of 150 mg nattokinase and pycnogenol, aka grape seed extract) for DVT prevention. All subjects went on long (7-8 hour) flights. The femoral, popliteal, tibial, and superficial veins were scanned with ultrasound before and within 90 minutes after flights. In the treatment group, no DVTs were found. In the control group, 5 subjects (5.4%) had a DVT and there were 2 superficial thromboses (7 events in 92 subjects; 7.6%). At inclusion, edema was comparable in the 2 groups. After flights there was an increase in edema score in controls (+12%) in comparison with a decrease (-15%) in the *Flite Tabs* group. (The difference in variation was statistically significant.) In conclusion, *Flite Tabs* were effective in reducing thrombotic events and in controlling edema in high-risk subjects in long flights.

*Angiology. 2003 Sep-Oct;54(5):531-9.*

##### ***Decreasing Fibrinogen and Factors VII and VIII:***

An open-label, self-controlled clinical trial was conducted on subjects of the following groups: healthy volunteers (Healthy Group), patients with cardiovascular risk factors (Cardiovascular Group), and patients undergoing dialysis (Dialysis Group). All subjects ingested 2 capsules of nattokinase (2000 fibrinolysis units per capsule) daily for 2 months. By use of mixed model analysis, a significant time effect, but not group effect, was observed in the change from baseline of fibrinogen ( $P = .003$ ), factor VII ( $P < .001$ ), and factor VIII ( $P < .001$ ), suggesting that the plasma levels of the 3 coagulation factors continuously declined during intake; also, the degrees of decrease were similar between groups. After 2 months of administration, fibrinogen, factor VII, and factor VIII decreased 9%, 14%, and 17%, respectively, for the Healthy Group; 7%, 13%, and 19%, respectively, for the Cardiovascular Group; and 10%, 7%, and 19%, respectively. No significant notable adverse events were observed in any of the subjects. In summary, this study showed that oral administration of nattokinase affects clotting by decreasing plasma levels of fibrinogen, factor VII, and factor VIII.

*Nutrition Research Volume 29, Issue 3, Pages 190-196 (March 2009)*



---

## Nattokinase

### **Dose**

For Deep Venous Thrombosis prophylaxis, *Flite tabs* containing 150 mg of nattokinase plus pycnogenol may be used. Two tabs are taken two hours before the flight and two tabs are taken 6 hours after the flight.

### **Side Effects and Interactions**

May increase the risk of bruising or bleeding. Caution is advised with herbs or medications that have blood thinning effects.

### **Cost**

The cost of Nattokinase can vary between \$8 and 25. For instance [www.vitacost.com](http://www.vitacost.com) has 90 capsules of 2000 FU Nattokinase (the recommended dose) for \$14.50. *Flite tabs*, the product tested in the trial cited above, can be purchased for \$25 at [www.arc-nutrition.com](http://www.arc-nutrition.com) for 8 tablets.

### **Comments**

Natto has been consumed by Japanese for centuries; some sources date its consumption back to somewhere between 10,000-3000 B.C. Natto contains high amounts of Vitamin K2, which is hard to find in our Western diet because it is often formed in the process of fermentation.

### **Clinical Bottom Line**

Nattokinase needs more research but preliminary studies show that *Flite tabs* (nattokinase + pycnogenol), may be a useful adjunct to DVT prophylaxis. Walking and moving your legs during a flight may work as well but no study comparing nattokinase to this has been done. Natto has many health benefits as a part of a healthy diet but may be difficult to incorporate into the western diet due to its unpalatable fermented taste.

*This supplement sampler is brought to you by Jake Wardwell, OMS IV, and your colleagues in the UW Department of Family Medicine, Integrative Medicine Program.*

*Date created: December 2010*