Inositol Hexanicotinate (IHN) is a special form of slow released Niacin. The IHN structure (see figure to the left) can be described as six molecules of Niacin bound to a central molecule of Inositol.

IHN is absorbed intact in the intestinal tract, and hydrolyzed in the body with a slow release of free Niacin and Inositol. The release of IHN components occurs slowly, and reaches peak serum levels approximately 10 hrs. after ingestion.

IHN should be taken two or three times per day to maintain therapeutic plasma levels of Niacin. Every 1000 mg of Niacin in IHN, is bound to approximately 170 mg of Inositol.

Niacin, also known as Vitamin B3, is an essential cofactor in many metabolic pathways in the body, due to its role in the coenzymes NAD (nicotine-adenine dinucleotide) and NADP (nicotine-adenine dinucleotide phosphate) and in the oxidation-reduction reactions in the mitochondria.

Inositol, an intracellular second messenger, was shown to reduce insulin resistance and alleviate PCOS (Polycystic Ovarian Syndrome) when supplemented at a level as low as 100 mg twice daily.

Plain Niacin has been used extensively for reducing cholesterol and triglycerides but side effects were frequently reported, such as: flushing, pruritis, and GI complaints, hepatotoxicity, increased uric acid or homocysteine, and impaired glucose tolerance. On the other hand, no adverse effects have been reported from the use of IHN in dosages as high as four grams daily, while achieving benefits similar to that of plain niacin.

**INOSITOL HEXANICOTINATE (IHN) BENEFITS BLOOD LIPID CONDITIONS**

- **a. High cholesterol, high triglycerides, low HDL:** Lipid-normalizing effects of IHN were observed at doses of 400 mg 3-4 times daily and IHN was more effective than niacin in its hypocholesterolemic, antihypertensive and lipotropic effects in one study.

- **b. High Lp(a):** 1 g twice daily of plain niacin reduced Lp(a) by 36%.
The mechanisms of action of IHN on blood lipids mentioned above (a,b) are believed to be the same as those for niacin. These include:

- Decrease in free fatty acid mobilization, thus resulting in reduced triglyceride synthesis
- Inhibition of cholesterol and VLDL synthesis in the liver, resulting in a decrease in LDL cholesterol, total cholesterol and triglycerides levels
- An increase in HDL levels by decreasing its catabolism
- Lowering of Lp(a) by decreasing its synthesis

**INOSITOL HEXANICOTINATE (IHN) BENEFITS CIRCULATORY CONDITIONS**

c. High blood pressure: A single dose of 200 mg of IHN reduced blood pressure 10-45 mmHg (an average of 30 mmHg) for an average of 12 hours.2
d. Intermittent Claudication: The use of IHN in the treatment of intermittent claudication that occurs as a result of atherosclerosis has been found effective at dosages of 2 grams twice daily sustained for at least 3 months.10-13
e. Peripheral Vascular Diseases: IHN is beneficial in the treatment of conditions resulting from peripheral vascular insufficiency, including threatened amputation from gangrene, restless legs syndrome, stasis dermatitis, atherosclerosis-related migraines.2
f. Raynaud’s Disease (very cold extremities due to poor circulation): Benefits are seen with one gram of IHN four times per day for several months.2, 4, 5, 7, 9

The mechanism of actions of IHN in the improvement of the circulatory conditions listed above (c through f) appear to be mediated by the following effects:

- transient vasodilation
- lipid-lowering
- reduced blood viscosity due to improved fibrinolysis
- improved oxygen transport

**Warning:** Use of IHN in patients with known liver disease should probably be avoided, even though no adverse reactions have been reported. In addition, if high doses (2 grams or greater daily) are being administered, liver enzymes should be monitored every 2-3 months for at least the first six months. Also, due to its fibrinolytic effect it should be used with caution in conjunction with other blood thinners. Taking Niacin alone can raise homocysteine. Niacin formulas should contain adequate B6, B12 and folic acid to prevent this, as seen in Designs for Health Niacin Supreme, which also adds chromium to control insulin.16

**References**