

COLLEGE OF MICRONESIA-FSM YAP CAMPUS AGRICULTURAL EXPERIMENT STATION

ROLE OF NONI IN CARDIOVASCULAR DISEASES—PART 2

Cholesterol: the Bad and the Good... contd.

Low Density Lipoprotein cholesterol is not really bad in its native form. In fact, it is essential for building good cell membrane, others cell parts, and many different hormones that our body needs. Problems begin when native LDL cholesterol are oxidized by the free radicals in our body and make them the harmful cholesterol. High environmental pollution, our stressful life style, and nutrient-depleted diet are the main causes of over production of free radicals in our body. Those free radicals oxidize LDL cholesterol and make it harmful to our body. Endothelium, the inner layer

of the artery, is an extremely sensitive lining that is vulnerable to even slightest irritation. Oxidized cholesterol and excessive free radicals cause the oxidative stress (see below) that injures the endothelium where the atherosclerotic plaque develops.

Role of Noni

In order to neutralize the activity of free radicals to convert the native LDL cholesterol to harmful LDL cholesterol, some powerful antioxidants are required. Within the body, antioxidants function as "scavengers" and "quencher" of free radicals. Although there are several enzyme systems (superoxide dismutase, catalase, peroxidase) within the body that

body and is suggested to be the cause of aging and various diseases in humans. Hence, the balance between antioxidation and oxidation is believed to be critical concept for maintaining a healthy biological system.

The level of oxidative stress is determined by the balance between the rate at which oxidative damage is induced (input) and the rate at which it is efficiently repaired and removed (output) (Figure 1). The rate at which damage is caused is determined by how fast the reactive oxygen species are generated and then inactivated by endogenous antioxidants (enzymes) or the dietary antioxidants. The determinants of oxidative stress are regulated by our unique hereditary factors, our environment and characteristic lifestyle. Unfortunately, our present day stressful life-style conditions bring an abnormally high level of oxidative stress that could increase the probability of early incidence of decline in optimum body functions.

Dietary antioxidants can stimulate cellular defenses and help to prevent cellular components against oxidative damage.

Noni fruits and leaves contain many antioxidants that fight free radicals in three ways:

- They prevent formation of free radicals within the body
- They interrupt oxidizing chain reaction to lessen the effects of free radicals
- They reduce the free radicals impact within the body

Antioxidants in noni work synergistically to neutralize the effect of free radicals, protect the cells from accelerated aging, and allow the body to restore normal metabolic functions. **Start enjoying noni today for a healthier tomorrow!**

OXIDATIVE STRESS

Biological combustion involved in the respiration process in our body produces harmful intermediates called Reactive Oxygen Species (ROS). Exogenous sources of ROS include exposure to cigarette smoke, environmental pollutants,

consumption of alcohol in excess, exposure to ionizing radiation, and microbial infections. Excess ROS in the body can lead to cumulative damage in proteins, lipids and DNA, resulting in so-called oxidative stress. Oxidative stress is the imbalance of pro-oxidant (damaging) and antioxidant (protective) chemicals in the

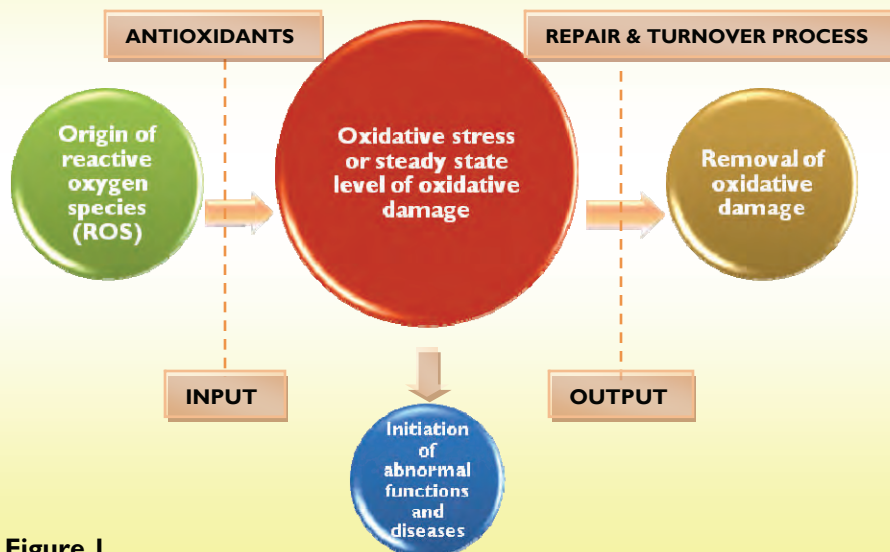


Figure 1

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scavenge free radicals, they are not enough to neutralize all the free radicals. Principal micronutrient antioxidants are vitamins A, C and E, beta-carotene, glutathione, bioflavonoid, selenium, zinc, ubiquinone and various phytochemicals. The body cannot manufacture these micronutrients, so they must be supplied in the diet. Certain fruits, vegetables and nuts contain a wide array of antioxidants.

Noni juice and fruit powder possess high antioxidant properties that help to neutralize the free radicals from oxidation of native LDL cholesterol and thus protects the arterial endothelial lining from injury and developing plaque. Noni is rich in vitamin A, Beta carotene, vitamin E, C, glutathione, bioflavonoid, selenium, zinc, and many more essential phytochemicals.

Melatonin, a hormone produced by the pineal gland, is also a potent antioxidant. Noni helps to stimulate more melatonin release from the pineal gland. Studies reveal that it has more antioxidant properties than grape seed extract and *Pycnogenol*, a common antioxidant health supplement available in the market.

The *raison d'être* of noni's success as a powerful antioxidant is twofold:

Noni is a treasure chest of chemical compounds - Noni has a rich complement of vitamins and minerals including vitamin A, C, E, B1, B2, B6, B12, Niacin(B3), Biotin (B7), Pantothenic Acid (B5) Folic Acid (B9), Calcium, Iron, Phosphorus, Magnesium, Zinc, Copper, Chromium, Manganese, Molybdenum, Sodium and Potassium. It also has 17 Amino Acids (including the 9 required for optimum health out of main 20).

Synergy of chemical compounds – So far, more than 200 chemical compounds have been isolated from noni plant. These known substances (and even some of the unknown) come together in a way that supports the needs of many of our internal systems, concurrently. As the word synergy implies, these substances work far better in combination than they do separately. Many of the ingredients in noni are found in varying amounts in other foods or herbs. However, there seems to be no known food or herb with either the rich list of substances or the high amounts of key substances all put together in one super food like noni. Noni helps in body's natural healing abilities and prevent plaque formation, the same way as lipid-lowering drugs. It keeps your heart healthy!

... to be continued

Noni is a fruit of strange beauty and strong spirit

- Noni Guru



NONI FRUIT POWDER: A POWERFUL DIETARY SUPPLEMENT

Noni fruit powder contains about 71% carbohydrates of which about 36% is dietary fiber, and provides 55% and 100% of the Dietary Reference Intakes respectively in a 100g serving. It is also a good source of protein (12% DRI), but low in total fats (4% DRI). These macronutrients exist in fruit pulp, as noni juice has sparse amounts of macronutrients.

Noni fruit powder is a good source of vitamin C (about 10 times of DRI).

It also contains substantial amount of vitamin B3, potassium and iron. Other micronutrients include vitamin A, calcium, sodium, selenium and zinc.

It is the high phytochemical content of Noni powder that makes it such an important herbal supplement.

Note: The Dietary Reference Intake (DRI) is a system of nutrition recommendations from the Institute of Medicine (IOM) of the United States National Academy of Sciences. The DRI system is used by both the United States and Canada and is intended for the general public and health professionals. The DRI was introduced in 1997 in order to broaden the existing guidelines known as Recommended Dietary Allowances (RDAs). However, the older Reference Daily Intake values are still used for nutrition labeling.

Disclaimer: The information provided in this information sheet is meant for educational purpose only. For any medical conditions, always consult a qualified medical practitioner.

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