



## Nitric Oxide & Erectile Dysfunction

Erectile dysfunction (ED) is a common and complex disorder that significantly impacts quality of life and is recognized as an important public health problem. Defined as an inability to achieve and maintain an erection sufficient for satisfactory sexual intercourse, ED is associated with aging and an increasing number of common systemic diseases including hypertension, cardiovascular disease (CVD), diabetes mellitus, hypercholesterolemia, and depression, as well as behaviours such as smoking, alcoholism, and drug abuse. Evidence suggests that ED may serve as a general marker for occult CVD and as an indicator of general physical and emotional health.

Prevalence of moderate ED in the United States appears to be about 20% in the total adult male population, 30%–50% in those aged 40–70 years, and >60% in men older than 70.

### Impaired Nitric Oxide bioactivity is the major pathogenic mechanism of ED

- NO facilitates the relaxation of the corpus cavernosa and increases blood flow to produce erections
- Evidence suggests that ED may serve as a general marker for cardiovascular disease (CVD) characterized by the impaired bioactivity of the NO signaling pathway.

### Nitric Oxide

- Regulates all cardiovascular function/homeostasis
- Critical to sexual function-vasodilation/innervates erectile tissue
- NO is the 'miracle molecule' responsible for circulation, where it widens blood vessels and micro-circulation allowing oxygen and nutrient delivery to all cells.

### What disrupts Nitric Oxide production?

- Physical inactivity
- Inflammatory diets (SAD - Standard American Diet) and decreased consumption of nitrate rich vegetables
- Lack of stomach acid
- Environmental factors such as pollution, heavy metals i.e. mercury, aluminium etc.
- Medications such as PPIs, NSAIDs and antibiotics
- Individual genomics such as decreased activity/expression of nitric oxide synthase (NOS) or its co-factors
- MTHFR SNPs affects BH4 metabolism and consequently NO production
- With aging, our production of NO decreases (10-12% decline per decade). By the age of 40, our NO production through the NOS pathway will have decreased by approximately 50%.

## What are vascular effects of Nitric Oxide?

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- Direct vasodilation
- Indirect vasodilation by inhibiting vasoconstriction (inhibits angiotensin II and sympathetic vasoconstriction).

## Nitrates

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- Nitrates can restore Nitric Oxide homeostasis as an independent source of Nitric Oxide
- Dietary nitrates use alternate pathways, other than the Nitric Oxide enzymes, to generate Nitric Oxide
- Dietary nitrates are most likely the mechanism of action of the Dietary Approaches to Stop Hypertension (DASH) and Mediterranean diets for health and longevity
- Nitrates are rapidly absorbed in the small intestine and readily distributed throughout the body with a circulating half-life of 5-8 hours.

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**Current ED medications, such as Viagra and Cialis, work through a NO pathway, so without adequate NO, these medications do not work. This is precisely the reason that these phosphodiesterase inhibitor medications only work in about 50% of people who take them.**

## Berkeley Life Nitric Oxide Support Program is based on a simple premise:

Provide a plant-based equivalency of nitrate that would be found in clinically-supported beet juice and leafy greens, allowing the body to convert nitrate – at the appropriate time and at the appropriate place within the body – to NO.

### Berkeley Test Strip is a patented salivary nitric oxide test strip.

The strips answer the question for individuals:

1. is the diet or supplementation effective at enhancing my NO status?
2. is my body converting nitrate to NO as well as ensuring sustained levels throughout the day?

For more information e-mail: [info@berkeleylifeprofessional.com](mailto:info@berkeleylifeprofessional.com)

## References

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