

# Nutrition and Supplements in Heart Disease and High Blood Pressure

*A Research Review by  
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Heart disease continues to be the leading cause of death in our society. Both genetic and lifestyle factors are known to influence the risk of heart disease and high blood pressure; which is a primary risk factor for heart attack and stroke (1,2,3). In addition to known risk factors for heart disease such as high blood cholesterol levels, cigarette smoking, high blood pressure, sedentary lifestyle, obesity, family history etc., research studies have recently revealed that a decline in the synthesis of a vitamin-like substance known as Coenzyme Q10 as we age, also appears to significantly increase the risk of heart failure and heart disease. Research indicates that our bodies can make ample quantities of Coenzyme Q10 up to 45-50 years of age, after which Coenzyme Q10 production begins to drop off. Coenzyme Q10 is required by the heart muscle (myocardium) to generate the energy necessary for the heart pump to work efficiently (4,5,6). With the decline in Coenzyme Q10 levels that accompanies the normal aging process the heart muscle is more prone to become weaker, which can lead to heart failure and a worsening of other existing heart and cardiovascular conditions, including angina (7,8,9).

## **Coenzyme Q10 Studies**

Remarkably, a large number of studies conducted on patients with congestive heart failure and other cardiovascular conditions (e.g., angina) have demonstrated that Coenzyme Q10 supplementation can strengthen the heart muscle and reverse or help stabilize many important cardiovascular problems (4,7,8,9,10,11). Due to the dramatic effects seen in these cases many experts now suggest that all individuals should begin taking Coenzyme Q10 as a daily supplement by age 45-50, as a preventive measure. Rather than waiting for the age-related decline in Coenzyme Q10 to weaken the heart, holistic practitioners recommend taking 30 mg of Coenzyme Q10 per day by age 50, and 60 mg per day by age 60, as an anti-aging intervention to help maintain more youthful heart function and reduce risk of heart failure and related heart diseases as we age.

Coenzyme Q10 is also a potent antioxidant, which has also been shown to be important in preserving cardiovascular health and slowing of the aging process. Unfortunately there are no good food sources of Coenzyme Q10 that are sufficient enough to compensate for the decline in synthesis we experience as we age (7,12). Thus, Coenzyme Q10 supplementation remains the only viable approach to ensuring optimal Coenzyme Q10 status after the age of 45. Due to its vital role in heart energy production this consideration should be taken seriously by anyone 45 years and older, who is interested in preserving their cardiovascular health.

## **Hawthorn For The Heart**

Like Coenzyme Q10, the standardized extract of the hawthorn plant also increases heart energy production and has been used successfully in many studies to treat heart failure, high blood pressure and angina in well-designed clinical trials. The hawthorn plant contains a special arrangement of flavonoids (anthocyanidins), which help to increase cyclic AMP within heart muscle. In order for the heart muscle to generate the necessary energy to sustain its pumping action, cyclic AMP must first be synthesized and then converted to ADP. Then, with the help of Coenzyme Q10, ADP is converted to ATP, which provides the source of fuel required for the heart muscle to keep beating. Any decline in cyclic AMP or ATP ultimately results in a weaker heart and predisposes to other heart problems, which may include angina and high blood pressure. Thus, Coenzyme Q10 and Hawthorn work synergistically to optimize the heart's energy system, helping to prevent the age-related decline in heart function as we age, and act as companion nutrients in the nutritional management of a number of heart and high blood pressure problems. In regards to hawthorn it is vital to use a standardized grade of this plant that yields 5% flavonoid content (approximately 1.5% vitexin flavonoid), in order to derive sufficient amounts of its bioactive agents (13,14,15,16,17,18,19,20, 21,22). As a general rule, every 30 mg of Coenzyme Q10 should be accompanied by an intake of 35-40 mg of hawthorn (std to

5% flavonoid content) as an anti-aging intervention and when used in the nutritional management of various cardiovascular conditions. It is important to note that hawthorn should not be used in conjunction with the drugs digoxin or digitalis (23).

### **High Blood Pressure**

A number of studies demonstrate that Coenzyme Q10 and Hawthorn supplementation can also be effective in reducing high blood pressure, presumably by helping to correct an underlying defect in the heart's energetic system and relaxing blood vessel resistance to permit easier blood flow. Doses of 60 mg of Coenzyme Q10 taken twice per day (and closely related doses) have been used successfully to lower high blood pressure. For hawthorn, doses as low as 75 mg taken twice per day have also been effective in reducing high blood pressure (10, 11,24,25,27,15,28). Once again, their synergistic effects on enhancing the heart's energy production make them a great combination to use in the nutritional management of high blood pressure cases (23).

Other dietary supplements that have shown promise in controlling high blood pressure include:

- Calcium: 1000-1500 mg per day (29)
- Magnesium: 400-600 mg per day (30)
- Garlic Extract: equivalent to one-half to one clove per day (yielding 4000 mcg of allicin) (31).

### **Vitamins and Heart Disease Prevention**

In addition to using Coenzyme Q10 and Hawthorn extract supplementation after the age of 45 to preserve cardiovascular health, studies indicate that lifelong supplementation of Vitamin E, Vitamin C and the B-Vitamins are strongly associated with a significant reduction in heart disease risk throughout adult life. Vitamin E and Vitamin C are powerful antioxidants that protect the cholesterol in our bloodstream from free radical damage. Once damaged by free radicals cholesterol tends to more aggressively stick to the walls of our arteries, causing accelerated narrowing and placing us at greater risk for heart attack and stroke. Studies demonstrate that Vitamin E (200-400 IU) and Vitamin C (500-1000 mg) supplements inhibit this process and may help protect us against heart attacks and related problems by as much as 40% (32-41).

Studies also reveal that individuals taking B- Vitamin supplements may reduce their risk of heart disease by over 30%. Certain B- Vitamins such as folic acid, B6 and B12 are known to reduce blood levels of a dangerous substance known as homocysteine. If homocysteine is permitted to build up in the bloodstream unchecked, it results in accelerated blood vessel narrowing, leading to heart attack and stroke (42-50). Thus, B-Vitamins play an important role in preserving our cardiovascular health by keeping homocysteine levels within a safe range.

### **Maximizing Your Defense Against Heart Disease**

To help defend yourself against heart attack, stroke and high blood pressure, it is advisable to eat less saturated fat and more soluble dietary fiber, keep your cholesterol in the safe range, attain your ideal weight, don't smoke and stay fit. In addition to this lifestyle advice you should consider taking a high potency multiple vitamin and mineral supplement each day, that is enriched with antioxidants (e.g., Vitamin E 400 IU, Vitamin C 1000 mg ) and a B-50 complex throughout all of adult life.

After age 45-50 you should strongly consider taking a supplement that combines the appropriate doses of Coenzyme Q10 and Hawthorn extract (e.g. Adeeva Cardio Essentials or similar product) to help offset the age-related decline in heart muscle strength and function that is associated with heart failure and other serious cardiovascular diseases. In this case an ounce of prevention is very likely to be more important than a pound of cure.

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