Nutrient of the Month: Cardioactive Hawthorn Phytonutrients

Though food plants contain hundreds of bioactive phytonutrients, botanical research can usually tease out which are most strongly linked to a plant's health benefits. Prepared as jam, tea, or wine, the fruits, flowers, and leaves of the Rose family member hawthorn (Crataegus oxyacantha, C. laevigata, and others) have long been used to protect and strengthen the heart. Some of hawthorn’s constituents include:

- a variety of anthocyanins, leucoanthocyanidins, and procyanidins, some of which are unique to Crataegus species
- numerous bioactive flavonoids and glycoside derivatives, some unique to Crataegus: catechins, epicatechins, flavanoids, quercetin, rutin, apigenin, luteolin, vitexins, aesculin, and hyperosides
- essential nutrients including chromium, magnesium, manganese, selenium, ascorbic acid, and beta-carotene
- antioxidant organic acids such ursolic, oleanolic, caffeic, crataegolic, and chlorogenic acids
- volatile, vasoactive amines: choline, phenylethylamine, isobutylamine, isoamylamine, trimethylamine, and tyramine

While it is known that this complex array of phytonutrients contributes to cardiac muscular and vascular function, no single hawthorn component has been identified as the primary active principle; it almost seems that this plant was 'formulated’ specifically for all-around nourishment of the hardworking heart.

Cochrane research analyses are well-known for their rigor, and one conducted in 2008
found hawthorn extract beneficial for increasing cardiac efficiency, exercise tolerance, and maximal workload in chronic heart failure patients. Consistent with traditional experience and as would be expected for a food, the Cochrane reviewers found no significant side effects for hawthorn. Hawthorn’s phytonutrients cooperate in supporting cardiovascular function, as shown in preclinical and clinical study:

- Its proanthocyanidins may help maintain more optimal heart rhythm and counter overwork-induced cardiac enlargement, while the flavonoids aid healthy endothelial function by improving vascular release of nitric oxide
- Clinical research using a flower/leaf extract of hawthorn suggests that it may be a valuable adjunct for patients with reduced left ventricular function
- Its proanthocyanidins inhibited angiotensin-converting enzyme, which would be expected to help lessen vascular constriction
- Its flavonoids (including glycoside forms) inhibited AMP phosphodiesterases in the heart; as oxidative stress activates AMPK, this may reflect better redox balance from more efficient cardiac function
- Its proanthocyanidins also help maintain endothelial integrity, to protect heart tissue during exertion
- Reviews note that hawthorn phytonutrients may also lower the heart rate, reduce feelings of anxiety, and better cardiometabolic control through effects on blood glucose and lipids
- Rutin is one of hawthorn’s flavonoids, and another Cochrane analysis found it and its derivatives effective for aiding venous blood flow, a crucial part of heart function since most blood is in the veins
- Hawthorn extracts interfered with maladaptive processes in blood and blood vessels that can lead to vascular blockage

Hawthorn represents a true heart adaptogen, with various of its constituents improving the experience of anxiety, the way the heart responds to perceived stress, reducing oxidative stress throughout the cardiovascular system, improving utilization of food as well as cellular energy, strengthening yet relaxing blood vessels, and increasing cardiac output while maintaining or even lowering the heart’s oxygen demands.

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TLC 2019: The Room Block is Full, But You Still Have Options

What a week we’ve had at PLMI! Registrations for the 2019 Thought Leaders Consortium flooded in and the conference is nearly (but not quite) at capacity. Our event venue, the Hyatt Regency Lake Washington, is now sold out for October 10th and 11th. The good news is there are nearby hotels that currently have rooms available if you are hoping to join us in Seattle. Contact us today if you need this information. Register today before all seats are gone.

The countdown has begun! The conference starts in exactly three weeks. We are so excited by our high registration numbers and the fact that attendees are traveling from 16 countries to take part in this meeting. Thank you! We look forward to welcoming all of this year’s participants.

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5 Things We Want You to Know>>

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Are Your Personal Metabolic Schedulers Getting Mixed Messages?

A very different profile of metabolic activity is better for sleep, for waking, for digestion of the day’s main meal, and for intense physical action. Yet composing the proper response takes time, the right conditions, and incredibly detailed and efficient coordination of bodily priorities that can at times pose dilemmas to optimal comfort and function. As one example, which is better when you get a phone call in the middle of the night: to be maximally alert, or to keep those body-healing brainwaves of non-REM sleep going? It depends on the context of the phone call, doesn’t it? The body must maintain enormous flexibility and capacity in order to meet the moment-to-moment demands of life while also keeping up with long-term changes and challenges.

Daily exposure to light and dark and our usual feeding times are, naturally, among the most important signals that train our body clock, since efficient management of energy input and activity is a central need. Because greater levels of hormones related to 1) sleep, 2) eating and energy storage, and 3) being highly mentally, emotionally, or physically responsive are needed at opposing times, human function is best adapted to eating while it’s light and rejuvenating and fasting while it’s dark, and doing otherwise has been clearly linked to biological aging-related conditions such as cancer and cardiometabolic disease in shift workers. The result of recent preclinical research is telling us more about how this happens, and how it could affect not just shift workers but also, potentially, others who periodically eat at irregular times. The timing of insulin-related messages has considerable influence on how the body ‘sets’ its circadian clock, and this study demonstrates how invoking these responses to food at unaccustomed times ‘resets’ body clocks related to particular functions while not doing so for others, resulting in overall dissonance. If this new feeding pattern is maintained, these separate clocks are able to converge, but continual irregularity (as well as continual dissonance between light/dark and feeding times) appears to impair the coordination of these essential metabolic timepieces and affect their capacity to formulate ideal functional responses.