

## Micro-emulsified CoQ10 in 100 mg and 200 mg softgels

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Q-Evail™ offers highly bioavailable ubiquinone coenzyme Q10 (CoQ10) in easy-to-swallow softgels. It is manufactured via a new, proprietary emulsification process that uses all-natural ingredients, including vitamin E, medium chain triglycerides (MCT) and lecithin, and is free of polysorbates, castor oil, and polyoxyethylated chemicals. Superior bioavailability has been demonstrated in an in-house human clinical trial, showing this material to be up to 390% more bioavailable than our previous, superior absorption, Q-Avail formulation.

### Coenzyme Q10

Coenzyme Q10 is a fat-soluble, high molecular weight compound produced by the body for the basic functioning of cells. It is synthesized endogenously on a branch of the mevalonate pathway, which also produces cholesterol. CoQ10 plays a central role in cellular energy metabolism that produces adenosine triphosphate (ATP), the energy currency for muscle contraction and other cellular processes. Organs with high energy demands, such as the heart and liver, have the highest concentrations of CoQ10.

CoQ10 is recognized for its significant role in the electron transport chain as well as being one of the body's most vital antioxidants. It is found in the mitochondria, the energy-producing center or "powerhouse" of the cell. In addition to being produced in the body, CoQ10 can also be obtained in small amounts through certain dietary sources, such as fish (salmon and tuna) and organ meats (heart, liver and kidney). These amounts (internal and dietary), however, may often be inadequate to meet the body's demands. Additionally, age and various illnesses, as well as the use of various medical classes, increase the need for this valuable nutrient. Thus, as is the case with many vitamins and minerals, supplemental amounts of CoQ10 may be beneficial for ameliorating specific health conditions<sup>1</sup> and helping to prevent or limit oxidative damage.

### CoQ10 Demystified

CoQ10 exists in both *ubiquinone* and *ubiquinol* forms, its names derived from the word "ubiquitous" because it is present everywhere in the human body. The number ten in "CoQ10" refers to its biochemical structure, which consists of ten isoprene units attached to a benzoquinone "head."

In the mitochondrial electron transport system, CoQ10 undergoes continuous reversible oxidation and reduction. It is converted to ubiquinol (reduced form) when it accepts electrons and to ubiquinone (oxidized form) when it donates electrons.<sup>2</sup> As an antioxidant, CoQ10 regulates membrane fluidity, recycles radical forms of vitamin C and E, and protects membrane phospholipids against peroxidation<sup>3</sup> (the process whereby free radicals "steal" electrons from the lipids in cell membranes, which can result in cell damage).

### Why is CoQ10 Important?

Low levels of ubiquinone have been documented in people experiencing various conditions including:

- Chronic fatigue syndrome<sup>4</sup>
- Congestive heart failure<sup>5</sup>
- Angina pectoris<sup>5</sup>
- Coronary artery disease<sup>5</sup>
- Cardiomyopathy<sup>6</sup>
- Chronic obstructive pulmonary disease<sup>7</sup>
- Parkinson's disease<sup>8</sup>
- Cancer<sup>9</sup>
- Periodontal disease<sup>10</sup>
- Asthma<sup>11</sup>
- Age-related macular degeneration<sup>12</sup>
- Hyperthyroidism<sup>13</sup>
- HIV/AIDS<sup>14</sup>
- Cerebellar ataxia<sup>15</sup>

### Who May Benefit

Supplementation with CoQ10 has been shown to provide a wide range of health benefits and may help support the following:

- Cardiovascular health
- Hypertension
- Aging
- Fatigue
- Dental health
- Eye health
- Renal health
- Migraines
- Neural and brain health
- Chemotherapy
- Genetic CoQ10 deficiencies
- Male infertility

## Medications and CoQ10 Depletion

CoQ10 is synthesized in the same pathway as cholesterol, and therefore also involves the HMG CoA reductase enzyme. CoQ10 production is negatively affected by the use of cholesterol-lowering statin drugs because they interfere with this enzyme by design. Research suggests that some statin drugs decrease serum CoQ10 levels by as much as 40%.<sup>16</sup> In addition, other drugs (gemfibrozil, adriamycin, beta blockers) have been found to decrease serum CoQ10.<sup>17</sup>

## CoQ10 Supplementation

- ▶ Most healthy individuals are able to convert ubiquinone to ubiquinol.<sup>3</sup> It has been shown that 80-95% of circulating CoQ10 following oral ingestion of a ubiquinone supplement is in the form of ubiquinol.<sup>18,19</sup> However, there is evidence that suggests that the ability to convert ubiquinone to ubiquinol may diminish with age.<sup>20</sup> Thus, consider recommending Q-Evail™ along with CoQnol™, highly absorbable ubiquinol, for comprehensive intake of CoQ10, especially in the elderly.
- ▶ Q-Evail™ can be taken along with Mitochondrial NRG™ for additional mitochondrial support and improvement in overall cellular and tissue vitality and health.

### Q-Evail™ 100

Supplement Facts		
Serving Size 1 softgel		
Amount Per Serving	% Daily Value	
Natural Coenzyme Q10 (Ubiquinone)	100 mg	*
*Daily Value not established.		

Other Ingredients: Medium chain triglycerides, sunflower lecithin, vitamin E, high gamma mixed tocopherols; gelatin, glycerine, purified water, annatto (color) (softgel ingredients).

### Q-Evail™ 200

Supplement Facts		
Serving Size 1 softgel		
Amount Per Serving	% Daily Value	
Natural Coenzyme Q10 (Ubiquinone)	200 mg	*
*Daily Value not established.		

Other Ingredients: Medium chain triglycerides, sunflower lecithin, vitamin E, high gamma mixed tocopherols; gelatin, glycerine, purified water, annatto (color) (softgel ingredients).



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