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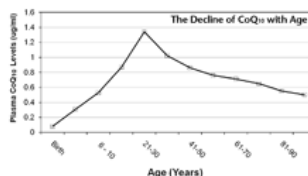
What's the Difference Between Ubiquinone and Ubiquinol?

Q I've been taking CoQ₁₀ as ubiquinone for a long time, and I'm now tempted to switch over to ubiquinol due to reports that it is more bioavailable. What's the current state of knowledge?

SALLY, Kansas City, MO

A CoQ₁₀, (as ubiquinone) has been studied for more than 3 decades, but a few years ago a patented form (known as ubiquinol) appeared, with is purportedly better at increasing serum levels of CoQ₁₀. Because ubiquinol may be more bioavailable, despite higher costs, you may be able to take smaller doses and get the same results as with higher doses of ubiquinone. While rat studies have shown ubiquinol to be superior to ubiquinone in boosting CoQ₁₀ for healthy cellular function and energy production, to date the human studies on ubiquinol are unclear.

For example, a recent study found that while treatment with ubiquinol in healthy, exercise-trained subjects increases total and reduced blood CoQ₁₀, this increase did not translate into improved exercise performance or decreased oxidative stress.¹ In any event, ubiquinone has been found to be reduced to ubiquinol and redistributed into lipoproteins, possibly to protect them from oxidation.



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And positive results for ubiquinone continue to accumulate. Typical of this is another recent study in which twelve weeks treatment with ubiquinone improved clinical outcomes and nerve conduction parameters of diabetic polyneuropathy. Moreover, ubiquinone reduced oxidative stress without significant adverse events.²

Dry mouth is a condition associated with reduced salivary secretion and associated with aging. To test whether CoQ₁₀ in reduced (ubiquinol) or oxidized (ubiquinone) forms could be of value, 66 subjects with this condition were chosen to receive either form or placebo, orally at a dosage of 100 mg/day for 1 month.³ Thereafter, salivary secretion and salivary CoQ₁₀ content were analyzed after treatment as they had been before.

Both parameters were significantly improved following treatment with either form of CoQ₁₀, suggesting the effectiveness of either form of CoQ₁₀ in reducing dry mouth symptoms. Since the reduced form is more expensive, this indicates that ubiquinone is a better choice.

There have been few comparative studies in humans. However, a study with senescence-accelerated mice (SAMP1) has been used to champion the benefits of ubiquinol over ubiquinone.⁴ The SAMP1 strain is a mouse model for accelerated senescence and severe senile amyloidosis (such as occurs in Alzheimer's disease).

The researchers wanted to determine whether supplementation with CoQ₁₀ could decelerate aging in SAMP1. Supplementation with reduced CoQ₁₀ (ubiquinol, 250 mg/kg/day) for one week increased plasma CoQ₁₀ concentrations. In two series of experiments, lifelong supplementation with ubiquinol decreased the senescence grading scores from 10 to 14 months, 7 to 15 months, and at 17 months of age. Yet lifelong supplementation with ubiquinol did not prolong or shorten the lifespan, nor did it alter

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the murine senile amyloid deposition rate or cancer incidence.

To repeat, while lifelong dietary supplementation with ubiquinol decreased the degree of senescence in middle-aged SAMP1 mice (as measured by grading scores), it did not prolong or shorten lifespan, and did not decrease amyloid deposition or the incidence of cancer. It is hard to give much of a cheer for ubiquinol.

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