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FOR INTEGRATIVE HEALTH

Do Longevity Supplements Work?

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Longevity and Healthy Aging Symposium

Curcumin

- An active constituent in turmeric (curcuma longa); typically, it is poorly absorbed

- **Joint and Muscle Health**
  - Effective for arthritis in improving function, especially osteoarthritis [1]
  - Pain, tender joint count and swollen joint count were reduced in patients with rheumatoid arthritis compared to placebo [3]
  - Reduction in pain and stiffness may be similar to common pain medications, but not superior [1]

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Curcumin

- **Anti-Inflammatory**
  - A promising adjunctive therapy in reducing inflammation, especially in diseases related to high inflammatory biomarkers (CRP, IL-6, TNF-α) [2]
  - Anti-inflammatory effect is not dose- or time-dependent. [2]
  - The effect is more pronounced in those > 45 yo [2]

- Curcuminoids that are optimized for absorption is generally superior to pure curcumin. [4]

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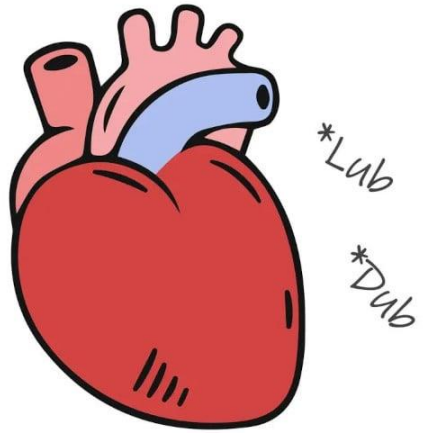
Coenzyme Q10 (CoQ10)



- Ubiquinol (reduced form) is more bioavailable than ubiquinone (oxidized form).
- Primary acts as an antioxidant and a cofactor in the production of cellular energy.
- As we age, coenzyme Q10 level decreases.
- Appear in high concentrations in heart, liver, kidney, and pancreas.

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Coenzyme Q10 (CoQ10)

- **Cardiovascular Health**
  - Improves diastolic dysfunction in patients taking statins [5]
  - Increases HDL, Vitamin C, and Vitamin E in patients with CAD[6]
  - Decrease total cholesterol and LDL in patients with CAD[6]
  - Reduce systolic and diastolic blood pressure [7]
  - Improve endothelial function to prevent future coronary events

- Often given as adjunct to conventional therapy and is currently studied for various pain conditions like migraine and fibromyalgia. [8]

Alpha-Lipoic Acid (ALA)

- An antioxidant made by the body and found in red meat, organ meats, yeast, spinach, broccoli, yams, and beets.

- **Metabolic Benefits**
  - May improve glucose utilization and insulin sensitivity in metabolic diseases [9]
  - Reduce total cholesterol and LDL but not triglycerides [10]
  - Small effect on weight loss compared to placebo in patients who are overweight or obese [11]

- *It does not increase "cellular energy" by improving mitochondrial function.*

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Resveratrol

- An antioxidant found in red wine, red grape skins, purple grape juice, mulberries, blueberries, and bilberries.
- Mild weight loss effect in those who are overweight or obese individuals. [12]
- Does not improve other parameters of good metabolic health: insulin sensitivity, fat mass, fasting blood glucose, lipids, or liver enzymes in overweight adults. [13]

- *Its anti-aging effect is likely exaggerated as currently studies were only done in animal models and on human cells.*

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Magnesium

- A mineral important for many cellular reactions and bone structure. Found in high fiber foods like legumes, whole grains, seeds, nuts, fish, and chocolate.

- **Mood Stabilizing Effects:**
  - One RCT showed reduction in depression and anxiety scores with supplementation [14]
  - However, serum magnesium are higher in patients with mood disorders than controls and is independent of psychiatric drug use [15]
  - Dietary magnesium intake has been shown in epidemiological studies to be associated with lower risk of depression [16]

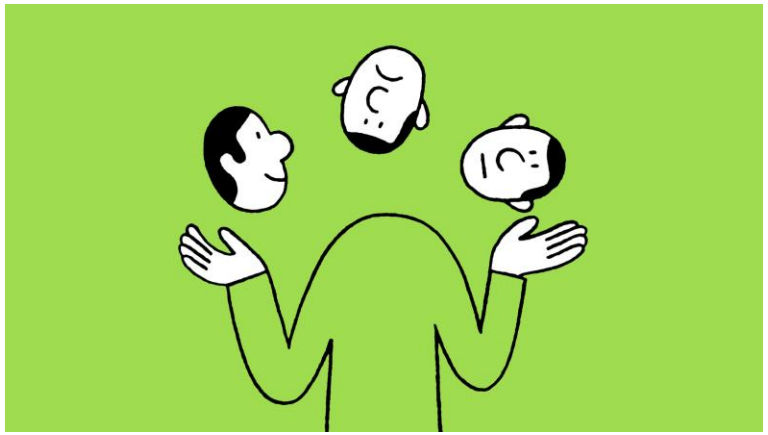

Photo Credit: The Atlantic

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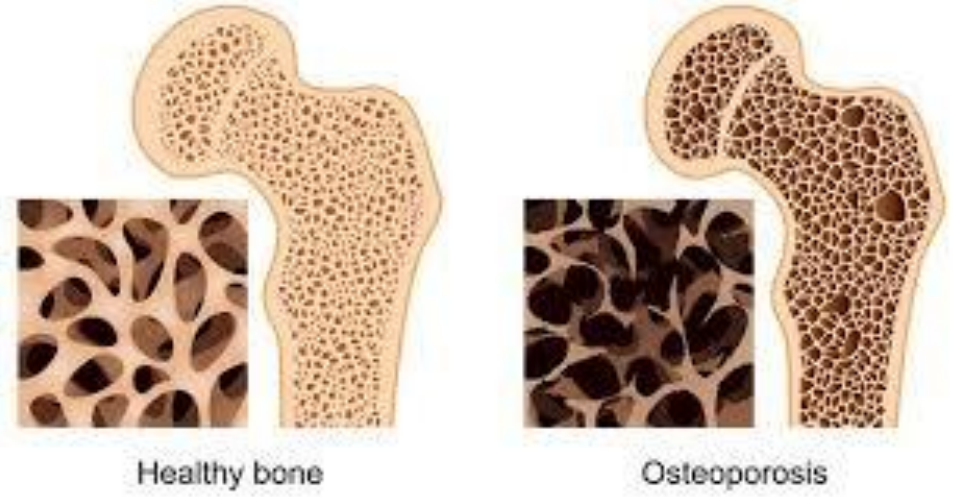
Magnesium

- **Bone Health:**
  - May reduce bone loss and bone turnover in postmenopausal patients with osteoporosis [16]
  - High dietary magnesium intake is associated with increased bone mineral density [17]



- *Currently, there are more evidence supporting high dietary intake of magnesium and its ability to increase bone mineral density and lower risk of depression compared to supplementation.*

- **Memory:**
  - Animal studies and recent RCTs indicate Magnesium L-threonate may improve cognitive function.

Photo Credit: Multiple Sclerosis Foundation

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Collagen peptides

- Peptides derived from animal collagen: cows, pigs, and fish skin, scale, bone, and other connective tissues.

- **Skin Integrity:**
  - Hydrolyzed collagen supplement compared to placebo improve skin hydration, elasticity, and wrinkles. [18]

- *In study settings, its anti-aging effects are significant. However, from a consumer perspective, these cosmetic changes may be significant enough to be noticeable. Effects of combination products containing collagens are difficult to assess.*

Green Tea Extract & EGCG

- Epigallocatechin gallate (EGCG) is most abundant catechin (a polyphenol) in tea, especially green and white tea.

- **Weight Management:**
  - *Green tea extract does not affect fat absorption, resting energy expenditure, and body composition in adults.* [19]

- **Cardiovascular Health:**
  - Drinking green tea may reduce risk of coronary heart diseases in observational studies, especially with light to moderate consumption (1-4 cups/day) [20]

Photo Credit: BBC Good Food

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Too Good to Be True?

RED FLAGS

- If the article is published or sponsored by the supplement company.
- If the claims are vague and too generalized.
- If there are no references listed at the end.
- If the reference listed are not related to the claims.

Many of these supplements do carry side effects. If not sure whether a supplement is safe for you, please seek professional guidance.

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