



Boosting **klotho** levels naturally and through potential interventions is an emerging area of longevity research. Here are some of the best strategies:

Lifestyle & Natural Methods

1. **Exercise** – Regular aerobic and resistance training significantly increases klotho expression, particularly high-intensity interval training (HIIT) and endurance exercise.
2. **Dietary Adjustments:**
 - **Intermittent Fasting** – Fasting and caloric restriction may upregulate klotho.
 - **Antioxidant-Rich Foods** – Berries, dark leafy greens, and cruciferous vegetables (broccoli, kale) help reduce oxidative stress that suppresses klotho.
 - **Healthy Fats** – Omega-3s from fish, flaxseeds, and walnuts support klotho production.
 - **Magnesium Intake** – Sufficient levels (from nuts, seeds, leafy greens) are linked to higher klotho expression.
3. **Quality Sleep** – Deep, restorative sleep enhances klotho levels and overall brain health.
4. **Stress Reduction** – Chronic stress and high cortisol levels can suppress klotho, so meditation, yoga, and mindfulness practices may help.

Supplementation & Potential Interventions

5. **Vitamin D** – Klotho is a co-regulator of calcium metabolism, and maintaining optimal vitamin D levels supports its function.
6. **Resveratrol** – Found in grapes and red wine, this polyphenol may help boost klotho expression through its anti-inflammatory effects.
7. **Probiotics** – A healthy gut microbiome supports klotho-related pathways; fermented foods like kimchi, kefir, and yogurt can be beneficial.
8. **Hormonal Balance** – Growth hormone and thyroid hormones appear to influence klotho expression. Keeping hormones in balance through diet and lifestyle is crucial.
9. **Metformin & Rapamycin (Experimental)** – These longevity drugs show promise in increasing klotho levels, but more research is needed.