Melatonin Improves Sleep in Critically Ill Patients

Melatonin supplementation improves both the quantity and quality of sleep in critically ill patients compared with placebo, according to a British study.* Melatonin is a hormone that regulates the sleep-wake cycle.

The researchers studied 24 patients hospitalized in an intensive care unit who were being taken off mechanical ventilation. Participants were randomly assigned to take melatonin 10 mg, given as a liquid, or placebo each night for four nights and then monitored for sleep quality. On average, the placebo group achieved only 2.5 hours of sleep per night, but melatonin use was associated with 3.5 hours of sleep, for an increase of 47%. The quality of sleep was also markedly better in the treated group.

No important adverse effects were noted. Use of melatonin in critically ill patients therefore holds promise, although the authors note that a lower dose of 1-2 mg would probably be sufficient.

—Laura J. Ninger, ELS

Luteolin Tames the Flames

The flavonoid luteolin may help reduce inflammation in the brain, according to a recent report from the Proceedings of the National Academy of Sciences.*

Researchers studied luteolin's effects in microglia—brain cells involved in immune defense. Although inflammatory cytokines produced by these cells help fight invading microorganisms, the resulting neuroinflammation can destroy neurons, which may contribute to cognitive impairment or neurodegenerative diseases.

Scientists pretreated microglia with varying concentrations of luteolin, and exposed the cells to lipopolysaccharide to initiate inflammation. Luteolin inhibited the production of the proinflammatory cytokine interleukin-6 (IL-6) by as much as 90% compared with untreated cells.

In another experiment, researchers gave varying concentrations of luteolin to mice 21 days before injecting them with lipopolysaccharide. Luteolin helped decrease IL-6 levels; mice that received the highest concentration experienced particular protection in the brain’s hippocampus, which is involved with memory and learning.

These findings suggest that luteolin may help mitigate brain inflammation and its consequences, which can include cognitive deficits.

—Dayna Dye

 Calcium Reduces Fracture Risk

Calcium supplementation may reduce the risk of bone fractures by an impressive 72% in generally healthy adults, according to a recent study published in the American Journal of Clinical Nutrition.¹

Using a controlled study design, the researchers administered 1,200 mg elemental calcium or placebo to study participants with an average age of 61 years. The supplemented individuals experienced significantly fewer fractures over a four-year period. Interestingly, the protective benefits of calcium ceased once supplementation was stopped.¹ The results of this study remind both patients and doctors of the critical importance of calcium supplementation as one ages.

While an earlier meta-analysis published by the same group failed to find that calcium supplementation reduced fracture risk,² other scientists have proposed that calcium supplementation is optimally successful when accompanied with vitamin D supplementation, as calcium does not function in isolation in optimizing bone health.³

—Jonathan Ozner
