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## Study: Tart Cherry Juice Increases Sleep Time In Adults With Insomnia

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SAN DIEGO, April 28, 2014 /PRNewswire/ -- A morning and evening ritual of tart cherry juice may help you sleep better at night, suggests a new study presented today at the Experimental Biology 2014 meeting. Researchers from Louisiana State University found that drinking Montmorency tart cherry juice twice a day for two weeks helped increase sleep time by nearly 90 minutes among older adults with insomnia.

These findings were presented Monday, April 28, at the "Dietary Bioactive Components: Antioxidant and Anti-inflammatory Effects of Dietary Bioactive Components" section of the annual meeting of the American Society of Nutrition, which is being held in conjunction with the Experimental Biology 2014 meeting in San Diego. The findings have been submitted for publication in a peer-reviewed journal.

Insomnia is a common health problem among older adults, impacting an estimated 23 to 34 percent of the population ages 65 and older. Insomnia – defined as trouble sleeping on average more than three nights per week – can be an annoyance for some, but long-lasting sleeplessness can seriously affect health, especially in the elderly.

Insomnia is linked to a higher prevalence of chronic pain, high blood pressure, type 2 diabetes and a decline of cognitive function, or dementia. Individuals with insomnia may turn to sleeping pills; however, these sedative medications have been found to increase risk of falls in the elderly – which makes it increasingly important to find more natural sleep-aids without these apparent side effects, said co-author Frank L. Greenway, MD, director of the outpatient research clinic at the Pennington Biomedical Research Center at Louisiana State University.

"Sleeping pills may be an option for younger insomniacs, but for older people these medications quadruple the risk of falling, which can lead to broken hips and, often, earlier death," Greenway said.

For the randomized crossover clinical trial, seven older adults (average age 68) with insomnia consumed 8 ounces of tart cherry juice twice daily for two weeks, followed by a two-week washout period, then a two-week period when another beverage was consumed (placebo). Greenway and his colleagues studied their slumber in a controlled setting, using overnight polysomnography to evaluate sleep efficiency, such as sleep onset and duration. Participants also completed questionnaires related to sleep, fatigue, depression and anxiety. Additionally, blood work was conducted on each participant.

The researchers found that those who drank the Montmorency tart cherry juice in the morning and at night were able to sleep more than an hour longer each night (averaging 84 minutes) compared to the placebo, and their sleep tended to be more efficient.

Montmorency tart cherries are a natural source of melatonin, a hormone that helps regulate the sleep-wake cycle. While previous studies have suggested that tart cherry juice has sleep-enhancing benefits, Greenway and colleagues set out to help explain why. They wanted to understand if the benefits were due to the melatonin content or another component in Montmorency tart cherries.

They believe the ruby red pigments in tart cherry juice, known as proanthocyanidins, also play a role. These natural polyphenolic compounds are especially abundant in Montmorency tart cherries. In the study, tart cherry juice helped to increase the availability of tryptophan, an essential amino acid and a precursor to serotonin that helps with sleep. The juice was shown in cells to inhibit an enzyme (indoleamine 2,3 dioxygenase) that degrades tryptophan. Tryptophan degradation is a known predictor of insomnia and is also related to inflammation, said co-authors Jack Losso and John Finley, professors in the School of Nutrition and Food Sciences at Louisiana State University Agricultural Center.

"Even though the amount of tryptophan in tart cherry juice is smaller than a normal dose given to aid sleep, the compounds in tart cherries could prevent the tryptophan from breaking down so it's able to work in the body more effectively," Greenway explained. "These compounds may help to improve tryptophan bioavailability for serotonin synthesis, which could have a positive effect on sleep. Increasing serotonin also helps improve mood and decrease inflammation."

Greenway believes it's the unique combination of melatonin and tryptophan in Montmorency tart cherries that is likely contributing to the sleep benefits. He and his colleagues conclude that drinking a glass of tart cherry juice in the morning and the evening may be a better and a safer way to treat insomnia.

Funding for this research was provided by the Cherry Marketing Institute, which had no role in the study design, data collection and analysis or preparation of the abstract or presentation. The study is registered at [ClinicalTrials.gov](http://ClinicalTrials.gov) NCT01669317.

#### **Source**

Liu AG, Tipton RC, Pan W, Finley JW, Prudente A, Karki N, Losso JN, Greenway FL. Tart Cherry Juice Increases Sleep Time in Older Adults with Insomnia. *Experimental Biology* 2014. San Diego, CA. April 28, 2014.

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