**Ginseng Sharpened Memory in Young Adults**

**BY CAROLINE HELWICK**

The U.S. Environmental Protection Agency sets air quality standards for six “criteria” pollutants — carbon monoxide, nitrogen dioxide, particulate matter, and sulfur dioxide. Each of these pollutants has multiple sources and can have measurable effects on health. Levels of some criteria pollutants are monitored in many countries and cities. The effects are commonly assessed in terms of hospitalization rates, asthma episodes, emergency department visits, and school absences. The effects of some pollutants on neurocognitive functions are less well understood.

In an effort to fill this gap in knowledge, a team of researchers led by Andrew Scholey, Ph.D., Professor of Behavioral and Brain Sciences at the Brain Sciences Institute at Swinburne University of Technology, analyzed the results of 11 studies that investigated the cognitive effects of American ginseng in young adults.

The studies, which were published recently in *Psychopharmacology* (2010 July 31 [doi:10.1007/s00213-010-1964-y]), found that American ginseng significantly improved working memory and verbal declarative memory.

**Summary**

- American ginseng improved working-memory performance in young adults.
- The cognitive improvements were observed across a range of cognitive parameters.
- The improvements were significant for tasks that required rapid visual information processing or Bakan task.

**Major Finding**

- American ginseng roots enhanced cognition and mood at several doses.

**Lack of Vitamin D, Ped Headache Linked**

**BY SHERRY BOSCHERT**

LOS ANGELES — Vitamin D deficiency was detected in 37% of 497 children and adolescents presenting to a tertiary care center for recurrent headache that required preventive treatment. Vitamin D insufficiency was found in 87%.

These results of routinely measuring baseline serum 25-hydroxyvitamin D (25(OH)D) levels at new or follow-up visits suggest that pediatric patients with recurrent headaches may be at increased risk for vitamin D insufficiency or deficiency compared with the general healthy population, Dr. Hope L. O’Brien and her associates reported in a poster presentation at the meeting.

Vitamin D deficiency was defined as a serum 25(OH)D level of less than 20 ng/mL. Vitamin D insufficiency was defined as a level below 30 ng/mL. Serum 25(OH)D levels averaged 24 ng/mL in patients presenting with episodic migraine and 23 ng/mL in those with chronic migraine, reported Dr. O’Brien of the University of Cincinnati.

A few studies have suggested a possible link between low vitamin D levels and migraine or chronic tension-type headache in adults, but this may be the first study to assess the association in children and adolescents. Patients in the current study had a mean age of 14 years (range 4-25 years).

The finding’s implications are unclear, but vitamin D supplementation might help improve headaches and overall health, Dr. O’Brien said. Studies in adults have linked low vitamin D levels with various chronic medical problems such as heart disease, diabetes, cancer, autoimmune disease, chronic pain, and osteoporosis.

Dr. O’Brien did not list any disclosures and did not respond to attempts to contact her.

**Nitrogen Dioxide**

- Increases in nitrogen dioxide (NO2) were strongly associated with verbal declarative memory.
- The most striking finding was a significant improvement in working-memory performance.

**Air Pollutants Tied to Headache Severity**

**BY SHERRY BOSCHERT**

LOS ANGELES — Increases in five air pollutants each were linked with increased frequency, severity, or medical consultation rates for headache or migraine in a review of 11 studies from three continents.

The increased risk for headaches is not sufficient to recommend lifestyle changes for individuals on days of high air pollution solely because of the headache risk, but the impact on public health could be large because headache and migraine are prevalent and air pollution is common, Dr. Luzma Cardona said at the meeting.

**Major Finding**

- Increases in outdoor environmental pollutants carbon monoxide, nitrogen dioxide, particulate matter, and sulfur dioxide each were associated with increases in the frequency, severity, or medical consultation rates for headache or migraine.

**Disclosures**

- Dr. Cardona said that he and his coauthors have no relevant conflicts of interest.

**Data Source**

- Review of 11 studies of air pollution and headache conducted in North and South America and Europe between 1988 and 2009.

**Summary**

- Increases in carbon monoxide, nitrogen dioxide, particulate matter, and sulfur dioxide all were linked with increased rates of headache.
- The strongest associations were observed for nitrogen dioxide and particulate matter.
- Increases in lead and particulate matter were significantly associated with increases in headache or migraine.

**Lack of Vitamin D, Ped Headache Linked**

- Vitamin D deficiency was detected in 37% of 497 children and adolescents presenting to a tertiary care center for recurrent headache that required preventive treatment.
- Vitamin D insufficiency was found in 87%.

**Results**

- These results of routinely measuring baseline serum 25-hydroxyvitamin D (25(OH)D) levels at new or follow-up visits suggest that pediatric patients with recurrent headaches may be at increased risk for vitamin D insufficiency or deficiency compared with the general healthy population.
- Vitamin D deficiency was defined as a serum 25(OH)D level of less than 20 ng/mL. Vitamin D insufficiency was defined as a level below 30 ng/mL.
- Serum 25(OH)D levels averaged 24 ng/mL in patients presenting with episodic migraine and 23 ng/mL in those with chronic migraine.

**Discussion**

- A few studies have suggested a possible link between low vitamin D levels and migraine or chronic tension-type headache in adults, but this may be the first study to assess the association in children and adolescents.
- Patients in the current study had a mean age of 14 years (range 4-25 years).

**Finding’s Implications**

- The finding’s implications are unclear, but vitamin D supplementation might help improve headaches and overall health.

**Dr. O’Brien**

- Dr. O’Brien did not list any disclosures and did not respond to attempts to contact her.

**AMSTERDAM — American ginseng significantly improved working-memory performance in a double-blind, placebo-controlled crossover study of healthy young adults presented at the congress.**

- The effects are distinct from those of Asian ginseng, which lowers blood glucose, improves cognitive performance, and alleviates the mental fatigue that is associated with intense cognitive processing.

- American ginseng (Panax ginseng) lowers blood glucose, improves cognitive performance, and alleviates the mental fatigue that is associated with intense cognitive processing.

**LOS ANGELES — Increases in air pollutants tied to headache severity.**

- Air pollutants tied to headache severity in adults. Subjects were assessed for acute mood, neurocognitive, and glycemic effects of three doses (100, 200, and 400 mg) of American ginseng (standardized to 10.6% ginsenosides). On study days, separated by at least a 7-day washout period, participants’ mood, cognitive function, and blood glucose were measured at 1, 3, and 6 hours after administration of the ginseng.

- The finding’s implications are unclear, but vitamin D supplementation might help improve headaches and overall health, Dr. O’Brien said. Studies in adults have linked low vitamin D levels with various chronic medical problems such as heart disease, diabetes, cancer, autoimmune disease, chronic pain, and osteoporosis.

- Dr. O’Brien did not list any disclosures and did not respond to attempts to contact her.