Life Extension Magazine®

Issue: Oct 2012

The True Potency Of The Pumpkin Seed

Nutrient rich pumpkin seeds contain an impressive array of vitamins, minerals, fatty acids, and even tryptophan! Evidence indicates that pumpkin seeds can help combat heart disease, osteoporosis, anxiety, and arthritis.

Scientifically reviewed by **Gary Gonzalez**, MD, in September 2021. Written by: William Gamonski.

While most people only think of pumpkins on Thanksgiving or Halloween, the seeds of this fruit offer an impressive cocktail of health enhancing and disease fighting compounds, vitamins, and minerals that can be consumed year-round. In addition, they are packed with ***tryptophan*** and ***essential fatty acids***.[1] Emerging evidence indicates that pumpkin seeds represent a potent functional food in the battle against heart disease, osteoporosis, bladder dysfunction, anxiety, and arthritis.

Pumpkin's History

Native to North America, pumpkins (*Cucurbita pepo)* were first embraced by Native Americans for their multi-purpose properties before the fruit's seeds were passed along to European explorers and spread throughout Europe. Pumpkins, and their seeds known as pepitas, belong to the gourd family *Cucurbitaceae*. The United States is currently the largest producer of pumpkins followed by Mexico, India, and China.[1]

Improving Bladder Function

Among its unique multitude of health benefits, pumpkin seeds standout for their ability to effectively treat an overactive bladder, a condition characterized by a sudden urge to urinate that may lead to an involuntary loss of urine.[2] Researchers estimate that **16%** of men and women suffer from overactive bladder symptoms such as urination urgency as well as frequent daytime and night urination.[3] Although an overactive bladder poses no threat to overall health, it has been shown to reduce quality of life.[4]

Several studies have shown compelling data in pumpkin seed extract's ability to support bladder function and combat the symptoms associated with an overactive bladder. In an animal study published in the *Japanese Journal of Medicine and Pharmaceutical Science*, rats supplemented with pumpkin seed extract significantly improved bladder function and decreased urinary frequency.[5]

The promising results of pumpkin seed extract for an overactive bladder were also demonstrated in humans. Japanese scientists examined the effects of pumpkin seed and soybean germ extracts on urinary frequency during the daytime and night in 39 postmenopausal women aged 52 to 86 over a 6-week period.[6] At the end of the study, participants experienced significant decreases in the number of daytime and night urinations.

In another study, 45 men aged 65 or older experienced significant reductions in nighttime urinary frequency and improved sleep satisfaction after supplementing with the combination extract for six weeks.[7]

Furthermore, pumpkin seeds might provide dramatic relief for aging men suffering from urinary symptoms caused by benign prostatic hyperplasia, or an enlarged prostate. Researchers revealed that 53 men ages 50-80 taking a pumpkin seed extract containing mixture for three months produced an over **40%** increase in urinary flow and a **30%** reduction in nighttime urinary frequency compared with those taking a placebo.[8]

Thwarting Heart Disease

Pumpkin seeds modulate several cardiovascular disease risk factors. In a recent study published in the *African Journal of Traditional, Complementary and Alternative Medicines,* researchers found that rats induced with atherosclerosis and supplemented with pumpkin seeds for 37 days experienced not only significant increases in protective HDL cholesterol but also a **47%** decrease in total cholesterol and a **78%** reduction in LDL cholesterol.[9]

One possible reason for pumpkin seeds LDL cholesterol lowering effects is due to its high concentration of phytosterols, plant compounds that inhibit cholesterol absorption in the small intestine.[10] Pumpkin seeds have the third highest phytosterol content among nuts and seeds commonly consumed as snacks.[11]

While managing LDL cholesterol is often the focal point of many heart boosting regimens, research indicates that increasing HDL cholesterol might play an equally pivotal role in heart protection as higher levels have been associated

with a decrease in cardiovascular disease risk.[12]

Pumpkin seed oil has favorable effects on HDL cholesterol, according to a study reported in the journal *Climacteric.* Researchers randomly assigned 35 postmenopausal women **2 g** of pumpkin seed oil or wheat germ oil daily for 12 weeks.[13] Measurements of blood lipids and blood pressure were recorded. The results showed that the pumpkin seed oil group experienced a **16%** increase in HDL cholesterol levels in addition to a nearly **7%** drop in diastolic blood pressure level.[13]

The antihypertensive potential of pumpkin seed oil was further supported in another study. Egyptian researchers caused hypertension in rats by inhibiting nitric oxide synthase, the enzyme responsible for generating the blood pressure regulating molecule nitric oxide. The hypertensive rats were then administered pumpkin seed oil or the antihypertensive medication amlodipine daily for six weeks. Findings showed that pumpkin seed oil was as effective as amlodipine in reversing elevated blood pressure in rats by restoring nitric oxide levels close to normal.[14]

Bone Protection

PUMPKIN SEEDS NUTRITIONAL FACTS, 1/4 OF A CUP[1]

Nutrients	Amount	DV(%)
Manganese	1.47 mg	73.5%
Tryptophan	0.17 g	53.1%
Magnesium	190.92 mg	47.7%
Phosphorous	397.64 mg	39.7%
Copper	0.43 mg	21.5%
Protein	9.75 g	19.5%
Zinc	2.52 mg	16.8%
Iron	2.84 mg	15.7%

Pumpkin seeds are a rich source of magnesium, phosphorous, and zinc, all overlooked minerals in optimizing bone health and preventing osteoporosis. Researchers at the University of Tennessee assessed the relationship between magnesium intake and bone mineral density, a major factor in the development of osteoporosis, in over 2,000 elderly men and women aged 70-79. After taking into account confounding factors of age, calcium intake, osteoporosis status, BMI, and physical activity, researchers concluded that higher intakes of magnesium were correlated with greater bone mineral density, particularly for caucasian individuals.[15] Researchers believe one possible mechanism for magnesium's beneficial effects is its ability to promote a more alkaline environment inside bones, which has shown to be conducive to boosting bone mineral density.

In a separate study published in the journal *Osteoporosis International*, scientists uncovered a strong association between fracture risk and dietary intake of phosphorous and zinc in more than 6,000 men ages 46-68. After analyzing data from a 2.4 year follow-up, participants with the lowest intake of zinc and phosphorous had increased fracture risk compared with those who consumed the highest intake of both minerals.[16]

Easing Arthritis

Pumpkin seed oil has also shown powerful antioxidant properties that might ease inflammation associated with arthritic symptoms. In a study published in the journal *Pharmacology Research*, rats induced with arthritis showed significant increased levels of inflammation that were reduced when administered pumpkin seed oil; results that compared favorably to when the rats received the non-steroidal anti-inflammatory drug indomethacin. Furthermore, the indomethacin-supplemented rats experienced increased levels of liver lipid peroxidation, an indicator of liver injury, whereas the pumpkin seed oil group experienced no side effects.[17]

Anxiety Relief

A study published in the *Canadian Journal of Physiology and Pharmacology* revealed that tryptophan, an amino acid abundant in pumpkin seeds, might help alleviate anxiety. Since tryptophan is converted to serotonin, a neurotransmitter that enhances mood and promotes well-being in the brain, researchers investigated whether consuming a tryptophan rich food could boost serotonin levels and reduce anxiety symptoms. They discovered that subjects with anxiety disorder who consumed tryptophan rich gourd seeds with carbohydrates before an anxiety test experienced greater improvements in subjective and objective measures on the Endler Multidimensional Anxiety Scale compared with those who consumed only carbohydrates.[18]

WAYS TO ENJOY PUMPKIN SEEDS[1]

1. For roasted pumpkin seeds, bake them in the oven at 160 to 170°F for 15 to 20 minutes.
2. Add pumpkin seeds to soups, stew, and meatloaf.
3. Sprinkle them on top of salads, cereals, and yogurt.
4. Eat them raw as a snack.

Summary

With a remarkable assortment of health-enhancing nutrients, from magnesium, protein, niacin, and zinc, to its high concentration of tryptophan and essential fatty acids, pumpkin seeds provide a powerful health punch that offers protection against common health problems including cardiovascular disease and osteoporosis. It also provides powerful relief for people suffering from bladder dysfunction, anxiety, and arthritis. While pumpkin seeds are synonymous with Halloween, consider incorporating these nutritional gems into your diet on a regular basis to reap their broad-spectrum health benefits. •

If you have any questions on the scientific content of this article, please call a **Life Extension**® Health Advisor at 1-866-864-3027.

References

1. Available at: http://www.whfoods.com/genpage.php?tname=foodspice&dbid=82. Accessed July 6, 2012.

2. Available at: http://www.mayoclinic.com/health/overactive-bladder/ds00827. Accessed July 26, 2012.

3. Stewart WF, Van Rooyen JB, Cundiff GW, et al. Prevalence and burden of overactive bladder in the United States. *World J Urol*. 2003 May;20(6):327-36.

4. Epstein LB, Goldberg RP. The overactive bladder and quality of life. *Int J Fertil Womens Med*. 2005 Jan-Feb;50(1):30-6.

5. Hata K, Tanahashi S, Wakida Y, Tatsuzaki M, Koide A. Effect of pumpkin seed extract on urinary bladder function in anesthetized rats. *Jpn J Med Pharm Sci*. 2005;54(3):339-45.

6. Sogabe H, Terado T. Open clinical study of effects of pumpkin seed extract/soybean germ extract mixture containing processed foods on nocturia. *Jpn J Med Pharm Sci*. 2001;46(5):727-37.

7. Terado, T et al. Clinical study of mixed processed food containing pumpkin seed extract and soybean germ extract on pollakiuria in night in elderly men. *Jpn J Med Pharm Sci*. 2004;52(4):551-61.

8. Carbin BE, Larsson B, Lindahl O. Treatment of benign prostatic hyperplasia with phytosterols. *Br J Urol*. 1990 Dec;66(6):639-41.

9. Abuelgassim AO, Al-Showayman. The Effect of pumpkin (Cucurbita pepo L) seeds and L- arginine supplementation on serum lipid concentrations in atherogenic rats. *AJTCAM.* 2012 Jan;9(1):131.

10. Nissinen M, Gylling H, Vuoristo M, Miettinen TA. Micellar distribution of cholesterol and phytosterols after duodenal plant stanol ester infusion. *Am J Physiol Gastrointest Liver Physiol*. 2002 June;282(6):1009-15.

11. Phillips KM, Ruggio DM, Ashraf-Khorassani M. Phytosterol composition of nuts and seeds commonly consumed in the United States. *J Agric Food Chem*. 2005 Nov;53(24):9436-45.

12. Barter P. HDL-C: role as a risk modifier. *Atheroscler Suppl*. 2011 Nov;12(3):267-70.

13. Gossell-Williams M, Hyde C, Hunter T, et al. Improvement in HDL cholesterol in postmenopausal women supplemented with pumpkin seed oil: pilot study. *Climacteric*. 2011 Oct;14(5):558-64.

14. El-Mosallamy AE, Sleem AA, Abdel-Salam OM, Shaffie N, Kenawy SA. Antihypertensive and cardioprotective effects of pumpkin seed oil. *J Med Food*. 2012 Feb;15(2):180-9.

15. Ryder KM, Shorr RI, Bush AJ. Magnesium intake from food and supplements is associated with bone mineral density in healthy older white subjects. *J Am Geriatr Soc.*2005 Nov;53(11):1875-80.

16. Elmstahl S, Gullberg B, Janzon L, Johnell O, Elmstahl B. Increased incidence of fractures in iddle-aged and elderly men with low intakes of phosphorous and zinc. *Osteoporosis.* 1998;8(4):333-40.

17. Fahim AT, Abd-el Fattah AA, Agha AM, Gad MZ. Effect of pumpkin-seed oil on the level of free radical scavengers induced during adjuvant-arthritis in rats. *Pharmacol Res*. 1995 Jan;31(1):73-9.

18. Hudson C, Hudosn S, MacKenzie. Protein-source tryptophan as an efficacious treatment for social anxiety disorder: a pilot study. *Can J Physiol Pharmacol.* 2007;85:928-32.