

## Health Bits and Pieces (HFN 35:1)

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### Ginger and Pain

In a comparison study, ginger was found to be as effective as pharmaceutical pain relievers ibuprofen (Advil) and mefenamic acid (Ponstel) for menstrual pain. Another placebo-controlled study also showed significant pain relief at onset of menses and three days prior. Ginger has also been found, among other indications, to be effective as an anticancer agent and for nausea, even for the nausea of cancer chemotherapy.

*Ozgili G, Goli M, Moattar F, "Comparison of effects of ginger, mefenamic acid, and ibuprofen on pain in women with primary dysmenorrhea," Journal of Alternative and Complementary Medicine, 2009 Feb;15(2):129-32. doi: 10.1089/acm.2008.0311; Lee S, Cekanova M, Baek S, "Multiple mechanisms are involved in 6-gingerol-induced cell growth arrest and apoptosis in human colorectal cancer cells," Molecular Carcinogenesis, 2008;47:197-208. doi: 10.1002/mc.20374; Ryan J, Heckler C, Roscoe J, et al., "Ginger (Zingiber officinale) reduces acute chemotherapy-induced nausea: a URCC CCOP study of 576 patients," Support Care Cancer, 2011;20:1479-1489.*

### Autism Spectrum and Leaky Gut

The Centers for Disease Control estimates that 1 in 68 children are diagnosed with autism spectrum disorder (ASD). Unfortunately there is no "one-size-fits-all" treatment for these autism-related disorders. One approach to treatment involves treatment of the "gut-brain axis." Recent research indicates how the gut-brain axis is an important component in the etiology of neurodevelopmental and neuroinflammatory disorders. A recent study is the first to look at the molecular signature of blood-brain barrier dysfunction in ASD with human patients.

Researchers analyzed postmortem cerebral cortex, cerebellum, and intestinal tissue samples from 33 individuals, including 8 with ASD, 10 with schizophrenia and 15 healthy controls. Their findings confirmed that an impaired blood-brain barrier associated with neuroinflammation contributes to ASD. Among the tissues analyzed from the ASD individuals, 75% of those had a reduced expression of the cellular components that contribute to blood-brain barrier integrity and 66% showed a higher expression of molecules that contribute to intestinal permeability.

*Fiorentino M, Sapone A, Senger S, et al., "Blood-brain barrier and intestinal epithelial barrier alterations in autism spectrum disorders," Molecular Autism, 2016; 7:49; Published online November 29 2016 doi:10.1186/s13229-016-0110-z.*

### I'm just Mad about Saffron

One in ten adults in the United States claim that they suffer from significant depression, with billions of dollars spent on antidepressants annually. Over the last 25 years, the use of antidepressant medication in the U.S. has gone up 400%. Among Americans aged 12 years and over, 11% now take antidepressant medication. The problem with prescription antidepressants is that 90% of people experience at least one of numerous possible side effects, which include anxiety, suicidal longings, insomnia, constipation, and weight gain.

The herb saffron was used for depression in traditional Persian medicine and for treating impaired blood circulation in traditional Chinese medicine. In a recent study published in *Pharmacopsychiatry*, researchers demonstrated that saffron significantly improved symptoms of

depression and anxiety. In a randomized comparison study 66 patients with major depressive disorder accompanied by anxiety received either saffron (30 mg/day) or the SSRI citalopram (Celexa, 40 mg/day) for 6 weeks. Patients who received either saffron or citalopram showed significant improvement in scores of the Hamilton Rating Scale for Depression and Hamilton Rating Scale for Anxiety.

One of the many side effects of the SSRI fluoxetine (Prozac) is loss of libido and impaired sexual function. The saffron group experienced significant improvement in total sexual function (FSFI), arousal, lubrication, and pain compared to a control group. Both the control group and the saffron group continued to take the fluoxetine throughout the study, even though it was the cause of the sexual dysfunction!

*Ghajar A, Neishabouri S, Velayati N, Crocus, "Sativus L. versus Citalopram in the Treatment of Major Depressive Disorder with Anxious Distress: A Double-Blind, Controlled Clinical Trial," Pharmacopsychiatry, Oct 2016. DOI: 10.1055/s-0042-116159; Kashani L, Raisi F, Saroukhani S, et al., "Saffron for treatment of fluoxetine-induced sexual dysfunction in women: randomized double-blind placebo-controlled study," Human Psychopharmacology, 2013 Jan;28(1):54-60.*

### **Should the Farmer and the Pesticide Man be Friends?**

Parkinson's disease (PD) can be positively linked to exposure to agricultural pesticides. Several studies have examined the association between PD and exposure to pesticides. A meta-analysis of peer-reviewed studies using 19 studies published between 1989 and 1999 was performed. The majority of the studies reported consistent elevation in the risk of PD with exposure to pesticides. The risk of PD increased with increased duration of exposure to pesticides, but no specific type of pesticide was identified.

*Priyadarshi A, Khuder S, Schaub E, Shrivastava S, "A meta-analysis of Parkinson's disease and exposure to pesticides," Neurotoxicology, 2000 Aug;21(4):435-40.*

### **N-Acetyl Cysteine for Parkinsonism**

Several years ago clinicians were reporting reversal of Parkinson's disease symptoms attributable to the use of the detoxifying amino acid glutathione administered intravenously. N-acetyl-cysteine (NAC) is an amino acid precursor to glutathione. Increasing NAC can reduce the toxicity of some prescription drugs, including cancer chemotherapy agents. Glutathione and N-acetyl cysteine are powerful antioxidants that support detoxification pathways and protect against environmental pollutants, toxic metals, and pharmaceuticals. Some of the conditions associated with the decline of detoxification pathways include cardiovascular disease, diabetes, cancer, and neurodegenerative conditions.

A recent study demonstrates a possible direct effect of NAC on the dopamine system in Parkinson's disease patients. This could explain some of the observed positive clinical effects. In another study, researchers at Oregon State University demonstrated that NAC may help maintain glutathione levels and prevent some of the factors that accelerate the aging process. The animal research study indicated that in younger animal cells, stress did not cause loss of glutathione at as rapid a rate as was observed in older animals. Preventive use of NAC increased glutathione levels in the older cells and offset cell death.

Monti D, Zabrecky G, Kremens D, Liang T, Wintering N, Cai J, et al., "N-Acetyl Cysteine May Support Dopamine Neurons in Parkinson's Disease: Preliminary Clinical and Cell Line Data," PLoS One, 2016; 11(6): e0157602. doi:10.1371/journal.pone.0157602; Thomas N, Shay K, Kelley A, Butler J, Hagen T, "Glutathione maintenance mitigates age-related susceptibility to redox cycling agents," Redox Biology, 2016; 10: 45 DOI: 10.1016/j.redox.2016.09.010.

### **So Be Positive, or Else!**

Positive psychological well-being increases longevity in everyone, sick or well, according to a meta-analysis of nearly 70 combined studies. The studies revealed protective effects of positive well-being reducing mortality among subjects with risk factors for cardiovascular disease, renal-failure, and those with HIV infections. Positive effects include emotional well-being, positive mood, joy, happiness, vigor, energy, and positive trait dispositions such as life satisfaction, hopefulness, optimism, and sense of humor. Positive psychological well-being was significantly associated with reduced cardiovascular mortality in healthy population studies, as well as reduced death rates in the patients with renal failure and with HIV infection. Toxic emotions such as bitterness, unforgiveness, resentment, retaliation, anger, hatred, guilt, shame, sorrow, regret, jealousy, helplessness, depression, anxiety, worry, apathy, loneliness, fear, and rejection can be the root of physiological symptoms, chronic health problems, and hormonal imbalances.

Chida Y, Steptoe A, "Positive psychological well-being and mortality: a quantitative review of prospective observational studies," Psychosomatic Medicine, 2008 Sep;70(7):741-56. doi: 10.1097/PSY.0b013e31818105ba. Epub 2008 Aug 25.

### **Post-Cholesterol-Era Cardiovascular Screening**

The last Health Bits & Pieces column reported that the 2015 U.S. Dietary Guidelines stated that there is not sufficient evidence to support limitation of dietary cholesterol in order to prevent cardiovascular disease. Data continues to accumulate that serum cholesterol levels often do not correlate with the occurrence of atherosclerosis. A more reliable screening tool is the coronary artery calcium (CAC) scan. A study has shown that half the people who were prescribed statins to lower cholesterol were not candidates for these dangerous drugs when their actual coronary calcium was measured. Many patients will not be willing to undergo a CAC scan; but it should be presented as an option, especially since statins carry so many risks and questionable benefit.

Epub at: <https://health.gov/dietaryguidelines/2015/>; Nasir K, Bittencourt M, Blaha M, et al., "Implications of Coronary Artery Calcium Testing Among Statin Candidates According to American College of Cardiology/American Heart Association Cholesterol Management Guidelines: MESA (Multi-Ethnic Study of Atherosclerosis)," Journal of the American College of Cardiology, 2015 Oct 13;66(15):1657-68. doi: 10.1016/j.jacc.2015.07.066; Okuyama H, Langsjoen P, Hamazaki T, Ogushi Y, Hama R, Kobayashi T, Uchino H, "Statins stimulate atherosclerosis and heart failure: pharmacological mechanisms," Expert Review of Clinical Pharmacology, 2015 Mar;8(2):189-99. doi: 10.1586/17512433.2015.1011125. Epub 2015 Feb 6.