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VEPACHEDU EDUCATIONAL FOUNDATION

The Telangana Science Journal

Health and Nutrition

TIACS-subscribe@yahoogroups.com (The Indian American Chemical Society)

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Coffee and Amphetamine

While stimulants may improve unengaged workers' performance, a new University of British Columbia study suggests that for others, caffeine and amphetamines can have the opposite effect, causing workers with higher motivation levels to slack off. The study published online by *Neuropsychopharmacology* explored the impacts of stimulants on "slacker" rats and "worker" rats, and sheds important light on why stimulants might affect people differently, a question that has long been unclear. It also suggests that patients being treated with stimulants for a range of illnesses may benefit from more personalized treatment programs.

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Metabolic Syndrome

It's estimated about one-third of U.S. adults have metabolic syndrome -- with older age and obesity being prime risk factors. There's some evidence from animal research that artificial sweeteners can end up boosting appetite and food intake. But no one knows yet if that translates to humans.

The lowest risk of metabolic syndrome was seen among people who drank no diet beverages and stuck to a "prudent" diet -- one rich in foods like fruits, vegetables, and whole grains and foods containing omega-3 fats. Meanwhile, people who also ate a prudent diet but did drink diet beverages had a somewhat higher rate of metabolic syndrome -- but not by much. Over 20 years, 20 percent of those men and women developed metabolic syndrome. That compared with 18 percent of prudent eaters who didn't regularly have diet drinks, according to a report in the American Journal of Clinical Nutrition. Participants with the highest rate of metabolic syndrome, at 32 percent, were those who drank diet soda and downed the typical "Western" diet. That means lots of meat, processed foods and sugar. Researchers weighed factors other than diet, too, like people's weight and exercise habits at the start of the study. With all of that considered, healthy eaters who steered clear of diet drinks still had the lowest risk of developing metabolic syndrome -- more than one-third lower than Western-style eaters who did drink diet beverages.

Vitamin D

Inflammation is known to have a central role in the development of type 2 diabetes and its further complications like coronary heart disease and stroke. Vitamin D carries benefits for skeletal health but evidence of an anti-inflammatory effect from clinical studies in humans remains scarce. Daily intake of vitamin D-fortified food improved inflammatory markers in type 2 diabetics and extra calcium conferred additional anti-inflammatory benefits, according to a recent study accepted for publication in The Endocrine Society's *Journal of Clinical Endocrinology and Metabolism (JCEM)*, according to The Endocrine Society.

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Inactivity

Although the overall rate of new cancer cases is declining, a report confirms research showing that excess weight and a sedentary lifestyle are risk factors for one-quarter to one-third of common cancers in the USA. About one-third of adults — almost 78 million — are obese, roughly 30 or more pounds over a healthy weight. The report, published Wednesday in the journal *Cancer*. For people who do not smoke, maintaining a healthy weight and getting sufficient exercise may be among the most important ways to prevent cancer, the authors write. The risk factors are second only to tobacco as preventable causes of disease and death in the USA. The American Cancer Society estimates that one-third of the more than 572,000 cancer deaths in the USA each year can be attributed to diet and physical activity habits, including overweight and obesity, while another third are caused by exposure to tobacco products. Mechanisms from obesity and inactivity that play a role in cancers include increased hormone levels, alterations in insulin levels, chronic hypertension and damaging inflammatory agents. Obesity also is a risk factor for colorectal and postmenopausal breast cancers, yet increases were not noted for those cancers. Plescia attributes this to aggressive screening and new treatments.

For better health, try standing up more, a new study suggests. Those who spend 11 or more hours a day sitting are 40 percent more likely to die over the next three years regardless of how physically active they are otherwise, researchers say. In a study published in the March 26 issue of the *Archives of Internal Medicine*.

Alcohol

Just one alcoholic drink a day can boost a woman's risk of breast cancer by about 5 percent, according to a new review of existing research. Heavier drinking -- three or more drinks a day -- can increase risk up to 50 percent, according to a review published March 29 in the journal *Alcohol and Alcoholism*. In the

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United States, one in eight women will develop breast cancer in her lifetime, experts estimate. The increased risk associated with drinking is added to that starting risk. Alcohol is thought to increase estrogen levels, in turn, perhaps, increasing the risk of breast cancer. Several studies have found alcohol more strongly linked to cancers known as estrogen receptor positive, which require estrogen to grow.

Soy

A new large-scale statistical analysis, published in *Menopause: The Journal of the North American Menopause Association*, offers clear and compelling evidence from a review of 19 studies examining more than 1,000 women. The conclusion: soy isoflavones reduce menopausal hot flash frequency and severity by approximately 50 percent. The results were highly statistically significant. Soy isoflavones, although different from the hormone estrogen, are plant compounds that exert a mild estrogen-like effect in certain conditions.

During menopause, hot flashes can persist for an extended period of time and can interfere with daily activities and sleep. Hormone therapy (HT) containing estrogens or a combination of estrogens and progestins used to be a standard choice for alleviating hot flashes, but safety concerns led to recommendations that HT treatment be taken at the lowest doses for the shortest period of time. The benefits observed in the newly published meta-analysis make isoflavones an effective option for women who don't want to take HT. A small survey also published in *Menopause* found that 70 percent of women seeking a non-hormonal treatment for hot flashes would be satisfied with an approach that provides at least a 50 percent reduction in symptoms.

Menopausal women concerned about breast cancer may be relieved to know that clinical evidence indicates soyfoods and soy isoflavones do not harmfully affect breast tissue and epidemiologic evidence indicates soy consumption improves the prognosis of breast cancer patients. And, for their daughters, another meta-analysis found an association between consuming soy starting in the childhood or adolescent years and decreased risk of breast cancer later in life.

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White Rice

Researchers looked at data from four studies: China, Japan, (the U.S. and Australia. All participants were diabetes-free when the studies began. On average, people from Asian countries ate about four servings of white rice daily. Individuals in Western countries, however, ate less than five servings a week. The study found that the more servings of white rice a person eats per day, the greater their risk for developing type 2 diabetes, the form of diabetes most closely linked to obesity. According to the new study, diabetes risk rises by about 10% with each increased serving per day of white rice. The new findings appear in the journal *BMJ*.

Yoga: Kirtan Kriya

In a study, one group performed Kirtan Kriya, an Indian yogic practice that included an ancient chanting meditation, every day at the same time for eight weeks. The other group was asked to relax in a quiet place with their eyes closed while listening to instrumental music on a relaxation CD, also for 12 minutes every day at the same time for eight weeks. At the end of the eight weeks the researchers found that the meditation group showed significantly lower levels of depressive symptoms and greater improvement in mental health and cognitive functioning, compared with the relaxation group. In the meditation group, 65 percent showed a 50 percent improvement on a depression rating scale, and 52 percent of the group showed a 50 percent improvement on a mental health score. This compared to a 31 percent depression improvement and a 19 percent mental health improvement for the relaxation group.

The researchers also found that meditation increased telomerase activity and thus slowed cellular aging. Telomerase is an enzyme that maintains the DNA at the ends of our chromosomes, known as telomeres. Telomeres are associated with a host of health risks and diseases, which may be regulated in part by psychological stress. In the absence of telomerase activity, every time our cells divide, our telomeres get shorter and shorter, until eventually, they become so short the cells die. If high telomerase can be maintained or promoted, though, it will likely promote improvement in telomere maintenance and

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immune cell longevity. In the study, the meditation group showed a 43 percent improvement in telomerase activity compared with 3.7 percent in the relaxation group. <http://www.sciencedaily.com/releases/2012/03/120313145018.htm>

An article by researchers from Boston University School of Medicine (BUSM), New York Medical College (NYMC), and the Columbia College of Physicians and Surgeons (CCPS) reviews evidence that yoga may be effective in treating patients with stress-related psychological and medical conditions such as depression, anxiety, high blood pressure and cardiac disease. Their theory, which currently appears online in *Medical Hypotheses*, could be used to develop specific mind-body practices for the prevention and treatment of these conditions in conjunction with standard treatments.

It is hypothesized that stress causes an imbalance in the autonomic nervous system (parasympathetic under-activity and sympathetic over-activity) as well as under-activity of the inhibitory neurotransmitter, gamma amino-butyric acid (GABA). Low GABA activity occurs in anxiety disorders, post-traumatic stress disorder, depression, epilepsy, and chronic pain. According to the researchers, the hypothesis advanced in this paper could explain why vagal nerve stimulation (VNS) works to decrease both seizure frequency and the symptoms of depression.

An earlier study by BUSM researchers comparing a walking group and a yoga group over a 12-week period found no increase in GABA levels in the walking group, whereas the yoga group showed increased GABA levels and decreased anxiety. In another BUSM 12-week study, patients with chronic low back pain responded to a yoga intervention with increased GABA levels and significant reduction in pain compared to a group receiving standard care alone.

Fruits and Vegetables

Your skin is a reflection of your overall general health. The healthier your skin is, the better it functions, the more it can help the rest of your body function; the healthier the rest of your body is, the healthier your skin is as well. It has long been known that many plant substances, such as the carotenoids beta-

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carotene and lycopene, contribute to the skin color. Only 25 percent to 30 percent of Americans eat the recommended amounts of fruits and vegetables, and efforts to increase consumption have not been too successful, Heller noted. Not only did skin look healthier at the end of the study period, it was judged more attractive as well. The study was published March 7 in the online journal *PLoS ONE*.

Strong scientific evidence exists that eating blueberries, blackberries, strawberries and other berry fruits has beneficial effects on the brain and may help prevent age-related memory loss and other changes, scientists report. Their new article on the value of eating berry fruits appears in ACS' *Journal of Agricultural and Food Chemistry*. Their review concluded that berry fruits help the brain stay healthy in several ways. Berry fruits contain high levels of antioxidants, compounds that protect cells from damage by harmful free radicals. The two also report that berry fruits change the way neurons in the brain communicate. These changes in signaling can prevent inflammation in the brain that contribute to neuronal damage and improve both motor control and cognition. They suggest that further research will show whether these benefits are a result of individual compounds shared between berry fruits or whether the unique combinations of chemicals in each berry fruit simply have similar effects.

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**Om! Asatoma Sadgamaya, Tamasoma Jyotirgamaya, Mrityorma Amritamgamaya, Om Shantih,
Shantih, Shantih!**

**(Aum! Lead the world from wrong path to the right path, from ignorance to knowledge, from
mortality to immortality, and peace!)**

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