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Journals, Websites & Newspapers Articles

Spotlight

**ILSI-India Annual Meeting
&
Seminar on Value Addition to
Agriculture through Food Processing
26 April, 2019, New Delhi**

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ILSI-India 2018 Publications

- Monograph On Prebiotics In Foods And Their Beneficial Effects
- Compendium Of Conference On Role Of Probiotics In Promoting Healthy Microbiome For Health And Immunity
- Compendium Of Seminar On Food Additives: A Global Perspective On Safety Evaluation And Use
- Report Of Seminar On Recent Developments In Food Science And Technology For Better Nutrition
- Report Of Workshop On Alternatives To Animal Testing For Food Safety
- 2017-18 ILSI India Activity Report

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Nutrition And Health Research

Mushrooms May Reduce Risk Of Cognitive Decline

A team of researchers from Singapore has found that seniors who consume more than two standard portions of mushrooms weekly may have 50% reduced odds of having mild cognitive impairment (MCI).

The six-year study, which was conducted from 2011 to 2017, collected data from more than 600 Chinese seniors, aged 60 and older living in Singapore. Six commonly consumed mushrooms in Singapore were referenced in the study. They were golden, oyster, shiitake, and white button mushrooms, as well as dried and canned mushrooms. A portion was defined as three quarters of a cup of cooked mushrooms with an average weight of around 150 grams.

The researchers believe the reason for the reduced prevalence of MCI in mushroom eaters may be due to a specific compound called ergothioneine (ET) found in almost all varieties. ET is a unique antioxidant and anti-inflammatory which humans are unable to synthesize on their own. But it can be obtained from dietary sources, one of the main ones being mushrooms.

Source: Feng Lei, Assistant Professor, NUS Dept. Of Psychological Medicine, National University Of Singapore (NUS), Journal Of Alzheimer's Disease

Acute Effect Of Soy And Soy Products On Serum Uric Acid Concentration Among Healthy Chinese Men

Soy products are essential to the daily life of the Chinese population. However, the association between soy products and serum uric acid remains unclear. Better understanding of their relationship could provide food choice information for patients with gout. This study assessed the acute effects of soy and soy products on serum uric acid. Sixty healthy adult male volunteers were recruited and randomly assigned to six groups. Ten participants in each group randomly ingested one of six foods: water, soy, and four different soy products. A blood test was conducted after 3 h to examine uric acid concentration. The serum uric acid concentration significantly increased by $21.4 \pm 23.4 \mu\text{mol/L}$ at 1 h and $16.3 \pm 19.4 \mu\text{mol/L}$ at 2 h following ingestion of whole soybeans.

These changes also applied to the soy powder group. The serum uric acid concentration rapidly increased by $38.1 \pm 20.5 \mu\text{mol/L}$ at 1 h, $34.4 \pm 18.2 \mu\text{mol/L}$ at 2 h, and $24.1 \pm 24.2 \mu\text{mol/L}$ at 3 h after the ingestion of soybean milk. The maximum concentration of serum uric acid was observed at 1 h after intake of soybeans and soy products, and then gradually decreased during the subsequent 2-h period. No significant uric acid changes from ingesting bean curd cake and dried bean curd stick were detected. Ingesting different soy products resulted in different concentrations of serum uric acid, with soybeans, soybean milk, and soy powder considerably increasing serum uric acid.

Source: Bengbu Medical College, Anhui, China, Asia Pac J Clin Nutr

Effect Of A Cereal And Milk Meal With Or Without Fruits And Nuts On The Postprandial Glycemic Response In Indian Men

Some cereals, consumed at breakfast, have shown lower glycemic responses. Limited data exist in the Indian context, where the effect could be modified due to genetic or racial differences. This study aimed to investigate the effect of cereal and milk, with or without fruits/nuts, on the glycemic response in healthy Indian men. A randomized cross-over study was carried out on 16 men (18 - 45 years), with 3 interventions providing equal amounts of glycemic carbohydrate: a glucose drink (Reference), cereal and milk (CM), and cereal, milk, fruits and nuts (CMO), on separate days. Plasma glucose, serum insulin, C-peptide, ghrelin, energy expenditure (EE), substrate oxidation and appetite/satiety were measured repeatedly over 3 hours post meal.

A significant time effect and time x meal interaction between the meals, higher for the Reference meal, was observed for plasma glucose (pe ($p < 0.001$)), insulin ($p < 0.001$), C-peptide ($p < 0.001$), and carbohydrate oxidation ($p < 0.001$); while lower for satiety ($p < 0.001$). The plasma glucose concentrations of CM and CMO meals returned to baseline 60 min postprandially, then remained there, unlike the Reference meal where the plasma glucose values returned to baseline at 120 min and dipped significantly below baseline at 150 and 180 min. A significant effect of time ($p < 0.001$) was observed for EE between meals. Ghrelin levels did not differ significantly between the test meals.

The study concluded that cereal with milk, along with fruits and nuts at breakfast, has a lower and stable glycemic response, along with increased satiety among healthy male subjects.

Source: St John's Research Institute, St John's National Academy Of Health Sciences, Bangalore, India, Asia Pac J Clin Nutr

Association Between Eating Behavior And Poor Glycemic Control In Japanese Adults

This study investigated the relationship between eating behavior and poor glycemic control in 5,479 Japanese adults with hemoglobin A1c (HbA1c) $< 6.5\%$ who participated in health checks. This study showed that Japanese adults who were male, older, had a high BMI, skipped breakfast ≥ 3 times/week and ate quickly were at increased risk for poor glycemic control. These findings indicated that eating behavior is associated with risk of diabetes. However, clinical studies are required because evidence of risk for poor glycemic control is limited.

Source: Asahi University, Scientific Reports, <https://www.nature.com/>

More Vitamin D May Improve Memory But Too Much May Slow Reaction Time

A unique study found that overweight and obese older women who took more than three times the recommended daily dose of vitamin D showed improvements in memory and learning -- but also had slower reaction times. The researchers hypothesize that slower reaction times may increase the risk of falling among older people.

One group took the recommended daily dose of 600 international units (IU), equivalent to 15 micrograms, of vitamin D each day for a year. Another group took 2,000 IU per day and the third took 4,000. All women participated in lifestyle counseling and were encouraged to lose a modest amount of weight.

The researchers found that memory and learning improved in the group that took 2,000 IU per day, but not in the group that took the higher dosage. Meanwhile, the women's reaction time showed a trend to be slower at 2,000 IU daily and was significantly slower at the higher dosage.

Source: Monica Castle Et Al, Rutgers University, Journals Of Gerontology: Series A

Higher Egg And Cholesterol Consumption Hikes Heart Disease And Early Death Risk

Egg yolks are one of the richest sources of dietary cholesterol among all commonly consumed foods. One large egg has 186 milligrams of dietary cholesterol in the yolk. The evidence for eggs has been mixed. Previous studies found eating eggs did not raise the risk of cardiovascular disease. But those studies generally had a less diverse sample, shorter follow-up time and limited ability to adjust for other parts of the diet.

A new study which looked at pooled data on 29,615 U.S. racially and ethnically diverse adults from six prospective cohort studies for up to 31 years of follow up has found that:

- *Eating 300 mg of dietary cholesterol per day was associated with 17 percent higher risk of incident cardiovascular disease and 18 percent higher risk of all-cause deaths. The cholesterol was the driving factor independent of saturated fat consumption and other dietary fat.*
- *Eating three to four eggs per week was associated with 6 percent higher risk of cardiovascular disease and 8 percent higher risk of any cause of death.*

Based on the study, people should keep dietary cholesterol intake low by reducing cholesterol-rich foods such as eggs and red meat in their diet. But researchers recommend that people should not completely banish eggs and other cholesterol-rich foods from meals, because eggs and red meat are good sources of important nutrients such as essential amino acids, iron and choline. Egg whites should be eaten instead of whole eggs or whole eggs should be consumed in moderation.

Source: Wenze Zhong, A Postdoctoral Fellow In Preventive Medicine, Northwestern, JAMA

Drinking Hot Tea May Increase Risk Of Esophageal Cancer

A recently conducted study throws light on the association between drinking hot tea and the risk of developing esophageal cancer. Studies have reported an association between hot tea drinking and risk of esophageal cancer, but no study has examined this association using prospectively and objectively measured tea drinking temperature. Researchers examined the association of tea drinking temperature, measured both objectively and subjectively at study baseline, with future risk of esophageal squamous cell carcinoma (ESCC) in a prospective study.

Researchers looked at the data of over 50,000 people in Golestan, a province in northeastern Iran for the purpose of the study. The researchers clinically followed the participants for an average period of 10.1 years, between 2004 and 2017, during which period, 317 people developed esophageal cancer.

To arrive at specific conclusions, researchers divided tea temperature into "very hot" – a temperature of over 60°C, and "cold [or] lukewarm," that is, a temperature that is or falls below 60°C. In their analysis, the researchers also considered a reported shorter time from pouring tea to drinking it — that is, on a scale between 2 and 6 minutes' wait, as well as reported preference for very hot tea drinking.

As far as the quantity is concerned, the study found that drinking 700 milliliters (ml) of "very hot" tea per day increased the chances of esophageal cancer by 90 per cent compared to drinking the same amount of cold or lukewarm tea daily. The results substantially strengthen the existing evidence supporting an association between hot beverage drinking and [esophageal cancer risk]. It may thus be a reasonable public-health measure to extrapolate these results to all types of beverages, and to advise the public to wait for beverages to cool to [lower than] 60°C before consumption.

Source: Dr. Farhad Islami, Strategic Director, Cancer Surveillance Research, American Cancer Society, International Journal Of Cancer

Drinking Bottle Of Wine A Week Has Same Cancer Risk As Smoking Up To 10 Cigarettes

For women, drinking one bottle of wine per week increases the absolute lifetime risk of cancer to the same extent as smoking 10 cigarettes a week. This is mostly due to an increased risk of breast cancer caused by drinking. For men, drinking a bottle of wine a week increases the absolute lifetime risk of cancer equivalent to smoking five cigarettes. This is due to the risk of cancer in parts of the body such as the bowel, liver and oesophagus. Researchers concluded that one bottle of wine per week is associated with an increased absolute lifetime cancer risk for non-smokers of one per cent among men and 1.4 per cent with women.

Source: Dr. Theresa Hydes, University Hospital Southampton NHS Foundation Trust, Bangor University And University Of Southampton, BMC Public Health

Nuts May Help Prevent Dementia

By eating more than 10 grams (or two teaspoons) of nuts per day older people could improve their cognitive function by up to 60 per cent- compared to those not eating nuts — effectively warding off what would normally be experienced as a natural two-year cognition decline a study has found.

The study by researchers from the University of South Australia was conducted on 4,822 Chinese adults aged over 55 years. The study is the first to report an association between cognition and nut intake in older Chinese adults, providing important insights into increasing mental health issues, including dementia, faced by an ageing population.

Source: Ming Li, University Of South Australia, South Australia

Coffee Compounds May Help Fight Prostate Cancer

Scientists have identified compounds found in coffee - kahweol acetate and cafestol- which may inhibit the growth of prostate cancer. The study was carried out on drug-resistant cancer cells in cell culture and in a mouse model. Coffee is a complex mixture of compounds which has been shown to influence human health in both positive and negative ways. There is increasing evidence that drinking certain types of coffee is associated with a reduction in incidence of some cancers, including prostate cancers.

Source: Hiroaki Iwamoto, Kanazawa University, Journal The Prostate

Bacteria In Probiotics Can Turn Nasty In Gut

The “good bacteria” in probiotic drinks and remedies can evolve in the body and have the potential to become harmful, according to a study which calls for caution in the emerging field of treatment.

Researchers have shown how one strain of bacteria in an anti-diarrhoea probiotic can begin to attack the protective coating of the intestine. This is one factor that can increase the risk of conditions like irritable bowel syndrome (IBS).

In trials on mice experts showed that high fat and sugar diets, antibiotic use and the other bacteria in the gut all boosted this probiotic evolution. Probiotics are fundamentally different from other drugs because they can evolve during treatment. This isn't a reason not to develop probiotic-based therapies, but it is a reason to understand how they change and under what conditions.

Source: Dr Guatam Dantas, Microbiologist, University Of Washington, Cell Host And Microbe

Knee Osteoarthritis: A Low-Carb Diet May Relieve Symptoms

A randomized controlled study finds that a diet low in carbs can relieve pain for people who have knee osteoarthritis. There is currently no cure for knee osteoarthritis, which can cause joint swelling, stiffness, and even severe pain.

Source: Robert Sorge, Ph.D., Director, PAIN Collective, University Of Alabama, Birmingham Department Of Psychology, Journal Pain Medicine

Time-Restricted Eating May Prevent Tumor Growth

Researchers have already identified obesity as a risk factor for cancer, so some doctors recommend reducing caloric intake to help prevent tumors. However, a new study now finds that prevention may be less about how many calories is consumed and more about when meals.

Time-restricted eating requires a person to have all of their daily meals within a specific window of time each day. This approach, the researchers suggest, could have a more positive effect on metabolic health than simple calorie restriction. Time-restricted eating may be more successful than calorie restriction in controlling the negative effects of obesity, due to the hunger and irritability that makes it more difficult to stick with long-term calorie restriction.

Source: Manasi Das, Ph.D., University Of California, San Diego, ENDO 2019, Endocrine Society, New Orleans, LA

Food For Mood

Research on the impact of diet on mental functioning is relatively new, and food studies can be difficult to perform and hard to interpret, since so many factors go into what we eat and our general well-being. But a study found that individuals who increased the number of servings of fruits and vegetables that they ate reported that they were happier and more satisfied with their life than those whose diets remained the same.

Source: Dr. Drew Ramsey, Assistant Clinical Professor, Psychiatry, Columbia University, American Journal Of Public Health

Danger Of Vitamin B12 Deficiency

Using roundworms, one of Earth's simplest animals, bioscientists have found the first direct link between a diet containing too little vitamin B12 and an increased risk of infection by two potentially deadly pathogens.

Despite their simplicity, 1-millimeter-long nematodes called *Caenorhabditis elegans* (*C. elegans*) share an important limitation with humans: They cannot make B12 and must get all they need from their diet.

Source: Natasha Kiriienko, Biochemist And Cancer Researcher, Rice University, PLOS Genetics

Food Safety & Technology

From 1 April, Liquor Bottles To Carry 'Don't Drink & Drive' Label

FSSAI has issued notification under Food Safety and Standards Act 2006 regarding statutory warning on label of alcoholic beverages. The Ministry of Health and Family Welfare has issued an order that all liquor bottles from 1 April, 2019 should contain prominent statutory warnings, asking consumers to not drink and drive and outlining how alcohol consumption is harmful for health. The nodal agency, Food Safety and Standards Authority of India (FSSAI), has issued a notification under Section 16(5) of the Food Safety and Standards Act, 2006 regarding statutory warning on label of alcoholic beverages.

Source: Food Safety and Standards Authority of India

Strawberries, Spinach, And Kale Top 2019 "Dirty Dozen" List

The Environmental Working Group (EWG) has once again released their annual list of the "dirtiest" and "cleanest" fruits and vegetables available to U.S. consumers.

EWG's analysis is drawn from data provided by the U.S. Department of Agriculture (USDA). Prior to testing, all produce was washed and peeled. Still, USDA's data shows the presence of 225 different pesticides on fruits and vegetables sold in the U.S. This means that simple washing of fresh produce does not remove all pesticide residues.

This year, probably the most shocking revelation is that kale—one of the most popular health foods in the U.S.—is among that most contaminated produce items. More than 92 percent of kale samples had two or more pesticide residues detected, and a single sample could contain up to 18 different residues. The most frequently detected pesticide, found on nearly 60 percent of kale samples, was Dacthal, which has been classified by the U.S. Environmental Protection Agency since 1995 as a possible human carcinogen. That chemical has been prohibited for use in Europe since 2009.

Here are the top foods that consistently have the highest concentration of pesticide residues: Strawberries, Spinach, Kale, Nectarines, Apples, Grapes, Peaches, Cherries, Pears, Tomatoes, Celery, Potatoes and Hot peppers.

Source: Environmental Working Group (EWG),
<https://www.foodsafetymagazine.com>

UK's Shellfish Safety Expertise Awarded By FAO

The Food and Agriculture Organization (FAO) of the United Nations has formally recognized the UK's expertise and leadership when it comes to shellfish safety. FAO has designated the Center for Environment, Fisheries and Aquaculture Science (Cefas) as a Reference Center for Bivalve Mollusc Sanitation.

According to a statement jointly published by Cefas and the UK's Food Standards Agency (FSA), this is the first time the FAO has designated a Reference Center in this area. The designation will help to support FAO's vision for a globally unified system for shellfish safety, recognizing the importance of both wild caught and aquaculture production in global food security and future trade.

Source: UK's Food Standards Agency (FSA)

Mixtures Methodology Equips EFSA For Multiple Chemicals

People, animals and the environment can be exposed to multiple chemicals from a variety of sources. Understanding how combined chemicals behave is complex and the number of combinations is potentially infinite. So EFSA has developed a harmonized framework to use across its scientific panels when evaluating the potential "combined effects" of chemical mixtures in food and feed. The approach gives EFSA's scientists the tools to follow a mixtures approach when needed, which complements the current EU regulatory requirements for assessing single substances.

Source: European Food Safety Authority

JECFA Has Its Work Cut Out For It

The Codex Committee on Food Additives, gathered for its 51st session in Jinan, China, agreed on 27 March on the priority list of substances for Joint FAO/WHO Expert Committee on Food Additives (JECFA) to evaluate. This list will be forwarded to the Codex Alimentarius Commission, which is expected to endorse.

Around 100 substances – flavors, enzymes, sweeteners, thickeners, emulsifiers, colorants and more – which were proposed by Codex Member countries, were put on the priority list. This exercise of developing the new list is carried out every year in a transparent, multi-step process that ensures the engagement of all Codex Members and Observers.

The vigorous vetting process, including through CAC, ensures that only the substances that are of high importance to Codex Members are added to the JECFA priority list, said Kim Petersen, WHO JECFA Secretariat, adding that over time the list has grown and the evaluations have become more complex.

Once approved by CAC, the new priority list will take JECFA multiple years to perform the food safety evaluations. Each year about 25 experts are invited to work independently as scientific experts for JECFA and carry out these safety evaluations.

Source: <http://www.fao.org/>

Non Communicable Diseases

Neuroscientists Find Brain Pathway Supporting An Intersection Of Taste And Pain

Neuroscientists have found a pathway in the brain where taste and pain intersect in a new study that originally was designed to look at the intersection of taste and food temperature. In study researchers have shown for the first time that taste and pain signals come together in the brain and use the same circuitry. This intersection may support a protective function and opens the possibility that taste messages could change how pain signals are transmitted in the brain, but more research is needed.

Source: Christian Lemon, Associate Professor, Department Of Biology, University Of Oklahoma, The Journal Of Neuroscience

Free Fatty Acids Appear To Rewire Cells To Promote Obesity-Related Breast Cancer

Scientists have found that free fatty acids in the blood appear to boost proliferation and growth of breast cancer cells. The finding could help explain obese women's elevated risk of developing breast cancer after menopause.

Source: Zeynep Madak-Erdogan, Professor, University Of Illinois, Food Science And Human Nutrition, Journal Cancer Research

Light And Sound Therapy May Boost Brain Function

New research in mice reveals that an innovative light and sound stimulation therapy can clear toxic plaque buildup in the brain and reduce some of the symptoms of Alzheimer's disease and impaired cognitive functioning. The hallmarks of Alzheimer's disease in the brain include the formation of beta-amyloid plaques and the amalgamation of tau, a toxic protein that disrupts the correct functioning of neural networks.

Source: Prof. Li-Huei Tsai, Massachusetts Institute Of Technology (MIT), Cambridge, Journal Cell

Plant Cellulose May Be Used To Create Bone Implants

Scientists have used plant cellulose to develop a strong, lightweight sponge that could be used as bone implants of the future. Researchers from the University of British Columbia (UBC) and McMaster University in Canada have developed an airy, foam like substance that can be injected into the body and provide scaffolding for the growth of new bone. It is made by treating nanocrystals derived from plant cellulose so that they link up and form an aerogel that can compress or expand as needed to completely fill out a bone cavity.

Most bone graft or implants are made of hard, brittle ceramic that doesn't always conform to the shape of the hole, and those gaps can lead to poor growth of the bone and implant failure. Scientists created this cellulose nanocrystal aerogel as a more effective alternative to these synthetic materials.

Source: Daniel Osorio, PhD Student, McMaster & Emily Cranston, Professor, University Of British Columbia

Study Links Severe Gum Disease To Raised Dementia Risk

A recent study has added to growing evidence of a link between severe gum disease, or periodontitis, and a raised risk of dementia.

The researchers also point out that their "retrospective cohort study" is likely the first to establish that lifestyle factors, such as alcohol consumption, smoking, and exercise, did not appear to have any effect on the connection.

Source: Journal Of The American Geriatrics Society

Night Shifts During Pregnancy May Up Miscarriage Risk

Working two or more night shifts in a week may significantly increase a pregnant woman's risk of miscarriage. Researchers accessed payroll data on 22,744 pregnant women working in public services, mainly hospitals. They linked that with data from Danish registers on births and admissions to hospital for miscarriage to determine how the risk of miscarriage between weeks 4-22 of pregnancy was influenced by night work.

Overall 377,896 pregnancy weeks were included -- an average of 19.7 weeks per woman. After week eight of pregnancy, women who had worked two or more night shifts the previous week had a 32 per cent higher risk of miscarriage compared with women who had not worked any night shifts that week.

Source: University Of Copenhagen And Aarhus University Hospital, Denmark, Journal Occupational & Environmental Medicine

Can Changes In Brain Energy Pathways Cause Depression?

New research has identified mutations in the DNA code that may affect energy metabolism. It also found a link to major depressive disorder. The World Health Organization (WHO) describes depression as "the leading cause of disability worldwide." It affects more than 300 million people around the world. Experts believe that many factors contribute to major depressive disorder (MDD).

These include genetics, environmental factors including abuse, brain physiology, and the immune system. One theory is that disturbances in energy metabolism in the brain may contribute to a person developing MDD. Conceptually, this is relatively easy to follow. The brain has a much higher requirement for energy than other organs. Any perturbations to this finely tuned system can have drastic consequences.

Recently a study in which researchers deleted the gene Sirt1 in forebrain excitatory neurons in male mice found a stark reduction in the number of mitochondria in these cells, accompanied by depression-like symptoms. Mitochondria, the so-called powerhouses of the cell, are specialized compartments that convert the food into the chemical energy that cells require to function. Each cell has many mitochondria to ensure a smooth supply of energy.

If their numbers are reduced or the intricate metabolic pathways disrupted, cells may die due to energy starvation. Researchers found a significant molecular signature of these in a subset of brain samples with MDD. Genes within the mitochondria and some within the cell's nucleus are responsible for keeping the powerhouses going. Mutations in these genetic locations can cause mitochondrial diseases. A person can inherit these mutations, but they may also accumulate during their lifetime. Scientists know that deletions, a type of DNA mutation wherein a large stretch of genetic code is missing, cause a number of mitochondrial diseases.

Source: Brooke E. Hjelm, Assistant Professor, Clinical Translational Genomics, University Of Southern California, Los Angeles, Journal Nucleic Acid Research

Physical Activity And Lifestyle

Catching Up On Sleep Over The Weekend Might Increase Your Waistline

According to a new study weekend recovery sleep is not an effective strategy to prevent metabolic dysregulation associated with recurrent insufficient sleep. The study explained how lack of sleep might also ignite risk for diabetes. It also said that short, insufficient sleep schedules may also lead to an inability to regulate blood sugar and increase the risk of metabolic disease in the long term.

Source: Kenneth Wright Jr, University Of Colorado, Boulder, Journal Current Biology

Moderate Physical Activities May Lower The Death Risk

New research suggests that adults over the age of 40 who engage in leisurely physical activity — such as dancing, gardening, or going for a walk — for even a short amount of time each week may have a lower risk of death from multiple causes ranging from cardiovascular and cancer, to all-cause mortality.

Researchers used data collected through the surveys between 1997 and 2008 to estimate the activity levels of 88,140 people aged 40-85 years, and linked that data with registered deaths up until December 31, 2011. They calculated the total leisure time physical activity of participants using definitions in 2008 US guidelines, which roughly equate one minute of vigorous activity such as running, fast cycling or competitive sports as equivalent to two minutes of moderate-intensity activity, such as brisk walking, gardening or dancing.

The study showed reductions in risk of death from cancer as also risk of death from cardiovascular events such as strokes and heart attacks. Individuals who were active for 10-59 minutes per week during their leisure time saw their risk fall by 12 per cent, and those who did 120-299 minutes per week by 37 per cent, compared with people who were inactive. However, much greater levels of physical activity were not associated with any greater benefits.

Source: Bo Xi, Professor, Department Of Epidemiology, Shandong University, Northern China, British Journal Of Sports Medicine

Being A Couch Potato Bad For Over 60s

Watching television for more than three-and-a-half hours a day could leave adults with a deteriorating memory. Tests on 3,500 adults over 50 found that verbal memory decline was twice as bad in couch potatoes, compared to lesser TV watchers, over six years.

The study found that those who watched television for more than three-and-a-half hours a day experienced, on average, an 8% to 10% decrease in verbal memory.

Source: Dr. Daisy Fancourt, UCL Institute of Epidemiology and Health Care, Scientific Reports

Musical Training May Improve Attention

Having had several years of musical training may yield some unexpected cognitive benefits. A new study suggests that musical training may improve a person's ability to focus and tune out distractions. The benefits of music for the human brain are numerous. Some studies have suggested that musical training improves blood flow in brain areas involved in language processing. More recent research has shown that listening to music may even "motivate" the brain to learn by stimulating neural networks associated with reward processing. Study suggests that musical training may also have an effect on attention control.

Source: Paulo Barraza, Ph.D., Center For Advanced Research In Education, University Of Chile, Santiago, Journal Heliyon

Agriculture & Climate Change

Japan Finds Gene-Edited Foods Are Safe

Scientists and regulators have recognized a difference between genetic modification, which typically involves transferring a gene from one organism to another, and gene editing, in which certain genes within an organism are disabled or altered using new techniques such as CRISPR.

Japan will allow gene-edited foodstuffs to be sold to consumers without safety evaluations as long as the techniques involved meet certain criteria, if recommendations agreed on by an advisory panel are adopted by the Ministry of Health, Labor, and Welfare. This would open the door to using CRISPR and other techniques on plants and animals intended for human consumption in the country.

The panel's final report, approved on March 18, says no safety screening should be required provided the techniques used do not leave foreign genes or parts of genes in the target organism. In light of that objective, the advisory panel concluded it would be reasonable to require information on the editing technique, the genes targeted for modification, and other details from developers or users that would be made public while respecting proprietary information. The recommendations leave open the possibility of requiring safety evaluations if there are insufficient details on the editing technique.

Source: Science Magazine

Nanotubes May Make Gene Editing More Efficient

Inserting or tweaking genes in plants is more art than science, but a new technique could make genetically engineering any type of plant—in particular, gene editing with CRISPR-Cas9—a quicker and easier process.

To date, most genetic engineering of plants is done by firing genes into the tissue—a process known as biolistics—or delivering genes via bacteria. Both are successful only a small percentage of the time, which is a major limitation for scientists seeking to create disease- or drought-resistant crops or to engineer plants so they're more easily converted to biofuels.

According to the researchers, nanotubes are highly successful at delivering a gene into the nucleus and into the chloroplast, a structure in the cell that is even harder to target using current methods. Chloroplasts, which have their own separate, though small, genome, absorb light and store its energy for future use, releasing oxygen in the process. An easy gene-delivery technique would be a boon for scientists now trying to improve the efficiency of light energy capture to boost crop yields.

The nanotube not only protects the DNA from being degraded by the cell, but also prevents it from being inserted into the plant's genome. As a result, the technique allows gene modifications or deletions that in the United States and countries other than the European Union would not trigger the designation "genetically modified," or GMO.

Source: University Of California, Berkeley, Nature Nanotechnology

Surveys

Packaged Food Market Crosses INR 5 Trillion As Buyers Switch To Branded Items

The branded packaged food market in India expanded 17.6 percent in 2018 to cross the INR 5 Trillion mark for the first time as almost all categories posted a healthy double digit growth. The market, which includes broad categories like edible oil, dairy and baby food, stood at INR 5.1 trillion in 2018 – up from INR 4.3 trillion a year ago. According to the analysis, migration of consumers from non-branded packaged food products to branded ones was the key driver.

- *Edible oil continued to be the largest category, growing 21.8 percent.*
- *Dairy, the second largest category grew by 15.6 percent.*
- *Rice, pasta and noodles, the third largest category, grew the fastest at 23.9 percent. Savoury snacks, the fourth largest category, grew by 13.6 percent.*
- *Conventional categories like sweets, biscuits and snacks bars and baby foods, too, grew by 10.2 percent and 12.9 percent respectively.*
- *Other larger categories like confectionery and sauces, dressings and condiments grew by 14.3 percent and 17.6 percent to INR 30, 450 crore and INR 18, 290 crore respectively.*

The Indian packaged food market is expected to continue its strong growth up to 2023, supported by consumers shifting from unpackaged food and the entry of a large number of new players.

Euro monitor also said government support in establishing infrastructure facilities, such as cold storage, rural electrification, and the internet are likely to further drive accessibility to packaged food in the hinterlands.

Source: Euro Monitor, Business Line, 28 March, 2019

Shoppers Who Buy Discounted Food More Likely To Be Obese

Consumers who buy food and drink on promotion are more likely to be obese than those who avoid special offers. The study, conducted by Cancer Research UK, looked at the shopping habits of over 16,000 British households. It discovered that those whose shopping trolleys contained between 40 and 80% of products that were on special offer had a 54% increased chance of being overweight. As a result, this also put them at a greater risk of 13 different types of cancer, including bowel and breast.

The study found that almost half of all chocolate, crisps, popcorn and savoury snacks were bought on promotion, with penny-pinching shoppers buying 30% less fruit, and 25% less vegetables than those who avoid special offers — a figure that equates to nearly 6kg every month.

Source: Professor Linda Bauld, Cancer Research UK's Prevention Expert

Natural' Claims Motivate U.S. Shoppers, Despite Lack Of Regulation

A new survey found that while "natural" is a non-regulated claim on food packaging, the word would be most likely to motivate more than half (53%) of Americans to purchase a product this year. The survey of 1,000 U.S. adults by Wakefield Research for Label Insight uncovered which loosely regulated claims would most likely influence consumer purchase behavior. While there is no standard definition, natural can be defined as the absence of color additives and artificial flavors, sweeteners, or preservatives in products that are minimally processed.

More than half of shoppers (51%) were also swayed by "no preservatives," particularly older generations. Nearly two-thirds (63%) of baby boomers say a product with that claim would motivate them to buy compared to Generation X (46%) and millennials (41%).

Today's shoppers increasingly want to know the conditions under which the fish, poultry, and livestock they are eating are raised. For this reason, consumers would be more likely to buy meat labeled as "antibiotic free" (34%), "free range" (26%), and "grass fed" (25%). "Pasture raised" influences only 17% of shoppers. Yet free range and pasture raised are synonymous terms, meaning the animal has been raised outdoors. In reviewing the Label Insight product database, 467 products make a "free range" claim and nearly twice that amount (862) make a "pasture raised" claim, demonstrating a disconnect between brands and consumers about which term is more likely to influence purchase.

Source: <http://www.ift.org/>

Activities Update

ILSI-India

Forthcoming Activity

- **ILSI-India Annual Meeting – 26 April, 2019, New Delhi**
- **Seminar on Value Addition to Agriculture through Food Processing – 26 April, 2019, New Delhi**

Activities Under Discussions- 2019

- **Workshop on How to build Robust Food Safety System**
- **Workshop on Protein Availability, Quality and Way Forward**

Research Projects / Monographs

- **Monograph Of Role Of Probiotics In Promoting Healthy Microbiome For Health And Immunity - Ongoing**
- **Assessment Of Sugar Consumption Levels Among Rural And Urban Population In India- Ongoing**
- **Assessment Of Fat / Saturated Fat Consumption Levels Among Rural And Urban Population In India- Ongoing**
- **Monograph On Risk Assessment - Ongoing**
- **Study On Healthy Foods and Healthy Diets- Ongoing**
- **Standardization of Methodologies for Research on Microbiome –Under Discussion**

Contact: ILSI-India for further Information

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Other ILSI Entities

ILSI North Brasil

X Congresso Nacional / Reunião Anual

2019-04-10 – 2019-04-12, Águas de São Pedro, Brasil

Experimental Biology 2019

2019-04-06 – 2019-04-09, Orlando, FL, USA

ILSI Europe

ILSI Europe's Annual Symposium 2019

2019-04-03, Brussels, Belgium

FIT4FOOD2030 Workshop 'Research and Innovation Showcases in the Food System'

2019-04-17, Brussels, Belgium

ILSI Europe's Roundtable on 'Foodborne Viruses: Detection, Risk Assessment, and Control Options in Food Processing' at IAFP's European Symposium on Food Safety 2019

2019-04-25, Nantes, France

ILSI Brasil

Café da Manhã com Palestra: Alimentos Fortificados e Suplementos

2019-04-05, São Paulo, Brasil

X Congresso Nacional / Reunião Anual

2019-04-10 – 2019-04-12, Águas de São Pedro, Brasil

ILSI Research Foundation

Crop Composition as a Component of Food and Feed Safety Assessment and Hands on with the ILSI Crop Composition Database

April 2, 2019, Tarragona, Spain

OECD Task Force on the Safety of Novel Foods and Feeds

2019-04-04 – 2019-04-05, Paris, France

OECD Working Group on the Harmonization of Regulatory Oversight in Biotechnology

2019-04-08 – 2019-04-10, Paris, France

ILSI Mesoamerica

Curso e-learning: programa de etiquetado general y nutricional de alimentos envasados

2019-06-17, San José, Costa Rica

ILSI North America

Experimental Biology 2019

2019-04-06 – 2019-04-09, Orlando, FL, USA

ILSI Southeast Asia Region

Seminar on Food Safety Risk Communication in ASEAN

2019-04-02, Bangkok, Thailand

Human Variability in Food and Nutrition: The Challenges and Opportunities for Industry and Academic Research

2019-05-14 – 2019-05-15, Sydney, Australia

ASEAN Regional Workshop on Food Safety Risk Communication

2019-04-02 – 2019-04-03, Bangkok, Thailand

Nutrition Reviews Of ILSI

Volume 77, Issue 3 March 2019

Lead Article

Intestinal plasticity in response to nutrition and gastrointestinal surgery

Special Articles

Diet quality of vegetarian diets compared with non-vegetarian diets: a systematic review

Effects of carbohydrate-restricted diets on low-density lipoprotein cholesterol levels in overweight and obese adults: a systematic review and meta-analysis

Nutrition Science ↔ Policy

Effects of product reformulation on sugar intake and health—a systematic review and meta-analysis

Browse ILSI Recent Publications at www.ilsi.org

Identification of a Surrogate to Validate Irradiation Processing of Selected Spices

LWT - Food Science and Technology, 2018 - ILSI North America

This study was conducted to determine the relationship between the populations of inoculated *E. faecium* and *S. enterica* after irradiation processing of selected spices.

Dinâmica da Composição do Leite Humano e Suas Implicações Clínicas

2018- ILSI Brasil

Volume 8 da Série de Publicações ILSI Brasil: Nutrição da Criança

Analyzing chemical substitution decisions among chemical and product manufacturers

Clean Technologies and Environmental Policy, 2018 - Health and Environmental Sciences Institute

The HESI Sustainable Alternatives Committee completed a study to understand potential tradeoffs concerning final product design and redesign decisions using a set of six factors affecting product design: business strategy, economic considerations, functionality and performance, health/environmental endpoints, public perception, and regulatory factors. The results are published here.

Mineral Intake Ratios Are a Weak but Significant Factor in Blood Pressure Variability in US Adults

The Journal of Nutrition, 2018 - ILSI North America

Higher intakes of potassium, calcium, and magnesium and lower intakes of sodium have been associated with a lower risk of hypertension and cardiovascular disease. In this study, the associations of mineral intake and mineral-sodium intake ratios with blood pressure were investigated.

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