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Protein Foods and Nutrition Development Association of India

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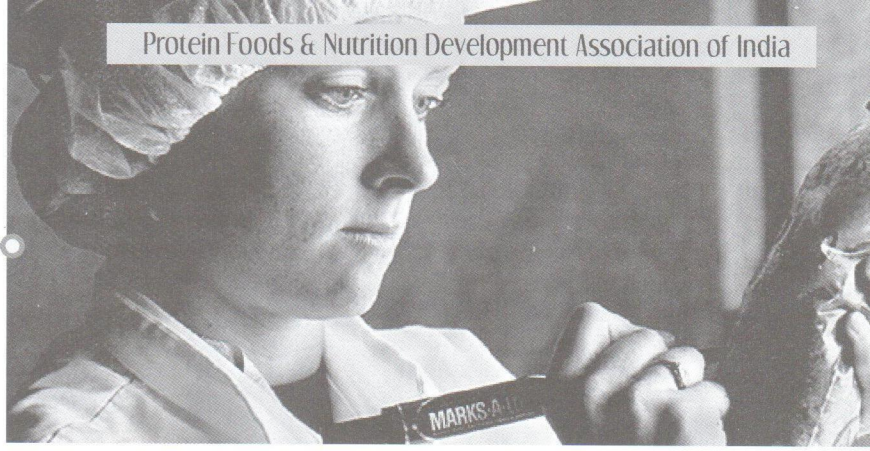
Editorial

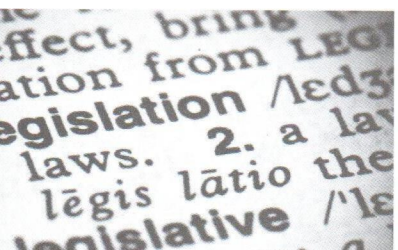


In 2011, working group on Business Regulatory Framework of Steering Committee on Industry set up by Planning Commission of Government of India, accepted that Indian system of regulation lacks Regulatory Impact Analysis (RIA) which has been globally accepted as a promising tool to analyse the need and relevance of existing as well as new regulations.

The US is the leading country which does regulatory impact analysis before enacting any regulation. Modern regulatory systems incorporate this concept which saves a lot of time, effort and money in avoiding unnecessary regulation. Regulatory impact analysis can show whether the regulation is necessary or what would be the cost of regulation and what would be the benefit arising out of such regulation. The benefit may be prevention of fraud, prevention of health hazard as well as wastage due to spoilage etc.

We have all kinds of regulations including the method of verification of genuineness of applicant for opening a bank account, purchasing a railway season ticket or BEST Bus pass as well as applying for a Visa. All the applicants have to submit documents which will be verified by the regulatory authority. Thus all the cost in this verification system needs to be considered and weighed against the benefits of preventing the fraudulent purchase of ticket or procuring visa or opening bank account which may lead to all kinds of further criminal acts.

Once the benefits are compared against the cost, then we may be able to justify such a regulation at a cost to prevent fraud which will result in a huge amount of assessed benefit. This regulatory impact analysis then justifies enacting the regulation.



In absence of such a system we tend to impose upon ourselves regulation which not only incurs unnecessary cost and waste of human and material resources, all of which is passed on to the consumers or tax payers. Most of the regulations without RIA tends to be the results of large-scale protests after some unfortunate incident or finding comes to light.

When chemical residue levels are regulated there must be some scientific justification of how much would be consumed by people and what would be level at which this would start causing health hazard and by notifying a limit how much benefit in terms of human health we are saving needs to be compared with cost of making the regulation and enforcing it including rejecting raw material having higher quantity and getting all samples analysed.

When allowing certain botanicals with physiological activity in foods a similar analysis needs to be carried out called risk analysis. There are benefits up to certain level but beyond that there might be adverse effects. This also needs to found out before regulating the amounts of such substances in food products as their intake may not be regulated unlike that of medicines.

We propose cautious optimism tempered by science whenever any regulation is made. At times regulatory decisions are affected by emotions and public outcry and regulators tend to make rules to pacify them. The former may be transient but regulations are longer lasting. Thus care needs to be used in addition to Regulatory Impact Analysis that would adequately justify regulation made.

With season's greetings,

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UNDERSTANDING REGULATORY REQUIREMENTS OF FOOD LABELLING

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Present day grocery stores are the avenues to greater nutritional knowledge. Today's food labels are distinctive and easy-to-read with product information such as ingredients, manufacturing details, nutritional information which will enable consumers to make healthful food choices. Information on the amount per serving of saturated fat, cholesterol, dietary fibre and other nutrients of major health concern, nutrient reference values will help consumers see how a food fits into an overall daily diet. Uniform definition for terms that describe a food's nutrient content – such as "light", "low fat" and "high fibre" to ensure that such terms mean the same for any product on which they appear. Claims about the relationship between a nutrient or food and diseases or health-related condition are helpful for people who are concerned about eating foods that may help keep them healthier longer. Standardization of serving sizes makes nutritional comparison of similar products easier.

Variation in the specifications/standards in different Acts/Orders, administration by different departments and ministries in India, resulted in implementation harmonized food safety standards and regulations on safety quality, packaging labelling aspects of food. Since India is a signatory to World Trade Organization (WTO) agreements, to meet Sanitary and Phytosanitary Measures(SPS), Technical Barriers to Trade (TBT) and other issues the food standards especially with reference to Additives, Contaminants, Labelling, Food Recall System, Traceability, etc .

Efforts are made to harmonise the regulation with the Codex Alimentarius Commission's guidelines keeping in mind the country's agricultural practices but never compromising on the safety and quality of the foods. The changing technologies, growing adulteration cases, increasing burden of food-borne illness necessitated the integration and

continual improvement of the existing Food Regulatory Systems. The Food Safety and Standards Act 2006 was introduced to overcome these shortcomings and providing impetus to safety standards including packaging and labelling. The Act consolidates all the laws relating to food and established Food Safety & Standards Authority of India (FSSAI), an autonomous body under Ministry of Health and Family Welfare, Government of India for laying down science-based standards for articles of food. This Act gives focuses on self regulation through better licensing and registration guidelines to process and sell safer food product to consumers. Food labelling is the one of the essential responsibility of the Food Business Operator to expose the hidden attributes of packed food with honesty and sincerity to the consumer.

Packing and Labelling Requirement as per FSSA 2006:

Food Safety & Standards (Packaging and Labelling) Regulation 2011, deal with Packing and Labelling of Foods under Food Safety and Standards Act 2006.

- Packaging materials used for packing food shall conforms to Indian Standards(IS) derived by Bureau of Indian Standards(BIS) for various food packaging materials.
- Every declaration on the package shall be Legible, prominent, definite, plain and unambiguous. It shall conspicuous as to size, number and colour
- Label shall not contain any false or misleading statement, claim, design, device, fancy name or abbreviation which is false or misleading. Unauthorized use of words showing imitation is prohibited.
- The language for the declaration on the label shall be English or Hindi in Devnagari Script; use of other language in addition to the above, is also permitted.
- It is mandatory that requires every package of food to carry a label with following particulars:
  a) The name, trade or description of food in the package.
  b) The names of ingredients used in the product in descending order of their composition by weight or volume.
  c) "Green" colour code shall be used for all vegetarian food products. If animal products including egg, other than milk and milk

products, colour code of 'Brown" for the non-vegetarian food shall be used on the label.

d) It is also required to declare class name and INS number for the food additives used in the product.

e) Nutritional information of the product shall be declared on the product label for all the food products other than those specified in the exception list.

f) The name and complete address of the manufacturer and the manufacturing unit and in case the manufacturer is not the packer or bottler, the name and complete address of the unit is also to be declared on the label.

g) Date of manufacture, Expiry date/ best before , Batch/Lot No, Net weight shall be declared on the label

h) Any food article manufactured outside India is packed or bottled in India, the package containing such food article shall also bear on the label, the name of the country of origin of the food article and the name and address of the importer and premises of packing or bottling in India.

i) FSSAI Logo with License number.

j) Additional information such as trademark, trade name, UPC code (barcode) may also be given.

- If the food is claimed to be enriched with nutrients such as minerals, proteins or vitamins, the quantities of such added nutrients shall be given on the label.
- Also exclusively deals with labelling of infant milk substitutes and infant food with following particulars on the label:
  - IMPORTANT NOTICE: "MOTHERS MILK IS BEST FOR YOUR BABY" in capital letters.
  - Infant food shall be introduced only after four months of age.
  - To be used only on the advice of a health worker.
  - Not the sole source of nourishment of an infant.
  - Process of manufacture.
  - Hygienic preparation, use and cleaning.

- The appropriate composition of nutrients per 100 gm of the product including its energy value.
- The storage conditions.
- The feeding charts and direction / instruction for use.
- Batch No., month and year of its manufacture, and month and year before which it is to be consumed.
- Picture of infant or woman or both is not permitted.

- Prepackaged, irradiated foods shall bear the declaration – "PROCESSED BY IRRADIATION METHOD, DATE OF IRRADIATION, LOGO, LICENSE NO. AND PURPOSE OF IRRADIATION".
- The rules also prescribe "form of labels" for various products such as coffee-chicory mix, condensed milk, milk powder, blend of vegetable oils, mixed masala, malted milk food, iodized common salt, pan masala and supari, etc.

However every food label shall also conform to Legal Metrology (Packaged Commodity) Rules 2011 under section 52 of the Legal Metrology Act 2009 (1 of 2010).

Nutritional Information Panel Requirements:

USA has comprehensive rules under Nutrition Labelling and Education Act, 1999 (NLEA) which requires nutrition labelling for most foods and authorizes the use of nutrient content claims appropriate FDA- approved health claims. Codex Alimentarius Commission has published guidelines on Nutrition labelling and guidelines for use of Nutrition claims.

Section 2.2.2.3 of the Food Safety & Standards (Packaging and Labelling) Regulation 2011 of FSSA 2006 has prescribed guidelines for Nutritional Information on the food label.

Mandatory pieces of information includes Energy value, amount of Protein, Carbohydrates including sugar, Fat and any other nutrient for which nutrition claim has made. This includes claim on Cholesterol, SFA, MUFA, PUFA and Trans fatty acids.

Some foods exempted from nutrition information includes raw agricultural commodities like wheat, rice, cereals, spices, spice mixes, herbs, condiments, table salt, sugar, jaggery and non–nutritive products like soluble tea, coffee, soluble coffee, coffee-chicory mixture, packaged drinking water, alcoholic beverages, processed and pre-packed assorted fruits and vegetables and products that comprise of single ingredient, pickles, papads, foods served for

immediate consumption in hospitals, hotels, food service vendors or halwais or foods shipped in bulk, as long as it is not for sale in that form to consumers.

If a claim is made about any of the optional components or if a food is fortified or enriched with any of them, nutrition information for these components becomes mandatory.

The required nutrients may be selected to address today's health concerns. The order in which they must appear reflects the priority of current dietary recommendations.

Nutrient Content Claims:

There is proposal to include nutrient content claims under Indian Food Regulatory system. Proposal for nutrient content claim includes the following:

- Nutrition Claims shall be permitted in relation to energy, protein, carbohydrate, fat and their components thereof, fibre, sodium, vitamins and minerals.
- Nutrient content or Nutrient comparative claim such as low or reduced energy, energy free, low-fat, fat-free, low cholesterol, cholesterol free , low saturated fat, saturated fat free , trans fat free, rich in mufa (mono unsaturated fatty acid) and/ or pufa (poly unsaturated fatty acid), contains omega3 fatty acids, source of omega 3 fatty acids, low sugar, sugar-free, low sodium/salt, Low Protein, source of protein, high in dietary fibre or rich in dietary fibre, etc or any synonymous claims such as free, low, reduced/less, increased/more can be made by fulfilling the conditions or criteria mentioned under the regulation
- Flexibility in the wordings of a nutrition claim may be allowed for free, low, reduced/less, increased/more, etc provided with the conditions laid down under the regulations.
- Where a food is by its nature high, low or free of nutrient and that is the subject of the claim, the term describing the level of nutrients shall be preceded by 'natural / naturally' and immediately preceded by the name of the food and shall be in the form of, for example: "a low (naming a nutrient or substance) food" or "a (naming the nutrient or the substance) free food".

- For making a nutrient comparative claim, the compared foods shall be different versions of the same food or similar foods having similar nutrient level. The foods being compared shall be easily identifiable.
- A Comparison shall be based on a relative difference of at least 25% in the energy value or nutrient content, except for micronutrients where at least a 10% difference in the NRV shall be required between the compared foods and the minimum absolute difference in the energy value or nutrient content equivalent to the figure defined as 'low' or 'reduced' as provided in the conditions /criteria.

For example; "Free" means the product contains no amount or only trivial or "physiologically inconsequential" amounts of fat, saturated, cholesterol, sodium, sugars & calories.

Free:

Calorie-free means less than 5 calories per serving;

Sugar-free & fat-free means less than 0.5g per serving.

Low:

Low-fat: 3g or less per serving

Low-saturated fat: 1g or less per serving

Low-sodium: 140gm or less per serving

Very low-sodium: 35mg or less per serving

Low-cholesterol: 20mg or less per serving

Low-calories: 40 calories or less per serving

Nutrition Claim

Nutrition Claim means any representation which states, suggests or implies that a food has particular nutritional properties including but not limited to the energy value and to the content of protein, fat and carbohydrates, as well as the content of vitamins and minerals. However, the following nutrition claims are not permitted:

- Claims stating that any given food will provide an adequate source of all essential nutrients
- Claims implying that a balanced diet or ordinary foods cannot supply adequate amounts of nutrients.

- Claims which cannot be scientifically substantiated.
- Claims as to the stability of a food for use in the prevention, attenuation, treatment or cure of a disease, disorder or particular physiological condition.
- Claims which could give rise to doubt about the safety of similar food or which could arouse or exploit fear in the consumer.

Health Claims:

- In India, at present no specific health-claims were permitted. There are proposal to include these claims based on Codex & US-FDA guidelines. Claims for 10 relationships between a nutrient and a food at the risk of a disease or health-related conditions are internationally allowed.

The allowed nutrient-disease relationship claims as per CODEX & USFDA are:

- Calcium & Osteoporosis: Food should contain 20% or more of DV for calcium (200mg) per serving
- Fat and Cancer: Food should be 'low-fat' and meat be 'extra lean'
- Saturated fat & cholesterol and CHD: Food should be with high fibre
- Fibre containing foods and cancer: Food should be with high fibre
- Fibre containing foods and CHD: Food should be with high fibre
- Sodium and Hypertension: Food with low sodium foods
- Fruits & Vegetables and Cancer: Good source for Vitamin A or C.
- Folic acid and neural tube defects: - diets with sufficient amounts of folate
- Dietary sugar alcohols and dental caries: - Foods such as candy, gums, containing sugar alcohols
- Soluble fibre and heart disease: Fenugreek preparations

In conclusion

A vast amount of work on labelling aspects of food has been undertaken in India under Food Safety & Standards Act 2006. Labelling regulations are being framed at par with international standards and regulations. It is the responsibility of the manufacturer to give the details of hidden attributes of the food on the food label to cater the consumer's right to be informed as self regulatory aspects for self compliance.

Coconut: the Tree of Life

by Prof. Jagadish Pai, Executive Director

Coconut tree has been sometimes also called as Kalpavriksha, the wish-fulfilling divine tree since it provides everything from food, beverage, oil, fibres, timber, health products and many more especially to coastal population where it grows abundantly. India contributes to about 20% of coconut production in the world and is grown mostly in coastal regions of Kerala, Karnataka, Maharashtra, Tamil Nadu, Andhra Pradesh, Orissa and Pondicherry with smaller amounts in Gujarat, Goa, West Bengal, Islands of Andaman & Nicobar and Lakshadweep.

Top Coconut Producing Countries, 2012

Country	Production (tonnes)
Indonesia	18,000,000
Philippines	15,860,000
India	10,560,000
Brazil	2,888,500
Sri Lanka	2,000,000
Vietnam	1,250,000
Thailand	1,100,000
Mexico	1,050,000
Papua New Guinea	900,000
Malaysia	606,500

Source: FAO statistics

Besides the many non-food products from coconut, the main food products are tender coconut water, coconut oil, copra (both fresh and dried) and coconut milk. Again from these a large number of other products can be prepared.

The coconut palm, *Cocos nucifera* with both tall and dwarf cultivars is grown throughout Asia, Africa, Latin America, the Carribbean and Pacific region. Every part of it is used and many value added products are prepared from it. The kernel or fresh (endosperm) is eaten fresh, green or dry and used for many value added products like copra, oil, cake and milk. Water is from immature nuts provides a nutritious and refreshing drink. The husk is fibrous and is used for fuel, mulch, coir and peat. The hard shell enclosing seed is used for handicraft, charcoal, and activated charcoal. Leaves and trunk make brooms, furnishing and decorations.

Total world production of coconuts in 2012 was over 60 million tonnes of which India accounted for over 10 million ranking third. Indonesia and Philippines have been leading coconut producers for several years. Production of coconut oil in world was over 3.3 million tonnes of which India produced over 390,000 tonnes while Indonesia produced about

930,000 tonnes and Philippines let the production with over 1.3 million tonnes. In India, almost 90% of coconuts produced are used for oil extraction with just less than 7% being used for direct consumption and/or making products and about 2% being used for seed purpose. Export is hardly 0.02% of total coconuts produced in India.

Coconut water is slowly becoming popular even as a sports beverage. Although sports beverage market is quite strong and is likely to reach about 50 billion USD, coconut water showed decent presence at 450 million USD in 2011 and steadily climbing each year by about 40 to 60 million USD and is expected to reach 750 million USD in near future.

Coconut Processing and Products

Coconuts are different from other fruits as they contain large amount of water and may be harvested when tender for this water. Mature coconuts also have water and can be processed to give oil from the kernel, the edible part. Fresh copra is a nutritious product which is used in cooking as grated coconut with or without grinding with spices.

Nutritional value of Coconut Products per 100 g

	Fresh copra	**Coconut water**
Energy	354 kcal (1,480 kJ)	19 kcal (79 kJ)
Carbohydrates g	24.23	3.71
Sugars g	6.23	2.61
Dietary fiber g	9	1.1
Fat g	33.49	0.2
Protein g	3.33	0.72
Water g	47	95
Thiamine (vit. B_1) mg	0.066	0.03
Riboflavin (vit. B_2) mg	0.02	0.057
Niacin (vit. B_3) mg	0.54	0.08
Pantothenic acid (B_5) mg	1.014	-
Vitamin B_6 mg	0.05	0.032
Vitamin C mg	3.3	2.4
Calcium mg	14	24
Iron mg	2.43	0.29
Magnesium mg	32	25
Phosphorus mg	113	20
Potassium mg	356	250
Zinc mg	1.1	0.1

Source: USDA Nutrient Database

Copra is dried to extract oil as it contains almost half its weight as moisture which impedes in oil recovery. Most copra is sundried and is then either mechanically extracted or with solvent hexane. Mechanical extraction gives a better flavour but leaves large amount of oil in cake. Premium quality copra meal also contains over 20% protein. Fresh copra is also a good source of dietary fibre and iron and many other minerals. Coconut proteins have been shown to have beneficial effect on serum lipids including cholesterol.

Coconut meat is used fresh or dried in cooking, especially in confections and desserts such as macaroons and as filling in some chocolate bars. Desiccated coconut or coconut milk or grated coconut is frequently added to curries and other savoury dishes. Coconut flour has been developed for use in baking, to fight malnutrition. There are many uses of coconut and its various products.

Coconut Water

Tender coconut water is very nutritious and wholesome beverage with pH 4.9 to 5.2. This serves as suspension of endosperm in coconut during its nuclear phase of development. It contains sugar, dietary fibre, proteins, antioxidants, vitamins and minerals and provides isotonic electrolyte balance. It is consumed as refreshing drink throughout humid tropics and is gaining popularity as sports drink.

Sugars start at 5 to 5.5% concentration in tender coconut and slowly reduces to 2% as nut matures with about half is sucrose. Tender coconut water is rich in potassium and B-vitamins. Tender coconut and the water within are very delicate materials so it is necessary to preserve their quality during transport and storage. Tender coconut has been shown to store for up to 24 days in refrigerated condition if dipped in solution containing 0.5% each of citric acid and potassium metabisulphite after dehusking. DFRL Mysore has developed the technology for packing tender coconut water in pouches and aluminium cans with 6 months shelf life in ambient conditions. Several companies have been marketing in India.

Globally large companies have been producing and marketing coconut water for health benefits like muscle performance, weight loss, kidney cleansing, stress reduction, heart health, diabetes control, hypo allergenic etc. and being consumed by sports persons and health conscious consumers with special interest among older and convalescing population.

Coconut Oil

This is edible oil prepared from mature coconut meat. It has over 90% saturated fatty acids and hence earlier health organisations advised against its consumption. However, opinions are slowly changing. The high level of saturates slows its oxidation and can last for a long time.

It can be prepared from dried copra which is pressed or solvent extracted. Wet process uses raw fresh coconut. Modern processes use centrifuges and pre-treatments including enzymes. Solvent extraction recovers more oil than expellers but during refining to remove solvent and free fatty acids, aroma is lost. Virgin coconut oil is produced without the application of heat and solvent. It has all the health promoting components along with vitamins.

Coconut oil is used as edible oil as well as in many industrial applications as well as in cosmetics. Refined coconut oil is used in biscuits, chocolates & other confectionery products, ice cream, and many other bakery products. It is also used in non-dairy creamers.

Desiccated Coconut

This is prepared by drying ground and shredded coconut kernel after removing brown testa. It is used in confectioneries, pudding and many other food preparations instead of fresh grated coconut. It is commercially produced in India in many small units in southern states. It has fat content of over 65% and moisture of less than 3%.

On a cottage scale, coconuts are de-husked and de-shelled and brown testa is removed by scrapers. Kernel is finely ground, blanched by steam and then dried in hot air oven. The meat was shredded or disintegrated and dried in hot air driers and used in the manufacture of cakes, pastries and chocolates. Desiccated coconut is prepared from white kernel of coconut processed under strict hygienic conditions and dried to a moisture content of below 3.0%.

Coconut Milk

This is extracted from the kernel of coconut as an emulsion of coconut oil in water, stabilised by proteins and other substances in coconut. It is milk-like liquid obtained from the gratings of fresh coconut kernels after mixing with water, blending and pressing out. It has pleasant sweet flavour. It is rich in fat, poor in protein and sugar. It is used in household cooking of fish, shell-fish, meat, poultry and vegetable dishes, confectionery, as a substitute of dairy cream, cheese, yogurt etc. It is preserved as canned coconut milk in many countries. Aseptic packing is also available.

Coconut milk can also be preserved by spray drying converting it into coconut milk powder which reduces bulk and has longer shelf life at reduced cost. It can be reconstituted to coconut milk by adding water. Coconut milk also has been used to prepare virgin oil by some processes.

Health Benefits

Coconut and its various products have been used for a long time and there are mentions of their benefits in our ancient literature. Many of these are now being re-established through modern research and most have been used as traditional remedies.

Coconut water is recommended for regulation of blood pressure, in weight control, for immunity and has also been recommended for pregnant women as well as old and convalescing patients. It has also been recommended for improving kidney function. It is used for rehydration and some sports persons use it as sports drink.

Coconut oil was once considered unhealthy because of its very high saturated fat content which was thought to contribute to heart disease. Many now consider it to be heart healthy food and has been shown to improve cholesterol profile.

Coconut oil is also shown to be very useful in slowing down some of the ageing problems of skin when taken in food as well as when applied. Coconut oil has good proportion of short and medium chain fatty acids that are absorbed in intestine more easily and rapidly than long chain fatty acids so they are beneficial for children and convalescent.

There are a large number of products and applications are known of coconut and this list is growing as some of the unique products become known. Tender coconut snow ball is prepared by removing the outer covering of husk leaving only the edible white tender meat and tender coconut water within intact so one can pierce the outer shell by a straw and drink the water and then eat the outer covering as well. This is a unique product and also lets the water unprocessed and without contamination.

Research in Health & Nutrition

TV ads nutritionally unhealthy for kids, study finds

December 17, 2013 Science Daily

The nutritional value of food and drinks advertised on children's television programs is worse than food shown in ads during general air time, according to new study. The nutritional value of food and drinks advertised on children's television programs is worse than food shown in ads during general air time, according to University of Illinois at Chicago researchers.

The study is published in the December issue of the journal *Childhood Obesity.*Using Nielsen TV ratings data from 2009, UIC researchers examined children's exposure to food and beverage ads seen on all -- both adult and children's -- programming. It also looked at the nutritional content of ads on children's shows with a child-audience share of 35 percent or greater, the first study to do so.

The researchers assessed the nutritional content of products advertised -- cereals, sweets, snacks, beverages and other foods -- and whether they fit the proposed voluntary nutrition guidelines recommended by the Interagency Working Group on Food Marketed to Children. The proposed federal guidelines, a joint effort of the Federal Trade Commission, the Food and Drug Administration, the Centers for Disease Control and Prevention and the U.S.

Department of Agriculture, would limit saturated fat, trans fat, added sugars and sodium, due to their potential negative effects on health or body weight.

The study also noted which ads were from food companies that pledged to promote healthier products to children or to refrain from targeting children in their advertising, under the Children's Food and Beverage Advertising Initiative. CFBAI began in 2006 and currently includes 16 companies that signed on, but also set their own nutritional criteria for foods advertised to children.

"We found that less than half of children's exposure to ads for food and beverage products comes from children's programming, meaning that a significant portion of exposure is not subject to self-regulation," said Lisa Powell, professor of health policy and administration in the UIC School of Public Health and lead author of the study.

The researchers found that more than 84 percent of food and beverage ads seen by children, ages 2 to 11, on all programming were for products high in fats, sugars and sodium. On children's programming, more than 95 percent of ads were for products high in those unhealthy contents.

Nearly all CFBAI ads seen on children's programming failed to meet recommended federal nutrition principles; more than 97 percent were for products high in fats, sugars and sodium.

While many foods made by CFBAI companies meet federal nutrition guidelines, the study suggests that the companies choose to market less-nutritional products to children more heavily.
"The self-regulatory effort has been ineffective so far," Powell said.

The CFBAI has proposed new, uniform nutrition criteria for member companies beginning Dec. 31, to replace the varying nutrition standards set by each company currently.

The new study serves as a benchmark to determine if the new, common CFBAI nutrition criteria will improve the content of products marketed to children, said Powell, who also serves as associate director of UIC's Health Policy Center of the Institute for Health Research and Policy.

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Diet rich in tomatoes may lower breast cancer risk

December 18, 2013 Science Daily

A tomato-rich diet may help protect at-risk postmenopausal women from breast cancer, according to new research accepted for publication in The Endocrine Society's Journal of Clinical Endocrinology & Metabolism.

Breast cancer risk rises in postmenopausal women as their body mass index climbs. The study found eating a diet high in tomatoes had a positive effect on the level of hormones that play a role in regulating fat and sugar metabolism.

"The advantages of eating plenty of tomatoes and tomato-based products, even for a short period, were clearly evident in our findings," said the study's first author, Adana Llanos, PhD, MPH, who is an Assistant Professor of Epidemiology at Rutgers University. Llanos completed the research while she was a postdoctoral fellow with Electra Paskett, PhD, at The Ohio State University Comprehensive Cancer Center -- Arthur G. James Cancer Hospital and Richard J. Solove Research Institute. "Eating fruits and vegetables, which are rich in essential nutrients, vitamins, minerals and phytochemicals such as lycopene, conveys significant benefits. Based on this data, we believe regular consumption of at least the daily recommended servings of fruits and vegetables would promote breast cancer prevention in an at-risk population."

The longitudinal cross-over study examined the effects of both tomato-rich and soy-rich diets in a group of 70 postmenopausal women. For 10 weeks, the women ate tomato products containing at least 25 milligrams of lycopene daily. For a separate 10-week period, the participants consumed at least 40 grams of soy protein daily. Before each test period began, the women were instructed to abstain from eating both tomato and soy products for two weeks.

When they followed the tomato-rich diet, participants' levels of adiponectin -- a hormone involved in regulating blood sugar and fat levels -- climbed 9 percent. The effect was slightly stronger in women who had a lower body mass index.

"The findings demonstrate the importance of obesity prevention," Llanos said. "Consuming a diet rich in tomatoes had a larger impact on hormone levels in women who maintained a healthy weight."

The soy diet was linked to a reduction in participants' adiponectin levels. Researchers originally theorized that a diet containing large amounts of soy could be part of the reason that Asian women have lower rates of breast cancer than women in the United States, but any beneficial effect may be limited to certain ethnic groups, Llanos said.
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Growing body of research supports efficacy of SNAP nutrition education

Science Daily
December 19, 2013

The Food and Nutrition Service of the U.S. Department of Agriculture (USDA) released a study on December 5, providing clear evidence that well-designed nutrition education programs can lead to healthier food choices by participants in the Supplemental Nutrition Assistance Program (SNAP).

"This study builds on a body of research published in the *Journal of Nutrition Education and Behavior* showing the positive impact education has on healthy behaviors," says Joanne Ikeda, president of the Society for Nutrition Education and Behavior (SNEB). "It's estimated that each SNEB member educates nearly 10,000 people through presentations, newsletters and social media. Their work helps at-risk families make better food choices and reduce the devastating impacts of conditions such as diabetes and obesity."

The study, SNAP Education and Evaluation Study (Wave II), evaluated the impact of several nutrition education programs on fruit and vegetable consumption among low-income elementary school children and seniors. The study found that children participating in certain nutrition education programs increased their daily fruit and vegetable consumption at home by a quarter- to a third-cup, and were more likely to choose low-fat or fat-free milk. Participating seniors also consumed more fruits and vegetables daily.

"The results of this study reiterate the critical role of nutrition education and promotion in improving the healthfulness of SNAP purchases," said Under Secretary Kevin Concannon in the USDA press release. "USDA and our partners continue to explore a wide-ranging set of strategies that support families as they purchase, prepare and eat more healthy foods." But Ikeda cautions, "Recent cuts to SNAP and SNAP-Ed have not only reduced money available for food for at-risk families, but have also impacted the funding for vital education programs. SNEB has joined other organizations in calling for Congress to protect SNAP and SNAP-Ed."

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Cholesterol study shows algal extracts may counter effects of high fat diets

Science Daily

December 20, 2013

Health Enhancement Products, Inc., in conjunction with Wayne State University's Department of Nutrition and Food Science in the College of Liberal Arts and Sciences, announces the publication of a scientific article in the Journal of Nutrition & Metabolism, "ProAlgaZyme sub-fraction improves the lipoprotein profile of hypercholesterolemic hamsters, while inhibiting production of betaine, carnitine, and choline metabolites."

The paper describes the beneficial effects of the Company's proprietary algal culture in supporting healthy cholesterol balance. The fractions and isolates derived from the Company's proprietary algae culture "PAZ" (formerly referred to as "ProAlgaZyme") were shown to be a viable candidate for supporting healthy cholesterol balance, in sharp contrast to the control group. The project, led by Smiti Gupta, Ph.D., associate professor of nutrition and food science at Wayne State University, involved monitoring lipid metabolism in a widely accepted animal model for investigating human lipid metabolism. The scientific paper describes a follow-up study to the original research conducted by Gupta. In the previous study, published in 2012, the test group consumed algal-infused water while simultaneously consuming a high fat diet. The algal fractions and isolates were shown to have a preventative beneficial effect against the negative effects of the high-fat diet on the animal's plasma

cholesterol levels. Specifically, the extracts significantly increased high density lipoprotein cholesterol (HDL-C, aka "good" cholesterol), and reduced non-HDL cholesterol ("bad" cholesterol) and the ratio of total cholesterol/HDL-C, despite the ongoing consumption of high fat food.

The test subjects in the recent study consumed a high fat diet for four weeks, at which point they became hypercholesterolemic (i.e. they had high plasma cholesterol levels.). Subsequently, the animals were given the extracts for 0 (untreated), 3, 7, 10, 14, and 21 days while still on the high fat diet. The results indicated that the PAZ extracts may be a useful option for improving the plasma cholesterol profile despite the hypercholesterolemic state induced by a high fat diet.

Specifically, "bad" cholesterol concentrations significantly decreased in all subjects consuming the PAZ extracts, compared to those who were not treated. Furthermore, increased levels of "good" cholesterol could be seen as early as Day Three for that same group. By Day 21, "good" cholesterol levels increased by 28% and "bad" cholesterol levels decreased by 30%.

Additionally, metabolomics analysis was conducted to analyze the concentration of certain metabolites (small molecules which are byproducts of normal metabolic functions) in the blood. Administering the PAZ extract correlated with significantly decreased levels of several metabolites that are independent predictors of increased risk of atherosclerosis and cardiovascular disease.

Gene expression analysis was also conducted, to get a deeper insight into the increase in plasma HDL-c levels. Thus the expression levels (mRNA) of proteins involved in HDL-c metabolism were evaluated. By Day Ten, subjects showed a threefold increase in the gene expression of APO A1, a major protein associated with the production of HDL particles, the "good" cholesterol which increased sixfold by Day 21.

"To put this in perspective, the benefit of raising HDL can be explained by examining how these "good" cholesterol particles function: They play a key role in removing excess cholesterol from cell storage and transporting that cholesterol to the liver for excretion from the body," said Amy Steffek, Ph.D., HEPI Director of Research & Development. "They also have other properties that promote and protect cardiovascular health, and serve as an independent predictor of cardiovascular risk. To simplify, one can lower risk of cardiovascular disease by increasing levels of HDL cholesterol. Given that cardiovascular disease is a leading cause of death in the US and other industrialized nations, the effects of our algal extracts in improving "good" cholesterol, and therefore cardiovascular health, are significant and potentially wide-reaching. Whether the relationship between our bioactive extracts and increased HDL cholesterol is causal or correlative, the studies conducted show an improved metabolic state, despite the continuation of a high fat diet."
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Peanut and tree nut allergy incidence lower among children whose mothers ate them during pregnancy, study finds

Science Daily
December 23, 2013

Women need not fear that eating peanuts during pregnancy could cause their child to develop a peanut allergy, according to a new study from Boston Children's Hospital published online Dec. 23 in JAMA Pediatrics.

"Our study showed increased peanut consumption by pregnant mothers who weren't nut allergic was associated with lower risk of peanut allergy in their offspring," says the study's senior author Michael Young, MD, of Boston Children's Division of Allergy and Immunology. "Assuming she isn't allergic to peanuts, there's no reason for a woman to avoid peanuts during pregnancy."

Previously, women had been advised to avoid highly allergenic foods such as peanuts and tree nuts during pregnancy and while nursing, and that their children should avoid peanuts until 3 years of age. The goal of these recommendations, despite a lack of supporting research, was to minimize early allergen exposure and sensitization, thereby reducing the risk of developing childhood peanut allergy. The American Academy of Pediatrics (AAP) endorsed these recommendations in 2000. However, from 1997 to 2007, the number of peanut allergy cases in the U.S. tripled, leading the medical community to re-examine its recommendations. Based on the lack of evidence supporting early dietary avoidance, the AAP rescinded the recommendation in 2008.

"No one can say for sure if the avoidance recommendation for peanuts was related to the rising number of peanut allergies seen in the late 1990s and early 2000s, but one thing is certain: it did not stop the increase," Young says. "It was clear that a new approach was needed, opening the door for new research."

To further define the relationship between maternal diet and the development of food allergy in offspring, Young and his team analyzed large amounts of data provided by the Growing Up Today Study (GUTS). Examining the records of 8,205 children, the researchers positively identified 140 cases of peanut or tree nut allergies. They then examined the diets of each child's mother -- specifically, peanut and nut consumption -- during the peri-pregnancy period and compared them with the dietary habits of pregnant women whose children did not develop a peanut allergy.

Young and team found that the rate of peanut allergy was significantly lower among children in the study whose mothers ate peanuts during the peri-pregnancy period. Although this is a

substantial finding, the data demonstrate only an association between maternal diet and the risk of peanut allergy in children.
"The data are not strong enough to prove a cause-and-effect relationship. Therefore, we can't say with certainty that eating more peanuts during pregnancy will prevent peanut allergy in children. But we can say that peanut consumption during pregnancy doesn't cause peanut allergy in children," Young says. "By linking maternal peanut consumption to reduced allergy risk we are providing new data to support the hypothesis that early allergen exposure increases tolerance and reduces risk of childhood food allergy."

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Most clinical studies on vitamins flawed by poor methodology

Science Daily
December 30, 2013

Most large, clinical trials of vitamin supplements, including some that have concluded they are of no value or even harmful, have a flawed methodology that renders them largely useless in determining the real value of these micronutrients, a new analysis suggests.

Many projects have tried to study nutrients that are naturally available in the human diet the same way they would a powerful prescription drug. This leads to conclusions that have little scientific meaning, even less accuracy and often defy a wealth of other evidence, said Balz Frei, professor and director of the Linus Pauling Institute at Oregon State University, in a new review published in the journal *Nutrients*.

These flawed findings will persist until the approach to studying micronutrients is changed, Frei said. Such changes are needed to provide better, more scientifically valid information to consumers around the world who often have poor diets, do not meet intake recommendations for many vitamins and minerals, and might greatly benefit from something as simple as a daily multivitamin/mineral supplement.

Needed are new methodologies that accurately measure baseline nutrient levels, provide supplements or dietary changes only to subjects who clearly are inadequate or deficient, and then study the resulting changes in their health. Tests must be done with blood plasma or other measurements to verify that the intervention improved the subjects' micronutrient status along with biomarkers of health. And other approaches are also needed that better reflect the different ways in which nutrients behave in cell cultures, lab animals and the human body.

The new analysis specifically looked at problems with the historic study of vitamin C, but scientists say many of the observations are more broadly relevant to a wide range of vitamins, micro nutrients and studies.

"One of the obvious problems is that most large, clinical studies of vitamins have been done with groups such as doctors and nurses who are educated, informed, able to afford healthy

food and routinely have better dietary standards than the public as a whole," said Frei, an international expert on vitamin C and antioxidants.

Vitamin or mineral supplements, or an improved diet, will primarily benefit people who are inadequate or deficient to begin with, OSU researchers said. But most modern clinical studies do not do baseline analysis to identify nutritional inadequacies and do not assess whether supplements have remedied those inadequacies. As a result, any clinical conclusion made with such methodology is pretty much useless, they said.

"More than 90 percent of U.S. adults don't get the required amounts of vitamins D and E for basic health," Frei said. "More than 40 percent don't get enough vitamin C, and half aren't getting enough vitamin A, calcium and magnesium. Smokers, the elderly, people who are obese, ill or injured often have elevated needs for vitamins and minerals.

"It's fine to tell people to eat better, but it's foolish to suggest that a multivitamin which costs a nickel a day is a bad idea."

Beyond that, many scientists studying these topics are unaware of ways in which nutrients may behave differently in something like a cell culture or lab animal, compared to the human body. This raises special challenges with vitamin C research in particular.

"In cell culture experiments that are commonly done in a high oxygen environment, vitamin C is unstable and can actually appear harmful," said Alexander Michels, an LPI research associate and lead author on this report. "And almost every animal in the world, unlike humans, is able to synthesize its own vitamin C and doesn't need to obtain it in the diet. That makes it difficult to do any lab animal tests with this vitamin that are relevant to humans."

Even though such studies often significantly understate the value of vitamin supplements, the largest and longest clinical trial of multivitamin/mineral supplements found a total reduction of cancer and cataract incidence in male physicians over the age of 50. It suggested that if every adult in the U.S. took such supplements it could prevent up to 130,000 cases of cancer each year, Frei said.

"The cancer reduction would be in addition to providing good basic health by supporting normal function of the body, metabolism and growth," he said. "If there's any drug out there that can do all this, it would be considered unethical to withhold it from the general public. But that's basically the same as recommending against multivitamin/mineral supplements."

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Pennies vs. Pounds: How 'supersizing' could actually lead to healthier choices

Science Daily
January 2, 2014

You're trying to eat right. You're exercising. Soon the pounds will melt off. But then your wallet starts weighing you down, literally. The problem? "Supersizing." Consumers often can't pass up a 'supersize' deal, even if it makes them fat.

"We know the health implications of a giant latte or supersized fries, so a little justification through feeling financially savvy and saving money makes us feel better about our decision and increases consumption," said Vanderbilt marketing researcher Kelly L. Haws.

But new research by Haws and co-author Karen Winterich found that consumers may be just as willing to buy healthy food if they feel they're still getting a deal.

"One of the studies in our research paper shows similar 'supersizing' effects happening with the purchase of baby carrots. Consumers are very attracted to deals in general and saving money per unit is very appealing to us, even when the deal is a larger bag of baby carrots," said Haws.

Haws found that by feeding into consumers' desire to get a bargain, the same economic "supersizing" mindset that leads to dangerously unhealthy choices could help some people with healthier options as well.

"There's no question in my mind we would get many more consumers to choose the smaller entre size if the price were exactly proportional to the size of food that they're receiving," said Haws.
The research also found that reminders of nutritional goals -- such as signs -- can have some mitigating effect on the harmful effects of supersizing.

THE PHRASE THAT PAYS

The term "supersizing" was coined by the McDonald's corporation in the mid-1990s to denote the practice of selling larger portions of fries and drinks for disproportionately small increases in price. McDonald's dropped the term by the early 2000's. But it's an effective business practice that lives on, especially in the fast food industry.

Haws said that businesses are taking what they've learned about the consumer mindset to the healthier side as well with pre-packaged smaller quantities such as "100 calorie packs."

FOLLOW THE FRENCH, NOT FRENCH FRIES

Winterich and Haws say American consumers would be wise to follow the lead of the French if they wish to indulge in high caloric foods. "That is, consumers may eat indulgent foods as

the French are perceived to do, yet if they do so in small quantities, they should avoid excessive weight gain." And avoid supersizing.
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What are the benefits of cod liver oil?

15 December 2013 Medical News Today

Cod liver oil, as the name suggests, is the essential oil extracted from the livers of Atlantic cod (Gadus morhua).

The oil is commonly taken as a dietary supplement. It is one of the best sources of omega 3 fatty acids (EPA and DHA) and contains relatively high amounts of vitamin A and vitamin D. The exact concentration of nutrients in cod liver oil depends on the species of *Gadus* family the oil comes from.

The medical use of cod liver goes back centuries. Its first documented medical use was in 1789, when Dr Darbey of the Manchester Infirmary in England used the oil to treat rheumatism.

Only a few decades later, in 1824, cod liver oil was used as a remedy against rickets. By the 1930s the therapeutic properties of cod-liver oil were well established and it was frequently given to children to help prevent rickets and other conditions caused by vitamin D deficiency.

This *Medical News Today* information article provides a nutritional breakdown of cod liver oil, the health benefits associated with its consumption, and some potential risks you should be aware of.

Nutritional breakdown of cod liver oil

Cod liver oil capsules

Nutrients in cod liver oil (value per 100g)
Vitamin A - 100,000 IU
Vitamin D - 10,000 IU
Saturated fatty acids - 22.608 g
Monounsaturated fatty acids - 46.711 g
Polyunsaturated fatty acids - 22.541 g

Health benefits of cod liver oil

Apart from being a good source of nutrients, studies have found that cod liver oil may have some very important therapeutic properties.

Cod liver oil is thought to help relieve joint stiffness associated with arthritis, have a positive effect on cardiovascular health, and help repair wounded teeth, nails, hair, and skin.

Cod liver oil alleviates symptoms of arthritis

A German study, which included 43 patients with rheumatoid arthritis who ingested 1 g of cod liver oil every day for 3 months, found that the patients experienced a decrease in the pain intensity of their stiff joints.

A separate study concluded that cod liver oil may also help those suffering from osteoarthritis. Researchers at Cardiff University found that cod liver oil helped reduce pain and cartilage damage caused by osteoarthritis, as well as reducing the need for joint replacement. In their study, the investigators found that cod liver oil reduced enzymes linked to pain and cartilage damage caused by osteoarthritis.

Cod liver oil helps prevent coronary artery disease

Daily intake of cod liver oil can help prevent coronary atherosclerosis. Research published in the journal *Lipids* concluded that ingestion of 1.5 g of n-3 fatty acids per day resulted in "decreased progression/increased regression of established coronary artery disease."

Cod liver oil may help repair wounds

One study assessed the effect of topically applying cod liver oil ointment on wounds using a hairless mouse ear wound model. The scientists concluded that topical application of 25% cod liver oil ointment "significantly accelerated both the epithelial and the vascular component of healing compared with saline."

Cod liver oil may help promote cognitive performance

Cod liver oil contains a high amount of vitamin D. A link between vitamin D and cognitive performance was identified in a study published in the *Journal of Neurology, Neurosurgery & Psychiatry*. The authors concluded that Vitamin D may play a key role in maintaining good brain function in old age.

Recent developments on the health benefits of cod liver oil from MNT news

Cod liver oil is effective at treating tuberculosis. A review of a historical study from 1848 revealed that cod liver oil could be an effective treatment option for tuberculosis. The disease was stabilized in 18% of participants who received cod liver oil, in comparison with only 6% in the control group.

Sufferers of Crohn's Disease may benefit from cod liver oil. A study published in the *Journal of Biological Chemistry* found that Vitamin D, readily available in supplements or cod liver oil, can counter the effects of Crohn's disease.

Potential risks associated with cod liver oil consumption

According to research published in the *American Journal of Cardiology*, large amounts of fish consumption can cause side effects because of environmental toxins in fish such as mercury, polychlorinated biphenyls, dioxins, and other contaminants.

The authors said that "the risks of exposure to environmental toxins and hypervitaminosis with fish consumption are substantially reduced through purification processes used to develop selected concentrated fish oil supplements and prescription preparations."

Therefore, when choosing fish oil therapies, people should be particularly aware of all available information to assess the oils' safety, including US Food and Drug Administration (FDA) or other regulatory labelling.

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Vitamin supplements a waste of money?

Monday 16 December 2013 - 2pm PST

Physicians urge, 'stop wasting money on vitamin and mineral supplements'

Editorialists responding to three articles on **vitamin** and mineral supplementation being published in ***Annals of Internal Medicine*** urge U.S. adults to stop wasting their money on dietary supplements. The authors cite the large body of accumulated evidence showing that most multivitamin supplements are ineffective, and some may cause harm. The message is simple, the authors write. Most supplements do not prevent chronic disease or death, their use is not justified, and they should be avoided. Summaries of two of the articles appear below. The third article was previously published in *Annals of Internal Medicine* as an early online release. The review by the United States Preventive Services Task Force **found insufficient evidence that multivitamins prevent cancer, cardiovascular disease, or death**.

Long-term multivitamin use does not preserve cognitive function in men

A substudy of a large, randomized, placebo-controlled trial being published in *Annals of Internal Medicine* shows that long-term use of a daily multivitamin did nothing to slow cognitive decline among men 65 and older. Multivitamins are the most commonly used dietary supplements in the United States. A typical daily multivitamin contains a combination of nutrients, such as vitamins A, C, E, β-carotene and B vitamins, thought to have properties that could help prevent cognitive decline. However, their benefit in preventing age-related cognitive decline is unclear. Researchers assigned 5,947 male physicians aged 65 and older to take either a daily multivitamin or placebo for 12 years. After an initial cognitive assessment, the men were tested for cognitive function and verbal memory via telephone interview three additional times at approximately two, six, and 10 years. The researchers saw no difference in cognitive function between the multivitamin and placebo groups, concluding that there is no benefit for taking a daily multivitamin to prevent cognitive decline.

High doses of multivitamins and minerals do not protect against cardiovascular events following myocardial infarction

Taking high doses of multivitamins and minerals does not protect against secondary cardiovascular events in stable patients receiving appropriate care after myocardial

infarction (MI), according to a study being published in *Annals of Internal Medicine*. Researchers randomly assigned 1,708 patients aged 50 years or older who had MI at least six weeks earlier and had serum creatinine levels of 176.8 µmol/L (2.0 mg/dL) or less to take either an oral 28 component high-dose multivitamin and multimineral mixture or placebo. Patient records were reviewed to determine time to death, recurrent MI, **stroke**, coronary revascularization, or hospitalization for **angina**. While the multivitamin and mineral regimen was not harmful, it did not seem to reduce cardiovascular events in patients receiving appropriate, evidence-based medical therapy following MI.

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Diet and physical activity may affect one's risk of developing kidney stones

Medical News Today 17 December 2013

Even small amounts of physical activity may decrease the risk of developing **kidney stones**, according to a study appearing in an upcoming issue of the Journal of the American Society of Nephrology (JASN). The study also found that consuming too many calories may increase risk.

Over the last 10 to 15 years, research has revealed that kidney stones are more of a systemic problem than previously thought. Their links with **obesity**, **diabetes**, metabolic syndrome, and cardiovascular disease demonstrate that the process of stone formation involves more than just the kidneys. As the prevalence of kidney stones has increased dramatically, especially in women, efforts to decrease the risk of stone formation have become even more important.

Mathew Sorensen, MD (University of Washington School of Medicine, and the Puget Sound Department of Veterans Affairs) and his colleagues conducted a study to evaluate whether energy intake and energy expenditure relate to kidney stone formation. They studied 84,225 postmenopausal women participating in the Women's Health Initiative, which has been gathering information such as dietary intake and physical activity in women since the 1990s.

After adjusting for multiple factors including body mass index, the researchers found that physical activity was associated with up to a 31% decreased risk of kidney stones. "Even small amounts of exercise may decrease the risk of kidney stones - it does not need to be marathons, as the intensity of the exercise does not seem to matter," said Dr. Sorensen. Women could get the maximum benefit by performing 10 metabolic equivalents per week, which is the equivalent of about three hours of average walking (2-3 mph), four hours of light gardening, or one hour of moderate jogging (6 mph).

The team also discovered that consuming more than 2200 calories per day increased the risk of developing kidney stones by up to 42%. Obesity was also a risk factor for stone formation.

"Being aware of calorie intake, watching their weight, and making efforts to exercise are important factors for improving the health of our patients overall, and as it relates to kidney stones," said Dr. Sorensen.

In an accompanying editorial, John Lieske, MD (Mayo Clinic) noted that because this study only included postmenopausal women, it will need to be replicated in other populations. He added that it is also possible that women who exercise regularly have other healthy habits that decrease stone risk. "Nevertheless, conservative (non-pharmacologic) counselling for patients with stones often centres almost exclusively on diet, stressing increased fluid intake, normal dietary **calcium**, lower sodium, moderate protein, and reduced dietary oxalate. The results of Sorensen et al. suggest that a recommendation for moderate physical activity might reasonably be added to the mix," he wrote.

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Parents approve of nutrition report cards

Medical News Today 18 December 2013

Parents receiving academic report cards throughout the school year is commonplace, but a new Cornell University study shows that for healthier **nutrition**, parents should opt to receive a nutrition report card, too.

"This pilot study underscores that a nutrition report card is feasible and efficient... Although the results are preliminary, they suggest that [nutrition report cards] may be helpful in nudging children toward more healthy, less expensive options ... at little cost to the school district," according to Cornell behavioural economists Brian Wansink and David Just.

Many school districts utilize a payment system where students use a specialized debit-card to pay for the meal after specific food items are keyed into a smart cash register, allowing for items purchased and name of the student to be easily tracked. For example, if a student buys hot lunch and an ice cream sandwich, the cash register records the purchases. In the pilot study, parents who previously signed up to receive an electronic nutrition report card would then receive a report detailing what their child eats periodically.

The researchers found that after receiving nutrition report cards, some parents adjusted family dinner meals to include more nutritious food, and some parents used the opportunity to discuss the importance of health and nutrition with their kids. Other parents learned why the child's cafeteria money account was depleted so rapidly.

Students whose parents received the nutrition report cards selected fruits and vegetables more frequently, and they selected flavoured milk less frequently than the control group.

After the research, in open-ended responses, parents expressed appreciation for knowing what their children ate. One parent responded: "I like seeing the snacks they purchased. It made me understand why my one son was always out of money on his account."

Nutrition report cards have the feature of engaging parents in their child's decision-making process. This could be especially beneficial to younger children, who are learning to make independent food decisions, say the researchers.

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Small rewards encourage children to eat fruit and veg

Medical News Today 22 December 2013

The good news: Research suggests that a new federal rule has prompted the nation's schools to serve an extra $5.4 million worth of fruits and vegetables each day.

The bad news: The nation's children throw about $3.8 million of that in the garbage each day.

Researchers from Brigham Young University and Cornell observed three schools adjust to new school lunch standards that require a serving of fruits or vegetables on every student's tray - whether the child intends to eat it or not. As they report in the December issue of *Public Health Nutrition*, students discarded 70 percent of the extra fruits and vegetables.

"We saw a minor increase in kids eating the items, but there are other ways to achieve the same goal that are much, much cheaper," said BYU economics professor Joe Price. Strange as it sounds, directly paying students to eat a fruit or vegetable is less expensive and gets better results.

With Cornell's David Just, Price conducted a second study to measure the effect of small rewards in the lunchroom. The week-long experiments took on different twists in the 15 different schools - some could earn a nickel, others a quarter, and others a raffle ticket for a larger prize. But the results were generally the same. As the scholars report in *The Journal of Human Resources*, offering small rewards increased the fruit and vegetable consumption by 80 percent. And the amount of wasted food declined by 33 percent.

Which begs the question: Is benevolent bribery a better way?

"Parents are often misguided about incentives," Price said. "We feel a sense of dirtiness about a bribe. But rewards can be really powerful if the activity creates a new skill or changes preferences."

The case against using bribes in parenting is perhaps best articulated in Alfie Kohn's 1999 book "Punished by Rewards." In many scenarios, the use of rewards can crush internal motivation. With healthy eating, for example, some fear that prizes will prevent children from developing their own motivation to eat things that are good for them. Another danger, known as a boomerang effect, is the possibility that some children would eat less fruits and vegetables when the rewards disappeared.

That's why Price and Just measured fruit and vegetable consumption before and after the week-long experiments. When the week of prizes ended, students went back to the same level of fruit and vegetable consumption as before - no lasting improvement, but no boomerang effect either.

Now the researchers are studying whether extending the experiments over three to five weeks might yield lasting change. So far things look promising.

"I don't think we should give incentives such a bad rap," Price said. "They should be considered part of a set of tools we can use."

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Family centred approach reduces weight in South Asians

Medical News Today 23 December 2013

Modest lifestyle changes made by South Asian families could help to improve their health and wellbeing, a clinical trial shows.

Making moderate improvements to diet and levels of physical activity, gave trial participants a better chance of losing enough weight to lower their risk of developing type 2 **diabetes**.

The study, carried out in participants' homes as opposed to hospital clinics, is the first of its kind in the UK to look specifically at South Asian cultures.

Patients lost weight reduced their hip and waist measurements and there were indications that they were less likely to become diabetic by the end of the trial, which focused on people of Indian and Pakistani-origin.

Researchers say that ethnic background and culture play an important role in shaping attitudes and behaviours towards diet and exercise.

National guidelines show that South Asian people place strong emphasis on family life and eating together. From a young age, South Asians are sensitive or at risk of health problems linked to **obesity**.

Men from Pakistani and Indian communities are three times more likely to develop type 2 diabetes than the general population - despite having similar Body Mass Indexes, scientists say.

The three-year trial monitored 171 people of Indian and Pakistani background living in Scotland who were already at high risk of diabetes as shown by blood tests done at the start of the trial.

Participants were given detailed advice by dieticians and offered culturally-appropriate resources to help them manage their weight through diet and exercise. At the same time, control groups were given basic advice, which was not culturally specific.

Professor Raj Bhopal, from the Centre for Population Health Sciences at the University of Edinburgh, and lead author of the study, said: "These differing approaches show us that a more family centred strategy, with culturally tailored lifestyle advice can produce significant benefits to people's health through weight loss."

The trial, which is led by scientists at the University of Edinburgh, is published in the journal ***Lancet Diabetes and Endocrinology***.❁❁❁

Experts share tips to help ward off age-related memory loss.

WebMD Feature Dec 6, 2013

Aging is a part of life, but there are plenty of things you can try to help keep your memory sharp.

1. Get Up and Go

Exercise regularly. It's one of the best things you can do to help prevent age-related memory loss. Moving boosts blood flow to your brain and helps nerve cells in the part of brain that controls your memory.

If you're not active now, check with your doctor to see if there's anything you shouldn't do. Then get moving.

Often, water exercises are great, because they aren't hard on your joints -- but you can still get a good workout for your heart and lungs.

Try to get at least 30 minutes of aerobic exercise 5 days a week.

2. Eat Right for Your Brain

One of the best diets for your brain is also good for your heart, says aging specialist Tiffany Hughes, PhD. She is a research assistant professor of psychiatry at the University of Pittsburgh.

"We know that if your heart's not healthy and it's not pumping blood and oxygen to your brain, that can have a negative effect on your brain health," she says.

- So, load up on vegetables and fruits.
- Choose whole grains instead of processed refined grains.
- Cut back on unhealthy trans and saturated fats.
- Choose low-fat protein foods like fish, skinless chicken or turkey breast, extra-lean cuts of meat, and beans.

Fruits and vegetables are especially good because they're rich in antioxidants, which help protect damage to brain cells. Fill up on antioxidant-rich leafy greens, berries, and tomatoes.

3. Work Your Mind

Whether it's crossword puzzles or Sudoku, computer games or mahjongg, exercising your brain keeps it working, says Amy R. Ehrlich, MD. She is associate chief of geriatrics at Montefiore Medical Center in New York.

"I encourage people to find new activities that are stimulating, that engage them, that keep them using different parts of their mind than they used when they were working," she says.

Find activities that are challenging and fun and will keep you motivated to do them every day. Try to learn a new language or play an instrument. Take a continuing education class or dance classes. Like physical exercise, mental exercise will be easier to do if you enjoy it.

4. Be Social

Try to be part of your community. It gets you engaged in conversations and activities, and keeps you thinking, talking, laughing, and planning -- all important ways to keep your mind nimble.

Studies show that people over 50 who have strong ties with family, friends, and community groups have less memory loss than people who are more isolated. Socializing may not be the only reason why this happens, but it's one more good reason to join up with friends to exercise, volunteer, or have dinner. Or you can try new activities to make new bonds. The more active you are, the more your brain is working.

5. Sleep Well

It can be harder to get enough sleep as you get older. But when your brain doesn't rest, you can have problems remembering and concentrating. So try to get at least 7 or 8 hours of sleep a night.

Set up good sleep habits by going to bed and getting up at the same time every day. Also, create a calming routine for yourself before bed. If you nap during the day, keep the nap short, no more than 30-60 minutes. Try not to nap after 4 p.m., since that can make it harder to fall asleep at night. If you take sleeping pills to help you sleep, know that they can make you groggy the following day and cause memory loss.

6. Fight Stress

When you're anxious or under pressure, your body makes stress hormones. That helps when it's an emergency. But having high levels of these hormones for too long can hamper your memory. When you're feeling stressed, find things that help you relax -- maybe yoga, tai chi, deep breathing, talking with a friend, or meditation.

7. Learn Memory Tricks

These strategies can help you remember, whether it's finding your car keys or knowing your new neighbour’s name.

- Make a routine. Always put often-used items, like your glasses, keys, wallet, and phone, in the same place every time.
- Write it down. Jot down things you need to remember -- like appointments or grocery items you need -- as soon as you think of them.
- Set an alarm. It can help you get to places on time or remember to take medications.
- Leave yourself reminder notes.
- Learn and repeat. To remember names, use the name often in conversation. Try to link the name with a picture that reminds you of that person.

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Mangos Associated with Improved Health

December 16, 2013 Food Product Design

Mango consumption has been associated with healthier diets, lowered blood sugar levels in obese adults and increased bone density, according to multiple studies.

Mangos, known for their superfruit status and nutritional profile, are full of antioxidants and over 20 different vitamins and minerals.

Between 2001 and 2008, researchers compared the diets of more than 29,000 children and adults and noticed adults who consumed mangos had a higher intake of certain nutrients like potassium and dietary fiber, which help contribute to a balanced diet. Lower levels of C-reactive protein were found in adult mango-consumers. C-reactive protein is a marker of inflammation and it has been suggested that high levels of it in the blood may be linked to increased risk for heart disease. Compared to non-mango consumers, mango eaters, on average, had higher intakes of whole fruit, vitamins C, potassium, and dietary fiber (in adults only) while having lower intakes of added-sugars, saturated fats (in adults only), and sodium (in adults only). Both adults and children who consumed mangos scored higher on the Healthy Eating Index compared to those who did not eat mangos.

Another study demonstrated that mango consumption may lower blood sugar levels in obese adults. A recent pilot study conducted at Oklahoma State University (OSU) examined the effects of daily mango consumption in 20 obese individuals (11 males, 9 females). Over a 12 week time frame, both male and female participants had significantly lower blood sugar levels to their previous baseline scores; however, there were no significant changes to body composition for either gender. These findings support the results from a previously published study conducted by OSU which found that adding 1% mango to high-fat diets in mice was effective in reducing body fat accumulation and lowering blood glucose levels.

More research is needed to determine the link between mango consumption and blood sugar levels.

Other research has determined that mango consumption decreases breast cancer and may strengthen bone density in high-fat diets.

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Paternal Folate Intake Affects Offspring

December 12, 2013 Food Product Design

Low paternal intake of folate, and diet before conception, has been shown to have negative effects on the offspring, according to researchers from McGill University.

Folate is found in a range of green leafy vegetables, cereals, fruit and meats. It is known that in order to prevent miscarriages and birth defects mothers need to get adequate amounts of folate in their diet. But the way that a father's diet can influence the health and development of their offspring has received almost no attention. Now there is research showing that a father's folate levels may be just as important to the development and health of their offspring as are those of the mother.

"Despite the fact that folic acid is now added to a variety of foods, fathers who are eating high-fat, fast food diets or who are obese may not be able to use or metabolize folate in the same way as those with adequate levels of the vitamin," Sarah Kimmins, lead researcher of the study, said. "People who live in the Canadian north or in other parts of the world where there is food insecurity may also be particularly at risk for folate deficiency. And we now know that this information will be passed on from the father to the embryo with consequences that may be quite serious."

The study found that paternal folate deficiency was associated with an increase in birth defects of various kinds in the offspring, compared to the offspring of mice whose fathers were fed a diet with sufficient folate.

"We were very surprised to see that there was an almost 30% increase in birth defects in the litters sired by fathers whose levels of folates were insufficient," said Dr. Romain Lambrot, department of animal science, McGill. "We saw some pretty severe skeletal abnormalities that included both cranio-facial and spinal deformities."

In a recent study, researchers also found that fathers who ate a high-fat diet before conception of offspring, the male offspring have increased body weight after weaning and high body fat in midlife despite eating a low-fat diet.

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Ferrous bisglycinate may prevent iron deficiency in pregnant women

A study published in the *Journal of Perinatal Medicine* shows that a low dose of ferrous bisglycinate (*Aminojern*, a product containing Albion's *Ferrochel*) may be equivalent to a

higher dose of ferrous salt with regard to hematological and iron status when used by expectant women. This finding is important for the prevention of iron deficiency and iron deficiency anemia that often coincides with pregnancy.

One of the greatest challenges for pregnant women is maintaining adequate iron levels from conception and throughout gestation. Iron is critical for maintaining a woman's red iron cell stores and to properly support development of a fetus. With the bioavailability of different iron forms varying so greatly and the preference for lower dose iron supplementation gaining acceptance, the researchers sought a comparison of different iron forms and doses.

In this peer-reviewed study, ferrous bisglycinate was taken by 80 Danish pregnant women throughout their pregnancy with measurements taken at 15–19, 27–29, and 36–37 weeks. Women were assigned to either a group that took a 25 mg dose of a ferrous bisglycinate elemental iron per day or a control group using a 50 mg dose of ferrous sulfate elemental iron per day for the designated time period.

The researchers found that participants who received the low dose ferrous bisglycinate benefitted equally to that of the control group with less gastrointestinal complaints. In addition, the newborn weight for the ferrous bisglycinate group was slightly higher than the control group.

Conclusions from the study suggest that adequate prevention of iron deficiency or iron deficiency anemia can be achieved using a low dose of ferrous iron from 15–19 weeks of gestation with appreciable side effects such as lower gastrointestinal distress and healthier baby birth weights. These findings are very important in women with a preference or greater tolerance for a lower dose of iron.

IFT Weekly January 2, 2013
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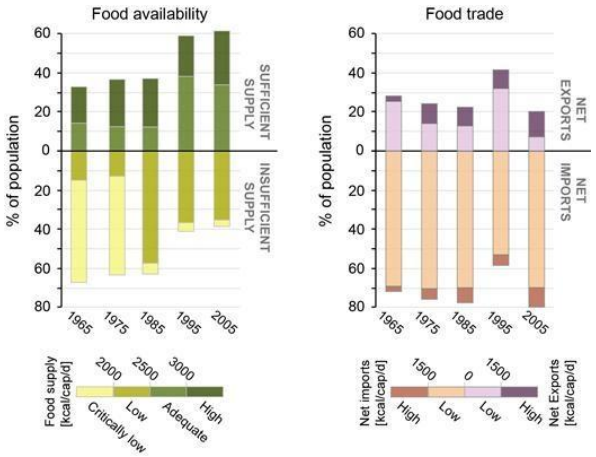
Food Science & Industry News

Availability of food increases as countries' dependence on food trade grows

Science Daily

December 19, 2013



Graph about food availability and food trade

Sufficient food is available for increasing numbers of people, but at the same time, the dependence of countries on international trade in foodstuffs has increased considerably in 40 years. The proportion of the population who get enough food (more than 2,500 calories a day) has nearly doubled to 61 per cent. Those living on a critically low food supply (less than 2,000 calories a day) have shrunk from 51 to three per cent.

The figures come out in a study made at Aalto University in Finland examining developments in food availability and food self-sufficiency in 1965-2005. Researchers of Aalto University examined the development of food availability in recent decades for the first time.

Food availability has improved especially in the Middle East and North Africa, Latin America, China, and Southeast Asia. Although food availability has increased on the global level, food self-sufficiency has remained relatively low.

"In the 1960s and 1970s, insufficient food production in a country amounted to food shortage, but nowadays the production deficit is increasingly balanced through food imports," says Aalto University researcher Miina Porkka.

The proportion of people living in countries that are significant net importers of food has more than tripled during the period under examination. The countries of North Africa and the Middle East, for instance, have become increasingly dependent on imported food. In these countries, food availability has increased from low to a very high level, even though domestic food production has remained inadequate.

Brazil, on the other hand, has become one of the world's most important producers of food for export. In the 1960s, food supply in the country was still inadequate, but in the past decades Brazilian food production has grown exponentially and food consumption is now more than sufficient.

The study also examined dietary changes that have taken place in different countries. The proportion of people consuming large amounts (more than 15 per cent of energy intake) of animal-based nutrition has increased from 33 per cent to more than 50 per cent. This together with over consumption of calories in many countries is putting an increased pressure on the planet's limited natural resources. At the same time, however, over a third of the world's population is still living with insufficient food supply.

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Healthier happy meals

Science Daily
December 19, 2013

What would happen if a fast-food restaurant reduces the calories in a children's meal by 104 calories, mainly by decreasing the portion size of French fries? Would children compensate by choosing a more calorie dense entrée or beverage? Researchers at Cornell University, Dr. Brian Wansink and Dr. Andrew Hanks, analyzed transaction data from 30 representative McDonald's restaurants to answer that question.
Prior to 2012, the Happy Meal® was served with one of three entrée options (chicken nuggets, cheeseburger, hamburger), a side item (apples or small size French fry), and a beverage (fountain beverage, white milk, chocolate milk, apple juice). By April 2012, all restaurants in this chain served a smaller size "kid fry" and a packet of apples with each CMB. Wansink and Hanks found that this change in default side offerings resulted 98 of the 104-calorie decrease in the CMB.

With such a large decrease in calories, would children compensate by choosing a more calorie dense entrée or beverage? Wansink and Hanks found that 99% of children ordered the same entrée, and orders of chicken nuggets (the lowest calorie entrée) remained flat at nearly 62% of all orders. Yet, nearly 11% fewer children took caloric soda as a beverage and 22% more chose white or chocolate milk -- a more satiating beverage. This increase was partially due to small changes in advertising for milk. Interestingly, the chocolate milk served in 2012 was of the fat-free variety compared to the 1% milk variety served previously. It also contained 40 fewer calories. Overall, the substitutions in beverage purchases resulted in 6 fewer calories served with the average CMB.

Small changes in the automatic -- or default -- foods offered or promoted in children's meals can reduce calorie intake and improve the overall nutrition from selected foods as long as there is still an indulgence. Importantly, balancing a meal with smaller portions of favored foods might avoid reactance and overeating. Just as managers have done this in restaurants, parents can do this at home.
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Oregano oil may help preserve quality of sunflower seeds

Sunflower seeds and sunflower oils have been shown to decrease risk of cardiovascular disease as well as have potential beneficial effects on obesity, bone health, and blood pressure. However, their high protein and fat content mean they can have a short shelf life. A study published in the *Journal of Food Science* shows that the addition of oregano essential oils to sunflower seeds may help preserve their positive sensory attributes and freshness quality.

The researchers prepared four samples: plain roasted sunflower seeds (control) and sunflower seeds added with oregano or poleo essential oils or butylated hydroxytoluene (BHT). The addition of BHT showed the greatest protection against the oxidation process in the roasted sunflower seeds. Oregano essential oil exhibited a greater antioxidant effect during storage than poleo essential oil. Both essential oils (oregano and poleo) provided protection to the product, inhibiting the formation of undesirable flavours (oxidized and cardboard).

The researchers concluded that the addition of oregano and poleo essential oils preserved the intensity ratings of positive sensory attributes and quality parameter in roasted sunflower seeds during storage. The addition of these essential oils should be considered for the food industry as a natural source of antioxidant additives for preserving quality properties in this food product and, also, in food with high fat content.

IFT Weekly December 18, 2013
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Milk may serve as a protective carrier of bioactive molecules

Polyphenols found in tea manifest anti-cancer effects but their use is limited by poor bioavailability and disagreeable taste. A study published in the *Journal of Dairy Science* shows that when epigallocatechin gallate (EGCG), the major extractable polyphenol in green tea and the most biologically active, is diluted in skim milk or other milk complexes, it remains bioactive and continues to reduce colon cancer cell proliferation in culture at concentrations higher than 0.03 mg of EGCG/mL.

“These results support a new role for milk as an ideal platform for delivery of bioactive compounds and opens the door to a new generation of dairy products providing additional benefits to human health,” said authors Sanaz Haratifar and Milena Corredig, University of Guelph, Ontario, Canada.

The majority of extractable polyphenols in tea are flavan-3-ols, commonly referred to as catechins. EGCG is the major catechin found in tea. Tea polyphenols have been shown to inhibit tumor formation, reduce cancer cell proliferation, increase normal cell death (apoptosis), and/or suppress the formation of new blood vessels feeding tumors (angiogenesis). For several reasons, tea catechins have poor bioavailability and the goal of

the current study was to encapsulate EGCG in casein (milk protein) molecular aggregates, known as micelles, to maintain and enhance catechin bioavailability.

In one experiment, human colorectal cancer cells (HT-29) were grown for 24 hrs in the presence of EGCG in water or dispersed in milk. The number of living cancer cells (cell viability) was measured, and it was shown that EGCG reduced cell viability in a dose-dependent fashion although at higher concentrations (0.15 mg/mL and above), the antiproliferative effect of EGCG in water was greater than in milk.

Another experiment evaluated cancer cell proliferation after EGCG was added to different milk products, including skim milk, milk whey, and milk serum. While some differences were noted in cell proliferation at lower concentrations between EGCG in control medium and EGCG diluted in the milk components, at higher EGCG concentrations (0.8 mg/mL and above), EGCG reduced cancer cell growth by 80% or more, whether diluted in milk or not.

"In order to exert their biological health benefits in vivo, polyphenols must be available and still active, even when present in a food matrix," said Haratifar. "This study showed that the binding of EGCG to the casein micelles did not affect the bioefficacy of EGCG and cell uptake at concentrations higher than 0.03 mg of EGCG/mL of skim milk."

IFT Weekly January 2, 2013
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Leatherhead: 'Natural preservatives are almost an oxymoron'

Food Navigator, 29-Nov-2013

Preservatives have a poor reputation among consumers – but that doesn't mean that natural options are completely off the menu, says Nicole Patterson-Lett, principal analyst at Leatherhead Food Research.

Speaking at the FIE conference in Frankfurt last week, she presented the organisation's latest research on consumer attitudes to preservatives – including natural preservatives – and how they have changed over the past ten years.

"Natural preservatives are almost an oxymoron. The two things don't go together," she said, adding that when thinking about preservatives in general, *"there is a tendency toward the negative".*
For half of consumers, their attitudes to preservatives had not changed in the past ten years, she said, while 31% felt less positively toward them, and 19% felt more positive.

However, she said there was a need for a lot more education on preservatives, as almost half of consumers (47%) admitted they didn't feel they knew enough about them, and 54% automatically considered preservatives to be artificial.

In fact, there is a wide range of natural preservatives now available to food formulators, although they may still have technical limitations.

Treats, yes…kids' products, no…

"There's some consumer acceptance that they are necessary in some food and drinks," she said, although overall acceptance depended on the application.

"People felt more negatively about preservatives in products they eat every day – and generally more positive in products that are 'treat products' only eaten occasionally….There is much more negativity towards preservatives in products for children."

Most consumers (58%) said they hoped foods and drinks would contain fewer preservatives in the future, but there was some acceptance of natural preservatives.

"Sixty-seven per cent said that if a product was labelled as natural, then it would only contain natural preservatives. However, they didn't expect there to be no preservatives at all," she said.

Compromise

Consumers also understood that they would need to make some compromises in terms of shelf life, cost and the appearance of foods if they wanted to avoid artificial preservatives. Fifty-seven per cent said they would be prepared to pay more for natural preservatives, while 82% said they would accept a shorter shelf life, and 76% said they were willing to accept a less visually attractive product.

"Only 14% said they thought preservatives were completely unnecessary in foods and drinks," she said.
"There's not really an understanding of the shorter shelf life for the consumer. They are not really understanding the logistics, or the inconvenience, or the massive wastage of it, or the sustainability issues. The trend at the moment is all about freshness and that is all good to them…There is a lot more education to be done on preservatives."
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Food Safety & Regulatory News

Should a healthy substitute for trans fats be found before banning them?

Medical News Today 26 December 2013
Health advocates cheered last month's U.S. Food and Drug Administration (FDA) proposal to ban partially hydrogenated oils - which contain trans fats that increase the risk of **heart disease** - but some wonder whether the substitutes for these fats will be any healthier. An

article in *Chemical & Engineering News*, the weekly newsmagazine of the American Chemical Society, investigates the matter.

Deirdre Lockwood, a contributing editor at C&EN, notes that back in the 1980s, out of concern over saturated fats, many food manufacturers and consumers made a switch from butter to margarine. The latter contains trans fat, but at the time, it wasn't recognized as a threat to heart health. Artificial trans fats proliferated, largely in the form of partially hydrogenated oil. We baked with it. We fried with it. We popped popcorn with it. Within the past two decades, however, its effect on **cholesterol** - raising the "bad" kind and decreasing the "good" kind - has become clear, and the food industry and consumers are responding. Since at least 2006, food makers and restaurants have been turning to liquid vegetable and tropical oils as alternatives. When they need a solid fat, they use fully hydrogenated oils and other modified fats.

Despite this move away from trans fat, it is still found in some processed foods, though not for long. In November, the FDA revoked the "generally recognized as safe" status of partially hydrogenated oils, effectively banning artificial trans fats in food. For the most part, the alternatives that are replacing trans fats are indeed healthier, Lockwood reports. Then again, the article points out, these fats aren't the only unhealthy ingredient of processed foods, which can also contain high amounts of salt and sugar.

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Unauthorised novel foods on sale across UK

Food Manufacture UK, 04-Dec-2013

Many unauthorised novel foods, which could present a health risk to consumers, are feared to be on sale across the UK without the knowledge of the regulatory authorities, bringing into question the effectiveness of the approvals process and its enforcement.

The news emerged at a workshop in London last month organised by the Advisory Committee on Novel Foods and Processes (ACNFP), which is responsible for authorising novel foods in the UK and advises the Food Standards Agency (FSA). Several workshop delegates and ACNFP members expressed concerns about the presence of novel foods on the market that had not undergone the required authorisation process.

ACNFP committee member Clare Mills, Professor of molecular allergology at the School of Translational Medicine, University of Manchester, told our sister title *Food Manufacture* she was particularly concerned about the availability of unauthorised novel foods on sale in small retail stores across the country.

'Serious allergy risks'

Mills feared that some of these foods contained ingredients from south-east Asia, for example, that could pose serious allergy risks to second generation ethnic groups and others who do not have a natural resistance to them.

The presence of unauthorised novel foods on the market was also an issue of concern to fellow ACNFP member Professor Harry McArdle, director of science at the Rowett Institute of Nutrition and Health at the University of Aberdeen.

Since October 2013 the FSA has published information about potential unauthorised novel foods when made aware they may be on the UK market illegally. However, because of limited resources within local authorities – and Trading Standards, in particular – the availability of unauthorised products for sale to consumers is believed to be widespread.

Weight loss supplements

While the FSA is currently reviewing several products that have been discovered on sale without approval, notably weight loss supplements acacia rigidula (also known as blackbrush acacia) and raspberry ketones, plus mesquite (prosopis pallida), which is found in South American meal flour, the fear is that many small manufacturers and retailers are either unaware of the need to win approval – or ignoring the requirement – before putting products on sale.

A quick search on the internet shows that many products containing these banned ingredients are readily available for sale to consumers in the UK today.

Although several delegates to the ACNFP workshop said they had removed raspberry ketones from sale immediately they discovered they were unapproved, they said they knew of other small firms still selling these products.

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USDA Releases Draft Guidance On The Definition Of Natural vs. Synthetic

Mondaq April 15 2013

On April 2, 2013, USDA released Draft Guidance here, here, and here addressing an issue that has plagued the National Organic Standards Board (NOSB") for years: how to determine whether a substance is agricultural or non-agricultural and synthetic or non-synthetic. These determinations are paramount when considering whether a substance may be used in "organic" or "made with organic..." processed foods, as only specifically listed natural or synthetic non agricultural substances that are included in the National List may be used. 7 C.F.R. § 205.606. According to the Draft Guidance, "natural" is a synonym for "non-synthetic."

While the term "natural" has not been defined by FDA and FTC, USDA's Draft Guidance explicitly details processes that create non-synthetic or natural substances. Agricultural materials that are chemically changed due to allowed agricultural processing methods (e.g., cooking, baking, etc.) do not result in classification of the processed agricultural product as synthetic, nor do products of naturally occurring biological processes, such as fermentation and composting. Moreover, heating or burning of biological matter (e.g., plant or animal material) is also a natural process that does not result in classification of ash as synthetic. On

the other hand, heating or burning of non-biological matter (e.g., minerals) to cause a chemical reaction triggers the synthetic substance definition.

Additionally, materials produced by separation techniques are classified as natural or non-synthetic if the extract results in a material that meets three criteria. First, at the end of the process, the material must not be transformed into a different substance via a chemical change. Second, the material may not be altered into a form that does not occur in nature. Finally, any synthetic materials used to separate, isolate or extract the substance must be removed from the final substance (e.g., evaporation, distillation, precipitation, etc.) such that they have no technical or function effect in the final product.

As we have previously noted, "natural" food and dietary supplement claims litigation has exploded in popularity over the past year. Because FDA and FTC have made it clear that they have no plans to establish a definition of the term "natural" any time soon, this Draft Guidance is likely to have a broad effect on the entire food industry, not just USDA-regulated products. The National List has already been referenced by plaintiffs to support accusations that certain foods do not qualify for natural claims, and this Draft Guidance targeted at defining synthetic versus non-synthetic substances is just another weapon in their arsenal. Comments on the Draft Guidance are due by June 3, 2013.