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MARCH 2015

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Regulatory Forum

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Editorial

Sustainability is a buzz word now. Everything needs to be sustainable. As population of the world increases billion by billion, even a small wastage can have a disastrous effect and even a small saving could mean a huge difference for needy.

Even if we decide to have smaller families, life expectancy has increased tremendously so in every country people are living to an older age so overall effect is going to become a very large number. Of course we should take credit because of better medicines and better food. But still, even though more people are getting better and more nutritious food, it also means that ever increasing number is remaining hungry.

Wastage is one of the immediate problems that could be tackled by everyone. We take on our plate much more than we need and so not only we overeat but also we leave some uneaten food as wastage. Of course this is much more in the west. The wastage in the US homes is so much it can easily feed the population of one whole country. We also should not be proud of ourselves as we also waste quite a lot.

Generally in the industrialised countries, the wastage occurs less on the field and in the supply chain as they have developed an excellent system there. However, the wastage occurs in the homes. Portion sizes as well as packs that sell food products have grown over the years and so consumers buy much more than they need even in single pack. This contributes to overeating and also many can't finish it so they throw it away.

Even the best before, according to some experts, has contributed to wastage. Even when the product is perfectly good for consumption, people won't buy it because it is gone beyond best before date. There are some stores that sell separately these products after their best before date at a lower price to reduce the wastage and to save them some loss, but this is a small portion.

In developing countries, much of the wastage occurs in supply chain as storage and transport facilities have not been adequately developed to reduce these wastages. In India, the things are improving but still farmers have to store grains and other agricultural produce in the open and unseasonal rains could cause spoilage. Even there are reports that government storages have incurred spoilages because of improper managing of stocks.

The sad part of the story is that we are catching up with the west with spoilages at consumption point. We are following them with larger serving sizes and also we tend to take much more than we need and end up wasting. We see this in social functions where the hosts try to force their guests to eat much more than normal.

Not just the consumers but industry also must try to inculcate sustainability in their systems. Wastage could be reduced not only with respect to food being processed but using less water and energy. Also not try to offer more for the same price to outsell competition.

We also need to think of sustainability when we make regulations. Not just best before concept, but also when we develop standards or specifications for processes, raw materials etc. we should try to keep this in mind. Of course, we should not allow use of unsafe raw materials but as long as it is safe, we should allow their use even when they may not be of highest quality.

With season's greetings,

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Cover Design & Bulletin Layout by Ms. Leena Shanbhag

SNACKING & INDIA

By Ms. Devishree Murty,
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Snacking is a practice that has increased in popularity in recent years. A snack can either be a food or a beverage that one has in between meals, but is not a substitute for a meal, and provides substantially fewer calories than that would be consumed in a typical meal. Snacks should essentially be low in fat and sugar, at the same time provide the required nutrients for health. Adequate amounts of fiber in a light and healthy snack will ensure that one doesn't feel hungry minutes after eating it.

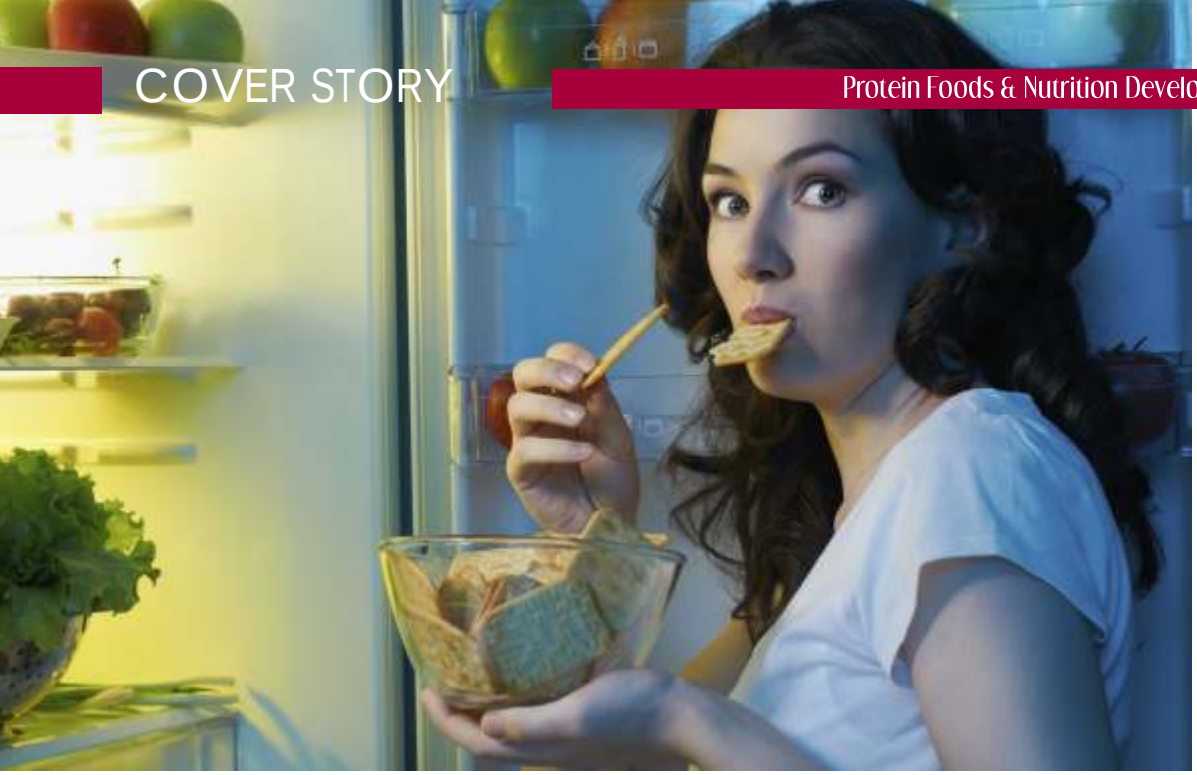
The National Sample Survey Organisation (NSSO), through its periodic surveys, provides insight into gradual changes in eating habits. Its report for 2011-12, shows that the intake of staples such as cereal, fruits and vegetables is declining, while consumption of oil and fat (42 gm per person per day in 1993-94 to 58 gm), sugar, milk and milk products and packaged foods is on the rise.

Interestingly, the NSSO survey covers the period when the economy opened up and incomes rose. The findings indicate that while incomes have risen, the food choices that people are now making are not necessarily healthy. This is also a period when health surveys have shown growing incidences of lifestyle and food-related ailments.

Also, ever since snacks made their appearance on the shelves of supermarkets in India, there's been a lot of interest on what, when and how much of snack an individual should eat. Snacking 'trend-studies' which are generally conducted are useful to know the food behavior of people in cities because there might be some lessons to learn from one another.

In 2011, A C Neilson, a leading consumer research company, surveyed the snacking trends of women and children in 5 cities – Bangalore, Mumbai, Delhi, Chennai and Kolkata. The women were young adults between 28 and 40 years of age and their children were between 5 and 12 years of age.

The survey reported that amongst the women, housewives consumed all three meals regularly at home – breakfast, lunch and dinner. Only



half the women surveyed ate between meals – mid morning, teatime, etc. These in-betweens were much more unhealthy foods than the regular meals. Women who don't eat their meals regularly and on time were more likely to snack on unhealthy foods. On the other hand, women who consumed their meals at fixed times, ate unhealthy snacks much less. Largest amount of unhealthy snacks were eaten as an evening snack, before dinner. This is also the time when hunger makes its appearance and most people are willing to eat whatever is available easily.

A pre-dinner snack was uncommon only in Bangalore. The other 4 cities, women ate a pre-dinner snack and most of the snacks chosen were unhealthy like namkeens, chips, biscuits, pakodas, etc. Interestingly women with kids between 5 and 12 years of age snacked more healthily between meals during the day. This is perhaps to set a good example of eating healthy for their children.

Children religiously consumed breakfast and dinner at home. But their lunch was split into mini-meals depending on their school schedules. Their lunch boxes were a mix of healthy and unhealthy food items. Noodles, pasta, biscuits, namkeens, south Indian snacks and bakery products were seen in children's lunch boxes.

Like women, children who consumed their meals at fixed times ate unhealthy snacks much less. Non-healthy food items included chips, biscuits, noodles, burgers, etc. Participants from Mumbai and Delhi seem to be more aware of eating healthy snacks and included sandwiches and milk between meals. However, a sandwich need not always translate into a healthy snack.A sandwich with lots of butter can be far worse than other snacks.

Majority of the children in Bangalore and Kolkata did not consume a mid-morning snack. While children in Mumbai and Delhi consumed a mix of healthy and unhealthy snacks, children in Chennai consumed much more unhealthy snacks like chips. There was a higher unhealthy snack trend during tea time and post-dinner consumption of snack. Most kids ate biscuits as an afternoon snack. Kids in Bangalore and Chennai ate more of unhealthy snacks than kids in the other 3 cities. Evening snack was an altogether different scene. Uniformly kids ate more of unhealthy foods than healthy foods.

It's not easy to determine whether mothers and children have healthy or unhealthy snacking habits. Consumption of snacks varies from home to home and from one city to another. Whatever the consumption maybe, the fact remains that we have more overweight children today than what we saw about 20 years ago. This definitely has a connection to food intake and physical activity.

Snacks are a great way to appease the appetite between the main meals. Eating healthy snacks can keep your blood sugar levels stable and prevent you from overeating during meal times. If you plan to buy a packaged food for a snack, check the nutrition label to ensure that it does not contain trans fats, it is low in total fat, sugar and sodium.

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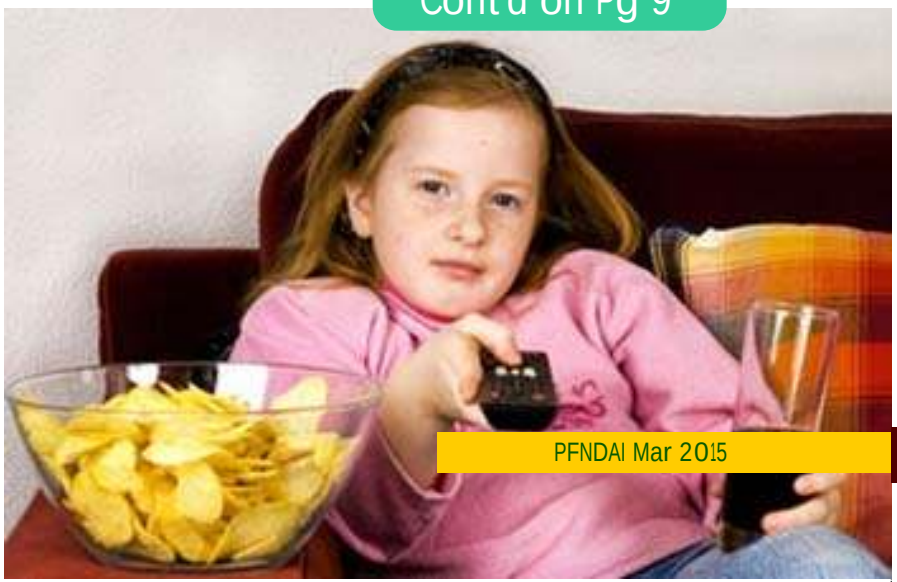


Using Nutrient Profiling on Food Labels for Communicating Healthy Food Choices

By
Dr Pulkit Mathur,
Assistant Professor,
Department of Food and Nutrition, Lady Irwin College

India is experiencing a rapid nutrition transition along with epidemiological transition. The incidence of communicable diseases is decreasing while the prevalence of non-communicable diseases (NCDs) like cardiovascular diseases, diabetes, hypertension, obesity is increasing in epidemic proportions.

Due to socio-economic development in the country, there is increased availability of foods at affordable prices leading to changes in dietary consumption patterns.

The use of mechanised devices, especially motorised transport, is leading to a decrease in physical activity levels and thereby positive energy balance.

Although there is an increase in health awareness, the consumer finds it difficult to make healthy food choices due to lack of nutrition information which is easy to comprehend.

The Food Label

The label on the package of a food product has a lot of information. Besides the name of the product, one can also see who has manufactured the product and where. This helps in selecting a trusted manufacturer or brand as well as makes the manufacturer legally responsible for product quality. Food label information helps in comparing prices of different brands selling the same food product.

Freshness of the food product can be checked from the best before date or date of manufacture. The list of ingredients gives an idea about what all has been added to the food product. One can selectively look for ingredients that one wants to avoid like allergens (wheat, soya, peanuts, etc.), preservatives, artificial colour, added sugar, etc. Whether the product is vegetarian or not can be identified from the 'green dot' logo.

The food label also carries nutrition information in the form of 'nutrition facts'. This gives the amounts of some nutrients present in 100g of the food or per serving portion of the food. This can ideally help the consumer to choose foods/brands which give more of desirable nutrients like fibre, protein, vitamins, calcium, iron, etc. and avoid foods/brands with high amounts of fat, saturated fats, cholesterol, trans fats, sodium and sugar, which are harmful for health.

In surveys however consumers have reported finding nutrition labelling confusing, especially the use of some technical and numerical information. Consumers have

difficulty in understanding the effect that different nutrients mentioned on labels have on their health.

The concepts and terms usually reported as least well understood are the relationship between calories and energy; sodium and salt; sugar and carbohydrate; and the terms cholesterol and fatty acids. If nutrition information is given per 100g, there is difficulty of converting information from gram/milligram per 100 g to gram/milligram per serving.

If information is given per serving size, it also proves difficult to interpret especially when the amount consumed is more or less than the serving size mentioned. Sometimes the serving size is mentioned in terms of weight in grams, then knowing the weight of the portion size selected by the individual is difficult. In general, older consumers and people with lower levels of education or income are likely to have the most difficulty understanding the terms used on food labels. Most consumers find the nutrition information too technical to understand.

Nutrient Profiling

It is not just difficult for consumers to understand whether a food is healthy or not, there is great debate among nutritionists and health professionals on the criteria which should be used to label a food healthful or harmful. So for instance a debate on whether chocolates are healthy or not, would have one side labelling it as unhealthy because of the high amount of saturated fat and sugar while another would talk of the protective phytochemicals of cocoa in the chocolate and label it as a health food. Similarly is a glass of milkshake (rich in protein and calcium) with sugary chocolate syrup (high in sugar) healthy or unhealthy? Nutrient Profiling seems to be the solution for all such questions.

Different Nutrient Profiling Symbols

Nutrient profiling is a scientific method for assessing the nutrient quality of food. According to WHO/IASO (2010) it is the science of classifying or ranking foods according to their nutrient contents for the purpose of preventing disease and promoting health. It can be used by national authorities to promote public health dietary goals. An internationally recognized method for nutrient profiling could have a wide range of applications.

However the issue is whether the criteria developed for one culture or cuisine, or for one purpose or setting would be applicable for another. Multiple types of nutrient profiling can lead to confusion; for example, food companies have already proposed a range of different nutrient profile models, many of which suit a specific portfolio of brands.

Nutritionists may not agree with the profiling criteria of a private company which obviously has a conflict of interest in labelling its own products unhealthy. Hence a procedure for systematic validation and comparison of different approaches is required, and a set of guiding principles is needed to ensure that national authorities can make use of models found to be effective and suitable.

Evidence-based framework and guiding principles have been formulated by WHO which can be adapted in developing and implementing the nutrient profiling of foods in different countries.

These could prove to be very useful especially for purposes of regulating the marketing of foods to children, evaluating health and nutrition

Nutrition Labels can confuse the consumer

claims, product labelling logos or symbols and providing information and spreading awareness. Marketing regulations for foods meant for children have been proposed in several countries to reduce the impact on children of marketing of foods high in saturated fatty acids, trans fatty acids, free sugars or salt/sodium.

Nutrient profile models basically fall into two groups, those that are based on:

- Nutrient levels in foods (e.g. high fat; low fat; reduced fat; source of fibre; high in sugars or salt/sodium; energy dense, nutrient poor); or on

- Effects of consuming the food on a person's health (e.g. healthy, healthier option, less healthy).

The nutrient levels are usually expressed per 100 g of food, per 100 kJ/kcal of food or per serving of food. Sometimes these may be combined within a model.

The food groups which are generally "encouraged'' by most models are fruits, vegetables, whole grains, and low-fat and fat-free dairy foods. Consumption of some other foods are "discouraged", such as those high in fat, especially saturated fat, sugar and salt.

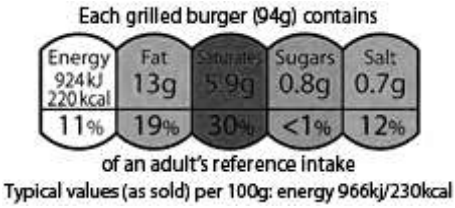
Balancing increased intakes of valuable nutrients with decreased intakes of nutrients to limit, all within a recommended amount of calories, are critical parts of a healthier diet. Moreover, what is also important is choosing appropriate serving sizes of foods and beverages in order to stay within recommended daily caloric allowances.

The Food and Drug Administration of USA (FDA) has taken the position that health claims can be used only if a serving of food contains < 13 g fat, <4 g saturated fat, <60 mg cholesterol, and <960mgNa. The criteria for the presence of beneficial nutrients states that healthy foods should contain >10% Daily Value (DV) per serving for at least one of the following: protein, calcium, iron, vitamins A and C, and fiber.

Using comparable criteria, the US Department of Agriculture (USDA) had defined foods of minimum nutritional value as those that failed to provide 5% of the reference daily intakes per serving for 8 key nutrients: protein, calcium, iron, vitamin A, vitamin C, riboflavin, thiamine, and niacin.

In the Traffic Light Approach proposed by Food Standards Agency, UK, (https://www.gov.uk) individual foods are categorized as green, amber, or red on the basis of the level of negative nutrients like total fat, saturated fat, sugar and salt. Red colour indicates that one or more of these nutrients are high in a food and hence it should be consumed sparingly.

Amber colour means there are moderate amounts of one or more of these nutrients and hence these should be consumed in moderate amounts. Green colour signifies that the negative nutrients are present in low amounts and hence the foods can be consumed freely.



The new scheme (an example of which is illustrated here), is recommended for use across the UK.

Location on pack

The nutrient profiling information needs to be readily available to the consumer when the purchase is being made. The best place is of course the label of the food package or the menu card of a food service establishment where foods are not sold in packaged form.

Whichever model of profiling is selected, it is important to find out whether the intended consumer can comprehend the information provided. It has also been suggested that nutrient profiling be put on the 'front of the pack' for better visibility of the information. This is because studies have shown that consumers select products by looking at the front of the pack and rarely flip the packet to see the fine print at the back.

The position of the information will be determined by many factors including brand position, additional information on pack, pack size and shape. The positioning of the information will also be dependent on space and legibility.

However in October 2014, the European Union has rejected the United Kingdom's controversial "traffic light" nutritional labelling scheme, citing a paradoxical example where Diet Coke is labelled more favourably than extra virgin olive oil. As reported in olive oil times.
http://www.oliveoiltimes.com/olive-oil-health-news/eu-rejects-uk-traffic-light-nutritional-labeling/41567

Limitations of nutrient profiling

Nutrient profiling cannot be looked at as a solution to all the nutritional problems. This is because the nutrient composition of individual foods is not the only determinant of diets. Diets are also determined by the portion sizes of individual foods that consumers eat, the frequency of their consumption and the variety of different foods that make up the diets.

Also, most nutrient profiling models tend to neglect substances like phytochemicals that are not nutrients, but are protective against many chronic degenerative diseases. It also does not usually consider the likelihood of contaminants like pathogens, pesticides, heavy metals and food additives, etc. being present in the food product while labelling it healthy.

The other issue with nutrient profiling is that most look at energy density of foods and may incorrectly label some foods as unhealthy. Energy density of foods is not always determined by their sugar and fat contents. Often, energy dense foods are simply foods that are dry as water influences the energy density of foods more than does any macronutrient, including fat.

Examples of dry energy-dense foods are candy and potato chips, but also whole grains and cereals. In contrast, soft drinks, fruits, vegetables, and milk are energy-dilute because of high proportion of water which adds weight to the food product but not calories. Although the overall inverse relation between energy density and nutrient density may hold, not all energy-dense foods are necessarily nutrient-poor or vice versa.

Nutrition scientists have now the challenge to develop the ''ideal profiling scheme'' in India that is stringent enough to protect the consumer but also flexible enough to encourage innovations by the food industry. Profiling criteria should not drive food companies to fortify junk food in order for it to pass regulatory benchmarks.

Given that all countries have the same objective (i.e. decreasing the risk of chronic diseases), should they all uniformly use models which focus on saturated fatty acids, trans fatty acids, sugars and sodium?

In a country like ours where there is a dual burden of malnutrition, perhaps we would also want consumers to identify foods which are healthful because of positive nutrients present like protein, vitamins and minerals.

So would a continuous system of nutrient profiling which ranks foods according to their nutrient content be better than a threshold system which looks at whether the nutrient is present below or above a specific value. The models based on the continuous system can differentiate between foods high or low in certain nutrients.

For example- if we have two products one high in sugar and saturated fatty acids and another one high in sugar but low in saturated fatty acids, these foods can be distinguished and ranked properly using a continuous system by assigning scores to each of the food items based on their nutrient composition.

On the other hand, using the threshold system, foods can be classified as having low or high amounts of a nutrient e.g. low sodium, high fiber, etc.

Even after an appropriate nutrient profiling model has been identified, the importance of ensuring proper communication to the consumer cannot be overemphasized.

Consumer research is needed to determine the best way to communicate so that it helps people make the right food choices.

Cont'd from Pg 4

Some suggestions for smart snacking -

1. Fresh fruit / fruit chaat / fruit salad

2. Vegetable salad with low fat dressing

3. Low fat soup

4. Low fat biscuits

5. Nuts and dry fruits

6. Boiled corn

7. Puffed rice with masala

8. Soymilk/ milk shakes (use skimmed milk)

9. Sprouts

10. Whole wheat bread sandwich
Serving size of a snack is also important.

A large portion of a snack is likely to reduce your appetite for the main meal – lunch or dinner or both. Some examples of controlled portions – 1 orange, 1 apple, 1 cup diced papaya, 1 cup of salad, 1 cup low fat soup, 4 low fat biscuits, 1 fistful of dry fruits and nuts, 200 ml of soymilk, ½ cup corn.

If you eat regular meals and healthy snacks, you are less likely to gain weight than those that don't follow a healthy eating pattern.

So here are a few tips to kick start your healthy snack plans -
1. Plan your snacks in advance so that it becomes easier to carry or prepare them.

2. Do not shop for snacks while you're hungry. You might end up buying items that you did not want in the first place.

3. Resist the temptation to buy snacks near the checkout counter of your supermarket.

4. Store a wide variety of healthful snacks at home/office so that you do not get bored of eating the same snack repeatedly.

5. Read nutrition labels when you buy quick snacks.

6. Do not fall for advertisements that promote non-nutritious snacks.

7. Do not skip your main meals; especially breakfast.

8. Think small portions on a small plate.

There's a need to eat healthier snacks as adults and create healthy snack options for children so that the future generations remain healthier than today's.

Choose wisely and stay healthy with smart snacking!

Research in Health & Nutrition

Indian gooseberry may help lower cholesterol in type 2 diabetes patients

IFT Weekly January 13, 2014

Endothelial dysfunction is one of the early prognostic markers of atherosclerosis, and may eventually result in cardiovascular disease.

It has been reported that endothelial dysfunction occurs in patients with diabetes much earlier than the clinical manifestations of vascular complications of the disease. A study published in Diabetes, Metabolic Syndrome and Obesity: Targets and Therapy shows that the herbal plant amla may improve endothelial function and reduced biomarkers of oxidative stress. Amla (Phyllanthus emblica) is an herbal plant used widely in indigenous medicinal preparations used to treat a variety of diseases. It is also known as the Indian gooseberry or amlaki, and is used in Indian medicine as a cardiotonic.

The study compared the effects of an aque¬ous extract of P. emblica versus those of atorvastatin (a statin drug used to lower cholesterol) and placebo on endothelial dysfunction and biomarkers of oxidative stress in patients with type 2 diabetes. Eighty patients were randomized to receive either P. emblica 250 mg twice daily, P. emblica 500 mg twice daily, atorvastatin 10 mg in the evening and matching placebo in the morning, or placebo twice daily for 12 weeks. The primary efficacy parameter was the change in endothelial function identified at baseline and after 12 weeks of treatment. Secondary efficacy parameters were changes in biomarkers of oxidative stress (malondialdehyde, nitric oxide, and glutathione), high sensitivity C-reactive protein levels, the lipid profile, and glycosylated hemoglobin (HbA1c) levels.

The researchers found that treatment with P. emblica 250 mg, P. emblica 500 mg, or atorvastatin 10 mg produced significant reductions in endothelial func¬tion after 12 weeks of treatment compared with baseline. Compared with placebo, the mean reduction in total cholesterol was 10.89%, 14.3%, and 24.68% on P. emblica 250 mg, P. emblica 500 mg, and ator¬vastatin, respectively, and low-density lipoprotein cholesterol decreased by 15.88%, 20.15%, and 35%, respectively. There was a significant improvement in biomarkers of oxidative stress and systemic inflammation compared with baseline and placebo. Further, the treatments significantly improved the lipid profile and HbA1c levels compared with baseline and placebo. All treatments were well tolerated.

The researchers concluded that both atorvastatin and P. emblica significantly improved endothelial function and reduced biomarkers of oxidative stress and systemic inflammation in patients with type 2 diabetes mellitus, without any significant changes in laboratory safety parameters.

More whole grains linked with lower mortality risk

IFT Weekly January 7, 2015

A study published in JAMA Internal Medicine shows that eating more whole grains may decrease people's risk of death by up to 15%—particularly the risk from heart disease.

Although eating more whole grains has been previously associated with a lower risk of major chronic diseases, such as type 2 diabetes and cardiovascular disease (CVD), until now there had been limited evidence regarding whole grains' link with mortality. The researchers looked at data from more than 74,000 women from the Nurses' Health Study and more than 43,000 men from the Health Professionals Follow-Up Study who filled out questionnaires about their diet every two or four years from the mid-1980s to 2010. Adjusting for a variety of factors, such as age, smoking, body mass index, physical activity, and overall diet excluding whole grains, the researchers compared the participants' whole grain intake with mortality data over an approximately 25-year period.

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They found that whole grain intake was associated with up to 9% decreased risk of overall mortality and up to 15% decreased risk of CVD-related mortality. For each serving of whole grains (28 g/day), the overall death risk dropped by 5%, and by 9% for CVD-related death. They also found that bran, a component of whole grain foods, was associated with similar beneficial effects. Bran intake was linked with up to 6% lower overall death risk and up to 20% lower CVD-related risk.
In contrast, the researchers found no association between eating whole grains and lowered cancer-related mortality risk. They also didn't find any decreased risk from eating germ, another essential component of whole grains.

Gut bacteria, yeast may interact to provide health benefits

IFT Weekly January 14, 2015

A study published in Nature shows that common gut bacteria may aid in the development of prebiotic medicines that help people fight off yeast infections and autoimmune diseases such as Crohn's disease. The study shows how microbes in the digestive tract have learned to unravel the difficult to break down complex carbohydrates that make up the yeast cell wall.

Evolving over the 7,000 years that humans have been eating fermented food and drink, the ability of a common gut bacterium called Bacteroides thetaiotaomicron to degrade yeasts is almost exclusively found in the human gut. Involving an international team of scientists, the research has unraveled the mechanism by which B. thetaiotaomicron has learned to feast upon difficult to break down complex carbohydrates called yeast mannans. Mannans, derived from the yeast cell wall, are a component in the human diet from fermented foods including bread, beer, wine, and soy sauce, as well as yeasts that call the microbiome home and are in some cases thought to be harmful.

"One of the big surprises in this study was that B. thetaiotaomicron is so specifically tuned to recognize the complex carbohydrates present in yeasts, such as those present in beer, wine, and bread," said Eric Martens, Assistant Professor in the University of Michigan's Dept. of Microbiology and Immunology.

Researchers believed this mechanism emanated from the ability of common gut bacteria to recycle chemically similar carbohydrates present on intestinal cells, which are constantly being shed and renewed to keep the intestinal lining healthy. "However, these bacteria turned out to be smarter than we thought: they recognize and degrade both groups of carbohydrates, but have entirely separate strategies to do so despite the substantial chemical similarity between the host and yeast carbohydrates," said Martens. "Even the relatively small amounts of yeast that we commonly consume in foods are enough to impact the physiology of our friendly gut bacteria."

Vitamin D May Protect Against Colorectal Cancer

January 15, 2015 Food Product Design

Vitamin D, often referred to as the sunshine vitamin, has received a lot of attention in the past decade. It's linked to mood, immune health, bone health and more. In October, we reported on a new study that found pregnant women with low vitamin D levels experience an increased amount of pain during labor.

Although products such as milk are often fortified with vitamin D, almost 50 percent of Americans are still deficient in vitamin D. To further support the need for vitamin D, a new study conducted by the Dana-Farber Cancer Institute found vitamin D can protect some people with colorectal cancer by perking up the immune system's vigilance against tumor cells (Gut. Jan. 15, 2015). This is the first time a link between vitamin D and the immune response to cancer has been shown in a large human population.

"People with high levels of vitamin D in their bloodstream have a lower overall risk of developing colorectal cancer," said the study's senior author, Shuji Ogino, M.D., Ph.D., of Dana-Farber, Harvard School of Public Health, and Brigham and Women's Hospital. "Laboratory research suggests vitamin D boosts immune system function by activating T cells that recognize and attack cancer cells. In this study, we wanted to determine if these two phenomena are related: Does vitamin D's role in the immune system account for the lower rates of colorectal cancer in people with high circulating levels of the vitamin?"

Ogino and his colleagues theorized if the two phenomena were connected, then people with high levels of vitamin D would be less likely to develop colorectal tumors that are permeated with large numbers of immune system cells. Colorectal tumors that do develop in these individuals would, by the same logic, be more resistant to the immune response.

Therefore, the research team drew on data from 170,000 participants in the Nurses' Health Study and

Health Professionals Follow-p Study, two long-term health-tracking research projects. Within this population, researchers compared carefully selected groups of 318 colorectal cancer patients and 624 individuals who were free of cancer. All 942 of them had blood samples drawn in the 1990s, before any developed cancer. The investigators tested these samples for 25(OH)D. They found patients with high amounts of 25(OH)D had a lower-than-average risk of developing colorectal tumors that were enriched with immune system cells.

“This is the first study to show evidence of the effect of vitamin D on anticancer immune function in actual patients, and vindicates basic laboratory discoveries that vitamin D can interact with the immune system to raise the body’s defenses against cancer," Ogino said. “In the future, we may be able to predict how increasing an individual’s vitamin D intake and immune function can reduce his or her risk of colorectal cancer.”

Cancer prevention guidelines may lower risk of obesity-linked cancers

January 5, 2015 Science Daily

Low alcohol consumption and a plant-based diet, both healthy habits aligning with current cancer prevention guidelines, are associated with reducing the risk of obesity-related cancers, a New York University study shows. The findings appear in the journal Cancer Causes & Control.

"Our research aims to clarify associations between diet and physical activity in relation to cancer to encourage at-risk individuals to make lifestyle modifications that may reduce their risk of certain cancers," said Nour Makarem, a nutrition doctoral student at NYU Steinhardt and the study's lead author.

A third of cancers are estimated to be related to excess body fat, and are therefore considered preventable through lifestyle changes. Obesity-related cancers include cancers of the gastrointestinal tract, reproductive organs, urinary tract, blood, bone, spleen, and thyroid. In 1997, the World Cancer Research Fund and the American Institute for Cancer Research released cancer prevention guidelines advising on weight management, diet, and physical activity. These guidelines, updated in 2007, provide an integrated approach for establishing healthy habits that reduce cancer incidence.

In their study, Makarem and her colleagues sought to evaluate whether healthy behaviors aligning with the diet and physical activity cancer prevention guidelines are in fact associated with reduced risk for obesity-related cancers and the most common site-specific cancers (breast, prostate, and colorectal cancers).

The researchers analyzed medical and dietary data for 2,983 men and women who were part of the Framingham Heart Study, a 60-year population study tracking factors related to cardiovascular disease as well as cancer. Focusing on data from 1991 through 2008, they identified 480 obesity-related cancers among the participants.

In order to calculate the relationship between the cancer prevention recommendations and cancer incidence, the researchers created a seven-point score based on the recommendations for body fat, physical activity, foods that promote weight gain, plant foods, animal foods, alcohol consumption, and food preparation and processing.

After adjusting for other factors that could contribute to cancer risk, including age, smoking, and pre-existing conditions, the researchers found that the overall score, as a proxy for overall concordance to the guidelines, was not associated with obesity-related cancer risk. However, when score components were evaluated separately, two different measures emerged as strong predictors of cancer risk.

In the current study, adherence to alcohol recommendations -- limiting alcoholic drinks to two for men and one for women a day -- was protective against obesity-related cancers combined and against breast, prostate, and colorectal cancers. In addition, among participants who consume starchy vegetables, eating sufficient non-starchy plant foods (fruits, vegetables, and legumes) was associated with a lower risk of colorectal cancer.

"Based on the study's results, dietary advice on preventing cancer should emphasize the importance of eating a plant-based diet and restricting alcohol consumption," said Niyati Parekh, associate professor of nutrition and public health at NYU Steinhardt and the study's senior author.

'Imaginary meal' tricks body into losing weight

January 5, 2015 Science Daily

Salk researchers have developed an entirely new type of pill that tricks the body into thinking it has consumed calories, causing it to burn fat. The compound effectively stopped weight gain, lowered

cholesterol, controlled blood sugar and minimized inflammation in mice, making it an excellent candidate for a rapid transition into human clinical trials.

Unlike most diet pills on the market, this new pill, called fexaramine, doesn't dissolve into the blood like appetite suppressants or caffeine-based diet drugs, but remains in the intestines, causing fewer side effects.

"This pill is like an imaginary meal," says Ronald Evans, director of Salk's Gene Expression Laboratory and senior author of the new paper, published January 5, 2014 in Nature Medicine. "It sends out the same signals that normally happen when you eat a lot of food, so the body starts clearing out space to store it. But there are no calories and no change in appetite."

In the United States, more than a third of adults are obese and 29.1 million people have diabetes, according to the Centers for Disease Control and Prevention. Both obesity and diabetes lead to an increase in health spending, a greater risk of health complications and a shorter lifespan.

Evans' laboratory has spent nearly two decades studying the farensoid X receptor (FXR), a protein that plays a role in how the body releases bile acids from the liver, digests food and stores fats and sugars. The human body turns on FXR at the beginning of a meal, Evans and others have shown, to prepare for an influx of food. FXR not only triggers the release of bile acids for digestion, but also changes blood sugar levels and causes the body to burn some fats in preparation for the incoming meal.

Pharmaceutical companies aiming to treat obesity, diabetes, liver disease and other metabolic conditions have developed systemic drugs that activate FXR, turning on many pathways that FXR controls. But these drugs affect several organs and come with side effects. Evans wondered whether switching on FXR only in the intestines -- rather than the intestines, liver, kidneys and adrenal glands all at once -- might have a different outcome.

"When you eat, you have to quickly activate a series of responses all throughout the body," says Evans. "And the reality is that the very first responder for all this is the intestine."

Evans and his colleagues developed the fexaramine compound by departing from the drug scaffold that most pharmaceutical companies typically pursue when targeting FXR. "It turns out that when we administer this orally, it only acts in the gut," explains Michael Downes, a senior staff scientist at Salk and co-corresponding author of the new work. Giving one such drug in a daily pill form that only reaches the intestines -- without transporting into the bloodstream that would carry the drug throughout the body -- not only curtails side effects but also made the compound better at stopping weight gain.

When the group gave obese mice a daily pill of fexaramine for five weeks, the mice stopped gaining weight, lost fat and had lower blood sugar and cholesterol levels than untreated mice. In addition, the mice had a rise in body temperature -- which signals metabolism ramping up -- and some deposits of white fat in their bodies converted into a healthier, energy-burning beige form of the tissue. Even the collection of bacteria in the guts of mice shifted when they received the drug, although what those changes mean isn't clear yet.

So, why does fexaramine in the intestines work even better than drugs that simultaneously activate FXR throughout the body? Evans thinks it has to do with the natural order in which the body's molecular pathways normally responds to a meal.

"The body's response to a meal is like a relay race, and if you tell all the runners to go at the same time, you'll never pass the baton," says Evans. "We've learned how to trigger the first runner so that the rest of the events happen in a natural order."

Since fexaramine doesn't reach the bloodstream, it is also likely safer in humans than other FXR-targeting drugs, the researchers hypothesize. They're already working to set up human clinical trials to test the effectiveness of fexaramine to treat obesity and metabolic disease. Ideally the drug, administered under a doctor's guidance, would work in conjunction with diet and lifestyle changes, similar to weight-loss surgeries or other obesity or diabetes drugs.

Smart phones, social media encourage healthy habits

January 6, 2015 Science Daily

Smart phones and social media may help college-age adults make healthier choices when it comes to food and physical activity, according to Kendra Kattelmann, professor of health sciences and nutrition and director of the South Dakota State University dietetics program.

Kattelmann was the lead researcher for the Young Adults Eating and Active for Health (YEAH) project, a 15- month study funded through a $1.5 million Agriculture and Food Research Initiative grant from the U.S. Department of Agriculture and involved researchers from 13 other universities.

Using Web for lessons, encouragement First, Kattelmann and

her colleagues identified key challenges that face 18- to 24-year-olds who are transitioning from living at home to the dorms or off-campus housing and establishing their independence -- managing time and dealing with stress from classes, relationships and living circumstances. The researchers then developed a theory-based, Web-delivered program to promote healthy behaviours.

Though the researchers recorded the weight and body mass index, or BMI, of the 1639 second-semester college freshmen, Kattelmann said the emphasis was on health promotion, rather than weight loss. Two-thirds of the participants were within normal BMI ranges, which mirrors the national college-age population.

Based on the participants' responses, 80 percent met the goal of 150 minutes of moderate physical activity per week before the study began. In addition, they were encouraged to consume five cups of fruits and vegetables per day and manage stress on most days.

Participants on each campus were divided into intervention and control groups. The intervention groups received lessons on eating, exercise and stress management via the Internet over a 10-week period, according to Kattelmann. In that time frame, email "nudges" along with a short video delivered four times a week reminded the students about their targeted goals and behaviours. These decreased to one per week for the next 10 months after the lessons ended.

Making mindful choices
Results showed that the students had no significant changes in weight, Kattelmann reported, noting the goal was not to lose weight, but to improve eating and exercise habits. The participants "increased their intention to consume healthy foods at mealtimes and for snacks." Those who received the targeted messages at 0.2 cups more fruits and vegetables daily. The females in the intervention groups also engaged in slightly more rigorous physical activity than those in the control group.

Preparing healthy meals and staying physically active takes time and does not create economic wealth, but long term may save money in health care costs, she pointed out. "Developing behaviours for meal preparation, snack preparation and food choices doesn't come easy unless it's a habit."

Kattelmann continued: "In a world where we have decreased activities levels due to technology plus easy access to pre-prepared food, young people will have to make mindful choices to prevent obesity-related illnesses."

To trigger energy-burning brown fat, just chill

January 8, 2015 Science Daily

Those who overindulged during the holidays may want to get a shot of cold air to kick-start some extra fat-burning activity for the new year.

Researchers at the University of California, Berkeley, found that exposure to cold temperatures increases levels of a newly discovered protein that is critical for the formation of brown fat, the type of fat in our bodies that generates heat. With extended exposure to chilly air, the protein, called transcription factor Zfp516, also helps the more abundant white fat in our bodies -- the kind that stores excess energy -- become more similar to brown fat in its ability to burn energy.

The researchers found that mice with boosted levels of the Zfp516 protein gained 30 percent less weight than control mice when both groups were fed a high-fat diet.

The new findings, published online Jan. 8 in the journal Molecular Cell, shed light on a type of fat that has drawn increased attention from researchers in the past five years.

"Knowing which proteins regulate brown fat is significant because brown fat is not only important for thermogenesis, but there is evidence that brown fat may also affect metabolism and insulin resistance," said principal investigator Hei Sook Sul, UC Berkeley professor of nutritional science and toxicology. "If you can somehow increase levels of this protein through drugs, you could have more brown fat, and could possibly lose more weight even if eating the same amount of food."

White fat, brown fat, good fat, bad fat
Unlike white fat, which stores excess energy, brown fat burns energy to keep us warm. Brown fat gets its hue from relatively high levels of mitochondria, the cell's power station. In humans, brown fat was thought to be present only in infants, but stores of it were recently discovered in adults around such vital areas as the heart, brain, neck and spinal cord.

The study authors said that because we generally live our lives in controlled, ambient temperatures, our need for brown fat has decreased over time.

"It has been noted that outdoor workers in northern Finland who are exposed to cold temperature have a significant amount of brown fat when compared to same-aged

indoor workers, but overall, the percentage of brown fat in adults is small compared to white fat," said Sul. "We also know that obese people have lower levels of brown fat."

The UC Berkeley team discovered that the Zfp516 protein activates uncoupling protein 1 (UCP1), found only in the mitochondria of brown fat and involved in the generation of heat.

"The amount of UCP1 produced by brown-like fat cells will be lower than that of classical brown fat, but since 90 percent of the fat in our bodies consists of white fat, finding a way to make that tissue more brown-like could have a significant impact," said Sul.

Making white fat into brown-like fat When the researchers disabled the gene for Zfp516 in mouse embryos, the embryos did not develop any brown fat. In another experiment, researchers found that mice with higher levels of Zfp516 protein were able to convert more white fat tissue into brown-like fat when exposed to cold air. After four hours in a room kept at 4 degrees Celsius (39.2 degrees Fahrenheit), the body temperature of the mice with the overexpressed Zfp516 protein was, on average, 1 degree Celsius (1.8 degrees Fahrenheit) higher than a control group of mice with normal levels of the protein.

"That difference in body temperature is huge for the mice," said study co-lead author Jon Dempersmier, a Ph.D. student in nutritional science and toxicology. "The brown-like fat, the kind converted from white fat tissue, is inducible by cold. Classical brown fat, the kind in babies and prevalent in rodents, always has a ton of UCP1 and mitochondria in order to perform thermogenesis."

The mice with overexpressed Zfp516 protein also gained less weight than their unaltered littermates after both groups ate a high-fat diet for four weeks.

"This suggests that the transgenic mice were protected from diet-induced obesity," said Sul. "This protein could become an important target for research into the treatment and prevention of obesity and obesity-related diseases."

The study authors noted that there's an active area of research in the relationship between brown fat and diabetes. Higher levels of brown fat are associated with greater sensitivity to insulin. Resistance to insulin leads to Type 2 diabetes.

The researchers noted that there are many steps between discovering the protein in mice and determining whether it can be useful in humans, but they said that having a clear target is an important development. "Brown fat is active, using up calories to keep the body warm," said Dempersmier. "It'll burn fat, it'll burn glucose. So the idea is that if we can harness this, we can try to use this in therapy for weight loss and for diabetes."

Oranges versus orange juice: Which one might be better for your health?

January 21, 2015 Science Daily

Many health advocates advise people to eat an orange and drink water rather than opt for a serving of sugary juice.

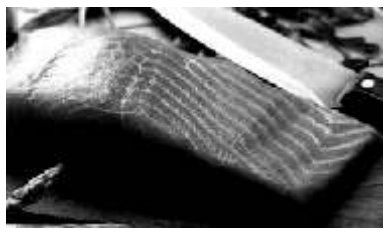
But in ACS' Journal of Agricultural and Food Chemistry, scientists report that the picture is not clear-cut. Although juice is indeed high in sugar, the scientists found that certain nutrients in orange juice might be easier for the body to absorb than when a person consumes them from unprocessed fruit.

Ralf Schweiggert, Julian Aschoff and colleagues note that oranges are packed with nutrients such as carotenoids and flavonoids that, among other benefits, can potentially help lower a person's risk for certain cancers and cardiovascular disease. But many people prefer to drink a glass of orange juice rather than eat the fruit. Sugar content aside, are they getting the same nutritional benefits? Schweiggert's team set out to answer that question.

The researchers found that the production of pasteurized orange juice slightly lowered the levels of carotenoids and vitamin C. But at the same time, it significantly improved the carotenoid and vitamin C bioaccessibility -- or how much the body can absorb and use. And contrary to conventional wisdom, although juicing oranges dramatically cut flavonoid levels, the remaining ones were much more bioaccessible than those in orange segments.

Fatty acids in fish may shield brain from mercury damage

January 21, 2015 Science Daily



New findings from research in the Seychelles provide further evidence that the benefits of fish consumption on prenatal development may offset the risks associated with mercury exposure.

In fact, the new study, which appears in the American Journal of Clinical Nutrition, suggests that the nutrients found in fish have properties that protect the brain from the potential toxic effects of the chemical.

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Food Science & Industry News

The Growth of Functional Foods

January 09, 2015 Food Product Design

The functional foods category is seeing some exciting growth and changes. Health and wellness is spotlighting this category and helping to drive its continued growth. According to a 2014 report from Leatherhead Food Research, the functional foods market experienced a global increase in value terms of 26.7 percent from 2009 to 2013. That's quite a jump.

So what's new on the horizon for functional foods? According to Elizabeth Sloan, contributing editor to Food Technology magazine, "Specialty nutritional ingredients, the emergence of a health-oriented Hispanic market segment, and consumers' ongoing interest in protein consumption are driving new opportunities for functional foods and drinks," she noted in her April 2014 article, The Top 10 Functional Food Trends.

Self.com named the top crazy food trends for 2015 based on research from the Sterling-Rice Group, a global food consulting firm out of Boulder, Colorado. Moving from 2014's crush on Middle Eastern flavors, 2015 will take delight in Japan's traditional green tea—matcha. Not only will consumers' tea cups be full of this antioxidant-dense tea, but tasty nibbles such as matcha-sama truffles and matcha green tea cookies will excite their palettes (and health).

Ultraviolet light treatment may benefit fresh-cut fruit

IFT Weekly January 14, 2015

A study published in the Journal of Food Science shows that treating fresh-cut mango and pineapple with ultraviolet (UV-C) light may extend the fruit's shelf-life while enhancing microbial inactivation and health-promoting compounds.

The researchers investigated the effects of UV-C and medium heat (70°C) treatments on the quality of fresh-cut Chokanan mango and Josephine pineapple. Quality attributes included physicochemical properties (pH, titratable acidity, and total soluble solids), ascorbic acid content (vitamin C), antioxidant activity, as well as microbial inactivation. Consumers' acceptance was also investigated through sensory evaluation of the attributes (appearance, texture, aroma, and taste). Furthermore, shelf-life study of samples stored at 4 ± 1°C was conducted for 15 days.

The fresh-cut fruits were exposed to UV-C for 0, 15, 30, and 60 min while heat treatments were carried out at 70°C for 0, 5, 10 and 20 min. The researchers found that both UV-C and medium heat treatments resulted in no significant changes to the physicochemical attributes of both fruits. The ascorbic acid content of UV-C treated fruits was unaffected; however, medium heat treatment resulted in deterioration of ascorbic acids in both fruits.

While the antioxidants were enhanced with UV-C treatment, the heat treatments resulted in decreased antioxidant activities.

Both treatments reduced the microbial count in both fruits. The shelf-life of the fresh-cut fruits was also successfully extended to a maximum of 15 days following treatments. As for consumers' acceptance, UV-C treated fruits were the most accepted as compared to their heat-treated counterparts.

The researchers concluded that the ability of UV-C treatment to retain quality and enhance antioxidant activity in fruits could be well exploited for the benefit of consumers.

Natural, Organic Strengthen Frozen Food Sector

January 15, 2015 Food Product Design

From snacks to sides to full-blown meals, frozen foods answer the consumer call for convenience. But that doesn't mean frozen foods don't need to taste good. Successful new products are easy to heat-and-eat, and reflect current trends in flavor, format as well as consumer demand for healthier choices.

Consumer demand for natural and organic products are driving growth

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in the frozen food sector after several years of challenges and declining sales. Sales of the collective frozen food categories dinners/entrées, pizzas, side dishes, and appetizers/snacks will reach $23 billion in 2019, according to a new report from Packaged Facts.

According to the "Frozen Foods in the U.S.: Hot Meals, Sides, and Snacks" report from Packaged Facts, consumers are slowly warming up again to frozen foods due to both the convenience of the products and the recent introduction of more natural and organic frozen offerings that are lending the segment a much needed health halo. Consumer concerns about preservatives and other ingredients are alleviated by the notion that if the products are natural or organic, they must be fresher or, at least, healthier.

"Frozen foods of all kinds have been challenged in recent years as a result of the convergence of several trends, especially, but not exclusively, a growing demand for fresh products or, at least, fresher products in refrigerated rather than frozen form. Nevertheless, frozen food products still have much to offer," said Packaged Facts research director David Sprinkle. "For instance, frozen products identified as natural or organic are having a more positive experience than frozen foods in general. These organic and natural frozen foods appeal to the consumer who is both cost conscious and health conscious."

In addition to the continued emergence of natural/organic frozen foods, increased sales of in frozen dinner/entrées, pizzas, side dishes, and snacks in the upcoming 5-year period will be based on the ability of major marketers to adjust to the changing consumer environment that calls for more variety (in terms of flavors and serving styles), healthier foods, and better pricing. Also a factor will be increased growth among smaller brands like Annie's (now under General Mills), which should gain more customers for their natural and organic frozen dinners and entrées.

With "fresh" and "healthy" emerging as food industry buzz words, it's easy to wonder if frozen foods—which almost inherently fail conjure connotations associated with either fresh or healthy products—still appeal to the majority of American consumers.

TV use, unhealthy eating linked

January 7, 2015 Science Daily

The holidays can be a time for binge watching TV shows or movies. According to a University of Houston (UH) researcher, all of those hours in front of the television may lead to increased snacking. A recent UH study conducted by professor Temple Northup suggests people who watch excessive amounts of TV tend to eat more unhealthy foods and might not understand the foundations of a healthy diet.

"A number of previous studies found a relationship between TV use in terms of the number of hours watched per day and unhealthy food consumption," said Northup, assistant professor at UH's Jack J. Valenti School of Communication. "In essence, the number of hours of TV you watch per day, the more unhealthy foods you eat. A common explanation for this is that TV watching is sedentary and encourages snacking."

Northup documents the relationship between television use and unhealthy food consumption in the study, "Understanding the Relationship Between Television Use and Unhealthy Eating: The Mediating Role of Fatalistic Views of Eating Well and Nutritional Knowledge." This study recently was published in the International Journal of Communication and Health.

"There was very little prior research on the psychological reasons this relationship might exist beyond that it's a sedentary activity that encourages snacking," he said "I wanted to investigate underlying psychological reasons that this relationship might exist."

A 'fatalistic view toward eating well' and 'nutritional knowledge' are two of the measurements Northup included in a cross-sectional survey of 591 participants. He also included 'television and news media usage' and 'nutritional intake.' Northup says the research model is based on similar measures that look at cancer prevention.

In a review of the cancer prevention studies, Northup found that people who adopt a fatalistic view towards cancer, a view that it is too difficult to understand causes of cancer well enough to do anything about it--tend to have lower self-efficacy toward reducing risky behaviors that may cause cancer. In the context of TV use and unhealthy eating, he believed that those with a more fatalistic view toward eating well tend to eat more snack foods. If these individuals think nutrition is too difficult to understand, they will probably give up trying to eat well, he said.

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GOOD REGULATORYPRACTICE: PARTICIPATION & TRANSPARENCY

Dr. J. I. Lewis, Chairman, Regulatory Affairs, PFNDAI

Ever so often during the erstwhile PFA regime, food businesses on receiving a draft regulation would respond by first congratulating the Regulator for its laudable effort promptly followed by groans of pain in implementing the same.

Observations were thereafter raised regarding ambiguous constructs and inadequate pre-enforcement timelines. Both were routinely ignored – the Regulator found nothing peculiar about this practice. The 60-day public notices inviting comments in reality was a one-way communication never intended for genuine discussion. The majority opinion even today is that public inputs are not acknowledged, no response posted and most annoyingly no indication whether the input had the merit to be considered. The exercise is a procedural formality rather than a genuine invitation to consult. One gets the feeling of being entrapped in a seemingly open system.

A leading daily recently put out the news that the Ministry of Health and Family Welfare through the Drug Controller General of India (DGCI) is proposing a regulatory pathway to facilitate speedy drug application approvals, bringing in transparency, accountability and predictability. Ironically the FSSAI is yet to implement the same principles that the DCGI is seeking to introduce. Principles laid down in Acts do not necessarily get translated into practice.

A major complaint is that the Regulator can and should be doing a better job of listening to, and even actively soliciting meaningful participation from all interests particularly industry. It would be a pompous presumption on the part of the Regulator to believe it has all the scientific and technical knowledge to understand the impact of a regulation. Consultation is the only way to access all the hard technical issues prior to arriving at regulatory options. The outcome of consultation can only lead to better regulation. When public participation is removed from the decision-making process it is hard to see how it can significantly enhance either the quality or legitimacy of rules.

Consultation under the Act: Does the law preclude the Regulator from any form of public participation and permits only the brief 60-day window at the draft step? The answer is a resounding no. If the PFA was not forced by statute to address the need for consultation prior to rulemaking – the FSSA 2006 does so very vividly leaving little room for doubt or shelter of interpretation.

Unspoken, unpractised, and ignored FSSA 2006 has several provisions relating to consultative engagement unequivocal in terms of quality and opportunity. Terms such as openness, transparency, public hearings, public consultations, the possibility of inviting observers to meetings of the Scientific Committee and the Scientific Panel are well codified in the Act. The general principles in Section 18 read:

“The Food Authority shall, while framing regulations or specifying standards under this Act– ensure that there is open and transparent public consultation, directly or through representative bodies including all levels of panchayats, during the preparation, evaluation and revision of regulations, except where it is of opinion that there is an urgency concerning food safety or public health to make or amend the regulations in which case such consultation may be dispensed with: Provided that such regulations shall be in force for not more than six months”.

Transparency: public access to the decision making process

For a shared understanding amongst all, transparency refers to public access to the decision-making processes of the Authority and its constituent bodies. The Act is clear that public consultation includes the decision-making processes by specifically stating that it should happen "during preparation, evaluation and revision of regulations". Transparency and public participation are legitimate democratic practice – it strengthens connections between government agencies and the public they serve. Current and past regulatory behaviour is more authoritarian.

The US rulemaking process is perhaps the most transparent and participatory system compared to other countries. An advance notice of proposed rulemaking (ANPRM) or what the FDA (Agency) is thinking on a proposed rule is made public on the basis of data or evidence supporting the proposal. The public can access the Agency's data and the analysis behind the rule being proposed besides providing its own data. The Agency then analyzes all it receives and puts out responses (published) on each relevant comment or input. These documentary exchanges form the permanent record of the consultation process to be reviewed and relied upon when a rule is made or abandoned. It also provides the Legislature or Judiciary evidence of whether the Agency has followed due process of law.

In India the process starts off by being neither transparent nor participatory, even though much of what will become the final rule probably gets developed well before a draft notification is put out. With inventive reasoning it excludes public participation from the start until the 60-day notification step in direct conflict with the principles laid down by the Act. It routinely shies away from meeting external groups to elicit important data or sharing evidence. In reality meetings sought and granted are generally grievance-based, direct fallout of the one-way communication practice.

Secondly the Authority does not willingly reach out to all interest groups in an even-handed manner. In spite of the Act requiring the Authority to reach a wide spectrum of interested groups (all levels of panchayats) it all too often hears mainly from well-organized interests, which may make up only a subset of the overall public interests that will be affected by the regulatory decision. While it is unlikely that a regulator is "forced" to listen to a particular opinion and alter policy, all viewpoints (scientifically backed) should be heard to present a fair process. Above all it makes it apparent to all that the Regulator takes in all points of view while still remaining independent.

Thirdly even if genuine science backed data reaches the Authority there is no response of its acceptance or rejection. It finds great difficulty in accepting inputs even when supported by

data that is contrary to its professed view. In essence the process of public consultation is distasteful or distressing either from the scientific challenge it presents to the weakness of its endogenous processes.

Finally all too often unilaterally prepared drafts (in reality a clerical aggregation of international texts) are pushed through with post hoc rationalizations rather than pre draft evidential support from Indian data (Section 16.3b). The reluctance to support regulation with evidence of harm is either its absence or the fear that it would contradict the embedded position of the regulator.

Openness is about inviting, hearing and sharing

The Act provides the Authority appropriate access to industry expertise and inputs preceding the arrival of a risk management decision. It allows democratic legitimacy - without the fault of legal indiscretion or 'stepping outside' its writ - to engage itself with updates on food science advancements and technological innovations. It does so under several sections – such as

- Undertake risk assessment based on the available scientific evidence and in an independent, objective and transparent manner;

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Three decades of research in the Seychelles have consistently shown that high levels of fish consumption by pregnant mothers -- an average of 12 meals per week -- do not produce developmental problems in their children. Researchers have previously equated this phenomenon to a kind of biological horse race, with the developmental benefits of nutrients in fish outpacing the possible harmful effects of mercury also found in fish. However, the new research indicates that this relation is far more complex and that compounds present in fish -- specifically polyunsaturated fatty acids (PUFA) -- may also actively counteract the damage that mercury causes in the brain.

"These findings show no overall association between prenatal exposure to mercury through fish consumption and neurodevelopmental outcomes," said Edwin van Wijngaarden, Ph.D., and associate professor in the University of Rochester Department of Public Health Sciences and a co-author of the study. "It is also becoming increasingly clear that the benefits of fish consumption may outweigh, or even mask, any potentially adverse effects of mercury."

"This research provided us the opportunity to study the role of polyunsaturated fatty acids on development and their potential to augment or counteract the toxic properties of mercury," said Sean Strain, Ph.D., a professor of Human Nutrition at the Ulster University in Northern Ireland and lead author of the study. "The findings indicate that the type of fatty acids a mother consumes during pregnancy may make a difference in terms of their child's future neurological development."

The new study comes as the U.S. Food and Drug Administration and international agencies are in the process of revisiting fish consumption advisories to better reflect the health benefits of nutrients found in fish. The FDA's current guidance -- which recommends that pregnant women limit their consumption of certain fish to twice a week -- was established because of the known risk of high level mercury exposure on childhood development.

Mercury is found in the environment as a result of both natural and human (e.g. coal plant emissions) activity. Much of it ends up being deposited in the world's oceans and, as a result, fish harbor the chemical in very small amounts.

This has given rise to concerns that the cumulative impact of prenatal exposure to mercury through fish consumption may have negative health outcomes, despite the fact that that a link between low-level exposure and developmental consequences in children has never been definitively established.

At the same time, fish are rich in a host of beneficial nutrients, including fatty acids, which are essential to brain development, leading to a long-standing exchange among scientists, environmentalists, and policymakers over the risk vs. benefit of fish consumption. This debate has significant consequences for global health, as billions of people across the world rely on fish as their primary source of protein.

The Seychelles Child Development Study -- a partnership between the University of Rochester Ulster University, and the Republic of Seychelles Ministry of Health and Education -- is one of the longest and largest population studies of its kind. The Seychelles, a cluster of islands in the Indian Ocean, has proven to be the ideal location to examine the potential health impact of persistent low-level mercury exposure. The nation's 89,000 residents consume fish at a rate 10 times greater than the populations of the U.S. and Europe.

The study published today followed more than 1,500 mothers and their children. At 20 months after birth, the children underwent a battery of tests designed to measure their communication skills, behavior, and motor skills. The researchers also collected hair samples from the mothers at the time of their pregnancy to measure the levels of prenatal mercury exposure.

The researchers found that mercury exposure did not correlate with lower test scores. This finding tracked with the results of previous studies by the group -- some of which have followed children in the Seychelles into their 20s -- that have also shown no association between fish consumption and subsequent neurological development.

The researchers also measured the PUFA levels present in the pregnant women and found that the children of mothers with higher levels of fatty acids known as n3 -- the kind found in fish -- performed better on certain tests. Another common form of PUFA, called n6, comes from other meats and cooking oils and is found in greater abundance in the diets of residents of developed countries.

The fatty acids in fish (n3) are known to have anti-inflammatory properties, compared to n6, which can promote inflammation. One of the mechanisms by which mercury inflicts its damage is through oxidation and inflammation and this has led the researchers to speculate that not only does n3 provide more benefit in terms of brain development, but that these

compounds may also counteract the negative effects of mercury.

This was reflected in the study's findings, which showed that the children of mothers with relatively higher levels of n6 did poorer on tests designed to measure motor skills.

"It appears that relationship between fish nutrients and mercury may be far more complex than previously appreciated," said Philip Davidson, Ph.D., the principal investigator of the Seychelles Child Development Study, a professor emeritus at the University of Rochester, and senior author of the study. "These findings indicate that there may be an optimal balance between the different inflammatory properties of fatty acids that promote fetal development and that these mechanisms warrant further study."

Which health messages work?

January 29, 2015 Science Daily

Is it better to be positive or negative?

Many of the most vivid public health appeals have been negative -- 'Smoking Kills' or 'Drive, Drive, and Die' -- but do these negative messages work when it comes to changing eating behaviour?

Is it better to be positive or negative? Many of the most vivid public health appeals have been negative -- "Smoking Kills" or "Drive, Drive, and Die" -- but do these negative messages work when it comes to changing eating behaviour?

Past literature reviews of positive- or gain-framed versus negative or loss-based health messages have been inconsistent. In our content analysis of 63 nutrition education studies, we discovered four key questions which can resolve these inconsistencies and help predict which type of health message will work best for a particular target audience: 1. Is the Target Audience Highly Involved in this Issue? 2. Is the Target Audience Detail-oriented? 3. Is the Target Audience Risk Averse? 4. Is the Outcome Uncertain? The more questions are answered with a "Yes," the more a negative- or loss-based health message will be effective. Let's look at these in more detail.

1. Is the Target Audience Highly Involved in this Issue? The more knowledgeable or involved a target audience, the more strongly they'll be motivated by a negative- or loss-based message. In contrast, those who are less involved may not believe the message or may simply wish to avoid bad news. These less involved consumers generally respond better to positive messages that provide a clear, actionable step that leaves them feeling positive and motivated. For instance, telling them to "eat more sweet potatoes to help your skin look younger" is more effective than telling them "your skin will age faster if you don't eat sweet potatoes. The former doesn't require them to know why or to link sweet potatoes to Vitamin A.

2. Is the Target Audience Detail-oriented? People who like details -- such as most of the people designing public health messages -- prefer negative- or loss-framed messages. They have a deeper understanding and knowledge base on which to elaborate on the message. In her coverage of the article for the Food Navigator, Elizabeth Crawford, noted that most of the general public is not interested in the details and is more influenced by the more superficial features of the message, including whether it is more positive or attractive relative to the other things vying for their attention at that moment.

3. Is the Target Audience Risk Averse? When a positive outcome is certain, gain-framed messages work best ("you'll live 7 years longer if you are a healthy weight"). When a negative outcome is certain, loss-framed messages work best ("you'll die 7 years earlier if you are obese"). For instance, we found that if it is believed that eating more fruits and vegetables leads to lower obesity, a positive message ("eat broccoli and live longer") is more effective than a negative message. 4. Is the Outcome Uncertain? When claims appear factual and convincing, positive messages tend to work best. If a person believes that eating soy will extend their life by reducing their risk of heart disease, a positive message stating this is best. If they aren't as convinced, a more effective message could be "people who don't eat soy have a higher rate of heart disease."

These findings show how those who design health messages, such as health care professionals, will be impacted by them differently than the general public. When writing a health message, rather than appealing to the sentiment of the experts, the message will be more effective if it's presented positively. The general public is more likely to adopt the behaviour being promoted if they see that there is a potential positive outcome. Evoking fear may seem like a good way to get your message across but this study shows that, in fact, the opposite is true--telling the public that a behaviour will help them be healthier and happier is actually more effective.

Diet, nutrition essential for mental health

January 29, 2015 Science Daily

Evidence is rapidly growing showing vital relationships between both diet quality and potential nutritional deficiencies and mental health, a new international collaboration led by the University of Melbourne and Deakin University has revealed.

Published in The Lancet Psychiatry today, leading academics state that as with a range of medical conditions, psychiatry and public health should now recognise and embrace diet and nutrition as key determinants of mental health.

Lead author, Dr Jerome Sarris from the University of Melbourne and a member of the International Society for Nutritional Psychiatry Research (ISNPR), said psychiatry is at a critical stage, with the current medically-focused model having achieved only modest benefits in addressing the global burden of poor mental health.

"While the determinants of mental health are complex, the emerging and compelling evidence for nutrition as a key factor in the high prevalence and incidence of mental disorders suggests that nutrition is as important to psychiatry as it is to cardiology, endocrinology and gastroenterology," Dr Sarris said.

"In the last few years, significant links have been established between nutritional quality and mental health. Scientifically rigorous studies have made important contributions to our understanding of the role of nutrition in mental health," he said.

Findings of the review revealed that in addition to dietary improvement, evidence now supports the contention that nutrient-based prescription has the potential to assist in the management of mental disorders at the individual and population level.

Studies show that many of these nutrients have a clear link to brain health, including omega-3s, B vitamins (particularly folate and B12), choline, iron, zinc, magnesium, S-adenosyl methionine (SAMe), vitamin D, and amino acids. “While we advocate for these to be consumed in the diet where possible, additional select prescription of these as nutraceuticals (nutrient supplements) may also be justified," Dr Sarris said.
Associate Professor Felice Jacka, a Principal Research Fellow from Deakin University and president of the ISNPR noted that many studies have shown associations between healthy dietary patterns and a reduced prevalence of and risk for depression and suicide across cultures and age groups.

"Maternal and early-life nutrition is also emerging as a factor in mental health outcomes in children, while severe deficiencies in some essential nutrients during critical developmental periods have long been implicated in the development of both depressive and psychotic disorders," she said.

A systematic review published in late 2014 has also confirmed a relationship between 'unhealthy' dietary patterns and poorer mental health in children and adolescents. Given the early age of onset for depression and anxiety, these data point to dietary improvement as a way of preventing the initial incidence of common mental disorders.
Dr Sarris, an executive member of the ISNPR, believes that it is time to advocate for a more integrative approach to psychiatry, with diet and nutrition as key elements.

"It is time for clinicians to consider diet and additional nutrients as part of the treating package to manage the enormous burden of mental ill health," he said.

Evidence mounts for improved cognitive function from cocoa flavanol consumption

Medical News Today 9 January 2015

It is normal for cognitive function to slightly deteriorate with age.

Memory capacity begins to worsen, along with processing speed and the ability to form long-term memories. Finding a way to defer the onset of these issues becomes increasingly important as life expectancy gets longer and global populations age.

This study, conducted by researchers from Italy's University of L'Aquila and Mars, Incorporated, reinforces the results of several recent cognitive studies--throwing more light on the important role diet plays in maintaining cognitive health. Dr. Giovambattista Desideri, lead author on the paper, said, "The results of this study are encouraging--they support the idea that diet, and specifically a diet rich in cocoa flavanols, can play an important role in maintaining cognitive health as we age."

This study was the second installment in a two-part investigation by this team into the effects cocoa flavanols have on the brain. The first study, published in the journal Hypertension in 2012, found cognitive and cardiometabolic benefits of habitual cocoa flavanol consumption in older adults who had been

diagnosed with mild cognitive impairment (MCI). Despite these findings, the question of the benefits of cocoa flavanols on cognitive function among individuals without MCI remained uncertain.

This second study just published in the AJCN looked to address this question. Enrolling men and women aged 61-85 years with no evidence of cognitive dysfunction, the participants in this controlled, randomized, double-blind study were assigned to one of three flavanol groups, consuming a drink containing either high (993 mg), intermediate (520 mg) or low (48 mg) amounts of cocoa flavanols every day for eight weeks. The nutritionally matched drinks were specially prepared. The high- and intermediate-flavanol cocoa drinks were produced using Mars' patented Cocoapro® process, while the low-flavanol drink was made with a highly processed, alkalized cocoa powder. Other than the inclusion of the test drink, normal diets and regular lifestyle were maintained throughout the study.

At the start of the study and again after eight weeks, cognitive function was assessed using a battery of tests that examined memory, retention, recall, as well as executive function. Among those individuals who regularly consumed either the high- or intermediate-flavanol drinks, there were significant improvements in overall cognitive function after only eight weeks. As cognitive function was normal for this aged population, this study shows that even cognitively healthy individuals can quickly benefit from the regular inclusion of cocoa flavanols in their diets.

In addition to evaluating cognitive function, the researchers also monitored insulin resistance, blood pressure and other metabolic markers. Excitingly, there was also evidence of improvements in these cardiometabolic outcomes. In the high- and intermediate-flavanol groups, both systolic and diastolic blood pressures were reduced and insulin resistance was significantly improved. In contrast, only a modest improvement in diastolic blood pressure was observed in the low-flavanol group, with no significant improvements in either systolic blood pressure or insulin resistance among the consumers of the low-flavanol drink.

It is not yet fully understood how cocoa flavanols bring about improvements in cognitive function, but the study's authors suggest that the improvements in insulin resistance and blood pressure could be revealing. "Earlier studies suggest a central role for insulin resistance in brain aging," said Desideri. "These results could therefore provide some insight into a possible mechanism of action for the cognitive improvements we have observed."

Over the past decade, there has been significant evidence indicating that consuming cocoa flavanols improves vascular function. Dr. Catherine Kwik-Uribe, human health and nutrition director at Mars, Incorporated, and co-author on this latest study, said, "Since the brain is a heavily vascularized tissue, we might also be looking at vascular improvements as underlying the observed improvements in cognitive function."

Dr. Kwik-Uribe went on to speak about Mars' flavanol research program that has spanned over two decades: "The amount of research showing the beneficial effects of cocoa flavanol consumption is growing and Mars is proud to be a partner in important research like this that highlights the positive role cocoa flavanols may play in supporting healthy aging."

Dr. Desideri and his team are already thinking about the next steps: "It is clear from our latest research and other recent studies that cocoa flavanols have profound effects on the body, and specifically the brain," said Desideri. "Now we'd like to know how they work and how long the effects last. If these further studies confirm the findings that brain health can be improved by consuming dietary flavanols, it may have the potential to affect the daily lives of millions of people world-wide."

What are the health benefits of folate?

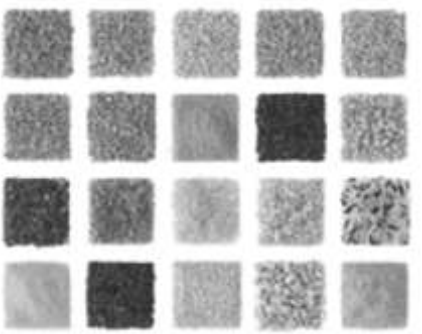
Medical News Today Friday 9 January 2015

Vitamin B9, more commonly known as folate or folic acid, is found in a wide range of foods including leafy green vegetables, cereals, meats and fruit.

Folate is one of eight total B vitamins and is needed for the formation of red and white blood cells in the bone marrow, the conversion of carbohydrates into energy and the production of DNA and RNA. Adequate folate intake is extremely important during periods of rapid growth such as pregnancy, infancy, and adolescence.
This MNT Knowledge Center feature is part of a collection of articles on the health benefits of popular vitamins and minerals. It provides an in-depth look at recommended intake of folate, its possible health benefits, foods high in folate and any potential health risks of consuming folate.

Recommended intake

The Recommended Daily Allowance (RDA) for individuals 14 years and older is 400 micrograms



Folate or folic acid, is found in a wide range of foods including leafy green vegetables, cereals, meats and fruit.

per day. Women, who are pregnant, are recommended to increase folate intake to 600 micrograms per day in order to prevent neural tube defects in the fetus. Inadequate diets, alcoholism, increased requirements related to growth and intestinal disorders causing malabsorption are the most common causes of folate deficiency.

Folate supplements are available, but it is always best to obtain any vitamin or mineral through food. It is not the individual vitamin or mineral alone that make certain foods an important part of our diet, but the synergy of that foods nutrients working together.
It has been proven time and again that isolating certain nutrients in supplement form will not provide the same health benefits as consuming the nutrient from a whole food. First focus on obtaining your daily folate requirement from foods then use supplements as a backup.

Possible health benefits of consuming folate:

Decrease risk of birth defects
Adequate folic acid intake is essential for pregnant women to protect their infants against miscarriage and neural tube defects. Recent research has also shown that a father's folate status before conception may be just as important. In a study from McGill University, paternal folate deficiency in mice was associated with a 30% higher number of various birth defects than in offspring with no paternal folate deficiencies.

Lower risk of depression
Folate may help ward off depression by preventing an excess of homocysteine from forming in the body, which can block blood and other nutrients from reaching the brain. Excess homocysteine interferes with the production of the feel-good hormones serotonin, dopamine, and norepinephrine, which regulate not only mood, but sleep and appetite as well.
Maintaining a healthy heart
Excess homocysteine levels are also a marker for coronary artery disease. People with above-normal levels of homocysteine are 1.7 times more likely to develop heart disease and 2.5 times more likely to suffer a stroke.

Preventing cancer
Low levels of folate intake have been shown to increase the risk of breast cancer in women. Adequate intake of dietary folate (in food) has also shown promise in protecting against colon, stomach, pancreatic and cervical cancers. Although the mechanism of protection is currently unknown, researchers believe that folate's protective effects have something to do with its role in DNA and RNA production and the prevention of unwanted mutations. There is no evidence that folate supplementation provides the same anti-cancer benefits.

Foods high in folate
The bioavailability (the body's ability to absorb, use and retain) of folate varies greatly among foods and is difficult to measure. There are 150 different forms of folate and losses of 50-90% can occur during cooking, storing or processing. The best sources of folate are green vegetables, legumes and liver. Folate is also added to some breakfast cereals and other fortified foods.

Asparagus and lentils are packed full of folate and are foods with some of the highest folate content.
- Asparagus, cooked, 1 cup: 243 micrograms
- Beef liver, braised, 3 ounces: 215 micrograms
- Black-eyed peas, boiled, ½ cup: 179 micrograms
- Lentils, boiled, ½ cup: 179 micrograms
- Broccoli, cooked, 1 cup: 168 micrograms
- Beans, white, boiled, ½ cup: 132 micrograms
- Spinach, cooked, ½ cup: 131 micrograms
- Lettuce, romaine, shredded, 1 cup: 64 micrograms
- Avocado, raw, ½ cup: 59 micrograms
- Egg yolk, 1: 27 micrograms
- Banana, 1: 24 micrograms
- Mushrooms, portabella, grilled, 1 cup: 23 micrograms.

Potential health risks of consuming folate
No adverse effects from high oral folate intake have been reported. High levels of intravenous folic acid intake may cause seizure. Before starting a folate supplement, check with your doctor to make sure that it will not interfere with any medications you are currently taking. Long-term use of folate supplementation may mask an underlying and possibly life-threatening B-12 deficiency.

It is the total diet or overall eating pattern that is most important in disease prevention and achieving good health. It is better to eat a diet with a variety than to concentrate on individual nutrients as the key to good health.

What are the health benefits of biotin?

Medical News Today
Thursday 15 January 2015

Biotin, also known as vitamin H or B7, and often grouped with the B-complex vitamins, is a water-soluble vitamin that can be produced in the body as well as obtained from foods.

This MNT Knowledge Center feature is part of a collection of articles on the health benefits of popular vitamins and minerals. It provides an in-depth look at recommended intake of biotin, the possible health benefits of consuming biotin, foods high in

biotin and any potential health risks of consuming biotin.

Recommended intake
The Adequate Intake (AI) for biotin is 30 micrograms per day for adults over 18 years of age. Biotin deficiency is rare in humans due to its wide distribution in foods and the ability to synthesize biotin in the gut.

Biotin is a water-soluble vitamin that can be produced in the body as well as obtained from foods.
The most common cases of biotin deficiency that have been reported are in pregnant women, patients receiving prolonged parenteral (intravenous) nutrition, infants whose mothers milk contained low amounts of biotin and in patients with impaired biotin absorption due to an inflammatory bowel disease or other GI tract disorder. Long-term use of anti-seizure medications such as phenobarbital, phenytoin, or carbamazepine can also reduced blood levels of biotin.

Biotin supplements are available, but it is best to obtain any vitamin or mineral through food. It is not the individual vitamin or mineral alone that make certain foods an important part of our diet, but the synergy of that foods nutrients working together. It has been proven time and again that isolating certain nutrients in supplement form will not provide the same health benefits as consuming the nutrient from a whole food. First focus on obtaining your daily biotin requirement from foods then use supplements as a backup.

Possible health benefits of consuming biotin

Healthy pregnancy
Mild biotin deficiency is often seen during pregnancy and poses a risk for abnormal development of the fetus. Since folic acid supplementation is recommended both before and during pregnancy, obtain a multivitamin with at least 30 micrograms of biotin per day in addition to folic acid to decrease the risk for deficiency.

Strong nails
Biotin has been shown to improve nail strength and durability of fingernails in several small-scale studies. One study showed a 25% increase in thickness and a decrease of splitting with biotin supplementation. Another trial reported an improvement in nail strength for up to 91% of participants.

Lower blood glucose
Promising results have been seen in several studies testing biotin's ability to lower blood glucose in both type 1 and type 2 diabetics. In animal studies, biotin was shown to stimulate the secretion of insulin from the pancreas and subsequently lower blood glucose. More studies need to be conducted before biotin's effects on blood sugar can be confirmed.

Foods sources of biotin
Eggs are rich in biotin - one large egg contains 13-25 micrograms. Foods that are rich in biotin include baker's yeast, wheat bran, organ meats, eggs and oysters.
- Liver, cooked: 27-35 micrograms
- Egg, large, cooked: 13-25 micrograms
- Salmon, 3 ounces, cooked: 4-5 micrograms
- Raspberries, 1 cup: 0.2-2 micrograms

Many foods, such as fruits and vegetables, contain a small amount of biotin.

Cocoa intake may delay progression of type 2 diabetes: Rat study

Confectionery News 09-Jan-2015

Cocoa intake may delay the progression of factors associated with type 2 diabetes, according to a study in rats.
The Spanish-based researchers at CIBERDEM, the Instituto de Ciencia y Tecnología de Alimentos y Nutrición, and the Universidad Complutense de Madrid had previously shown the anti-diabetic potential of cocoa flavanols in vitro. Fernández-Millán et al's latest study, due for publication in Molecular Nutrition & Food Research, used a live animal model. "These findings provide the first in vivo evidence that a cocoa-rich diet may delay the loss of functional beta cell mass and delay the progression of diabetes by preventing oxidative stress and beta-cell apoptosis," they said.

Rats fed cocoa powder
Pre-diabetic obese rats were fed a control diet or 10% cocoa-rich diet for six to 15 weeks. The cocoa came from 100 g/Kg of Natural Forastero cocoa powder, provided by Nutrexpa. After the trial period, the researchers conducted a glucose tolerance test (GTT) and assessed beta cell mass, beta cell apoptosis and markers of apoptosis and oxidative stress. They found that cocoa feeding rats demonstrated improved factors associated with type 2 diabetes such as attenuated hyperglycaemia, reduced insulin resistant and increased beta cell mass compared to the control group.

Reduced body weight
Although there was no difference in food intakes, they also found that the cocoa group had 20% less body weight than the control group. "This effect has been attributed to the ability of cocoa polyphenols to regulate lipid metabolism and prevent visceral fat deposition," said the study. The researchers said their findings were consistent with earlier research by Fu et al that found dietary supplementation with the flavanol epicatechin preserved functional beta cell mass in non-obese diabetic mice.

Cont'd on Pg 36

Regulatory & Safety News

Guidelines for marketing food to children

IFT Weekly January 21, 2015

The Robert Wood Johnson Foundation has published "Recommendations for Responsible Food Marketing to Children" to provide a comprehensive set of model definitions for food marketing practices directed to children. According to the report, "Children are uniquely vulnerable to the wide array of marketing practices and tactics that surround them and need stronger protections from unhealthy child-directed food marketing than are currently in place."

The Recommendations for Responsible Food Marketing to Children provide an evidence-based and more comprehensive framework to define food marketing directed to children. These recommendations, when paired with strong nutrition criteria, will assist stakeholders as they work to create healthy food environments that contribute to building a Culture of Health for all children. The recommendations are as follows:

1. The child audience is defined as birth to 14 years of age. Most companies participating in the Children's Food and Beverage Advertising Initiative (CFBAI) define the child audience as youths ages 2–11. However, children ages 12–14 are substantially influenced by unhealthy food marketing due to their greater independence, their higher levels of media consumption, and evidence showing that this age group is disproportionately targeted by companies with unhealthy food and beverage marketing.

2. Media and venues are considered child-directed if children constitute 25% or more of the audience or if an assessment of the marketing strategies, techniques, characteristics, and venue suggests that children are the target demographic for the advertising or marketing message. The existing industry definition of child-directed programming for most companies that participate in self-regulatory programs is that children comprise 35% or more of the audience share. This high threshold does not adequately cover the food and beverage advertisements directed at children.

3. Any marketing that is especially appealing to kids is child-directed. Marketing or advertising that utilizes strategies or techniques—or contains qualitative characteristics that are particularly appealing to children—regardless of media platform or venue, should be considered child-directed based upon its net impression. The food and beverage products that are promoted through that marketing should meet nutrition criteria.

4. Brands marketed to children contain only products that meet nutrition criteria. Many advertisements and other marketing aimed at children focus primarily on promoting a corporate or family brand. These marketing efforts show brief images of specific products that meet nutrition criteria, but place greater emphasis on larger brand-related messages and images. This is particularly problematic when most products offered within the corporate or family brand do not meet nutrition criteria, and are not appropriate to market to children. Such tactics are not addressed (or are inadequately addressed) by most company marketing policies, allowing companies to market wide portfolios of unhealthy food and beverage products to children. Closing this loophole is critical to reduce the amount of unhealthy food marketing directed to children.

Current nutrition labeling is hard to digest

January 20, 2015 Science Daily

Current government-mandated nutrition labelling is ineffective in improving nutrition, but there is a better system available, according to a study by McGill University researchers published in the December issue of the Annals of the New York Academy of Sciences.

The researchers compared four different labelling systems and found that the Nutrition Facts label currently required on most food products in the US and Canada was least useable. That label, which lists the percent daily value of several nutrients, took more time to understand and led to nutrition choices hardly different from chance. Another label type, NuVal, enabled quick and nutritious choices.

Labelling: %Daily Value, Traffic Light, NuVal and Heart.

Cont'd on Pg 32

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NuVal is a shelf sticker used in some American food markets, which indicates the overall nutritional value of each food item with a number from 1-100. Resolving "nutrition conflicts" "Food shoppers typically have a limited amount of time to make each food choice, and they find the Nutrition Facts labels to be confusing and difficult to use," says Peter Helfer, lead author and PhD student in Psychology and Neuroscience at McGill. "One product may be low in fat, but high in sugar, while another product may be just the opposite. Nutrition Facts labels can highlight nutrition conflicts but fail to resolve them. Even educated and motivated shoppers have difficulty picking out the most nutritious product with these labels."

NuVal scores are calculated by nutrition experts at several universities, including Yale, Harvard, and Northwestern, and emphasize both the positive and negative aspects of each food. By reducing nutritional content to a single number, NuVal labels resolve nutrition conflicts.

Two other labelling methods produced mixed results. The Traffic Light system used in the UK allowed for a bit more nutritious choices than chance. But it took more time to use, because the colours of several traffic lights have to be counted and compared. Labels that certify some foods as nutritious, but not others, are used in Denmark, Sweden, and Canada. These allowed quick decisions, but did not increase nutritious choices. "Such certification labels are not sufficiently discriminating to produce consistently better nutrition. They also create controversies about exactly where to draw the line between nutritious and harmful foods," says co-author Thomas Shultz, Professor of Psychology and Computer Science at McGill.

The widespread availability of low-nutrition, high-calorie food is believed to be an important cause of an epidemic of obesity and associated diseases throughout the world. Shultz argues that "Empowering consumers to make healthier food choices with valid and useful nutrition labelling could help to stem this epidemic. If consumers have the information to make nutritious choices, this could nudge food sellers and producers to improve their products."

'Regulations & Incentives' needed to reduce trillions of tonnes of hidden water use globally

Food Navigator 09-Jan-2015

Governmental and institutional actions are needed urgently to reduce the estimated 1.8 million tonnes of water – per person - used in food production around the globe, a UK group has urged.

The Institution of Chemical Engineers (IChemE) said "regulations and incentives" were needed to meet a targeted reduction of 20% by 2020 or face major water shortages by 2050. It called for a €677m annual investment in infrastructure, technology and other measures and advocated the imposition of 'water footprinting'.

"Estimates suggest that we will need to produce 60% more food by 2050. Agriculture will need around 19% more water to produce that extra food," said Andy Furlong, IChemE director of policy. It is clear that current production methods are unsustainable and there are genuine risks of food shortages, rising food prices, droughts and social unrest for future generations unless we make more efficient use of water. There are solutions, but these will require political will, major investment and lifestyle changes."

Government push

He added "a combination of regulations and incentives should be introduced to require industry to monitor their water usage, as well as be rewarded for using alternative and sustainable water supplies."

Renewed planning and investment efforts were required for better facilities, infrastructure and technology along with better education. Manufacturers should be incentivised to use alternative, sustainable sources of water such as water in food, rainfall and saltwater. "None of this will be cheap or easy, but like the mitigation of climate change, it will be necessary to guarantee our quality of life," said Furlong.

Glucose health claims: EFSA says yes; EC says no (and closes door)

Food Navigator 09-Jan-2015

Five glucose health claims approved by the European Food Safety Authority (EFSA) back in 2012 have been officially banned by the European Commission due to concerns over what they would say to consumers about sugar consumption.

The claims, all filed by Dextro Energy, were formally refused by the Commission this week, with the decision now written into its official journal. The Commission reasoned that while a cause and effect relationship had been established between the consumption of glucose and contribution to energy-yielding metabolism, these claims were inconsistent with, "generally accepted nutrition and health principles".

"The use of such a health claim would

convey a conflicting and confusing message to consumers, because it would encourage consumption of sugars for which, on the basis of generally accepted scientific advice, national and international authorities inform the consumer that their intake should be reduced."

EFSA is responsible for the scientific assessment of such claims, but it is the Commission, along with EU member states and institutions which are tasked with mandating these opinions in the law. A similar situation has been seen with health claims for caffeine, for which EFSA delivered positive scientific opinions, but which are yet to make it to the law books due to member state concerns about caffeine consumption largely through energy drinks.

Dr Luca Bucchini, managing director at Hylobates Consulting, said that while this was not the first case of a ban on public health grounds – with a similar call made on claims for the effect of fats on the normal absorption of fat soluble vitamins and sodium on the maintenance of normal muscle function in 2012 – this latest glucose decision offered some pointers on which way other blocked claims like that for caffeine may go.

Can claims be restricted to avoid encouraging excessive use?
In its decision, the Commission said that even if the health claims were to be authorised with specific restrictive conditions of use or accompanied by additional warnings, "it would not be sufficient to alleviate the confusion of the consumer, and consequently the claim should not be authorised".

Bucchini said this point, which suggests there was no way to restrict the use of the glucose claim to avoid negative effects for consumers, was key. "The same concerns were raised for carbs and sports, but the health claim has been authorised because it was possible to restrict use of the claim in ways that would not encourage excessive use."

As a result, this point, along with EFSA's upcoming safety assessment in the case of caffeine, could be an important consideration in these stalled claims beyond glucose. "Can the use of caffeine health claims be restricted in ways that do not encourage excess consumption? That's the key, and hopefully the EC and member states will look at the science, and not to politics."

Sugar as the bad guy
Katharine Jenner, campaign director for public health lobby group Action On Sugar, told us she was surprised to see claims for glucose rejected when that for fructose had made it through the system. However, she added that ultimately it was a "great step forward in busting the myth that we need added sugars for energy".

"Glucose is the brain's primary energy source, but whereas some food, and particular drinks, manufacturers would like to claim their products are a good source of energy, in fact, the body makes glucose from any food that contains carbohydrates, and doesn't need it from 'added' glucose. These foods include fruits, vegetables, breads and pasta, none of which need contain added glucose."

Bucchini said this ruling was another move toward sugar being cast as the "bad guy" and marked a certain end to any 'positive' health advertising around sugar. "It should mark the end of ads about sugar and kids jumping full of energy."

EFSA refuses fenugreek for glycaemic benefits

Nutra Ingredients 12-Jan-2015

A 9-study dossier linking herbal extract fenugreek (Trigonella foenum-graecum L.) and improved glycaemic response has been deemed insufficient by the EU's central science agency. But the firm's chief told us, "We do not see this as a rejection."

Avesthagen founder Dr Villoo Patell said the company was already commissioning further studies that would involve its Teestar extract and more participants to back another article 13.5 application under the EU nutrition and health claims regulation (NHCR). "We do not see this as a rejection," said Dr Patell. "The outcome actually says there may well be a physiological effect of Teestar, however they need a more detailed clinical study."

"We accept that the clinical study was carried out on a very small group of patients. We will be doing an expanded clinical study to substantiate the claim further and resubmit the documents." She said the new study would commence in April or May of this year.

The European Food Safety Authority's (EFSA) Panel on Dietetic Products, Nutrition and Allergies (NDA) rejected the dossier as it said eight of the studies did not specifically use the Teestar extract and the one that did was underpowered and delivered inconclusive results. The panel observed that the eight studies "were not carried out with Teestar or any other fenugreek seed extract …but rather with whole or powdered fenugreek seeds, fenugreek leaves, an extract from fenugreek leaves, fenugreek gum isolate or fenugreek composites."

Teestar study
The single Teestar study was conducted with 27 male subjects who consumed Teestar (1 g) crackers or a placebo at breakfast and dinner for seven consecutive days. Its primary endpoint was a reduction in the mean peak post-

prandial blood glucose concentrations, something the NDA noted was not achieved. However it noted, "Power calculations indicated that eight subjects per study group would yield a power of 95% to detect a difference in peak blood glucose concentrations of 0.5 mmol/L, at a significance level (two-sided) of 5% and assuming a standard deviation of 0.15 mmol/L."

Secondary endpoints were mean blood glucose concentrations 60, 90 and 120 minutes after meals. The NDA pointed out that time points were treated as independent in the analysis, without correction for multiple comparisons.
"…no conclusions can be drawn from the secondary analysis of the study," it stated, before concluding, "that in the absence of evidence for an effect of Teestar on post-prandial glycaemic responses in humans, animal studies on potential mechanisms do not provide support for the scientific substantiation of the claim." The target population was "healthy adults with or without impaired glycaemic pre-obese and obese conditions."

Other data
The EFSA opinion comes despite a recent meta-analysis that found in favour of fenugreek and its glycaemic response potential. Scientists from the National University of Singapore, McMaster University (Canada), and Harvard University concluded medium and high doses (at least 5 grams per day) of fenugreek seed powder were associated with significant reductions in fasting blood glucose levels in diabetics.

"Our systematic review and meta-analysis suggest that fenugreek seeds may contribute to better glycemic control in persons with diabetes mellitus with a similar magnitude of effect as intensive lifestyle or other pharmaceutical treatment added to standard treatment," they wrote in the Nutrition Journal. "Fenugreek is widely available at low cost and generally accepted in resource poor countries such as India and China where a large proportion of persons with diabetes in the world reside. Therefore, fenugreek may be a promising complementary option for the clinical management of diabetes."

Probiotic term could reappear on yogurt in UK

Food Manufacture UK 23-Dec-2014

The term 'probiotic' could make a re-appearance on pots of yogurt on sale in UK supermarkets, if Italy is successful in getting approval for its use as a 'generic descriptor'.

Last June, the Yoghurt & Live Fermented Milks Association (YLFA), together with the Italian dairy association (Assolatte) and the Italian supplements association (AIIPA), applied to the European Commission's (EC's) health and consumer directorate DG Sanco and other EU Member States (MSs) for approval to use probiotic as generic descriptor in Italy. The application was based on the fact that the general descriptive term 'probiotic' had been used in Italy for over 20 years.

Generic descriptor
DG Sanco announced in November 2014 that the application could proceed, following the receipt of no objections. Only Portugal and Denmark had asked for some clarification about the application. It now waits to hear whether it has been successful in achieving derogation from the Nutrition & Health Claims Regulation (NHCR). On December 14 2012, the NHCR banned the use of the term 'contains probiotic' from packaging in the EU, since it was considered to constitute an unapproved health claim rather than a nutrition claim. The YLFA application will now involve discussion by the EU's Standing Committee on the Food Chain and Animal Health (SCoFCAH), which represents the EC and MSs. There is no formal deadline for issuing a final opinion and it will be determined by what SCoFCAH believes is "the urgency of the matter".

If Italy is successful, the UK could well follow its lead and seek approval for use of the term 'probiotic', getting an extension of the derogation as a 'concerned Member State'. Probiotic yogurt firms selling in the UK are believed to be looking at this option. "While we're in regular contact with the YLFA as the application progresses, the really big issue for the Provision Trade Federation [PTF] would be around criteria for its responsible use should the probiotics generic descriptor be approved," said PTF director general Terry Jones.

'Not only technical, but also political'
"The interpretation that the term 'probiotic' is a health claim is based on assumptions that have never been documented," said Carine Lambert, secretary general of YLFA International. "So, any decision regarding the generic descriptor approach is not only technical but also political. Many MSs favour a harmonised solution at EU level."

Lambert accepted that this application would not resolve the main hurdle, which is the absence of health claims on probiotics, "but at least it may lead to a recognition of the existence of the probiotic category", she added, and "will at least provoke a debate between the stakeholders … not only on the use of the term probiotic but also about the criteria for eligibility for being considered probiotic". "The [probiotics] industry will continue working on science and health claim dossiers for the recognition of the health benefit of probiotics," said Lambert.

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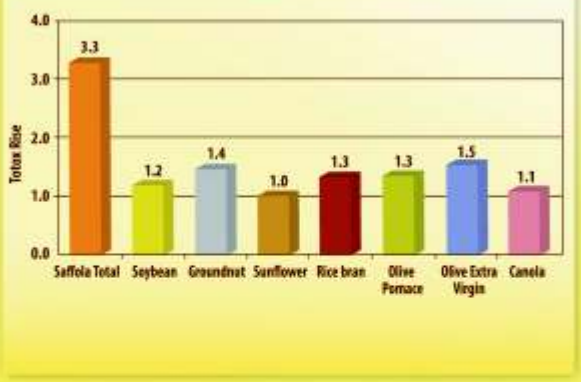

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#Blending oil technology. ^Based on clinical study done in 2014 with some important biomarkers to assess the risk of CVD.

Cont'd from Pg 29

What are the health benefits of selenium?

Medical News Today 19 January 2015

Selenium is an essential trace mineral important for cognitive function, a healthy immune system and fertility for both men and women. Selenium is found in a variety of foods, the richest sources being Brazil nuts, seafood and organ meats.

The amount of selenium in food often depends on the selenium concentration of the soil and water where the food was grown or raised. This MNT Knowledge Center feature is part of a collection of articles on the health benefits of popular vitamins and minerals. It provides an in-depth look at recommended intake of selenium, its possible health benefits, foods high in selenium and any potential health risks of consuming selenium.

Recommended intake
The Recommended Daily Allowance (RDA) for selenium is 55 micrograms per day for adults. Pregnant and lactating women have a slightly higher need for selenium at 60 and 70 micrograms per day, respectively.

Selenium deficiency is rare worldwide, often takes years to develop and is usually only found in regions with severely low selenium content in the soil. Several regions in China with low soil selenium content have eradicated deficiencies in the population through supplementation programs. Selenium supplements are available, but it's best to obtain any vitamin or mineral through food. It is not the individual vitamin or mineral alone that make certain foods an important part of our diet, but the synergy of that foods nutrients working together.

Selenium is an essential trace mineral important for cognitive function, a healthy immune system and fertility for both men and women.

It has been proven time and again that isolating certain nutrients in supplement form will not provide the same health benefits as consuming the nutrient from a whole food. First focus on obtaining your daily selenium requirement from foods, then use supplements as a backup if needed.

Possible health benefits of consuming selenium
Selenium is involved in the production of prostaglandins in the body, which regulate inflammation and may reduce inflammation related to Rheumatoid arthritis. A study out of the Netherlands has linked selenium intake to a lower risk of prostate cancer.

Researchers tested the levels of selenium in the toenails of study participants, a marker that measures long-term selenium intake. The researchers found that the greater the level of selenium in the toenail, the lower the risk for prostate cancer in study participants. Of note, earlier studies investigating a link between selenium and prostate cancer had varying results.

Selenium works in close conjunction with vitamin E as an antioxidant to prevent the formation of free radicals and in turn, may reduce the risk of skin cancer and prevent sunburn.

Foods sources of selenium

Brazil nuts are a good source of selenium, with 1 ounce containing 543 micrograms.

- Brazil nuts, 1 ounce: 543 micrograms
- Halibut, baked, 1 fillet: 148 micrograms
- Tuna, canned, 3 ounces: 68 micrograms

- Oysters, raw, 3 ounces: 56 micrograms
- Rice, white, long grain, 1 cup: 44 micrograms
- Lobster, 3 ounces: 36 micrograms
- Sunflower seeds, ¼ cup: 25 micrograms
- Egg, 1 large: 16 micrograms
- Bread, whole wheat, 1 slice: 10 micrograms.

The amount of selenium in grains and grain-based foods greatly depends on soil content. Most fruits and vegetables are low in selenium.

Potential health risks of consuming selenium
Selenium toxicity (also rare) can cause skin and nail changes, tooth decay and GI and neurological abnormalities. It is the total diet or overall eating pattern that is most important in disease prevention and achieving good health. It is better to eat a diet with a variety than to concentrate on individual nutrients as the key to good health.

Holding recess before lunch increases fruit and veggie consumption and decreases waste

Medical News Today Thursday 15 January 2015

Students participating in the National School Lunch Program are required to select a fruit and a vegetable side. This regulation is intended to get students to eat more fruits and vegetables; however, just because an apple and green beans made it on to the tray doesn't mean

that they will be eaten. Many schools have reported that fruits and vegetables are feeding trash cans rather than students. This new study published in Preventive Medicine shows that one simple no-cost change, holding recess before lunchtime, can increase fruit and vegetable consumption by 54%. "Recess is often held after lunch so children hurry to "finish" so that they can go play--this results in wasted fruits and vegetables," explains co-author David Just, PhD of Cornell University, "However, we found that if recess is held before lunch, students come to lunch with healthy appetites and less urgency and are more likely to finish their fruits and vegetables."

Lead author Joseph Price, PhD, Brigham Young University and Dr. Just conducted their study in a school district in Orem, Utah. Seven schools within the district (grades 1-6) participated in the study, three of which switched recess to before lunch and 4 of which continued to hold recess after lunch. For four days in spring of 2011 and 9 days in the fall of 2011 researchers measured fruit and vegetable waste by standing next to the trash cans and recording the number of servings of fruits and vegetables that each student consumed or threw away. They also measured whether or not each student ate at least one serving of fruits or vegetables.

After analyzing a total of 22,939 observations the researchers concluded that in the schools that switched recess to before lunch children ate 54% more fruits and vegetables. There was also a 45% increase in those eating at least one serving of fruits and vegetables. During the same time period consumption of fruits and vegetables actually decreased in the schools that didn't switch.

Not getting a full, balanced meal can leave children feeling hungry during the rest of the school day leading to decreased academic performance and excessive snacking when they get home from school. The researchers note that, "increased fruit and vegetable consumption in young children can have positive long term health effects. Additionally, decreasing waste of fruits and vegetables is important for schools and districts that are faced with high costs of offering healthier food choices." Because moving recess is a no-cost way to make kids healthier and make the school meal program more successful, Price and Just recommend that every school makes the switch.

Regulatory Forum

Cont'd from Pg 22

o The Scientific Committee shall be responsible for providing the scientific opinions to the Food Authority, and shall have the powers, where necessary, of organizing public hearings.

o The possibility of observers being invited to meetings of the Scientific Committee and the Scientific Panels

FSSAI in 2010 put out two significant documents outlining its intention to make the character shift from discretion to open discussion.

The following extracts explain this movement:

o Documents outlining risk management options prepared in relation to food-related health risks should generally be publicly available and public submissions on these documents taken into account in the regulatory decisions. Confidential commercial information should be protected but in general data that supports the safety assessment of the food are not considered confidential. Dialogue with industry, consumers and health professionals on food regulatory matters is integral and will be facilitated, including encouraging stakeholders to comment on documents outlining risk management options.

o Issues are discussed openly and conflicting opinions reconciled on the basis of scientific evidence and transparent consultations with all stakeholders affected. FSSAI believes that excluding opinions, which do not agree with the conventional view, is not feasible in a sector which is characterized by fast pace of technological change, limited skills and competence of the regulatory agencies to decide highly complex technical issues and resource constraints.

Transparency and openness flourish when all stakeholders engage in implementing the procedures and processes of the Act. Industry chambers have yet to engage on procedural matters positioned as they are as grievance cells. On the other hand the Authority's reluctance to engage in spite of mandates under the Act is symptomatic of the democratic deficit of public administration. Openness, participation and transparency are essential to good regulatory practice.

Cont'd from Pg 20

"I found people who watch more TV had both a poorer understanding of proper nutrition and a more fatalistic view toward eating well compared to those who watched less TV. In turn, those two items predicted snacking behaviors," said Northup. "It is important to understand how people develop knowledge about nutrition, including examining nutritional messages found within the media."

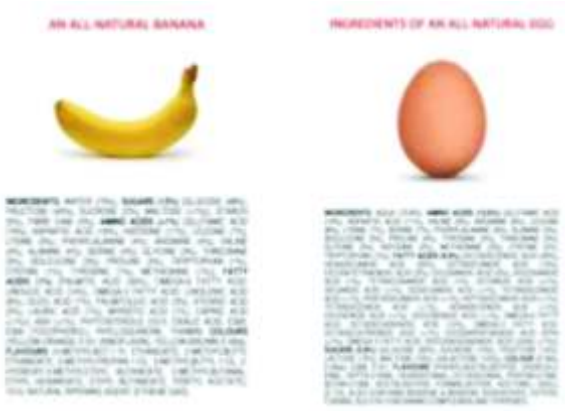
Northup suggests that because consumers are inundated with advertising for unhealthy food and messages about the latest trends in what you should (or shouldn't) eat, they develop these poor attitudes toward and knowledge about eating well.

Naturally opposed? Balancing new technologies with consumer perceptions

Nutra Ingredients 10-Dec-2014

New technologies are vital to the future growth of the food and nutrition industry, but their future success depends on much more than the science behind them.

They could help produce new foods in more sustainable ways, battle obesity and diabetes -- and maybe even feed the world. But in order to succeed, the food and nutrition industry must think about long-term perceptions of food science and technologies much earlier than they do currently.



Some of the most promising solutions to change the bleak outlook for our food system and health involve using technologies. In the past few years we have seen a new generation of technology 'pioneers' who are trying to solve the food security problems facing us by developing innovative new sources of protein.

From fermentation technologies, to algae, insects, and even lab-grown meat – we have begun to see the huge potential for providing a valuable food source to people. But consumers, in general, are sceptical of these new technologies and ideas – no matter how good they are. Potential is one thing. But fulfilling it is another. Seriously considering consumer perceptions earlier could remove one huge barrier to success.

The fear factor

Consumer perceptions are the most important thing when it comes to food and nutrition. It is not uncommon for consumers to develop ingredient-based food fears, or for specific foods, macronutrients, and ingredients to fall out of favour with the public. If the current 'clean label' trend has taught us anything, it is that ingredient names that are hard to pronounce or understand make people wary of them.

Whether they are natural or not, has almost become irrelevant - if they don't sound natural, people will be wary of it – and avoid it. While this may not seem rational, it is something that the clean label trend has played up to for a long time. Ingredient-based fears are often the result of exaggerations on the risks of the ingredient (such as it leading to obesity, or having unintended effects on the body), and a potential underestimation of any benefits the ingredient may provide (possibly decreasing the price of products, extending their shelf-life, etc).

Communication is key

These food fears, whether based on ingredient names or other concerns, have had harmful effects on major, and potentially beneficial, food technologies in the past. While some of these fears are justified, many are not. It is important that we all consider communicating both sides of the equation – to be honest about any risks and unknowns (not hide them), but also to showcase the benefits. Research has repeatedly shown that when people do this, consumers are more open and willing to accept new foods and technologies. Yet time and time again, unwarranted fears come about because this is ignored.

Take responsibility

It is not just the job of those working with finished products within the food and retail industry to talk to the public about these issues. Every part of the supply chain, from researchers, product developers, marketers - and often those who don't even think they have much to do with food production - must take more ownership and responsibility for what they say and do in respect to food technologies.

We must not only consider the science base, but also include a consideration of social and cultural concerns. In the end, the success of any food technology will not be determined solely by the science. It will also depend on public perceptions. It will depend on the way in which businesses adapt to, adopt and use a technology in commercially and socially beneficial ways. But most of all it depends consumers to not see new technologies as 'the enemy' – like they have done with so many before. The responsibility of making sure that doesn't happen lies with us all.

Fertility food supplement targets older couples

Nutra Ingredients 07-Jan-2015

An Israeli firm has debuted 'his, her's and theirs' food supplements aimed at boosting the fertility of ageing couples who want children - the chances of pregnancy drop to as low as 5% after the age of 40.

The range from Fruitful Way has been debuted in response to the widespread phenomenon of people choosing to have children later in life – both male and female. The firm has launched an app to help couples gauge fertility and offers fertility-based data and dietary advice. "The statistics on fertility demonstrate that couples are most likely to experience problems trying to get pregnant now that the average age of the mother for a first pregnancy has risen to about 30 years," said Udi Alroy, CEO and founder of Fruitful Way.

"And the second child is now conceived at around age 35 or even later. On top of that, you have to add about five years to the age of the father-to-be. It takes time to find the right partner and build your career, so once the couple decides to get pregnant, both are forced into a rapidly narrowing window of time."

Alroy said the supplements were US-made and sourced and the app had been developed, "by a team of clinical and family physicians and scientists". 'Hers' is comprised of vitamin A, natural vitamin E, vitamin D, a vitamin B complex plus iron, zinc, iodine, selenium and cystein. The male formulation contains L-carnitine, natural vitamin E, green tea extract, selenium and zinc. The couple formulation is omega-3 based.

Food Navigator predicts top industry drivers for 2015

Food Navigator 22-Dec-2014

It's time to get out our crystal balls and predict the hottest trends in the European food and drink sector for the year ahead. What's in store for 2015? Portion control: A little of what you fancy

The food industry has made strides in improving the health profile of many products over the past several years – but consumers increasingly are sceptical of reduced fat, reduced sugar and reduced salt foods. While the reduction trend will continue, smaller portions of regular products will multiply over the year ahead as a way to appeal to consumers' desire for health while also providing the full flavours and creamy textures they crave. In some cases – notably the confectionery market – smaller portions may become the new norm, but in other categories, look out for more options when it comes to portion size.

A major push for sustainable sourcing
Sustainability has featured in our trend predictions for several years in one guise or another. In 2015, the trend will focus on communication with consumers. In light of the Food Information for Consumers (FIC) regulation requirement to specify palm oil (instead of generic vegetable oil) in ingredients lists, many manufacturers will be keen to highlight sustainably sourced palm – and if they are not sourcing sustainably already, to make the switch.

Tech on the rise
Consumer interest in food has expanded dramatically in recent years, and the coming year will see technology firms – including small start-ups – tapping into this increased interest. Look out for a proliferation of apps in 2015, providing information on the provenance of ingredients, nutrition, and a range of environmental and ethical criteria.

Naturally healthy
Consumer demand for healthy and functional foods seems set to continue for a long time yet. However, the growth of organic and raw foods also signals the ever increasing importance attached to foods that are closer to nature and minimally processed. As the food and nutrition industry start to embrace these secondary demands, we will begin to see even more foods that claim to be naturally health rather than fortified or functional.

Expect to see strong growth in product categories that naturally contain ingredients with proven health benefits, and for firms to move away from 'shoehorning' functional ingredients in to product categories where they are not seen to be a natural fit.

Seaweed success
Seaweed and algal ingredients have created a lot of buzz in recent years. Many suppliers within the industry have invested heavily in this area, while 2014 also saw a whole host of small and trendy bakeries using seaweed as ingredients. Could 2015 be the 'breakthrough' year for seaweed and algal products? Expect

to see even more widespread use and acceptance of these ingredients in foods in the next 12 months.

Sweet and spicy
Things may be spicing up in flavours too. One of the hottest flavour trends of 2015 is set to be a combination of sweet and spicy. Top restaurants are already using spicy and sweet mixtures like jalapeno honey to create the next big buzz in flavours. It's not usually too long before the food industry begins to follow such trends. Just look at the huge trends for things like salted caramel or chilli chocolate in recent years ... we expect to see spicy and sweet combinations to soon follow suit.

Functional and healthy GM foods have large market potential

Food Navigator 14-Jan-2015

Consumers are more accepting of, and willing to pay more for, genetically modified (GM) foods that have defined health benefits, say researchers.

The new data, published in Nature Biotechnology, suggests that while the majority of developments in genetically modified crops provide no additional health benefit to the consumer, those that do have good market potential. Led by Hans De Steur of Ghent University, the team behind the research said various GM crops with health benefits have been developed – with notable examples including rice enriched with pro-vitamin A (also known as 'Golden Rice') and folate-enriched rice, developed at Ghent University.

"Fifteen years after the development of 'Golden Rice', which was the first GMO with health benefits, the developers of such transgenic biofortified crops have little reason to celebrate," said the team. "To date, none of these GMOs are approved for cultivation, unlike GMOs with agronomic traits." Despite these regulatory hurdles, six major staple crops have been successfully biofortified with one, or more, vitamins or minerals.

Now the research team has 'convincingly demonstrated' that there is a strong market potential for such products – showing that consumers are willing to pay more for GM food with health benefits, with premiums ranging from 20% to 70%. "This differs from GMOs with farmer benefits, which are only accepted by consumers when they are offered at a discount," said the team.

The team added that although GM foods with health benefits 'are not a panacea' for eliminating malnutrition, they do offer a complementary and cost-effective alternative when other strategies are less successful or feasible.

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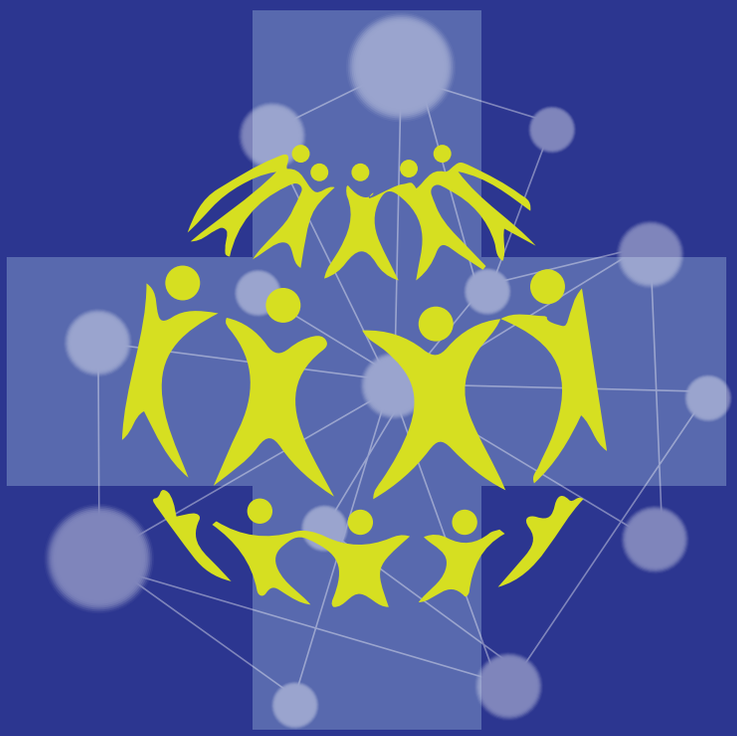

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