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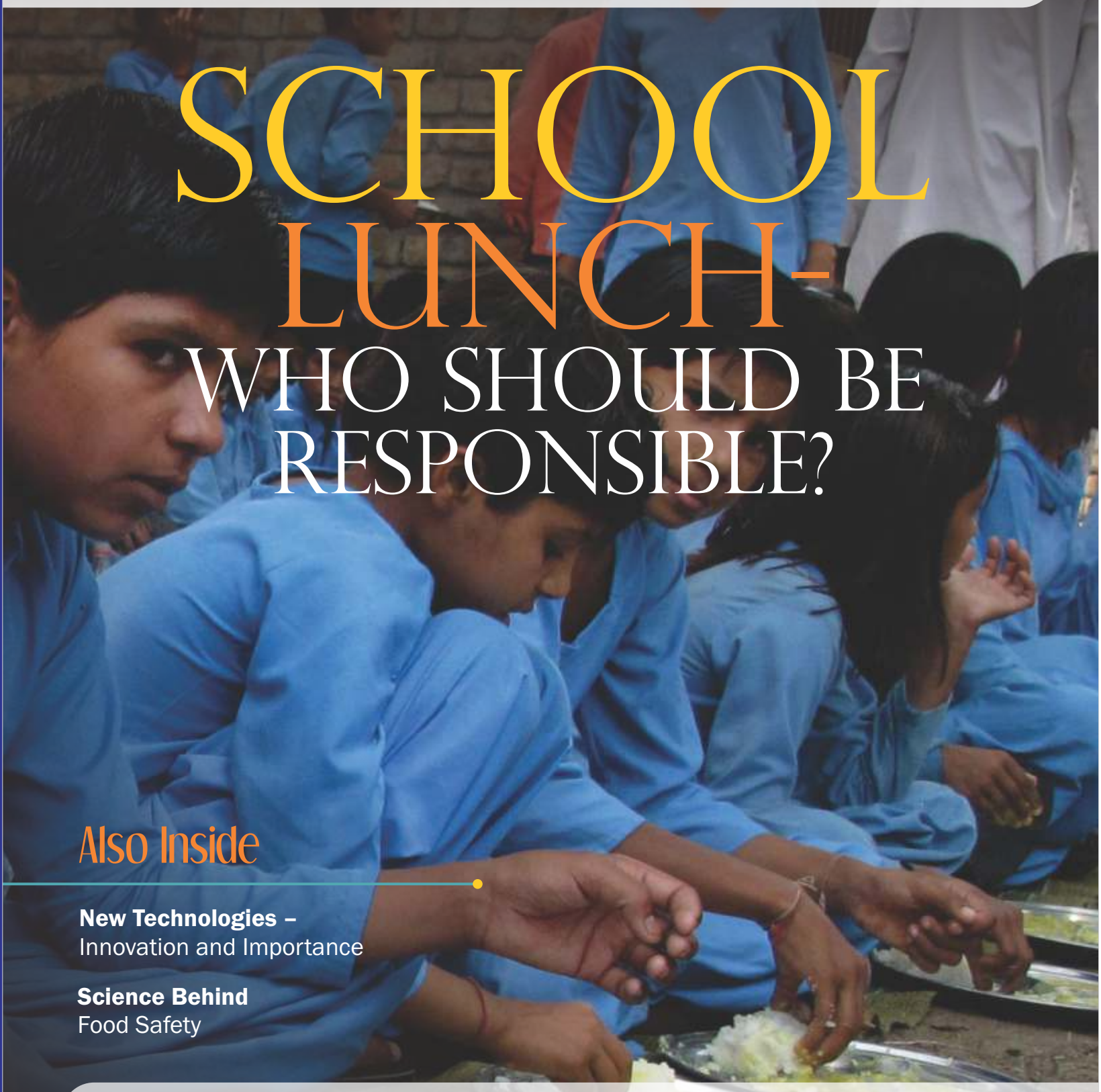
JAN 2016



SCHOOL LUNCH- WHO SHOULD BE RESPONSIBLE?

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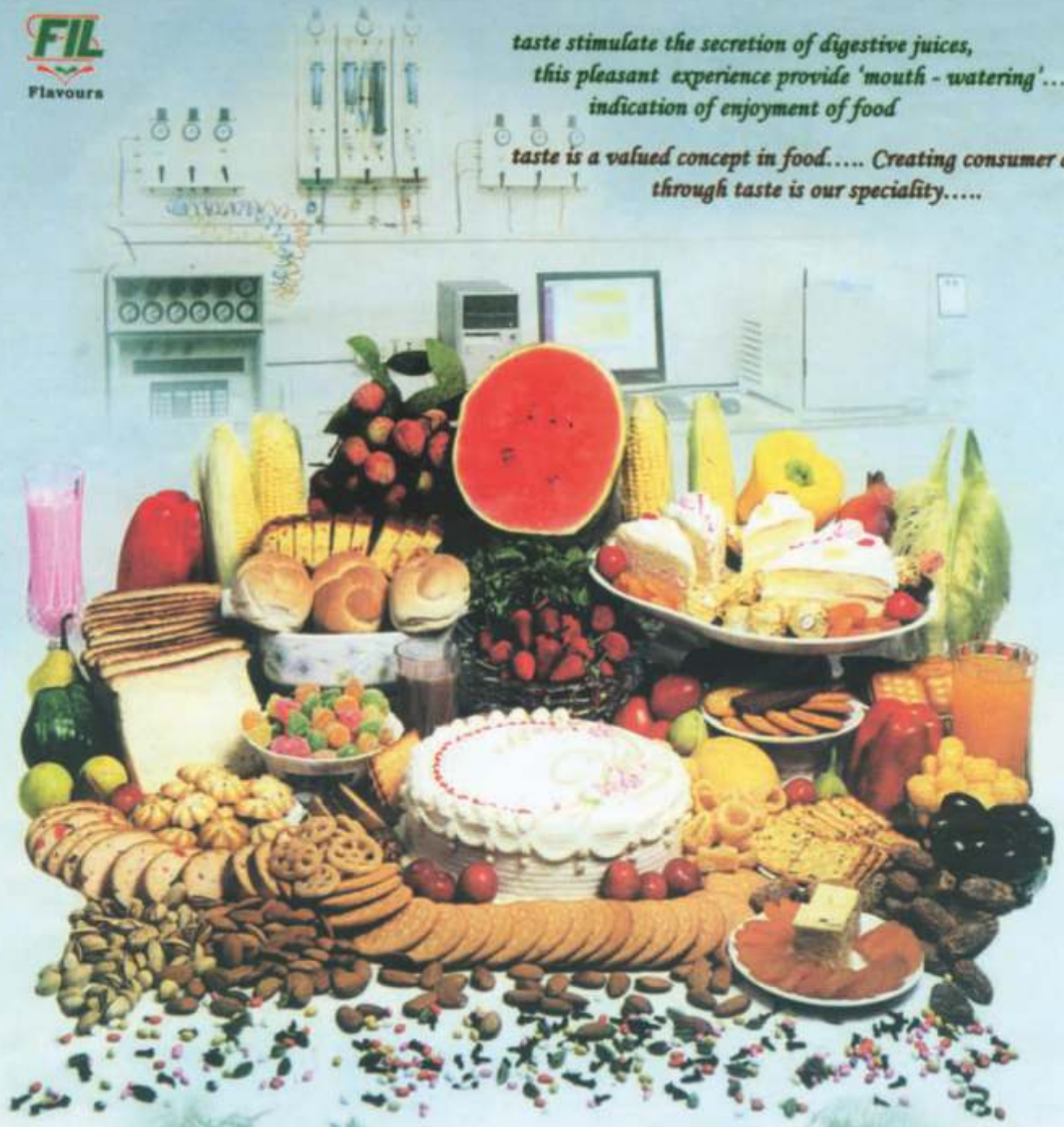

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PFNDAI Bulletin
JANUARY 2016

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Editorial

Our regulators want to ensure safety of food products marketed in India so people would get only safe foods. There are two aspects of safety. One is ensuring that only safe foods are produced in the manufacturing process. The second aspect is to check whether the products that were produced are safe.

When space program started thinking about sending people into space for extended period of time, it had to ensure the safety of food consumed by them. An American company developed a system which was later adopted into what is today's HACCP food safety system. Here one finds out what health hazards could come into the food product to be manufactured and develop a system with checks to ensure that only safe food is produced. If there is some glitch and system parameters are affected which would start producing unsafe food, there is immediately corrective action taken to reset the parameters to again go back to manufacturing safe food. If in the meanwhile some unsafe food is manufactured, it is rejected. So only safe food products get manufactured and go to the finish line and get packed. The Food Safety & Standards Act has integrated this food safety system into the new food law.

Another and older way is to test whether the manufactured product is safe or not. Food product may be analysed to find out if any microbial and chemical hazards persist at higher than acceptable levels rendering the food unsafe. This is still used today just to check whether the food safety system is actually working or for validation purpose.

Enforcement agencies also take samples for routine analysis to ensure that no unsafe food escapes the checks of the manufacturer or some fly-by-night operator does not dump any untested and possibly unsafe food into market. When enforcing agencies want to ensure products to be safe, they may take representative samples. They cannot analyse each and every package of food product for economic as well as logistics reasons. There were food tasters for emperors and kings to ensure that only safe food is consumed by their patrons. Consumers are not going to be happy if food inspectors start taking a bite off bread or cheese to ensure their safety, so they need to analyse only representative samples depending on whether these products are more prone to safety problems or whether products of any particular manufacturer were found to be not meeting the standards. Such products would attract greater scrutiny than others.

Checking food products in market for safety should thus be representative which is effective as we cannot analyse each and every packet sitting on shelves of food markets. For comparison we can give an example of milk processing for safety. In order to make milk safe from microbes, it is heated to kill them. It would require a very high temperature and long time to truly sterilise milk. True sterility is needed in IV saline or other medications but is not necessary for milk for oral consumption. We can either pasteurise milk to kill only the pathogenic microbes which cause disease. One can kill all yeast, mould and bacteria which cause spoilage over time while keeping milk over long time. This is done for long shelf life bottled milk and requires much more heat than pasteurisation. This is called commercial sterilisation and there may be some microbes still surviving but unable to grow in the environment present. True sterilisation needs severe heat treatment and causes loss of nutrients and degrades colour and odour to make milk unacceptable. Thus milk should be heated to achieve a goal: either safety from pathogens or long shelf life and should not be unnecessarily overheated which loses the aim of heating.

One must also aim to regulate safety by targeting the products and samples prone to spoilage and also cause ill-health. When some samples are found to be unsafe, they should be targeted more until safety is established. New products and brands should be adequately checked for safety. One they are found to be safe, their frequency of checking should be reduced and then go to others. Analysis should not be only for quality parameters but for microbial and chemical safety. This way enforcement can be more effective and over a larger proportion of food industry.

Prof. Jagadish S. Pai,
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SCHOOL LUNCH- WHO SHOULD BE RESPONSIBLE?

By **Dr. V. Krishnakumar,**
Managing Director, GIRACT (www.giract.com)

Education in India is no laughing matter. India is said to have the largest school system in the world with 1.44 million elementary schools, and almost 200 million students enrolled. Since 2009-10, when India made eight years of education a fundamental right, the number of 6-14 year olds going to school has grown by over a million.

A longitudinal research study by Young Lives shows that 97% of 12 year olds in 2013 are enrolled in elementary school, up from 89% in 2006. Within this sample, private school enrolment has risen from 32% in 2006 to 41% in 2013, with the remaining children attending government-run or aided schools. In addition, rural and urban India provide contrasting pictures, but The Annual Status of Education Report (ASER) indicates that enrolment in private schools at the elementary level even in rural India increased from 19% to 29% in the seven year period from 2006 to 2013. Some of the metropolitan cities claim to have around 75% of their children attending private schools. There are many types of education systems in India even at the primary school level.

The above statistics make two aspects clear: 1. that the schooling system in India is large and complex and 2. that the government has direct control over the system only in about 60% of the school-going population while it can and does influence the remaining children (who are enrolled in private schools) through acts, rules and regulations.

Many governments in countries around the world provide lunch for children at school. While some countries offer free meals, others subsidize the meals either according to income levels or on a uniform basis. However, the debate in recent years has been around the quality of the meals made available to the children in the school canteens. This debate was started by chef Jamie Oliver in the UK around 10 years ago, and ever since parents in many developed countries are demanding better quality meals for their children. While the UK and the USA are still accused of serving kids unhealthy meals, France, South Korea and Brazil are shown as examples of countries where the children are provided with relatively healthy food during lunchtime. What is clear is that any school lunch will have to integrate the local customs, beliefs and traditions since food for children is a very sensitive and difficult issue to tackle.

While almost all activities at the national level are complex in India, some assumptions will have to be made in order to formulate and implement policies. Thus, in the case of school lunches, let us divide the relevant population into two groups – private and government schools. The overall assumption is that the vast majority of children enrolled in private schools receive at least the minimum necessary daily calorie intake since they are mostly

in the upper half of the society, while children enrolled in government schools suffer from a deficiency even in calorie intake, and most certainly in other key nutrients.

This immediately offers some direction to the two completely different and probably opposing policies regarding school lunches – how to help the children attending government schools receive the minimum required daily nutrients and how to help prevent child obesity amongst children attending private schools. Once again, this may sound rather simplistic since such a generalisation always risks excluding some children in both groups, but it is at least a good start to the process, and reduces the complexity to a certain extent.

Let us look at the status of school lunches in government schools. India, naturally, has a massive free lunch programme for the children and quite possibly the largest in the world. Under the Integrated Child Development Services (ICDS), government schools and partially aided schools, along with Anganwadis, provide midday meals to the students attending such institutions, known as the Midday Meal Scheme. It was launched in 1995, and it is currently estimated to feed 120 million school children across India. A single afternoon lunch usually contains a cereal which is locally available, made in a way acceptable to the prevailing local customs. Vegetables cooked as curry or soups and a portion of milk is allotted for each child. While a lot has been written about the problems faced from the imperfect implementation of this system, there is no doubt that there has been a steady improvement in this scheme over the years and important global institutions monitor it constantly. The basic aim of this scheme is to provide these relatively poorer children with nutrition and the Supreme Court's 2001 directive mandated that midday meals have "a minimum content of 300 calories and 8-12 grams of protein each day of school; for a minimum of 200 days a year."

The current national programme can probably trace its roots to the populist project launched by the then Chief Minister of Tamil Nadu, M.G. Ramachandran in July 1982. This ambitious Midday Nutritious Meal Scheme, a Rs 150-crore project gave over 68 lakh underfed children in the state one square meal and 400-odd calories a day, through 52,000 centres, including 31,000 schools. The results were spectacular - it boosted school enrolment by over 70 per cent, reduced truancy by over 80 per cent and the number of drop-outs by over 90 per cent. Other states soon followed this politically rewarding action, and by 1995, it was launched at the national level

As mentioned earlier, the overall policy of the government regarding the free midday meal scheme appears sound and the quality of implementation is constantly monitored both by international bodies and local organizations. While there is certainly room for speedier reforms in this scheme, there is an overall consensus regarding the need for the scheme and its general direction..

However, it is the case of the second group, i.e. those children enrolled in private schools, that we need to examine carefully from a policy setting point of view. These children normally have three different types of access to their lunch at school – take lunch in a box from home/have it delivered from home, eat at school canteen or buy food from street vendors or shops near the school. The identification of these three routes helps us to focus on the relevant stakeholders who can influence the quality and quantity of food consumed by children at school during their lunch break. In the case of those children who either take lunch in a box or have it delivered from home, the parents play the major role in deciding the quality and quantity of the lunch that the child consumes at school. The quality of food served at the school canteen is the responsibility of the school as well as any contract food supplier if food is not prepared in situ. The purchase of food outside the school is determined by the offers from the unorganized and organized food service and food industry sectors operating near the school.

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Ingredients for Women's Wellness

Bone strength, weight management, heart health, cancer, healthy pregnancy, menopause and skin health are some health issues women worry about where diet can play a role. Some ingredients with health benefits in these areas are discussed below.

Protein

This is the hottest trend today and an ingredient most sought after. For women, lean protein might be useful for many reasons such as muscle maintenance and weight management. Two popular protein ingredients used in processed foods are soy protein and whey protein.

Studies have shown the efficacy of soy protein for promoting fat loss, including abdominal fat while preserving muscle mass. Soy and animal based proteins both support weight loss and management as part of calorie-restricted diet but soy has additional benefit of heart health.

Recent randomised controlled crossover study found that both high-meat-protein and high-soy-protein diets lowered body weight and improved body composition of post-menopausal women, yet partly replacing meat with soy protein improved blood lipid profile and insulin sensitivity independent of body weight changes. Also clinical studies have shown that 25g soy protein per day as part of diet low in saturated fat and cholesterol can decrease LDL-cholesterol levels which may reduce risk of heart disease.

Soy may have other effects on heart health like support of blood vessel health. That area of research is now emerging and some beneficial effects may be due to isoflavones or proteins or a combination of both.

A soy protein that is recently introduced is a high-quality protein that disperses in water in seconds to deliver better flavour and mouthfeel for consumers. The product was developed because of consumer complaints about lumpy mouthfeel and difficulty stirring which is problem of dry-blended beverages.

Wide range of whey protein concepts have been showcased recently to show how manufacturers can create healthy products women will want to buy for their families. Ideas included low-calorie solutions for yogurt and cheese and highly nutritious protein bars for pregnant women.

Many female consumers mistakenly believe that eating and drinking high-protein products could make them fat or develop excessive muscle mass. Some avoid high-protein products because they mistakenly see them as high in calories and hence fattening or associate them with body builders and fear they would develop muscular and unfeminine body shape.

Protein actually contains fewer than half the calories in fat and about the same as in carbohydrate. In addition, whey protein keeps people feeling full, helping them lose weight. Consumption of whey protein daily over a period of five months showed significant reduction in total body weight, waist size and fat mass. It can help produce lean muscle while discouraging fat storage.

Vitamins & Minerals

Calcium is important for women's health. Although the decline in bone mass is a natural process affecting both genders, women start with lower bone density and lose bone mass more rapidly as they age increasing the risk of osteoporosis. Women can lose up to 20% of bone density within 5 to 7 years after menopause due to decrease estrogen in their body.

Calcium fortification is difficult because of bitter taste profile of most calcium salts although some like carbonate and phosphate are less bitter. They also have chalky flavour and sandy mouthfeel. Lactates and gluconates have been developed with neutral taste profile and do not require masking agents or stabilizers.
Advanced fermentation natural processes have been used to produce calcium salts so they could be labelled natural. Such ingredients also raise the bioavailability of calcium and increase the amount of calcium absorbed in body. Their solubility is also high so as high as 50% RDA could be incorporated in single serving of beverage. Some ingredients are so versalite that they could be incorporated in syrups and in-line blending.

Magnesium is another important mineral for building healthy bones as it converts vitamin D into its active form so it can aid calcium absorption. Research has shown that calcium's efficacy and benefits in bone health and preventing osteoporosis are greatly impaired if magnesium levels in body are inadequate. Magnesium plays important role in bone's mineral homeostasis and directly affects bone cell function.

Two vitamins play roles in bone and heart health. Vitamin D has been known to affect calcium absorption, making it important for women. It is also associated with neuromuscular and immune function and heart health. It affects depression. Women are more likely to experience anxiety or mood disorder.
Vitamin K2 is associated with bone and heart heath as well. It has been shown recently that long term use of vitamin K2 (menaquinone-7) supplements improved arterial stiffness in healthy postmenopausal women especially when there is high arterial hardening. Researchers investigated use of vitamin K2 (180 microgram per day) in a double blind, placebo-controlled trial.

Other minerals like iron and folic acids are important. Deficiency in iron can lead to anemia, the most common deficiency in women. Minimum of 15 mg iron per day is recommended. Women of childbearing age needs 400 microgram of folic acid per day to reduce risk of neural tube birth defects. It also boosts immune function.

Health benefits of choline are becoming apparent. Choline is declared essential nutrient by Institute of Medicine. It is important particularly for pregnant women. It plays critical role in development of fetal and eye and brain, especially the memory centre of brain. It lowers levels of cortisol, reducing stress, with potential lifelong benefits. Choline also protects women by helping prevent some causes of eclampsia in pregnancy and acts like folate in preventing neural tube defects in fetal development. IOM recommends 425 mg/day for women, 450 for pregnant women and 550 for lactating women.

Collagen Peptides

Food and beverage category for women especially in beauty from within continues to expand especially for skin health. Collagen peptides are top ingredients in beauty foods which has recently grown 51% in new US supplements containing collagen.

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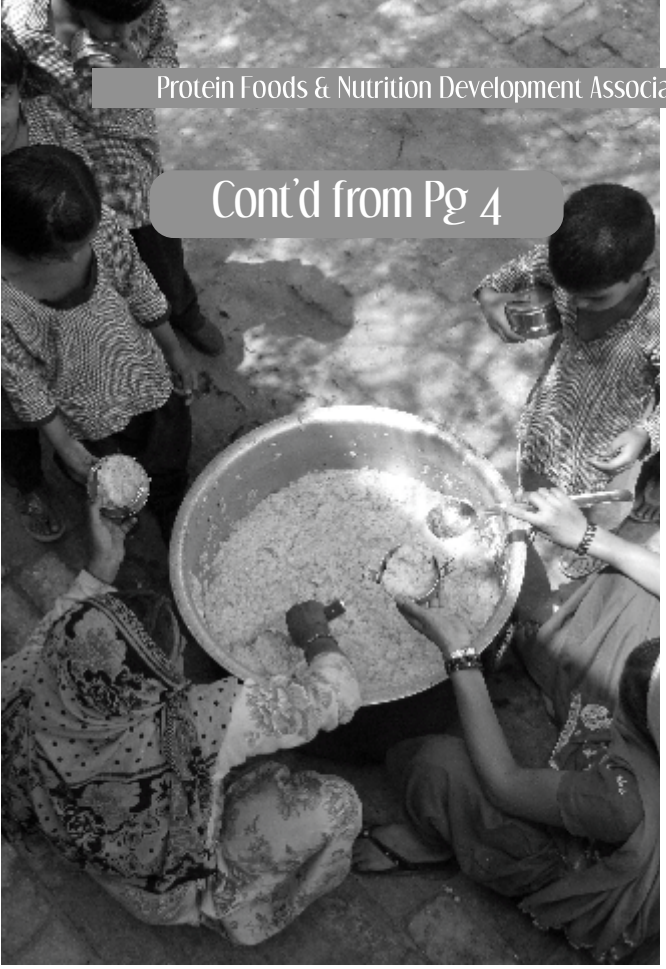

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Very clearly, this is a large and growing group which in a vast majority of cases receives more than the minimum required nutrition and often, much more, on a daily basis. It is this group that is prone to obesity through the wrong choice of both quality and quantity of food consumed in school.

A paper by Kar and Kar (2015) shows that childhood obesity among the higher economic strata in India is close to 6% as compared to only 0.4% in the lower economic strata. These numbers may be very loosely attributed to the two groups in our case – children enrolled in private schools and those enrolled in government schools. The numbers quoted for overweight children in India are even more impressive and range from 14 to 18% of total school-going children.

The medical care costs of obesity in the United States are estimated to be USD 147 billion, and the annual nationwide productive costs of obesity and obesity-related absenteeism range between USD 3.38 billion (USD 79 per obese individual) and USD 6.38 billion (USD 132 per obese individual). No such comparable costs are available for India. However, it is clear that India simply can't afford the ensuing medical bills related to treating and handling obesity amongst its richer half of the population and a part of that problem can be linked to the school meal, and particularly within the target group of children enrolled in private schools.

Hence, the first task is to clearly distinguish the different groups of children while discussing the subject of child obesity in India. The next step is to understand how each of the stakeholders can be educated on the need for balanced nutrition for these children during their lunchtime meal. Finally, a clear plan should be drafted regarding the monitoring of the situation concerning the quality and quantity of meals consumed by these children during lunchtime.

The parents are the primary target since it is widely believed that the 'loving mother' should cook 'nutritious' food for the child to take to school. However, a lunch box which includes a buttered paratha and deep-fried vegetables is not very different from the one with burger and fries! There is a general misconception that 'home-cooked' food is healthy, while processed food is unhealthy. This is a deep-rooted belief and is both sensitive and difficult to change.

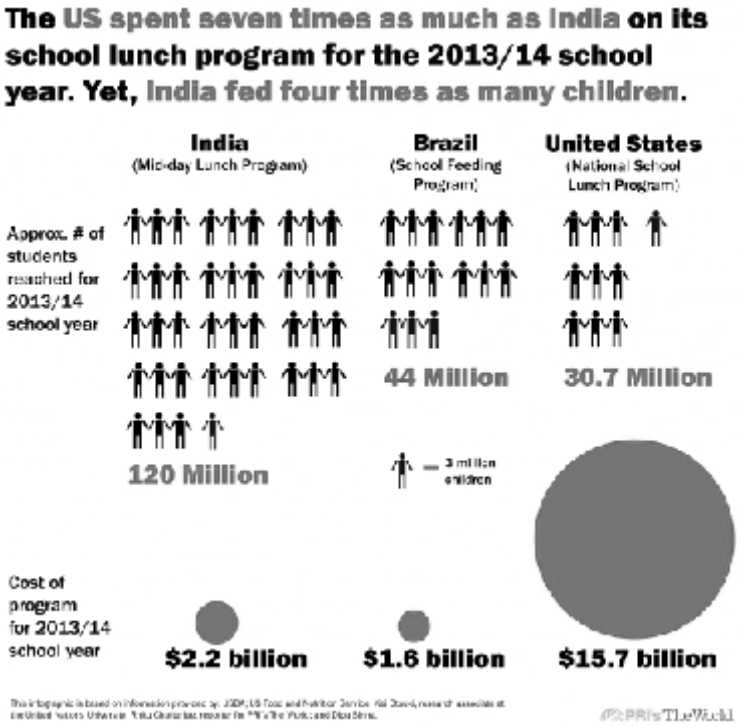
On the other hand, an increasing number of educated parents from the more affluent classes are now demanding better quality food from the school canteens where their children eat. This is a recent phenomenon but it is likely to become bigger as parents are beginning to be more aware of the dangers of child obesity. There are also discussions about the quantity of food a child should eat, but this is a very tricky subject and requires considerable skills to communicate the message to parents.

The organized food industry and the foodservice sectors also need to be more responsible and participate in this debate in an honest and open manner to find viable and long-lasting solutions. However, the unorganized sector may not be willing to play the game according to the rules laid out and this will be a major challenge for the government, particularly since it also involves hygiene and other legal factors when it comes to monitoring street vendors.

Thus any major policy decision regarding the quality (and even quantity) of school lunch consumed by the kids enrolled in private schools needs to involve all the above stake-holders which should be based on mutual trust and respect amongst these stakeholders.

In addition, other related stakeholders such as NGOs and media should also accept their share of the responsibility and try and abstain from taking easy and populist routes such as blaming the food industry as the sole cause of the problem or propagating the myth that home-cooked food is always healthy. Thus, it can be seen that the problem involving school lunches and the possible link to childhood overweight and obesity is very large and complex in India. Further, it involves a variety of stakeholders who need to be working in tandem along with the government in order to achieve positive results in this area.

Prime Minister Wen Jiabao of China once said "I have a dream about a future where every Chinese



child would have enough milk to drink" — a half-litre of milk a day for each child, to be exact. Given China's internal systems, he was able to double the per capita consumption of milk, particularly by school-children, in just 3 years! India is a bit more complex, and consensus-building on policy decisions is a laborious and arduous task. In fact, the last time someone turned his dream into a significant benefit for the entire Indian population was probably way back in 1947. Hence an open and inclusive discussion by the government on such a national policy is both urgent and necessary.

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New Technologies - Innovation and Importance
Protein Foods & Nutrition Development Association of India

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Collagen is the major structural component of skin (80% of skin's dry mass). Skin's epidermis is affected by dermal layer structure and environmental factors, including aging, ultraviolet radiation, hormones and nutrition.

Supplements can slow these skin metabolism-impairing processes responsible for the loss of collagenous extra-cellular matrix. They contain collagen peptides that increase skin's moisture and slow wrinkle formation.

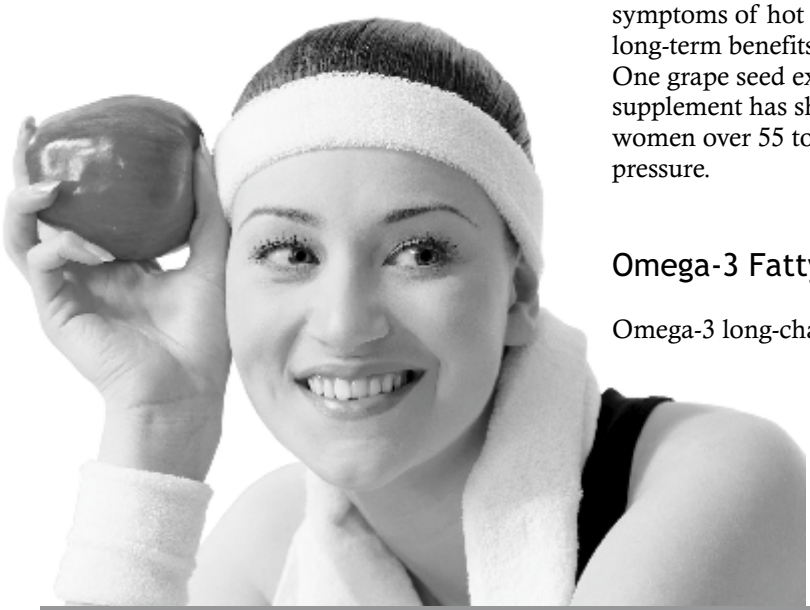
A study with women aged 35 to 55 has been demonstrated that skin elasticity improved significantly with use of collagen hydrolysate. Women were given 2.5 to 5 g substance or placebo once daily for 8 weeks by end of which skin elasticity in collagen users showed improvement.

One collagen peptide supplement was shown to be effective in improving skin hydration over 4 week period. One marine-based supplement having collagen and elastin peptides showed synergistic anti-wrinkle action along with skin moisture retention.

Botanicals & Extracts

One herbal formula with blend of hot-water extracts of herbs Phlomis umbrosa,

Cynanchum wilfordii and Angelica gigas provided relief from symptoms of menopause, including decreasing severity and frequency of hot flashes, vaginal dryness, night sweats and low energy.



Genistein from soy is believed to have positive effects on hot flashes. One product offers synthetic genistein having identical structure as soy genistein. It offers documented short-term relief of menopause symptoms of hot flashes and long-term benefits to bone health. One grape seed extract supplement has shown benefits to women over 55 to manage blood pressure.

Omega-3 Fatty Acids

Omega-3 long-chain polyunsaturated fatty acids are important for women during pregnancy and to support heart health. During pregnancy, docosa-hexaenoic acid (DHA) and arachidonic acid (ARA) are important for brain development of the fetus. Omega-3 fatty acids are believed to beneficial in improving heart rate, heart rhythm and blood lipids.

(Condensed from Article by Linda Milo Ohr in Food Technology December 2015)

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Awareness about FSSAI Notifications/Orders & Amendments
March 9, 2016
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Contact: Mr. Nilesh Lele, Hon. Secr., AFST (I) Mumbai Chapte
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Aahar 2016
International Food & Hospitality Fair
March 15-19, 2016
Pragati Maidan, New Delhi
E: fhsai@aaharways.com

Oils & Fats International Exhibition
OFI India 2016
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Research in Health & Nutrition

'Healthy' foods differ by individual

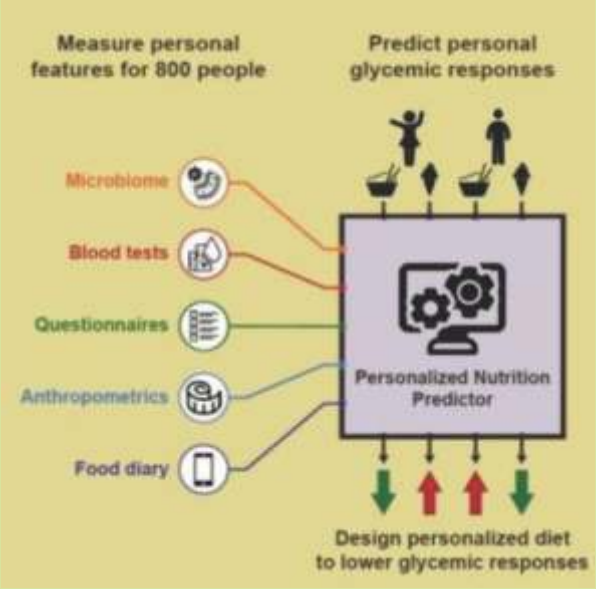
November 19, 2015 Science Daily

Ever wonder why that diet didn't work? A new study tracking the blood sugar levels of 800 people over a week suggests that even if we all ate the same meal, how it's metabolized would differ from one person to another.

The findings demonstrate the power of personalized nutrition in helping people identify which foods can help or hinder their health goals.

Blood sugar has a close association with health problems such as diabetes and obesity, and it's easy to measure using a continuous glucose monitor. A standard developed decades ago, called the glycemic index (GI), is used to rank foods based on how they affect blood sugar level and is a factor used by doctors and nutritionists to develop healthy diets. However, this system was based on studies that average how small groups of people responded to various foods.

Fig depicts the inputs used to develop a personalized nutrition predictor algorithm.



The new study, led by Eran Segal and Eran Elinav of the Weizmann Institute of Science in Israel, found that the GI of any given food is not a set value, but depends on the individual. For all participants, they collected data through health questionnaires, body measurements, blood tests, glucose monitoring, stool samples, and a mobile-app used to report lifestyle and food intake (a total of 46,898 meals were measured). In addition, the volunteers received a few standardized/identical meals for their breakfasts.

As expected, age and body mass index (BMI) were found to be associated with blood glucose levels after meals. However, the data also revealed that different people show vastly different responses to the same food, even though their individual responses did not change from one day to another.
"Most dietary recommendations that one can think of are based on one of these grading systems; however, what people didn't highlight, or maybe they didn't fully appreciate, is that there are profound differences between individuals--in some cases, individuals have opposite response to one another, and this is really a big hole in the literature," says Segal, of Weizmann's Department of Computer Science and Applied Math.

"Measuring such a large cohort without any prejudice really enlightened us on how inaccurate we all were about one of the most basic concepts of our existence, which is what we eat and how we integrate nutrition into our daily life," says Elinav, of Weizmann's Department of Immunology. "In contrast to our current practices, tailoring diets to the individual may allow us to utilize nutrition as means of controlling elevated blood sugar levels and its associated medical conditions."

Moving Toward Personalized Nutrition

Compliance can be the bane of nutrition studies. Their outcomes rely on participants, away from the laboratory, rigidly following a diet and honestly recording their food intake. In the Weizmann study, the participants (representing a cross-section of Israel's population and all unpaid) were asked to disrupt their weekly routine in two ways: They were to eat a standardized breakfast such as bread or glucose each morning and also enter all of their meals into a mobile app food diary. In return, the researchers would provide an analysis of the participants' personalized responses to food, which relied on strict adherence to the protocol. Elinav and Segal say this proved to be a strong motivator, and participant meal reporting closely matched the biometric data obtained from their glucose monitors.

The individualized feedback yielded many surprises. In one case, a middle-aged woman with obesity

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and pre-diabetes, who had tried and failed to see results with a range of diets over her life, learned that her "healthy" eating habits may have actually been contributing to the problem. Her blood sugar levels spiked after eating tomatoes, which she ate multiple times over the course of the week of the study.

"For this person, an individualized tailored diet would not have included tomatoes but may have included other ingredients that many of us would not consider healthy, but are in fact healthy for her," Elinav says. "Before this study was conducted, there is no way that anyone could have provided her with such personalized recommendations, which may substantially impact the progression of her pre-diabetes."

To understand why such vast differences exist between people, the researchers conducted microbiome analyses on stool samples collected from each study participant. Growing evidence suggests gut bacteria are linked to obesity, glucose intolerance, and diabetes, and the study demonstrates that specific microbes indeed correlate with how much blood sugar rises post-meal. By conducting personalized dietary interventions among 26 additional study participants, the researchers were able to reduce post-meal blood sugar levels and alter gut microbiota. Interestingly, although the diets were personalized and thus greatly different across participants, several of the gut microbiota alterations were consistent across participants.

"After seeing this data, I think about the possibility that maybe we're really conceptually wrong in our thinking about the obesity and diabetes epidemic," says Segal. "The intuition of people is that we know how to treat these conditions, and it's just that people are not listening and are eating out of control--but maybe people are actually compliant but in many cases we were giving them wrong advice."

"It's common knowledge among dieticians and doctors that their patients respond very differently to assigned diets," he adds. "We can see in the data that the same general recommendations are not always helping people, and my biggest hope is that we can move this boat and steer it in a different direction."

The researchers hope to translate what was learned in this basic research project so that it can be applied to a broader audience through further algorithmic developments that would reduce the number of inputs that are needed in order to provide people with personalized nutritional reports.

Study provides strongest evidence yet of a link between breakfast quality and educational outcomes

November 16, 2015 Science Daily

New study of 5,000 9- to 11-year-olds demonstrates significant positive associations between breakfast consumption, educational outcomes

The research found that the odds of achieving an above average educational performance were up to twice as high for pupils who ate breakfast, compared with those who did not.
A direct and positive link between pupils' breakfast quality and consumption, and their educational attainment, has for the first time been demonstrated in a ground-breaking new study carried out by public health experts at Cardiff University.

The study of 5000 9-11 year-olds from more than 100 primary schools sought to examine the link between breakfast consumption and quality and subsequent attainment in Key Stage 2 Teacher Assessments 6-18 months later.

The study -- thought to be the largest to date looking at longitudinal effects on standardised school performance -- found that children who ate breakfast, and who ate a better quality breakfast, achieved higher academic outcomes.
The research found that the odds of achieving an above average educational performance were up to twice as high for pupils who ate breakfast, compared with those who did not.
Eating unhealthy items like sweets and crisps for breakfast, which was reported by 1 in 5 children, had no positive impact on educational attainment.

Pupils were asked to list all food and drink consumed over a period of just over 24 hours (including two breakfasts), noting what they consumed at specific times throughout the previous day and for breakfast on the day of reporting.

Alongside number of healthy breakfast items consumed for breakfast, other dietary behaviours -- including number of sweets and crisps and fruit and vegetable portions consumed throughout the rest of the day -- were all significantly and positively associated with educational performance.

Social scientists say the research, published in the Public Health Nutrition journal, offers the strongest evidence yet of a meaningful link between dietary behaviours and concrete measures of academic attainment.

Hannah Littlecott from Cardiff University's Centre for the Development and Evaluation of Complex Interventions for Public Health Improvement (DECIPher), lead author of the study, said: "While breakfast consumption has been consistently associated with general health outcomes and acute measures of concentration and cognitive function, evidence regarding links to concrete educational outcomes has until now been unclear.

"This study therefore offers the strongest evidence yet of links between aspects of what pupils eat and how well they do at school, which has significant implications for education and public health policy -- pertinent in light of rumours that free school meals may be scrapped following George Osborne's November spending review.

"For schools, dedicating time and resource towards improving child health can be seen as an unwelcome diversion from their core business of educating pupils, in part due to pressures that place the focus on solely driving up educational attainment.

"But this resistance to delivery of health improvement interventions overlooks the clear synergy between health and education. Clearly, embedding health improvements into the core business of the school might also deliver educational improvements as well."

Professor Chris Bonell, Professor of Sociology and Social Policy at the University College London Institute of Education, welcomed the study's findings. He said: "This study adds to a growing body of international evidence indicating that investing resources in effective interventions to improve young people's health is also likely to improve their educational performance. This further emphasises the need for schools to focus on the health and education of their pupils as complementary, rather than as competing priorities. Many schools throughout the UK now offer their pupils a breakfast. Ensuring that those young people most in need benefit from these schemes may represent an important mechanism for boosting the educational performance of young people throughout the UK."

Dr Graham Moore, who also co-authored the report, added: "Most primary schools in Wales are now able to offer a free school breakfast, funded by Welsh Government. Our earlier papers from the trial of this scheme showed that it was effective in improving the quality of children's breakfasts, although there is less clear evidence of its role in reducing breakfast skipping.

"Linking our data to real world educational performance data has allowed us to provide robust evidence of a link between eating breakfast and doing well at school. There is therefore good reason to believe that where schools are able to find ways of encouraging those young people who don't eat breakfast at home to eat a school breakfast, they will reap significant educational benefits."

Dr Julie Bishop, Director of Health Improvement at Public Health Wales also welcomed the findings. She said: "Public Health Wales welcomes this important work. It increases our understanding of the link between health, in this case what we eat, and educational outcomes. We need to understand more about how eating breakfast helps to improve educational outcomes but this work will certainly support the case for schools to consider measures to improve diet for children -- to benefit not just their immediate health but also their achievement."

Obesity: Is junk food really to blame?

November 5, 2015 Science Daily

Candy, soda, and fast food are not driving the rising obesity trend in the US.

Soda, candy, and fast food are often painted as the prime culprits in the national discussion of obesity in the United States. While a diet of chocolate bars and cheese burgers washed down with a Coke is inadvisable from a nutritional standpoint, these foods are not likely to be a leading cause of obesity in the United States according to a new Cornell University Food and Brand Lab study conducted by the Lab co-directors David Just, PhD, and Brian Wansink, PhD. The study, published in Obesity Science & Practice, finds that intake of these foods is not related to Body Mass Index in the average adult.

Researchers Just and Wansink reviewed a nationally representative sample of adults in the United States and found that consumption of soda, candy and fast food is not linked to Body Mass Index (BMI) for 95% of the population. The exception is those who are on the extreme ends of the BMI spectrum: those who are chronically underweight and those who are

morbidly obese.
Given that there was no significant difference in consumption of these indulgent foods between overweight and healthy weight individuals, the researchers concluded that the overwhelming majority of weight problems are not caused by consumption of soda, candy and fast food alone.

"This means," explains Dr. Just, "that diets and health campaigns aimed at reducing and preventing obesity may be off track if they hinge on demonizing specific foods." He adds, "If we want real change we need to look at the overall diet, and physical activity. Narrowly targeting junk foods is not just ineffective, it may be self-defeating as it distracts from the real underlying causes of obesity." These findings suggest that clinicians and practitioners seeking to help individuals obtain a healthy weight should examine how overall consumption patterns, such as snacking, and physical activity influence weight instead of just eliminating "junk foods" from patient's diets.

Standing and exercise linked to lower odds of obesity

November 3, 2015 Science Daily

Standing one-quarter of the time linked to 32 percent reduced likelihood of obesity.

Standing for at least one-quarter of the day has been linked to lower odds of obesity in a new study led by the American Cancer Society in collaboration with The Cooper Institute, the University of Texas, and the University of Georgia. The study appears in Mayo Clinic Proceedings.

While sedentary behaviour (such as watching TV and commuting time) has been linked to negative health effects, it is unclear whether more time spent standing has protective health benefits. To investigate further, a research team led by Dr. Kerem Shuval, Director of Physical Activity & Nutrition Research at the American Cancer Society, examined reported standing habits in relation to objectively measured obesity and metabolic risk among more than 7000 adult patients attending the Cooper Clinic (Dallas, Texas) for preventive medicine visits from 2010 to 2015.

Specifically, the association between standing time and obesity was determined through three measures: body mass index (BMI), body fat percentage, and waist circumference. The association between standing and metabolic risk was assessed via metabolic syndrome, a clustering of risk factors that increase the risk for heart disease, stroke, and diabetes.

The study found that among men, standing a quarter of the time was linked to a 32% reduced likelihood of obesity (body fat percentage). Standing half the time was associated with a 59% reduced likelihood of obesity. But standing more than three-quarters of the time was not associated with a lower risk of obesity.
In women, standing a quarter, half, and three quarters of the time was associated with 35%, 47%, and 57% respective reductions in the likelihood of abdominal obesity (waist circumference). No relationship between standing and metabolic syndrome was found among women or men.

Researchers also investigated whether physical activity in conjunction with standing provided additional reduction in risk. They found that among those meeting physical activity guidelines (150 minutes of moderate activity and/or 75 minutes of vigorous activity per day) the addition of standing time was associated with incremental drops in the likelihood of all obesity measures and metabolic syndrome in both women and men. For example, men meeting physical activity guidelines and standing a quarter to half of the time had a 57% reduced likelihood for abdominal obesity, whereas those meeting guidelines and standing three quarters of the time or more had a 64% lower odds for abdominal obesity.

While the findings provide initial and important evidence on the potential protective benefits of standing, the study team cautions that their findings should be interpreted in the context of the study's limitations. These findings are cross-sectional, meaning they capture a 'snapshot' in time, so it is unclear whether less standing leads to more obesity or whether in fact obese individuals stand less. Additional prospective studies are needed to determine whether standing has protective health benefits.

Moreover, while obesity and metabolic syndrome were objectively measured, standing and physical activity were not; they were based on self-report which may lead to over estimation of these behaviours. Further, due to the survey measure used in the study, it is unclear whether study participants were standing still or standing and moving. While standing and moving provides extra energy expenditure, standing still is similar to sitting with regards to energy expenditure.

Finally, it should be noted that some studies have found adverse health effects to prolonged standing, such as increased risk for varicose veins. Therefore, additional research into the effects of standing on health is definitely suggested.

Soybean foods may protect menopausal women against osteoporosis

November 2, 2015 Science Daily

Eating a diet rich in both soy protein and isoflavones can protect menopausal women from bone weakening and osteoporosis, according to the results of a preliminary study presented at the Society for Endocrinology annual conference in Edinburgh.

Osteoporosis is a common condition where bones become brittle and fragile from tissue loss, causing 9 million fractures worldwide every year. In women, bone loss occurs most quickly in the years immediately after menopause because they produce less of the sex hormone estrogen, which protects against bone loss.
Soybean foods contain chemicals known as isoflavones that are similar in structure to estrogen and so could theoretically protect women against osteoporosis by mimicking the action of estrogen.

In this study, researchers from the University of Hull gave two hundred women in early menopause a daily supplement containing soy protein with 66mg of isoflavones or a supplement with soy protein alone for six months. The researchers investigated changes in the women's bone activity by measuring certain proteins (βCTX and P1NP) in their blood.

They found that the women on the soy diet with isoflavones had significantly lower levels of βCTX than the women on soy alone, suggesting that their rate of bone loss was slowing down and lowering their risk of developing osteoporosis. Women taking soy protein with isoflavones were also found to have decreased risk of cardiovascular disease than those taking soy alone.

Lead author of the study Thozhukat Sathyapalan said: "We found that soy protein and isoflavones are a safe and effective option for improving bone health in women during early menopause. The actions of soy appear to mimic that of conventional osteoporosis drugs."
"The 66 mg of isoflavone that we use in this study is equivalent to eating an oriental diet, which is rich in soy foods. In contrast, we only get around 2-16 mg of isoflavone with the average western diet. Supplementing our food with isoflavones could lead to a significant decrease in the number of women being diagnosed with osteoporosis."

Researchers next aim to investigate the long-term health consequences of using soy protein and isoflavones supplements, and whether it may also have benefits beyond bone health.

Pumpkin: Health Benefits, Uses and Risks

Medical News Today 25 November 2015

If the only thing you have ever done with pumpkin is carve it and fill it with a candle, you are not alone. Many people tend to think of pumpkins as little more than just a Halloween decoration or a Thanksgiving pie filling, but you may want to rethink this plump orange plant.

Pumpkin is an extremely nutrient dense food, meaning it is chock-full of vitamins and minerals but low on calories. There are many creative ways pumpkin can be incorporated into your diet, including desserts, soups, salads, preserves and even as a substitute for butter. Next time pumpkin season comes around, don't carve it, cook it up and eat it!

This MNT Knowledge Centre feature is part of a collection of articles on the health benefits of popular foods.

Fast facts on pumpkin
Here are some key points about pumpkin. More detail and supporting information is in the main article.
• Pumpkin is a rich source of vitamin A.
• Pumpkin is one of the best-known sources of the antioxidant beta-carotene.
• The potassium contained within pumpkins can have a positive effect on blood pressure.
• The antioxidants and vitamins contained within pumpkins could prevent degenerative damage to the eyes.
• Canned pumpkin pie mix typically contains added sugars and syrups.
• Conversely, canned pumpkin should just contain pumpkin and no other ingredients.
• Uncut pumpkins should be stored in a cool, dark place for up to 2 months.
• Pumpkin puree or canned pumpkin can be used as a replacement for butter or oil in baking recipes.

NUTRITIONAL BREAKDOWN OF PUMPKIN
According to the USDA National Nutrient database, one cup of pumpkin, cooked, boiled, drained and without salt contains 49 calories, 1.76 grams of protein, 0.17 grams of fat, 0 grams of cholesterol and 12 grams of carbohydrate

(including 2.7 grams of fiber and 5.1 grams of sugar).
Consuming one cup of cooked,

canned pumpkin would provide well over 100% of your daily needs for vitamin A, 20% of the daily value for vitamin C, 10% or more for vitamin E, riboflavin, potassium, copper and manganese at least 5% for thiamin, B-6, folate, pantothenic acid, niacin, iron, magnesium, and phosphorus. Of course, using fresh pumpkin and preparing it yourself will give you the most health benefits, but canned pumpkin is also a great choice. Be sure to steer clear of canned pumpkin pie mix, which is usually right next to the canned pumpkin in grocery stores and in a similar can but has added sugars, syrups, etc. Canned pumpkin should have only one ingredient: pumpkin.

POSSIBLE HEALTH BENEFITS OF CONSUMING PUMPKIN
Consuming fruits and vegetables of all kinds has long been associated with a reduced risk of many lifestyle-related health conditions. Many studies have suggested that increasing consumption of plant foods like pumpkin decreases the risk of obesity and overall mortality, diabetes, heart disease and promotes a healthy complexion and hair, increased energy, overall lower weight.

Pumpkin is one of the best-known sources of beta-carotene, a powerful antioxidant known to give orange vegetables and fruits their vibrant color and which is converted to vitamin A in the body. Consuming foods rich in beta-carotene may reduce the risk of developing certain types of cancer, offer protection against asthma and heart disease, and delay aging and body degeneration.

Blood Pressure: Eating pumpkin is good for the heart. The fibre, potassium and vitamin C content in pumpkin all support heart health. Consuming adequate potassium is almost as important as decreasing sodium intake for treatment of hypertension (high-blood pressure). Other foods that are high in potassium include cantaloupe, pineapple, tomatoes, oranges, spinach and bananas.
Increased potassium intakes are also associated with a reduced risk of stroke, protection against loss of muscle mass, preservation of bone mineral density and reduction in the formation of kidney stones.

Cancer: One particular type of cancer where research has shown a positive benefit of a diet rich in beta-carotene is prostate cancer. According to a study conducted by the Harvard School of Public Health's Department of Nutrition, Beta-carotene has also been shown to have an inverse association with the development of colon cancer in Japanese population.

Eye Health: The antioxidants vitamin C, vitamin E and beta-carotene (all of which pumpkin has) have been shown to support eye health and prevent degenerative damage. A higher intake of all fruits (3 or more servings per day) has also been shown to decrease the risk of and progression of age-related macular degeneration.

Fertility: For women of child-bearing age, consuming more iron from plant sources such as spinach, beans, pumpkin, tomatoes and beets appear to promote fertility, according to Harvard Medical School's Harvard Health Publications. The vitamin A in pumpkin (consumed as beta-carotene then converted to vitamin A in the body) is also essential during pregnancy and lactation for hormone synthesis.

Immunity: Plant foods like pumpkins that are high in both vitamin C and beta-carotene offer an immunity boost from their powerful combination of nutrients.
HOW TO INCORPORATE MORE PUMPKIN INTO YOUR DIET:
Although the jack-o-lantern variety of pumpkins is perfectly edible, look for the sweet or pie pumpkin varieties for cooking, which are smaller and sweeter. Make sure your pumpkin has a few inches of stem left and that it is hard and heavy for its size. Store the uncut pumpkins in a cool dark place for up to two months.
• Make your own pumpkin puree instead of buying canned
• Use pumpkin puree or canned pumpkin in place of oil or butter in any baking recipe
• Make a quick treat of pumpkin chocolate yogurt by combining Greek yogurt, pumpkin puree or canned pumpkin, honey, cinnamon and cocoa powder.

Superfoods: Health Benefits, Uses and Risks

Medical News Today 25 November 2015

The term "superfood" is a fairly new term referring to foods that offer maximum nutritional benefits for minimal calories. They are packed with vitamins, minerals and antioxidants.

There are no standard criteria or legal definitions to classify a food as a superfood at this time. Most superfoods are plant-based. Antioxidants decrease or reverse the effects of free radicals that are closely linked with heart disease, cancer, arthritis, stroke, respiratory diseases, immune deficiency,

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- 30 gm carrot, chopped
- 20 gm cabbage, bite sized pieces
- 10 gm spring onion
- 300 gm rice, boiled
- Pepper, as per taste
- ½ tsp aromat powder
- Vinegar, few drops
- 1 tsp light soya sauce
- 1 tsp green chilli sauce

Method:

1. Take a chinese wok and put it on flame.
2. Once it is hot, add oil in the wok.
3. Add chopped ginger, garlic, celery and sauté it for 5 seconds till it gives out fragrance. (Make sure it does not get burnt)
4. Add Nutrela Soya Chunks in the wok.
5. Add French beans, carrots, cabbage and whites of spring onion.
6. Add rice. Once the rice is added, toss it in the wok.
7. Add salt, white pepper, aromat powder, light soya sauce and green chilli sauce.
8. Add a few drops of vinegar.
9. Garnish with chopped onion greens.
10. Serve hot.

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Food Science & Industry News

Consumers turn to retail outlets for prepared meals, snacks

IFT Weekly November 4, 2015

Supermarkets and convenience stores (c-stores) are raising the bar on their food service offerings and an increasing number of consumers are choosing these outlets for their prepared meals and snacks in addition to quick service restaurants (QSRs), reports The NPD Group, a global information company.

Quick and convenient food from c-stores and supermarkets has incrementally added customers to the fast food/foodservice market, according to NPD's QSR Plus Retail Market Monitor, a continuous, daily tracker that monitors awareness, trial, and usage for QSR operators in major markets and nationally. Further, the number of fast-food purchases made at retail outlets per customer in the March 2015 through June 2015 period is over six visits higher than those made to QSRs in an average 4-week period.

The majority of consumers are using multiple channels—retail outlets and QSRs—when purchasing prepared meals and snacks. Less than one-quarter of QSR customers are going only to a traditional QSR outlet in a four-week period. Most QSR customers are using all available retail channels to meet their quick-service meal requirements. Those who are exclusive traditional QSR customers are more likely to dine in at the restaurant than customers who use multiple channels for quick service.

C-stores hold its highest shares of these product categories: coffee, snacks, breakfast foods, soft drinks, and Mexican foods. QSRs offering morning meals are the most likely to feel the impact of c-stores on their customer base. The morning occasions are likely in-and-out, grab-and-go visits where convenience and fast service trump QSR chain preference.

Between meal and snack purchases are another vulnerable time of day for QSRs, reports NPD. Grocery stores hold a high share of purchases of chicken, side dishes, and salads. These stores are providing an easy and convenient ready-to-consume meal for multiple family members.

"Consumers use QSRs, convenience, and grocery stores interchangeably for fast food, particularly when they find the same quality and variety," said Bonnie Riggs, NPD restaurant industry analyst. "The lines between retail foodservice and QSRs are blurring for consumers and these channels are competing for visits from consumers looking for a quick meal or snack."

UK evidence review recommends strategies to lower sugar intake

IFT Weekly November 4, 2015

Public Health England (PHE), a part of the UK's Dept. of Health, has released an evidence review entitled "Sugar reduction: the evidence for action."

The review concludes that a range of factors, including marketing, promotions, advertising, and the amount of sugar in manufactured food, is contributing to an increase in sugar consumption. The Dept. of Health commissioned the evidence review from PHE following publication of the draft Scientific Advisory Committee on Nutrition (SACN) report on Carbohydrates and Health in June 2014.

Children and young people consume 3 times the recommended amount of sugar on average, with adults consuming more than double. The SACN recently recommended that sugar makes up no more than 5% of daily calorie intake: 30 g or 7 cubes of sugar per day. The UK government adopted the advice as official dietary advice in July this year.

PHE's evidence review shows that action to reduce sugar consumption levels could include, but is not limited to, reducing:

Cont'd on Pg 36

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NUTRITION AWARENESS ACTIVITY At SNDT, Pune

Report by Ms. Preeti Panicker, Food Technologist, PFNDAI

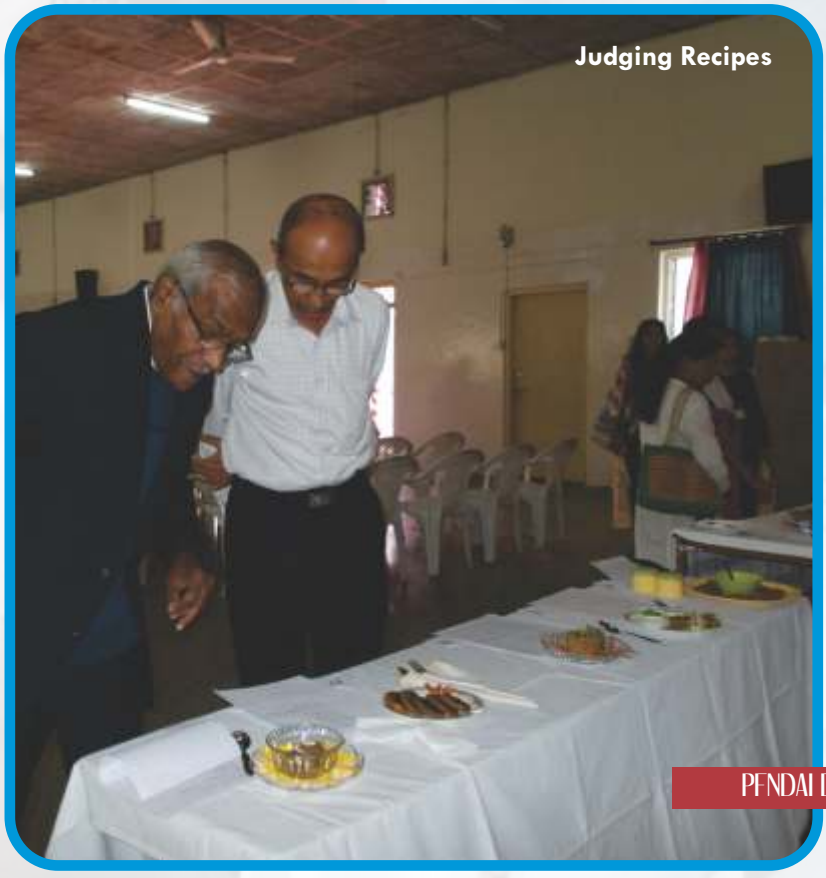
PFNDAI organised a nutrition awareness activity at SNDT College of Home Science, Pune on the 5th of December 2015 in collaboration with the college and with support from Fresenius Kabi, Pepsico, Kelloggs and Nutrela. Such events serve as a learning tool in a competitive environment and as a platform for students to interact with persons from industries and research institutions.

The theme for the event was Nutrition for Active and Healthy Life. Various competitions were arranged based on this. Recipe competition was based on Meals with Millets. A variety of dishes like ragi idlis, millet nachos, bajra kebabs, stuffed ragi pancakes, foxtail bell peppers, bhakri pizza, little millet cutlet etc. were prepared by the students. Recipe competition was judged by Dr Lalita Rajwade and Dr Joshi eminent nutritionists in Pune.

For poster competition students were given two food products namely flaxseed chocolate and Fruit yoghurt for which they were supposed to come up with a label depicting their products. Judging was done by leading consulting food technologists Dr Naikare & Dr Satyanarayana. Debate competition had students putting their view points against each other regarding "Whether milk is really essential in our diet".

There were lot of facts presented before the audience that had them thinking. Milk has been a part of our diets since time immemorial but has it managed to stay unaffected by the changing times, which has seen an increase in adulteration, unregulated use of pesticides, herbicides, use of hormones to increase milk production and other malpractices. Is milk actually a good source of calcium and other nutrients or are there other foods that serve the purpose better? Is UHT milk better or HTST? The judges for debate were Mr Rohit Kulkarni Sports Nutrition Manager from Venky's Nutrition & Dr Geeta Dharmatti, leading consultant clinical nutritionist and dietician from Pune.

Photography competition had a lot of entries with photos of mouth-watering 'Street Foods' which was the theme. Judging was done by Prof. Radha Mishra and Mr Pimputkar. Quiz competition had four teams from different colleges battling it out on the stage. The quiz competition covered varied topics including adulteration, deficiencies,



Judging Recipes

functional components in foods etc. Quiz competition was organised by the home science staff which included Mrs Anuja Kinikar, Mrs Bhairavi Thosar & Mrs Shraddha Adsul. Many colleges in and around Pune participated in the activity including NAFARI (National Agriculture & Food Analysis Research Institute), Symbiosis, Modern College of Engineering and Vaikunth Mehta Institute.

The second half was the seminar session. Eminent speakers gave presentations. Past Chairman, a Governing Board Member and a leading consultant in industry Dr Vilas Adhikari spoke on Food Fortification and how food fortification can reduce instances of micronutrient deficiency among the lower strata of population. There is a high incidence of Vitamin A, Iron and Iodine deficiency in developing countries. He showed how fortification of common products like salt could be instrumental in reducing nutrient deficiency. The choice of food to be fortified should be considered with great caution as over consumption of nutrient could lead to other complications. Bioavailability, packaging, nutrient interaction with other components present, storage stability also need to be taken into account.

Dr. Sadanand Kulkarni, VP, Medical Affairs and Clinical Research from Fresenius Kabi spoke about the Importance of Enteral and Parenteral Nutrition and how a combination of both is necessary. He explained the advantages of enteral and parenteral route of providing nutrition. In case of certain patients, children, and very old people, it is not possible to provide food the normal way. He explained many techniques in both ways.

Ms Siddhita Kadam from PFNDAI spoke on using soy okara which is a by-product obtained from the extraction of soy milk and how it can be used to partially replace refined wheat flour. She showed how high quality nutritious bread could be prepared using okara.

Dr. Vilas Shirhatti, Chief Advisor Nutraceutical Business, Tata Chemicals spoke about Healthy Food products: Learning from Indian traditional foods where he emphasised that India being a biodiversity hotspot we are able to procure everything here itself rather than looking towards the west ,he spoke about traditional herbs like Ashwagandha, tulsi etc. He also shed light on how the thali system is an ideal way to consume food with spices being consumed first and sweet consumed last and how they are correlated to the working of the digestive system.

The seminar was concluded by Ms Ummeayman Rangwala from PFNDAI by thanking the HOD of Food Science Department Dr. Mrs Chandrakala Mannuru, who was the chief organiser of the program, the Acting I/C principal Mrs Rajesh Kapila and the In-charge Principal Dr. Mrs. Manik Dixit who supported the program whole-heartedly to ensure success.


Recipe


Judging Recipes

Debate Competition


Judging Debate Competition


Poster Competition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emphysema, Parkinson's disease and other inflammatory or ischemic conditions.

Superfoods are not magic cure-all foods. Dietitian Penny Kris-Etherton explains: "A lot of people have unrealistic expectations about these foods, thinking they'll be protected from chronic diseases and health problems. They may eat one or two of these nutrient-dense foods on top of a poor diet."
Including superfoods in your daily intake is great but not if you are not consuming a healthy, balanced diet overall. It is better to eat a "super diet" than to concentrate on individual foods.

COMMON SUPERFOODS

Foods that are high in antioxidants and flavonoids, as many foods touted as superfoods are, have been shown to prevent coronary heart disease and cancer as well as improve immunity and decrease inflammation. Consuming fruits and vegetables of all kinds has long been associated with a reduced risk of many lifestyle-related health conditions and overall mortality while promoting a healthy complexion and hair, increased energy and overall lower weight.

BERRIES

The higher levels of flavonoids in berries have been shown to lower risk of heart attack. A few commonly identified superfood berries include acai berries, blueberries, raspberries, tart cherries, cranberries and goji berries. Acai berries are small, dark purple berries grown in South America. They contain 19 amino acids and many antioxidants.

Blueberries are high in fiber, manganese, and vitamin K. Cranberries are high in a particular flavonoid that helps lower the risk of urinary tract infection. Goji berries are a small red berry native to Asia that are high in vitamin C and E, along with many different types of flavonoids. They are frequently used in Eastern medicine to help treat diabetes and high blood pressure and maintain eye, liver and kidney health.

SOY

Soybeans have a high concentration of isoflavones, a type of phytochemical. The isoflavones in soy have been shown to reduce low-density lipoprotein (LDL) or "bad" cholesterol.

A few studies have shown that soy may prevent age-related memory loss. Soy isoflavones are also known to decrease bone loss and increase bone mineral density during menopause and have been reported to reduce menopausal symptoms.

TEA

Tea contains few calories, helps with hydration and is a good source of antioxidants. Catechins, potent antioxidants found primarily in green tea, are known for having beneficial anti-inflammatory and anti-carcinogenic properties. A study published in the Journal of Physiological Anthropology looked at the effects of green tea, white tea and water consumption on stress levels in 18 students. The study suggested that both green and white tea had a lowering effect on stress levels and that white tea had an even greater effect. Larger studies need to be conducted to confirm this possible health benefit. Green tea may also have an anti-arthritic effect by suppressing overall inflammation.

LEAFY GREENS

Leafy greens typically identified as superfoods are kale, spinach, Swiss chard, beet greens, and collard greens. These foods are rich in vitamins A, C, E, K and many B vitamins. These leafy greens also contain an abundance of carotenoids, iron, magnesium, potassium and calcium.

Many foods considered to be "superfoods" are rich in colour, often indicating that they are rich in antioxidants.

One cup of kale provides 550 micrograms of vitamin K - over 680% of our daily needs. Kale and other leafy greens are high in fiber and water content, both of which help to prevent constipation and promote regularity and a healthy digestive tract.

SALMON

The high omega-3 fatty acid content in salmon and other fatty fish like trout and herring can decrease the risk of abnormal heartbeats, reduce cholesterol and slow the growth of arterial plaque.

DARK CHOCOLATE

Research has shown that dark chocolate is high in flavonoids. Flavonoids are shown to have antioxidant activity, prevent coronary heart disease and certain types of cancer and boost the immune system.
The component in chocolate specifically responsible for these benefits is cacao powder, derived from cacao beans. Keep in mind that chocolate may have added ingredients - such as excess sugar - that could negate these benefits.

WINE AND GRAPES

Resveratrol, the polyphenol found in wine that made it famously "heart healthy" is found in the skins of red grapes. A few studies have shown promise that resveratrol can protect against diabetic neuropathy

Grapes, particularly red grapes, contain healthful components such as resveratrol and quercetin.

and retinopathy - conditions caused by poorly controlled diabetes where vision is severely affected.

One study in which diabetic rats were treated with resveratrol for two weeks found that it reduced the effects of neural changes and damage associated with diabetic neuropathy.
Researchers have also found resveratrol to be beneficial for treating Alzheimer's disease, relieving hot flashes and mood swings associated with menopause and improving blood glucose control. However, large studies using human subjects are still needed to confirm these findings.

Another flavonoid found in grapes known as quercetin is a natural anti-inflammatory that appears to reduce the risk of atherosclerosis and protect against the damage caused by LDL cholesterol in animal studies. Quercetin may have the additional bonus of anti-cancer effects; however, more studies are needed using human subjects before these results can be confirmed.

Although wine does contain antioxidants, keep in mind that eating grapes would provide the same benefit, along with additional fiber. The American Heart Association recommends that alcoholic beverages should be limited to no more than two drinks per day for men and one drink per day for women.

Other superfoods gaining in notoriety include spirulina, blue-green algae, garlic, wheatgrass, beets and beet juice, turmeric, Brazil nuts, barley and shiitake mushrooms.

HOW TO INCORPORATE MORE SUPERFOODS INTO YOUR DIET
These foods can be incorporated into a healthy diet when available, but do not go breaking the bank or searching the globe trying to find them. The secret is that any leafy green vegetable or berry commonly found in your grocery store will provide many of the same benefits found in the premium priced superfoods. Buy your produce in season and from local sources to ensure the highest nutrient content. Do not discount your ordinary apple or carrot either; all fruits and vegetables should be referred to as superfoods! Keep in mind that the more processed foods you can replace with whole foods like fruits or vegetables, the healthier you will be.

Quick tips:
• Eat the rainbow! Look at the colours on your plate. Is all of your food brown or beige? Then it is likely that antioxidant levels are low. Add in foods with rich colour like kale, beets and berries
• Add shredded greens to soups and stir fries
• Try replacing your beef or poultry with salmon or tofu
• Add berries to oatmeal, cereal, salads or baked goods
• Make sure you have a fruit or a vegetable every time you eat, meals and snacks included
• Have a daily green or matcha tea
• Spice it up! Make turmeric, cumin, oregano, ginger, clove and cinnamon your go-to spices to amp up the antioxidant content of your meals
• Snack on nuts, seeds (especially Brazil nuts and sunflower seeds) and dried fruit (with no sugar or salt added).

Researchers Identify Dietary Fat That Could Offer More Effective Epilepsy Treatment

Medical News Today 25 November 2015

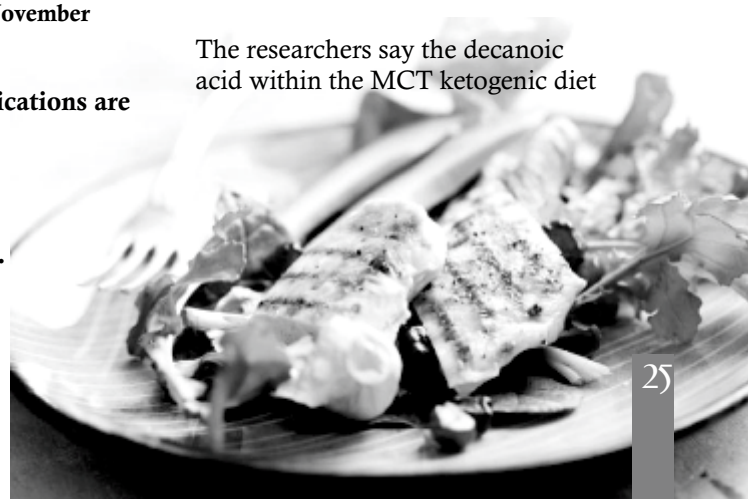
While anti-seizure medications are considered the primary treatment for epilepsy, some individuals with the condition do not respond to such therapy. But the results of a new study may offer a solution; researchers found a fatty acid that forms part of a ketogenic diet could be used to treat the condition.

Prof. Robin Williams, of the Centre for Biomedical Sciences at Royal Holloway, University of London in the UK, and colleagues publish their findings in the journal Brain.
A ketogenic diet incorporates foods that are high in fats, moderate in proteins and low in carbohydrates. The diet alters the way energy is burned in the body; the body normally uses carbohydrates for energy, but reducing intake of carbohydrates and increasing fat intake means the body uses fat as its main fuel instead.

This change in energy source causes the body to produce ketones - water-soluble molecules made by the liver that many researchers have previously suggested contribute to improved seizure control in patients with epilepsy.
In this latest study, however, Prof. Williams and colleagues have identified a fatty acid that forms a part of the medium-chain triglyceride (MCT) ketogenic diet, called decanoic acid, which they found has strong anti-epileptic effects.

DECANOIC ACID 'MORE EFFECTIVE THAT CURRENT EPILEPSY TREATMENTS'
In the MCT diet, a larger proportion of fat comes from MCT fats; these produce ketones more easily than long-chain triglyceride (LCT) fats. As a result, less total fat is required in the diet, meaning more carbohydrates and protein can be consumed.

The researchers say the decanoic acid within the MCT ketogenic diet



blocked seizures among people with epilepsy to a greater extent than medications currently used to treat the condition. Not only that, decanoic acid may even pose fewer side effects.

Around 50 million people across the globe have epilepsy, and according to the researchers, around a third of people with the condition do not respond to current medications.

However, the team says their findings could offer new treatments for the condition. Study coauthor Prof. Matthew Walker, of the UK's University College London, explains: "This discovery will enable us to develop improved formulations that are now likely to significantly improve the treatment of epilepsy. It will offer a whole new approach to the management of epilepsies in children and adults."

What is more, the team says their findings challenge the popular theory that it is the ketones produced by the ketogenic diet that produce anti-seizure effects. "Finding that the therapeutic mechanism of the diet is likely to be through the fat, rather than widely accepted by generation of ketones, may enable us to develop improved diets, and suggests we should rename the diet simply 'the MCT diet,'" says Prof. Williams.

Earlier this year, Medical News Today reported on a study that suggested listening to music may prove an effective treatment strategy for people with epilepsy.

Personalized diets needed to combat obesity and diabetes

Medical News Today 19 November 2015

One man's meat is another man's poison, so the saying goes. A new study published in Cell recommends personalized nutrition plans to help people identify the foods needed to achieve their health goals.

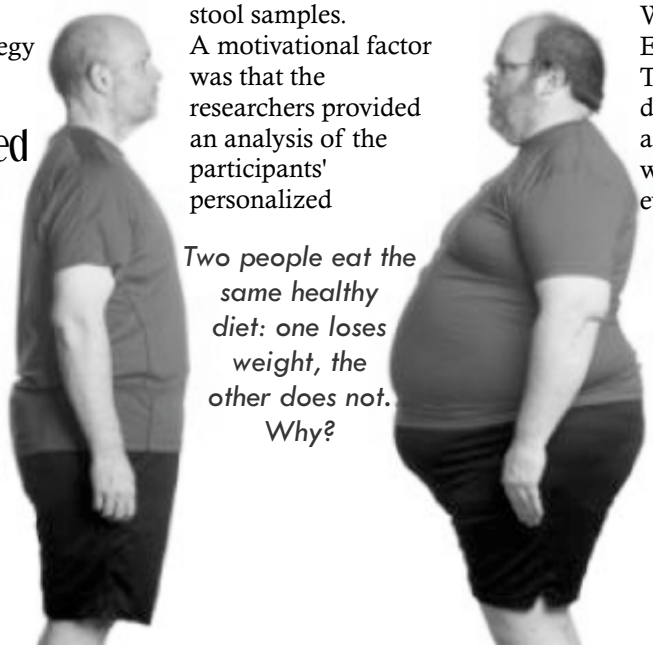
Researchers from the Weizmann Institute of Science in Israel have shown that even if everyone ate the same meals, the effect would differ from one person to another because of metabolism.

Blood sugar is closely related to diabetes and obesity and is measured using a continuous glucose monitor. The standard glycemic index (GI) enables ranking of foods based on how they affect blood sugar level, and it is a factor used to develop healthy diets. However, that system was based on studies averaging how small groups of people respond to various foods.

The new study was led by Eran Segal of Weizmann's Department of Computer Science and Applied Math and Eran Elinav of the Department of Immunology. It tracked the blood sugar levels of 800 people over a week and found that found that the GI of any given food is not a set value, but it depends on the individual.

Participants ate a standardized breakfast such as bread or glucose each morning, items of which were provided; they also recorded all food intake in a mobile app food diary. Additional data were collected through health questionnaires, body measurements, blood tests, glucose monitoring and stool samples.

A motivational factor was that the researchers provided an analysis of the participants' personalized responses to food, which relied on strict adherence to the protocol.



Two people eat the same healthy diet: one loses weight, the other does not. Why?

INDIVIDUAL DIFFERENCES EVIDENT

As expected, age and body mass index (BMI) were found to be associated with blood glucose levels after meals. However, the data also revealed that different people show vastly different responses to the same food, even though their individual responses did not change from one day to another.

One middle-aged woman with obesity and pre-diabetes, who had tried a range of diets unsuccessfully, learned that her "healthy" eating habits may have been contributing to the problem. Her blood sugar levels spiked after eating tomatoes, which she ate multiple times over the course of the week of the study.

For this person, an individualized tailored diet would exclude tomatoes but include other ingredients not generally considered healthy that are in fact healthy for her. Such information could substantially impact the progress of her condition.

Segal points out that most dietary recommendations are based on standardized grading systems, but it is not often appreciated that individuals display profound differences; some people may have the opposite response to others, and this needs addressing.

MICROBIOME STUDIES SHOW WHY DIFFERENCES EXIST

To understand such differences, microbiome analyses on stool samples were carried out. Growing evidence links gut bacteria to obesity, glucose intolerance and diabetes; this study confirms that specific microbes correlate with how much blood sugar rises post-meal.

In personalized dietary interventions among 26 additional study participants, the researchers were able to reduce post-meal blood sugar levels and alter gut microbiota. Interestingly, despite the diets being personalized and thus differing greatly across participants, several of the gut microbiota alterations were consistent across participants.

Elinav says:
"Measuring such a large cohort without any prejudice really enlightened us on how inaccurate we all were about one of the most basic concepts of our existence, which is what we eat and how we integrate nutrition into our daily life, In contrast to our current practices, tailoring diets to the individual may allow us to utilize nutrition as means of controlling elevated blood sugar levels and its associated medical conditions."

There is sometimes a sense that we know what needs to be done in terms of diet, but that people are not listening and are eating out of control. This study suggests that people may be complying, but the advice is not right for them.

Limitations of the study include relying on participants to rigidly following a diet and honestly record their food intake. Nevertheless, the results suggest that we may need a new way of looking at diabetes and obesity.

The researchers would like to simplify the method used so that it could be applied to a wider audience, who could then be provided with personalized nutritional reports.

Last month, Medical News Today reported that differences in gut microbiota may impact people with anorexia.

No more brown apples?

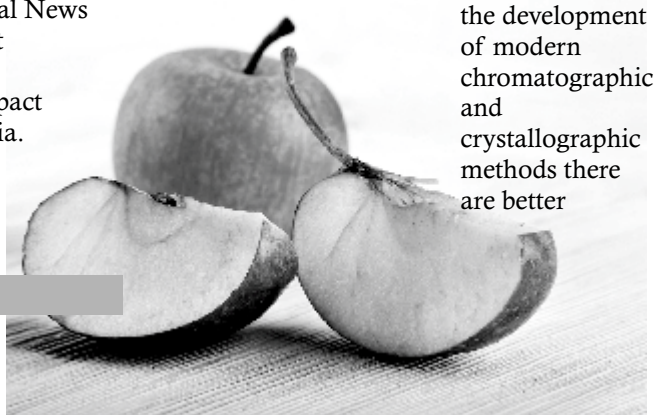
Medical News Today 12 November 2015

Everybody knows this phenomenon: After slicing an apple, it loses its appetising white colour very quickly, which does not only scare off children. Although browned fruit is not harmful, we unwillingly eat "old-looking" fruit and throw away huge quantities of fresh products each year.

The reason for this ugly colouring is a chemical reaction, which is due to the catalysis caused by the enzyme tyrosinase. Actually, this "browning" is a defence mechanism of plants. "There are caterpillars which are starving to death with a full stomach, because they are no longer able to digest the material which is altered by the tyrosinase", explains Matthias Pretzler of the Department of Biophysical Chemistry at the University of Vienna, who was involved in the structure elucidation of the first plant tyrosinase together with his colleagues and team leader Annette Rompel. The research results have now been published in the internationally-renowned journal "Angewandte Chemie" (Applied Chemistry).

FROM MUSHROOM TO THE WALNUT LEAF

The tyrosinase, which is a metal-containing enzyme catalysing the oxidation of phenols, has been explored by Annette Rompel for over 20 years. It is also involved in the synthesis of human melanin and therefore responsible for human "browning" as well. "In the 1990s we were far away from handling the enzyme, but with the development of modern chromatographic and crystallographic methods there are better opportunities available to us today", says Annette Rompel, who already tried to isolate and purify the enzyme from walnut leaves.



After the successful characterisation and crystallisation of mushroom tyrosinase in 2014, the walnut leaf is the centre of her research nowadays. "Walnut leaves make the skin become brown, which proves that they contain a high concentration of the enzyme and represent an attractive source for our research", she explains.

OLD THEORY IS REPLACED BY NEW FINDINGS

On the basis of the crystallisation of tyrosinase from walnut leaves, the researchers disproved a common theory. The tyrosinase belongs to the enzyme class of polyphenol oxidases. It catalyses the first two reactions (hydroxylation and oxidation) of the melanin biosynthesis. "Besides the tyrosinase, the so-called catechol oxidase is found in plants, which, however, is only able to catalyse the second reaction (oxidation)", says Matthias Pretzler.

Both enzymes are very similar as far as the structure is concerned. "This raises the question how the results of the individual reactivities differ from each other", adds Aleksandar Bijelic. It was previously assumed that tyrosinase differs from catechol oxidase by one single amino acid, which is virtually positioned over the active centre like a "plug" and thus responsible for the different reactivities. After the scientists of the University of Vienna have crystallised the first plant tyrosinase, they discovered that both enzyme classes contain this "plug" in plants. "Our conclusion is that we have to change the perspective", says the PhD student.

DEVELOPING NEW PERSPECTIVES

Accordingly, the team shifted its focus from the active site to more

distant structural regions of the enzyme. "Our assumption is that some sort of pre-orientation has to take place in order to allow a substrate to gather the active site despite the presence of the 'plug' so that it can be finally converted by the tyrosinase", says the project leader. Thus, the scientists "zoomed out" a little bit and focused towards the amino acids at the second shell, which is located at the entrance of the active site. "In fact, we learned that these amino acids play a more important role than previously assumed."

UNDERSTANDING THE UNDERLYING PRINCIPLE
"For many years, researchers studying tyrosinases found themselves confronted with the question: Why do you always obtain unexpected reaction products? Even if you feed it with the same substrate, different products can be obtained", says Annette Rompel. Her goal is it to understand the principle behind this, i.e. how the enzyme, namely tyrosinase, actually functions. If this succeeds, it will be possible to block the browning reaction in fruits.

SUPPRESSING THE ACTIVATION OF BROWNING
The research group has already started its next project in order to address exactly this issue and to find a harmless method to control the tyrosinase. For this purpose, they have to find out how the enzyme is actually activated. "We want to find the enzyme that 'switches' the tyrosinase from latent to active", explains the scientist.

"If we are successful in suppressing the first activating step, this will be an enormous success for science", adds Annette Rompel: "It would mean that a banana would not turn brown anymore if you squeezed it in your bag." Still, it would of course rot. "It will most probably rot even faster", concludes Matthias Pretzler.

Chondroitin sulfate may beat anti-inflammatory drugs for knee health support

Nutra Ingredients USA, 10Nov2015

Daily supplements of chondroitin sulfate may be superior to celecoxib, a potent anti-inflammatory drug, for supporting knew joint health and delaying the progression of osteoarthritis, says a new study.

Results presented at the Annual meeting of the American Academy of Rheumatology in San Francisco indicate that supplements of Bioiberica CS bBioactive chondroitin sulfate possess the same level of efficiency as celecoxib for the improvement of pain and mobility in knee osteoarthritis.

"The study confirmed that both products are efficient for the treatment of osteoarthritis symptoms, although only chondroitin sulfate has the additional advantage of exerting a joint protection effect and a better safety profile," said Prof Jean Pierre Pelletier from the Rheumatology Research Institute of Montreal and lead author on the study. "This study shows that chondroitin sulfate complies with the requirements that an osteoarthritis treatment must fulfill: on one hand, it improves pain and functional capacity, and, on the other hand, it delays the disease's progression while having a good safety profile, something essential in a chronic disease such as osteoarthritis," said Dr. Josep Vergés, medical and scientific director at Bioberica.

Prof Pelletier and his coworkers performed a two year, multicenter, randomized, double blind, controlled and comparative study called MOSAIC (24 MOnth study on Structural changes in knee osteoarthritis Assessed by mrI with Chondroitin sulphate). They recruited 194 people with knee osteoarthritis with inflammation (synovitis) and moderate pain and randomly assigned them to receive either 1,200 mg per day of chondroitin sulfate (CS bBioactive) or 200 mg per day of celecoxib (Pfizer).

Results from three Quantitative Magnetic Resonance scans revealed that the progression of knee osteoarthritis was slower in patients receiving the CS bBioactive supplements. "This data proves that chondroitin sulfate may delay the advance of osteoarthritis in the long term, and that it had a diseasemodifying effect," said Prof Pelletier.

Additional data revealed that both interventions were equally efficient across a range of other measures, including pain, function, stiffness, joint efflux and swelling, reaching a clinically relevant symptom improvement of around 50%. "This trial demonstrated, for the first time, the superiority of chondroitin sulfate over celecoxib at reducing the long term progression of knee osteoarthritis structural changes," wrote the researchers. "Moreover, both drugs were found equally effective at reducing the symptoms of osteoarthritis. These findings have important implications regarding the usefulness of chondroitin sulfate for long term management of knee osteoarthritis

and its impact on disease outcome."

Amla, the fruit for cancer prevention

Food News Latam NOVEMBER 10, 2015

A multi-ingredient formula previously studied for cognitive effects has ecent study.

The Amla (Emblica officinalis or Phyllanthus emblica) is commonly called amalaki Indian prickly currant. It is a low calorie fruit. Mainly contains water that constitutes 80% of the fruit is a rich source of carbohydrates and dietary fiber. It is one of the main suppliers of vitamin C and contains minerals like calcium, phosphorus and iron. Amla is also a rich source of antioxidants. One of the most interesting and important research areas of amla is in the field of cancer prevention.

Research by the Faculty of Pharmaceutical Sciences, Nagasaki University (http://www.nagasaki-u.ac.jp/en/) showed that fruit extract had the potential to prevent cancer by helping the body fight the harmful effects of chemicals that are carcinogens and inhibit further growth affected cells. The study showed maximum action on stomach cells, skin and uterus.

Amla, elderberry or fruit of women , it is also natural anti-inflammatory, anti-bacterial, and able to relieve any kind of deep pain, even chronic. Surprisingly it is also the fruit with more antioxidants (mainly responsible for combating free radicals) that exist in the realm of berries.

One of the most amazing health benefits is its ability to decrease the total lipids, cholesterol, triglycerides, LDL and VLDL cholesterol from 34 to 82% in addition to increasing HDL (good cholesterol), all in one perfect balance. The Amla produces a more beneficial to health than the simvastatin drug used to lower blood cholesterol levels effect. Clinical trials in humans report that thins Amla, control hyperglycemia, have health claims on the heart, reduces hypertension, rhinitis, improves skin, is anti-inflammatory, improves the immune system, anti-neoplastic and protects the hepato-pancreas harmful effects of alcohol.

Preclinical animal research report that Amla is antipyretic, analgesic, anti-tussive, anti-atherogenic, adaptogenic, cardioprotective, gastro, anti, anti-hypercholesterolemic, wound healing, anti-diarrhea, anti-atherosclerotic, hepato-protective, nefro-protector, neuro-protective and helps anticancer treatments. Amla contains phenolic compounds, tannins, rutin, curcuminoids, emblicol, gallic acid, ellagic acid, pyrogallol, some sesquiterpenoid, corilagin, geraniin, elaeocarpusin and prodelphinidins B1 and B2. All parts of the plant used for medicinal purposes, especially fruit. It can be used alone or in combination with other plants.

The antioxidant activity of Amla can reside in tannoids (emblicanin A, B emblicanin, punigluconina and pedunculagin) of the fruits of the plant. At concentrations of 5 to 10 mg / kg induce antioxidant cascade of superoxide dismutase (SOD), catalase (CAT) and glutathione peroxidase (GPX) in blood and also decreases lipid peroxidation in brain regions of rats when administered for 7 days. The Amla increases the antioxidant power of plasma and decreases oxidative stress in uremic patients.

The healing effect in the primary stage of cancer can be strengthened by combining plants that meet metabolic deficiencies and simultaneously stimulate immunity of patients. This strategy has cured hundreds of cancer patients over 30 years. The Amla belongs to the group of food plants that have anti-cancer properties against several types of benign such as onions (Allium cepa), garlic (Allium sativum), turnip (Brassica campestris and Brassica rapa) malignant tumors (cancer), cauliflower (Brassica oleracea var. Botrytis), cabbage (Brassica oleracea var. Cupitata), lemon (Citrus limon), turmeric (Curcuma longa), Amla (Emblica officinalis), soybean (Glycine javanica), tomato (Lycopersicon esculentum), bitter melon (Momordica charantia) chiyarita (Swertia chirata), fenugreek (fenugreek), wheat (Triticum aestivum), ginger (Zingiber officinale). Other plants also have this property include (Amorphophallus companulatus), oats (Avena sativa), pigeon pea, barley (Hordeum vulgare), lentil (Lens culinaris), (Mentha arvensis) and corn (Zea mays).

According to US RDA, daily intake of dietary Amla (Vitamin C) it is for babies (under 1 year) between 30-35 mg, children (ages 1 to 14 years) 40-50 mg, preadult (age 15 to 18 years) 65-75 mg, men (older than 18) 90 mg, women (older than 18) 75 mg. There are no real side effects, but always in doubt consult your doctor. It is safe in children, pregnancy and lactation. But as it is a natural coolant, some people with cold, cough can be observed that the symptoms get worse, if they are eating fruit or Amla powder taken alone.

Regulatory & Safety News

Impacts of milk fraud on food safety, nutrition

IFT Weekly November 4, 2015

A study published in Comprehensive Reviews in Food Science and Food Safety investigates the impacts of milk fraud on nutrition and food safety.

In recent decades, there has been an upsurge in milk consumption worldwide, especially in developing countries, and it is now forming a significant part of the diet for a high proportion of the global population. As a result of the increased demand, in addition to the growth in competition in the dairy market and the increasing complexity of the supply chain, some unscrupulous producers are indulging in milk fraud.

According to the authors, this malpractice has become a common problem in the developing countries, which lack strict vigilance by food safety authorities. Milk is often subjected to fraud (by means of adulteration) for financial gain, but it can also be adulterated due to ill-informed attempts to improve hygiene conditions. Water is the most common adulterant used, which decreases the nutritional value of milk. If the water is contaminated, for example, with chemicals or pathogens, this poses a serious health risk for consumers.

To the diluted milk, inferior cheaper materials may be added such as reconstituted milk powder, urea, and cane sugar, even more hazardous chemicals including melamine, formalin, caustic soda, and detergents. These additions have the potential to cause serious health-related problems. The authors concluded that given the potential for public health impacts, "more analysis is essential to generate awareness among the public about malpractices or negligence in milk production."

FDA requests comments on use of 'natural' on food labels

IFT Weekly November 11, 2015

Due to the changing landscape of food ingredients and production, the U.S. Food and Drug Administration (FDA) is asking the public to provide information and comments on the use of the term "natural" in the labelling of human food products.

The FDA is taking this action in part because it received three Citizen Petitions asking that the agency define the term "natural" for use in food labelling and one Citizen Petition asking that the agency prohibit the term "natural" on food labels.

In addition, some Federal courts, as a result of litigation between private parties, have requested administrative determinations from the FDA regarding whether food products containing ingredients produced using genetic engineering or foods containing high fructose corn syrup may be labeled as "natural."

Although the FDA has not engaged in rulemaking to establish a formal definition for the term "natural," it does have a longstanding policy concerning the use of "natural" in human food labeling. The FDA has considered the term "natural" to mean that nothing artificial or synthetic (including all color additives regardless of source) has been included in, or has been added to, a food that would not normally be expected to be in that food.

However, this policy was not intended to address food production methods, such as the use of pesticides, nor did it explicitly address food processing or manufacturing methods, such as thermal technologies, pasteurization, or irradiation. The FDA also did not consider whether the term "natural" should describe any nutritional or other health benefit.

Specifically, the FDA asks for information and public comment on questions such as:

- Whether it is appropriate to define the term "natural"
- If so, how the agency should define "natural"
- How the agency should determine appropriate use of the term on food labels

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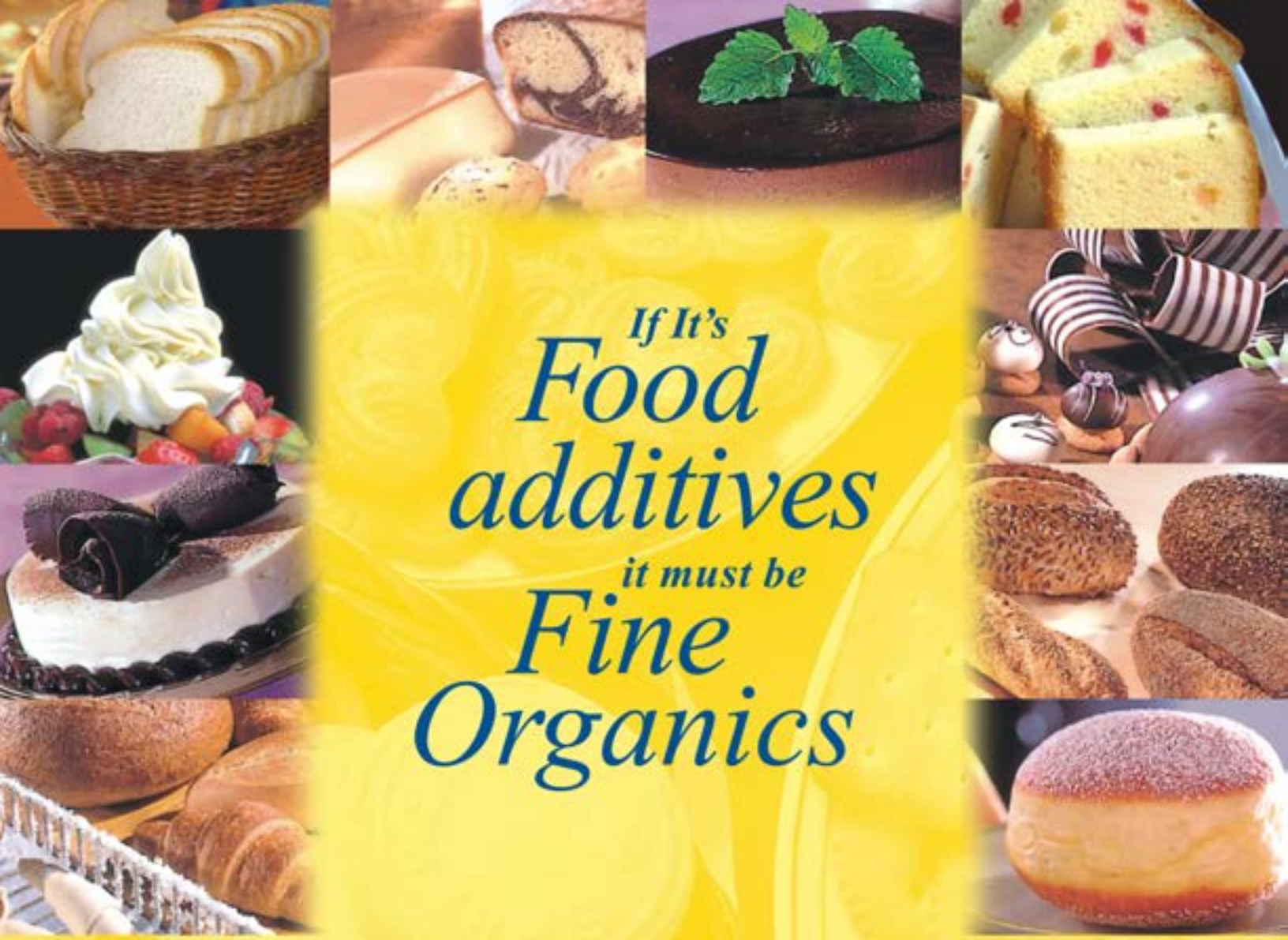

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- Cold water dispersible Emulsifier system

Anti-Fungal / Anti Mold agents

- Calcium Propionate / Sodium Propionate

Beverage Clouding Agent

Speciality Additives

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- Cake Improver
- Biscuit Improver
- Whipped Topping Concentrate for Cakes and Frozen Desserts
- Eggless Cake Concentrate
- Lecithin Replacer (Biscuit)
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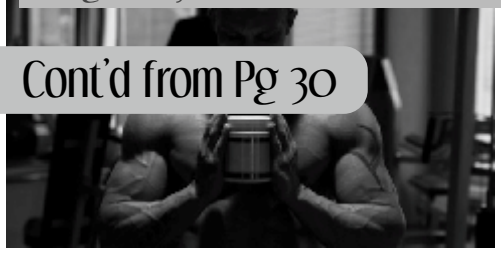

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The new DMAA: DMBA warnings spread to EU

Nutra Ingredients 12Nov2015

The Swedish Food Safety Authority (NFA) has urged consumers not to buy products containing DMBA – a novel substance used to replace the banned stimulant DMAA.

The statement comes eight months after the US Food and Drug Administration (FDA) sent warning letters to 14 companies regarding 17 products which appeared to contain DMBA (1,3Dimethylbutylamine). Sweden said DMBA was being used to replace the banned stimulant DMAA (1,3dimethylamylamine), which is illicitly used in pre-workout sports supplements and as a so-called fat burner. DMAA has been linked to cases of high blood pressure, nausea, cerebral haemorrhage, stroke and death. The NFA said since DMBA was a new substance there was currently no evidence of its effects or safety. However, due to its structural similarity to DMAA, the authority said at doses available, consumption of DMBA was likely to entail severe and possibly fatal risks.

In July the authority published a report in Swedish on DMBA. The report said the substance could be covered by the national Act on the Prohibition of Certain Goods Dangerous to Health in the future. Asked if the substance would be banned like DMAA, a spokesperson for the Swedish Medical Products Agency told us: "It could be that local authorities in Sweden could ban the substance on the basis that this substance is not safe in foods."

Nutra Ingredients understands that the UK's Medicines and Healthcare products Regulatory Agency (MHRA) is also currently considering the status of DMBA.

In April the FDA said there was no evidence of the novel ingredient being safety and lawfully marketed as a dietary ingredient in the US before October 15, 1994. DMBA came into the spotlight at the end of the 2014 when a study from Dr Pieter Cohen – famous in the US for his cutting research on supplement adulteration – found the synthetic stimulant in 12 of 14 supplements tested. Two of the labels implied DMBA was a derivative of tea, which parallels similar marketing of DMAA as a geranium extract.

How to know if a dietary supplement is safe or useful?

FOOD NEWS LATAM
NOVEMBER 18, 2015

Like many, you can take dietary supplements in an effort to stay healthy.

With so many dietary supplements available today and so many claims made about their health benefits is therefore important to know some key points about dietary supplements, they contain a variety of ingredients such as vitamins, minerals, amino acids, herbs and other products botanists. Research has confirmed the health benefits of some dietary supplements but not others.

To use dietary supplements safely, to read the label, if it says "natural" does not always mean "safe". Note that an herbal supplement may contain dozens of compounds and all its ingredients cannot be known. Some dietary supplements may interact with medications or risks if you have health problems. Most dietary supplements have not been tested in pregnant women, nursing mothers or children.

The Food and Drug Administration (FDA) regulates dietary supplements, but regulations for dietary supplements are different and less stringent than those who are on prescription or OTC medications. Dietary supplements were defined in a law passed by Congress in 1994 and the Health and Education Act of Dietary Supplements (DSHEA) was called. Under DSHEA, a dietary supplement is a product that:

• It is intended to supplement the diet
• It contains one or more dietary ingredients (including vitamins, minerals, herbs or other botanicals, amino acids and other substances) or its constituents
• It is intended to be taken orally, in such forms as tablets, capsules, powder, soft capsule, gelcap or liquid
• It is labelled as a dietary supplement.

Herbal supplements are a type of dietary supplement. An herb is a plant or plant part (such as leaves, flowers or seeds) used for its taste, aroma and properties and potential health related.

"Botanical" is often used synonymously with "grass" . An herbal supplement may contain a single herb or herbal mixtures. The law requires that all herbs appear on the product label. Research has shown that some uses of dietary supplements are beneficial to health. For example, scientists have found that folic acid (a vitamin) prevents certain birth defects. Other research on dietary supplements that benefit has not been demonstrated; several important studies of echinacea supplement based on herbs found no evidence of benefit against the common cold.

According to the National Health Survey in 2007, which included questions on the use of natural products in the US (not including vitamins and minerals), the 17.7% of US adults had used these products in the past 12 months . The most popular of these products used by adults in the last 30 days were fish oil / omega 3 / DHA (37.4%), glucosamine (19.9%), echinacea (19.8%), oil linseed or pills (15.9%), and ginseng (14.1%) . National Health and Nutrition Facts (NHANES) collected from 2003 to 2006 covering all types of dietary supplements indicate that 53% of American adults took at least one, more commonly multivitamin / multimineral supplements dietary supplement (adopted by 39% of all adults). Women were more likely than men to take supplements.

The Federal Government regulates dietary supplements through the FDA. The regulations for dietary supplements are not the same as the counter medications. Manufacturers of dietary supplements are responsible for ensuring that their products are safe and that the label information is truthful and not misleading. However, a manufacturer of a dietary supplement does not have to provide the FDA data showing the product's safety before marketing. By contrast, drug manufacturers must provide evidence to the FDA that their products are safe and effective before drugs can be sold.

Manufacturers can make three types of claims for its dietary supplements: health claims, claims you structure / function claims and nutrient content. Some of these statements describe the relationship between a food substance and a disease or health-related condition; the anticipated benefits of using the product; or the amount of a nutrient or dietary substance in a product. Different requirements apply to each type of claim. If a dietary supplement manufacturer makes a statement about the effects of a product, the manufacturer should have data to support the claim. If a supplement affects the structure or function of the body must be followed the words "This statement has not been evaluated by the Food and Drug Administration (FDA). This product is not intended to diagnose, treat, cure or prevent any disease."

Manufacturers should follow the "good manufacturing practices current" for dietary supplements and ensure that these products are processed, labelled and packaged consistently and meet quality standards. Once a dietary supplement is on the market, the FDA evaluates the safety to do the research and monitoring of side effects reported by consumers, health care providers and supplement companies. If the FDA finds a product is not safe, it may take action against the manufacturer and / or dealer, and can issue a warning or require that the product be recalled.

In addition, once a dietary supplement is on the market, the FDA monitors product information, such as claims of labels and leaflets. The Federal Trade Commission (FTC) is responsible for regulating advertising products; which requires that all information be truthful and not misleading. The Federal Government has undertaken legal action against promoters of dietary supplements or Web sites that promote or sell dietary supplements to make false or misleading statements about their products or because marketed products have proven to be unsafe.

Do we need new labelling conventions around fully hydrogenated oils?

Food Navigator 13Nov2015

Fully hydrogenated oils (FHOs) do not create harmful trans fats, and could replace partially hydrogenated oils (PHOs) in many applications.

However, manufacturers are reluctant to use them because the word 'hydrogenated' has become "demonized", argues one expert, who says efforts are underway to find an alternative name for FHOs that will satisfy manufacturers, consumers, and regulators. Richard Galloway, a consultant at Qualisoy (a soybean industry initiative to bring new traits to market), said the United Soybean Board is supporting efforts by the Institute of Shortening and Edible Oils (ISEO) to explore whether new labelling conventions for FHOs could change perceptions. The problem, Galloway told Food Navigator USA, is that consumers don't understand the difference between partially hydrogenated oils (which create trans fats, and are being phased out following an FDA crackdown); and fully hydrogenated oils (which can actually help eliminate trans fats).

Hydrogenation has been totally demonized

Fully hydrogenated soybean oil, for example, can be blended with high oleic soybean oil [high stability, low sat fats] to create products without any palm oil in bakery applications requiring harder fats, he said. Meanwhile, inter-esterified fully hydrogenated oils (where you apply an enzymatic catalyst that causes a chemical change in the oil similar to that achieved via partial hydrogenation but without producing the same kinds of bonds – trans isomers or trans fats) have superb functionality, he explained.

The last thing we want to do is mislead consumers

But many manufacturers won't

use them because they don't want to use the word 'hydrogenated' on their labels, he added.
"Hydrogenation [per se] has been totally demonized, and the consumer thinks full hydrogenation is even worse than partial hydrogenation, so it's created a lot of confusion. The last thing we want to do is mislead consumers, so the FDA needs to be involved in the process from early on, along with consumer organizations. But we need to find a term [to replace 'fully hydrogenated'] that consumers won't misunderstand."

He explained: "If there were a name change, it would make a huge difference as the products are tremendously functional; you can create products without using all the palm oil [a widely used replacement for partially hydrogenated vegetable oils], have less saturated fat and better functionality. Palm oil has a very restrictive melt curve, whereas you can really vary the melt curve when you inter-esterify fully hydrogenated oils. ADM, Bunge and Cargill all have inter-esterification capabilities, but the labelling issue is holding people back."

Good, bad and ugly fats As to whether consumers are as bothered about cutting down on saturated fat as they used to be, it's hard to say, he said. However, recent meta-analyses challenging the link between saturated fats and heart disease garnered a lot of media attention (TIME magazine famously invited us all to EAT BUTTER in summer 2014), while sugar has become public enemy #1 in the nutritional stakes. That said, he doesn't anticipate that current advice to keep saturated fat consumption in check (as per the 2010 Dietary Guidelines) will change in the 2015 guidelines, which are due out shortly.

High oleic soybean oils
As for the next generation of high-oleic soybean oils, which have 2060% less saturated fat than commodity soybean oil and 75% less than palm oil, supplies are still fairly limited, but are growing every year, he said. "Chefs really like the oils as aside from the nutritional profile, they offer extended fry life, less cleanup, and improved quality – so you get a crispier mouthfeel, a nicer colour, and the flavour of food comes out more."

But why not just use high oleic canola? "Because high oleic soy is a better oil, period," claimed Galloway. "It has a longer oxidative life; the food products made with it also have a better flavour, texture and appearance, particularly if they have been left out for a while."

GMOs: If we go the same way as Europe, the consumer will suffer
Asked about how the GMO factor was impacting purchasing decisions in the edible oils market, much will depend on what happens from a labelling perspective, he said. "I think if we go the same way as Europe, the consumer will suffer it's a shame to base policy based on what 2% of people think is reality, especially when they are wrong. But if this is what the consumer wants, the soybean industry does have non-GMO products available, although current supplies are fairly limited, and there is a price premium."

Partially hydrogenated and fully confused: How to protect Europeans from trans fats?

Food Navigator 22Oct2015

Seven European countries are capping industrially produced trans fatty acids in food – but if they are so harmful why not ban them outright?

Earlier this month four major international food companies – Mars, Kellogg's, Mondel z and Nestlé – and several health NGOs including the European Public Health Alliance (EPHA), the European Heart Network (EHN) and the European Consumer Rights Organisation (BEUC) sent an open letter to the European Commission asking it to legislate and limit trans fats originating from partially hydrogenated oils to 2 g per 100 g of fat.

But if artificial trans fats are so bad then why stop at a 2% cap when an outright ban of their main source – partially hydrogenated oils – would protect consumers even more? In Europe, Latvia, Denmark, Austria and Hungary as well as non-EU countries Switzerland, Iceland and Norway have set a 2% limit.

Latvia, the latest European country to legislate, said it decided to cap the permitted amount as this seemed to be standard procedure in Europe – but it says a ban would have been preferable. A spokesperson for the Ministry of Health told Food Navigator: "Considering the health [issues], the Ministry of Health would be interested in not just reducing, but banning industrially produced TFA in food products. However, since currently there are no bans on the TFA in other EU member states and European region countries, Latvia has chosen to set the 2% limit of TFA. "[This limit] does not restrict or discourage manufacturers to produce food products with lower amounts or even without any TFA [and] already now there are Latvian food companies that take great pride in pointing out that their food products are free of TFA."

However, she added that there is no guarantee some companies may not decide to introduce TFA levels up to 2% into their products. But director general of European vegetable oil group FEDIOL, Nathalie Lecocq, said a ban is unnecessary.

Cont'd on Pg 40

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Cont'd from Pg 18

• the volume and number of price promotions in retail and restaurants
• the marketing and advertising of high sugar products to children
• the sugar content in and portion size of everyday food and drink products

The review also suggests consideration of a price increase, through a tax or a levy, as a means of reducing sugar intake, though this is likely to be less effective than the three measures set out above.

Other conclusions from the review include setting a clear definition of high sugar foods; adopting the government buying standards for foods and catering services; delivering accredited training on diet and health to all who work in catering, fitness, and leisure sectors; and continuing to raise awareness of practical steps to reduce sugar consumption.

"PHE's evidence review shows there is no silver bullet solution to the nation's bad sugar habit," said Alison Tedstone, chief nutritionist at PHE. "A broad and balanced approach is our best chance of reducing sugar consumption to healthier levels and to see fewer people suffering the consequences of too much sugar in the diet."

Starches add to bread shelf life

Food Manufacture UK, 03Nov2015

Two starches that are claimed to increase the shelf life of loaves significantly and enhance the height and softness with no detriment to taste or texture, have been launched by clean label ingredient specialist Ulrick & Short.

The company said a 2% inclusion of Synergie Melody and Synergie Superdust in a standard white loaf commercial recipe will provide up to a day's additional shelf life with additional springiness maintained to at least the best before date.

Effective emulsifiers
Even when emulsifiers are reduced the inclusion is still fully effective, giving bread manufacturers the opportunity to improve their product and clean up their labelling as the two new starches are wheat based. Niamh Davern, development technologist at Ulrick & Short, explained: "The Synergie range has already proved itself in many food applications, including for thickening savoury sauces.

"This is a fresh development, which has been undergoing trials for some time with a wellknown bakery customer, and we're completely confident in our claims of increased shelflife and volume, plus enhanced softness and springy texture but with absolutely no adverse effects."

No requirement
Davern said at the moment bakeries may use enzymes to enhance their products artificially, with no requirement to declare these. "According to Campden BRI, this situation could change as the trend for clean and clear labelling gains more momentum, and our new products could provide farsighted bakers with the first step in the race to stay ahead of the trends and their competition."

Create a tomato that can produce the same amount of resveratrol as exists in red wine bottles 50

Food News Latam NOVEMBER 3, 2015

The John Innes Centre scientists have found a way to produce industrial quantities of useful natural compounds efficiently for their crop in tomatoes.

The compounds are phenylpropanoids as resveratrol, the compound found in wine has been reported to extend lifespan in animal studies and genistein, the compound found in soybeans have been suggested to play a role in preventing cancer steroid-related hormone, particularly breast cancer.

As a result of research conducted by Dr. Yang Zhang and Dr. Eugenio Butelli working in the laboratory of Professor Cathie Martin in John Innes Centre, a tomato can produce the same amount of resveratrol as it exists in 50 bottles of red wine. A tomato has also produced the amount of genistein found in 2.5 kg of tofu. Researchers have been studying the effect of a protein called AtMYB12 found in Arabidopsis thaliana, a plant found in most gardens in the UK and was used as a model plant in scientific research.

The AtMYB12 active protein has a broad set of genes involved in metabolic pathways responsible for the production of natural compounds of plant use. The

protein acts as a valve to increase or decrease the production of natural compounds depending on the amount of protein present. Interestingly, the effect of the introduction of this protein was the way in which acted both to increase the capacity of the natural plant to produce compounds (phenylpropanoid activating production) and to influence the amount of energy and carbon plant for the production of these natural compounds.

In response to the influence of AtMYB12 protein, tomato plants began to create more phenylpropanoids and flavonoids devoting more energy to do this in the fruit. Introducing AtMYB12 and plant genes that encode specific enzymes for taking resveratrol in genistein grape and vegetables, tomatoes can produce as much as 80 mg of the new compound per gram of dry weight.

Tomatoes are a culture of high performance and relatively low input. Tomatoes may be harvested and have valuable compounds that can be extracted from the juice. Tomatoes same could potentially become the largest source of nutritional or medicinal benefit. "The high value medicinal plants are often difficult to grow and manage. Our research provides a fantastic platform to quickly produce these valuable medicinal compounds in tomatoes. The compounds may be purified directly from tomato juice. We believe our design idea It could also be applied to other compounds such as alkaloids and terpenoids, which are the main groups medicinal plant compounds ". Dr. Yang said Zhang.

Food industry needs to help people age healthily

Food Manufacture UK 21Oct2015

There are more people in the world aged over 60 than ever before. Michelle Perrett discovers what the industry needs to do to help them age healthily.

As more of the global population fights the onslaught of wrinkles they will also be dealing with a range of potential health problems. It's not a nice list – coronary heart disease, diabetes, stroke, declining muscle mass, cognitive and digestive health – to name a few.

Add to this the increase in dementia and osteoarthritis and getting old is looking like a depressing prospect. Yet, older people still want to be active, which is why bone and joint health is an increasingly important area for the sector to tackle. The latest statistics from the UK Office of National Statistics reveal that since the 1970s the population of over65s has grown by 47%, while the number aged over 75 has grown by 89%. These two groups now make up 26% of the UK population. And this is not just a UK trend.

'Population ageing'

According to the latest figures from the United Nations Department of Economic and Social Affairs, the phenomenon of 'population ageing' means that by 2050 all major areas of the world, except for Africa, will have nearly a quarter or more of their population aged 60 or over. That means, there will be an increasing number of people fighting the onslaught of bone and joint deterioration and, in the worst-case scenario, osteoporosis.

The National Osteoporosis Society estimates there are currently close to 3M people in the UK who have the condition, while one in two women and one in five men over the age of 50 will break a bone, mainly because of poor bone health. The combined cost of hospital and social care for patients with hip fractures alone amounts to more than £2.3bn a year. Diet is important, along with exercise.

According to the British Nutrition Foundation , a balanced diet and nutrients are essential.

Mintel reports there is a lack of product launches in the sector specifically targeting the older age group. But demand will grow as the population ages, it predicts. Mintel looked at global food and drink products launched between 2010 and October 2014. Dairy, baby food and breakfast cereals were the most common categories featuring a calcium claim, accounting for 37%, 14%, and 11% of launches, respectively. Products with added vitamin D were found in similar categories.

During the same period, 40% of food and drink products launched with vitamin D were in the dairy category, 21% in the baby food category, and 12% in the breakfast cereal category.

Focused on babies "The majority of bone health products are focused on babies, toddlers and children. Only 1% of food and drink products launched between 2010 and October 2014 with a bone health claim also had a demographic claim for seniors," says Stephanie Mattucci, global food science analyst, in a Mintel report titled Nutrition, Health & Wellness. "Very few products only 1% have also featured a demographic claim for seniors aged 55+ and less than 1% have had a claim for men."

Calcium-fortified foods are especially important in the Asian market, where the median calcium intake is low across the region. The result has been that the majority (47%) of food and drink launches

with added calcium claims have occurred in the Asia Pacific region, Mintel reveals.
Innova Market Insights' own research reveals a similar trend.

Between the years 2011 and 2014 the number of global product launches tracked with bone health claims tripled, with even higher growth seen in Asian markets.
Özden Kilic, manager of market analysis at Innova Market Insights, told Food Ingredients, Health & Nutrition: "New product development is increasing.
"We see more and more products being launched with health claims that are relevant to this group. And delivering the right benefits is very important for this target market."

However, Kilic says a major issue is that these products are not being targeted at the senior market specifically. "Bone health is challenging because it is easy to replicate from a research and development point of view but difficult to market," he adds.
He highlights the Anlene milk product in Asia that has managed to effectively target this market by offering free bone scans supported by nutritional advice. This consumer engagement allows people to understand the product better than traditional advertising.

Senior market
While many markets are behind in this type of innovation, there is a small move in the UK towards more products targeting this senior market. The National Osteoporosis Society operates a number of partnerships promoting bone health and products.

Calin+
Yogurt, produced by Yoplait UK, which contains high levels of calcium and vitamin D, has been a supporter and partner of the charity since 2012. The society is also working in partnership with retailer Marks & Spencer, which recently announced that it would enrich its bread with vitamin D.

Rousselot, the collagen and gelatine manufacturer is at the forefront of developing ingredients that could help 'seniors' with bone and joint health issues. The company is working to increase awareness of the role of nutrition in the prevention of musculoskeletal conditions and has become the nutrition supporter of World Osteoporosis Day in 2015.

In November, at Food Matters Live in London, Rousselot along with Fortified Food Coatings, will present a new concept in ready meals for the ageing population. It will unveil the details of a new technology that uses a food printer to spray a thin layer of gelatine enriched with Peptan collagen peptides, calcium and vitamin D over restaurantquality ready meals.
Rousselot says the protein Peptan collagen peptides works alongside calcium and vitamin D to promote the healthy functioning of bones, supporting the whole musculoskeletal body and improving joint flexibility.

Unawareness
"Most consumers are aware of the importance of calcium and vitamin D supplementation for stronger bones while the role of proteins is not so well known. Proteins such as collagen peptides are essential for healthy bones as they promote intestinal calcium absorption and stimulate bone formation," says Dr Elke De Clerck, technical support and development manager Europe, Rousselot.

"As the most abundant protein in the body, collagen makes up 90% of bones' organic scaffold, provides the structural framework for calcium and other minerals and is responsible for flexibility."
While Rousselot is working to introduce ingredients that help with bone and joint health, supplements are also an untapped market. There is a range of vitamin brands on the market, but start-up business Prime Fifty, specifically targets the over50s on musculoskeletal health.

Dr Max Gowland, previously chief innovation officer at Jeyes, says bone and joint health is just one part of the issue as older people need to focus on muscle, bone, joints and energy. "We did market research of over 1,000 50+ people and I sat through six focus groups where 12 people were present at a time," he says. "We were trying to get what they were most terrified of losing and without a doubt they wanted to hold onto mobility."

'Holistic' approach
While products fortified with vitamin D and calcium are important, it is a more "holistic" approach that is needed, he argues. "Bone is a living tissue that contains not only bones but nerves, cartilage and connective tissue. "If you look at bone only about 65% is hard mineral, the rest is soft and a very strong protein called collagen, which holds everything together. You can't talk about bones without talking about collagen."

This is why Prime Fifty products not only target the issues of bone loss but related issues such as ligaments and tendons. As well as calcium and vitamin D it includes vitamin K, magnesium and zinc for general bone health as well as vitamin C, manganese and copper to help maintain tendons, ligaments and collagen formation. So as we are fighting the wrinkles of old age, food firms need to help us stay mobile and fight the onslaught of declining bone and joint health. There is no option, as more of us are getting older. It's a fact.

Nanoparticles improve nutrient content and growth of tomato plants

FOOD NEWS LATAM NOVEMBER 10, 2015

With the global population expected to reach 9 billion by 2050, engineers and scientists are looking for ways to meet the growing demand for food without increasing pressure on natural resources such as water and energy.

Ramesh Raliya, a postdoctoral researcher, Pratim Biswas, Lucy, Stanley Lopata Professor and Chairman, Department of Energy, Environmental and Chemical Engineering, School of Engineering and Applied Washington University in St. Louis Science, are addressing this problem by using nanoparticles to increase the content of nutrients and growth of tomato plants.

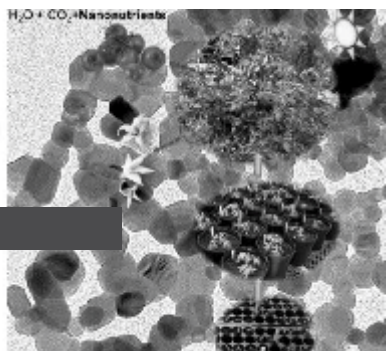
The team found that by using zinc oxide nanoparticles and titanium dioxide, tomato plants better absorb light and minerals, and the fruit had higher antioxidant content. "When a plant grows, it says it needs nutrients to the soil," says Biswas. "The nutrient you need is not in a form that the plant can take immediately, so that secretes enzymes that react with the soil and triggers bacterial microbes to convert nutrients into a form the plant can use. We are trying to help this pathway by adding nanoparticles".

Zinc is an essential nutrient for plants; it helps correct the function of other enzymes and is an ingredient in fertilizers. Titanium is not an essential nutrient for plants, said Raliya but increases light absorption increases the content of chlorophyll in the leaves and promotes photosynthesis, Biswas discovered that during creation of the solar cells.

The team used a fine spray using spray forming techniques to deposit nanoparticles directly on the leaves of plants for maximum absorption. "We found that our technique of aerosol in the platan obtained a greater absorption of nutrients compared to the application of nanoparticles to the ground," says Raliya. "A plant can capture only about 20 percent of the nutrients applied through the floor".

In general, nanoparticles treated aerosol through the plant has produced almost 82 percent (by weight) more fruit than the untreated plants. In addition, tomatoes treated plants showed an increase in lycopene, an antioxidant related to a lower risk of cancer, heart disease and eye disorders related to age, between 80 percent and 113 percent. Previous studies by other researchers have shown that increasing the use of nanotechnology in agriculture in densely populated countries like India and China has made an impact in reducing malnutrition and infant mortality. These tomatoes help malnutrition says Raliya, allowing people to get more nutrients than conventionally grown tomatoes.

In the study, published online last month in the journal Metallomics, the team found that the nanoparticles in plants and tomatoes were well below the limit of USDA and considerably lower than that used in conventional fertilizers. However still have to be cautious and select the best concentration of nanoparticles used for maximum benefit, says Biswas.



Raliya and the rest of the team are working to develop a new formulation of nanonutrients which includes 17 elements required by plants.

"In 100 years, there will be more cities and less farmland, but we will need more food," says Raliya. "At the same time, water is limited because of climate change. We need an efficient methodology and controlled environment in which plants can grow."

Oatmeal Coconut Water in support of probiotics

FOOD NEWS LATAM NOVEMBER 12, 2015

Probiotics have been used since prehistoric times as fermented milk products like cheese, yogurt and butter milk. According to the World Health Organization and the Organization for Food and Agriculture of the United Nations (FAO / WHO) definition of probiotics is "live microorganisms which when administered in adequate amounts confer a health benefit on the host ".

To get the health benefits that are

expected, the "living probiotic bacteria" are to be consumed. Some other documented benefits of consumption of probiotics include: prevention and reduction of diarrhea, reducing the symptoms of lactose intolerance, providing anti mutagenic, anti-carcinogenic, protection against non-alcoholic fatty liver disease (NASH) and obesity. Many authors believe that the number of viable cells required to affect the average human gastrointestinal environment is 6-8 log CFU / mL or CFU / g of food. This accepted dose is recognized as

"the therapeutic minimum." Generally, a probiotic product is considered as functional if it contains only 7 log cfu / mL at the time of consumption. The daily dose of probiotics is considered as log CFU 9-11. Therefore, the consumption of 100 ml or g of a product containing a therapeutic minimum (6-8 log CFU / ml or g of the product) would meet the daily needs, but is still considering the required dose for health benefits.

Although dairy products is the most popular matrix for delivering probiotics to the gastrointestinal tract, a trend are non-dairy probiotic due to several problems with dairy probiotics. Dairy substrates can contain high cholesterol and potential allergens as casein. An alternative to consumers are not dairy products containing probiotics desired. This new demand could lead to the manufacture of non-dairy probiotic foods such as coconut milk, fruit juices, nutrition bars, soy products and cereal products. Cereal is a choice of meal fit for fermentation. Previous studies have shown that grain, oats, wheat, malt, barley and probiotic products are acceptable counts of living cells.

Oatmeal is a well known breakfast cereal, which is made from oats. Oat fiber is considered a food source for the lactic acid bacteria; oat fibers serve as colonic consumed for intestinal micro biota. In addition, oats contains soluble fibers, which are known to decrease heart disease by lowering LDL and total cholesterol in humans (for 5% -8%). The health benefits in addition to the food matrix can lead to the production of functional products more consumer acceptable.

Instead of oats as a regular food breakfast it can be consumed as a fermented product with a probiotic commercially available and proven. The Department of Food, Nutrition and Sciences in the United States studied packaging a product based probiotic not Lactos, coconut water, oats, for regular consumption, with a reasonable shelf life under refrigeration storage. Although few studies have been devoted to the survival of probiotics in dairy matrices not, to our knowledge, this is the first study that oatmeal and coconut water were tested as support of probiotics.

The study showed that a non-dairy refrigerated food matrix can support and maintain acceptable levels of viable colony forming L. plantarum for about seven weeks without significant changes in the acidity and the apparent viscosity. Although pH change was significant, it was enough determining the useful life in terms of acidification of a probiotic product.

Addition of the inulin matrix nondairy food did not improve probiotic counts in the study. However the presence of inulin in the product would be beneficial as a microbial modifier in the intestinal tract. There was conducted a sensory evaluation. Further studies to optimize the concentration and the use of certain prebiotics and sensory evaluation for consumer acceptance of probiotic products are recommended. Counts the study suggests that coconut water with oatmeal is a promising matrix for carrying L. plantarum in sufficient quantities without changing the organoleptic properties of the matrix.

Regulatory News

Cont'd from Pg 34

"The fact that EFSA acknowledged in 2004 that TFA levels 'are close to 1 to 2%' should prove that our industry addressed the problem effectively. The trend in the decrease of TFA levels in Europe has been rather constant and substantial over the past 20 years and there is no reason to believe that the trend would be inverted," she said.

Ban the label fully/partially?

Meanwhile, IMACE, the European margarine association, is campaigning for a different kind of legislation from the European Commission – it wants the requirement that hydrogenated oils are labelled as either partially or fully hydrogenated to be removed on the grounds that the distinction does not bring any added value to consumers.

A spokesperson for IMACE told Food Navigator: "Indeed, it is shown that it misleads consumers as they do not understand and confuse both terms, making them think that a product labelled as 'fully hydrogenated' contains substantially more TFA as compared to 'partially hydrogenated' products, while it actually does not contain any TFA at all." But if this is the case then surely more education in informing the public on the difference on fully and partially hydrogenated fats would be preferable – would removing requirement to specify whether an oil is partially or fully hydrogenated merely reduce consumers' ability to monitor what they are eating? Since trans fats can naturally occur in oils, checking whether a product contains partially hydrogenated oils is the only way consumers can keep track of trans fat levels. In the US, this is the FDA advice given to consumers – read the label. The European Commission is due to produce a much awaited and already overdue report on artificial trans fats.

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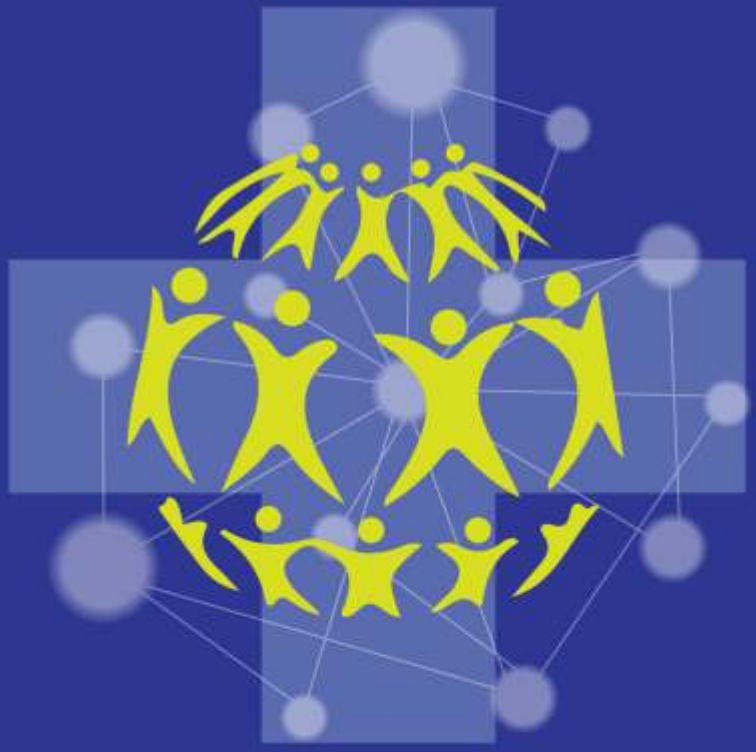

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