JULY 2019

PFNDAI Bulletin

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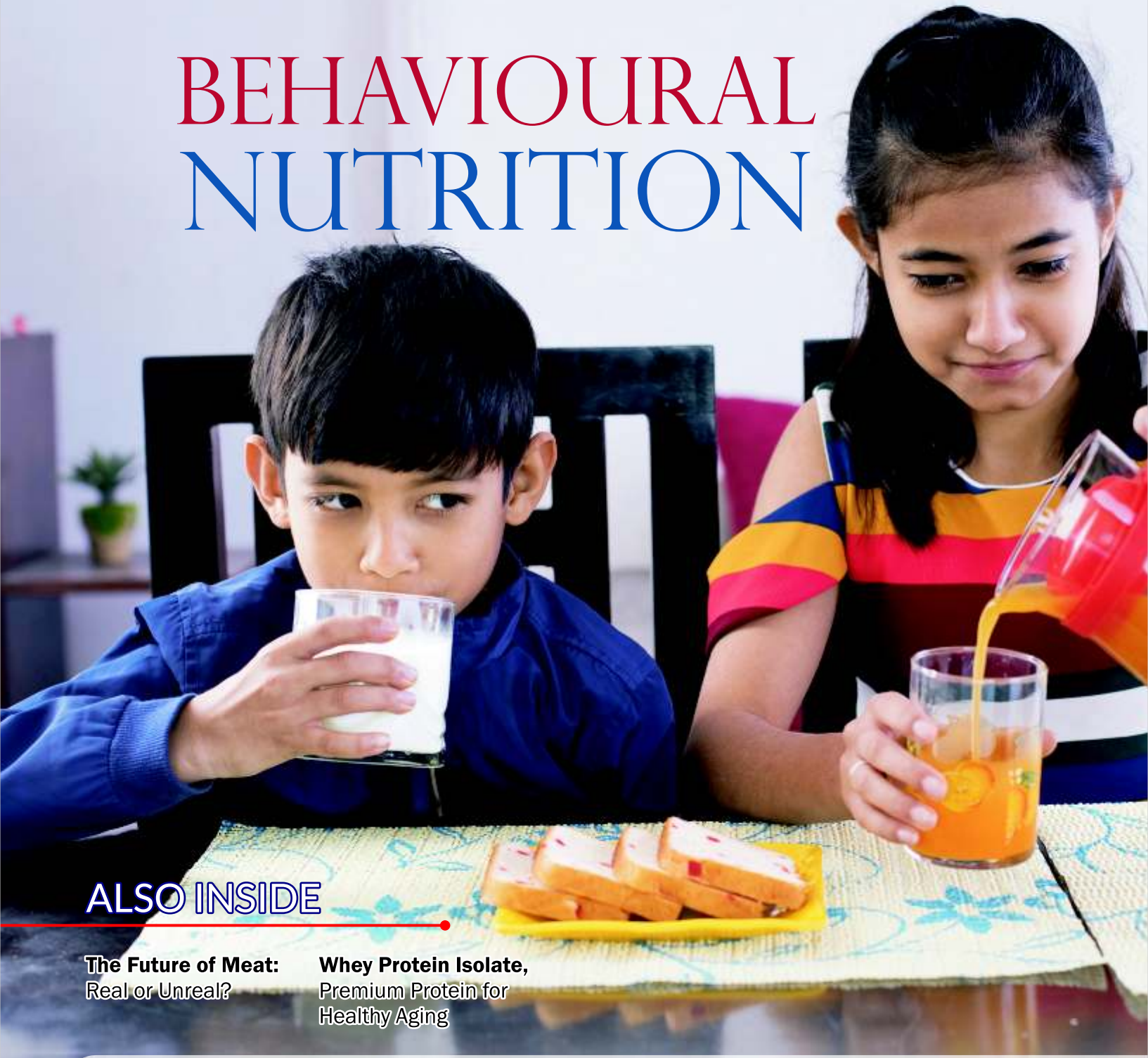
FOOD, NUTRITION & SAFETY MAGAZINE

BEHAVIOURAL NUTRITION



ALSO INSIDE

The Future of Meat:
Real or Unreal?

Whey Protein Isolate,
Premium Protein for
Healthy Aging

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ASSOCIATION OF INDIA

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EDITORIAL

There have been news items in media that expensive oils are being adulterated with cheaper oils which are then sold at cheaper rate. Recently it was reported that mustard and coconut oils are adulterated with palm oil which is much cheaper. There have been instances in the past too. Olive oil was reported to be adulterated with canola oil. Even such oils like sunflower and groundnut oils were adulterated with cottonseed oil.

The incidents of adulteration keeps being reported but very little action seems to have been taken. Although bigger manufacturers are not involved and smaller FBOs cheat the consumers at regional level action taken is apparently ineffective.

The regulators keep saying that they do not have the more sophisticated equipment to detect the adulteration of this kind. They need gas chromatographs which are expensive and only a couple of authorised food labs have them. This they say makes it very difficult to analyse such a large number to be analysed to keep such adulteration under check.

This excuse has been given for last several decades and there has been no improvement. Regulators keep talking of capacity building but unfortunately they keep missing this capacity building which is really necessary. This is the excuse given every time industry talks about allowing blended oils. They keep saying that there are no gas chromatographs.

Actually, the mindset of regulator has not changed over years of changeover to Food Safety and Standards Act which moves from just adulteration to safety of foods. Even in other products the analysis is being carried out is just as before i.e. several decades earlier when only the purity or quality standards was checked.

Recently, it was pointed out that milk analysis is just simple chemical tests and microbial tests are hardly ever done. Microbial analysis do not need sophisticated equipment. Yet, this is not done. They try to find out fat content, solids non-fat, total solids etc. So many cases of milk admixed with water have been reported. Poor quality water may cause all kinds of diseases but that is never the emphasis. They only try to find out if it is adulterated. Safety has still not entered their priority.
Many cases of food poisoning are reported but in several cases no cause is reported. Unless we emphasise safety aspects in our surveillance we will not be able to fully enjoy the benefits of the promise under the new act which emphasises safety and not just adulteration.

We must equip our food labs properly with all kinds of analytical instruments. We must also start analysing safety parameters also. We may have to induct trained food chemists and microbiologists for such analysis. We may still have to rely on private labs but unless we adequately improve the infrastructure and the kind of analysis we do in these labs, we will not be able to ensure safety adequately.

Prof Jagadish Pai,
Executive Director,
PFNDAI

BEHAVIOURAL NUTRITION

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By
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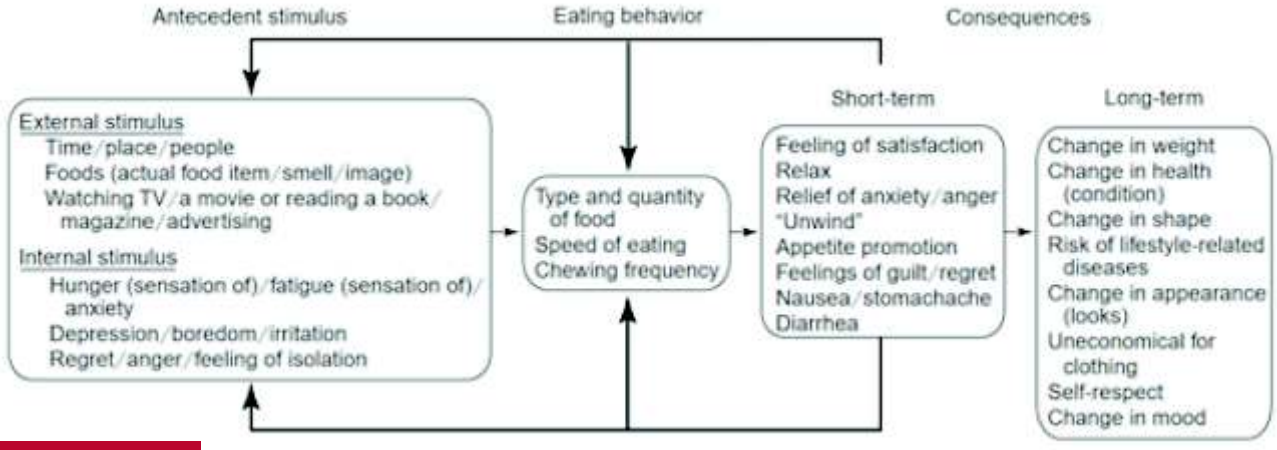
Food exerts a major influence on behaviour. It has been estimated that we make nearly 200 eating decisions a day which may be initiated by internal cues such as hunger and external cues like mealtimes. The relationship between food, nutrition and health is also affected by biological, socio-economic, cultural and behavioural factors.

From the primeval times, the food behaviours have oscillated in different directions such as the preference for "sweet and high-fat foods" or "conserving energy when unable to eat" based on the in response to an environment of scarcity. These food behaviours represent basic human adaptive characteristics that were valuable in long human history but have become negative factors in our modern society because of unhealthy foods and sedentary lifestyles. One of the major stimulus for unhealthy eating behaviour involves conditioning in which sensations of hunger and satisfaction become particularly intense (Fig. 1). Here, resisting hunger pangs leads to pain, people eat their favourite snacks even on a full stomach, and snacking while watching TV gradually becomes a habit. Eating is directly connected with feelings as some people eat when bored, or use food as a way of coping with feelings of anxiety, anger or nervousness.



In this manner, the feelings that come before eating, and the sense of reward feeling immediately after, exert a powerful stimulus on behaviour. In addition, the event (incident) generated by a behaviour will again become an antecedent stimulus leading to the formation of a behaviour chain.

This eating behaviour many a times takes an individual on a guilt trip, which again may enter into the cyclic unhealthy eating response. This Food – Mood cycle is a viscous cycle that needs to be studied in depth before designing and implementing an intervention. Eventually, this has led to an emerging field of Behavioural Nutrition.

Behavioural Nutrition is dedicated to understanding the interaction between the food , biology and individual behaviours in their environments which collectively contributes to the health and disease. The success of any dietary intervention is dependent on the positive behaviour change of an individual. One of the famous quotes by Margaret Mead "It is easier to change a man's religion than to change his diet" holds so true when it comes to a nutrition intervention plan. Only a nutrition behaviour approach helps the individual achieve the desired goals.

Mindless Eating:

The behaviour of mindless eating is a major area of concern that needs attention. Individuals engaged in mindless eating, eat while distracted and not focussing on the food they are consuming. This impairs the ability to accurately estimate the amount of food consumed leading to surplus amounts. Watching television, playing a mobile game, listening to the radio and dining with others are factors that typically lead to mindlessly eating larger amounts than intended. This behaviour might also reduce individuals' sensory-specific with a decline in the perceived pleasantness from the food and therefore postpones meal termination. When eating mindlessly, people have difficulty remembering the food consumed recently and also increase in the amount of food consumed later that day.

Purchase Behaviour:

Several environmental cues (i.e. music, food-commercials and advertisements) influence eating and food purchasing behaviours in ways that people cannot even recognize or resist. Another reason of the surplus consumption is the availability of high caloric tempting foods.

Price does matter!! The price marketing strategies may persuade a consumer to buy larger amount of food for the same price. Large packages are made attractive. In bundling promotions, customers get a discount and offers on large packs (e.g. buy two, get 50 % off). These promotions stimulate the customers to buy foods, even if they did not intend on buying. The free samples further persuade customers to taste and buy the sampled food. Surprisingly, it is demonstrated that when offered,70% of the shoppers consumed a free sample, of which 40% bought the sampled food and especially the obese consumers were found to be more vulnerable.

Size does matter!! People generally perceive larger serving sizes to be appropriate for the price paid. Larger meals promote passive overconsumption, and there is a positive association between the portion size served and the amount consumed .Pre-packaged high-convenience foods (eg ready to eat chips), low-convenience food (eg- instant poha or noodles that needs requires preparation before consumption) in large pack is preferred over small pack sizes independent of the perceived taste or food quality. Even the container size independently of the portion size influences the amount consumed. Another misleading perception is consuming "one pack" which may be more than optimum and the package actually contains more servings than appropriate for one-time. Hence, people are unaware of consuming more than appropriate.

Dining out, Buffets and Takeaway food: Over the years, the portion sizes of food served in restaurants, takeaway and fast-food outlets have increased significantly and exceed standards for dietary guidance. Most restaurant chefs are not aware that the portions they serve exceed recommended amounts. Consumers tend to order large portions from the menu. Often, in a buffet-style restaurants the visitors serve themselves. Because of the large variety of food, people might experience the hedonic properties of the foods offered and be prompted to serve themselves with surplus amounts. Since most buffet-style restaurants have fixed-price offers, most visitors are motivated by the desire to get their money's worth and consume as much as possible.

52% DHAAKAD PROTEIN

GOOD BUY!
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INDIA'S PROTEIN-DEFICIENCY.

A recent survey suggests that 73% of Indian diets are protein-deficient*. Part of the reason lies in the insufficiency of protein content in conventional protein sources such as eggs, lentils, milk etc. Moreover, the steep cost (per 100 gms of protein) of these sources makes it even difficult for families to fulfil their daily protein need. We at Ruchi Soya, the makers of Nutrela Soya Chunks, Mini Chunks and Soya Granules, help consumers bridge this gap by providing the richest source of protein at the most affordable price, which we call '52% Dhaakad Protein'. 200 grams of soya contains 52% protein which is equivalent to 15 bowls of cooked daal or 16 boiled eggs or 17 glasses of cow's milk. We urge you to make soya an integral part of your diet recommendations. Let us join hands to help India say a GOODBYE to protein-deficiency!

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*Source: The Times of India, July 2017

Loggerheads_2018


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Approach to Behaviour Change

Such eating behaviours form the basis of increasing number of obese people affected with metabolic related diseases. Effective behaviour-based nutrition interventions offers a key strategy to combat these lifestyle diseases. The interventions are based on the evaluation and assessment of the individual behaviour. The Social Ecological Model of Health Behaviour (Fig 2) can be used as a framework to categorize different approaches to evaluating behavioural nutrition interventions.

Factors that influence behaviour are:

- Personal or individual: beliefs, knowledge, attitudes, skills, genetics
- Social: Friends, family, community
- Environmental: places like school, work place, shops, restaurants and external factors including the economy and technology.

Nutrition Behavioural Interventions often use several different behaviour change techniques like stress management, motivational interviewing and time management. Self-monitoring and other self-regulatory techniques (goal-setting, prompting, self-monitoring, providing feedback on performance, goal review) are effective behaviour change tools. Dietary change is best supported by instruction provision (teaching the behaviour), self-monitoring (e.g. writing a food diary) and problem solving by implementing coping strategies. These strategies to control the amount of food consumed can be reflected as small nutrition behaviour changes which may be more easily maintained and may gradually lead to healthier lifestyles at the individual level and eventually to reductions in obesity rates at the population-based level.

Designing a Behaviour Change Intervention

The process of designing a behaviour change intervention involves 3 steps : 1.understanding the target behaviour, 2.selecting a broad approach, and 3. designing the specific behaviour change techniques to be used. The 'behaviour change wheel' (Fig.3) has been developed as a guide for selecting appropriate interventions .

Fig 2 - The Social Ecological Model

The changes may be for individual's attitudes, behaviour and choices or for a large social practice like eating while watching TV or cinema halls.

Behaviour change takes time, and evaluation needs to be sufficiently long-term to demonstrate that an intervention has resulted in and maintained behaviour change.

Nutrition Education:

Behaviour change is a goal, whereas nutrition education is a key means to achieve this goal. One of the main channels for the nutrition education, particularly to reach children is schools thereby improving nutritional status and learning ability. A similar approach can be applied through communities, to educate vulnerable target population like elderly, women, especially pregnant and lactating women, patients with diabetes etc

Nutrition labelling:

Nutrition labelling policy has the potential to improve the dietary behaviour. The information provided on the label can help a customer do an appropriate selection in terms of nutritional content and the amount.

To seek attention, the labels must be a good location (front-of- package) , with simple design without surrounding clutter, readable font size. Similarly, "traffic light" labels that using red, amber, and green colour receive more attention.

Behavioural Nutritional Techniques

The principle objectives of behaviour therapy can be summarized as 'preparing a healthy environment and promoting self-control techniques. Reducing psychological resistance to healthy new behaviour and encouraging patients to actually begin this is also important.

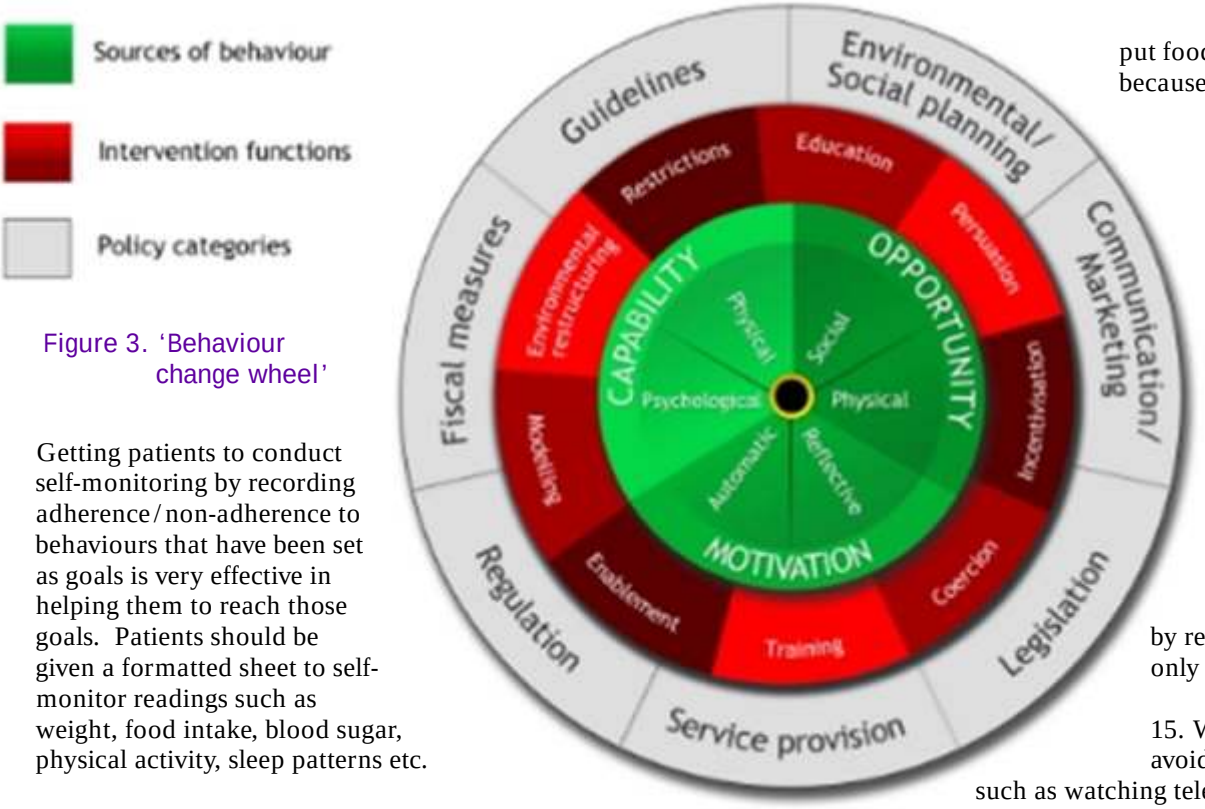

Figure 3. 'Behaviour change wheel'

Getting patients to conduct self-monitoring by recording adherence/non-adherence to behaviours that have been set as goals is very effective in helping them to reach those goals. Patients should be given a formatted sheet to self-monitor readings such as weight, food intake, blood sugar, physical activity, sleep patterns etc.

Rewarding good behaviour patterns with praise and encouragement is as important as changes in laboratory values. Acknowledging the behaviour change helps in good compliance, adherence and staying motivated.

Techniques like "nudging', aims to 'nudge' people's choices, not by removing the less healthy ones, but by making the healthier option easier. For example, making salad the default side dish, or making the stairs a more attractive choice than taking the lift. Modifying recipes to improve their nutritional content is another useful technique.

Various evidence-based behavioural strategies may be helpful to control the amount of food consumed

1. When grocery shopping, make a list in advance and do not deviate

2. Do not be tempted by special deals and offers (buy-two-get 50 % off or buy-one-get-one-free)

3. Don't buy jumbo-sized packages

4. Don't taste free samples at shops

5. Don't consume the total amount of a package or container of food but determine the amount of a 'normal' serving size to eat

6. Serve only once with pre-decided amount of food

7. Reduce the frequency of purchasing tempting foods (sweets and/or snacks)

8. Don't buy tempting foods (sweets and/or snacks) for events in the future like unexpected visitors

9. Store tempting foods (such as sweets) well packaged, out of sight and out of reach

10. Don't store (tempting) foods near you or car or the office desk. Keep these places snack-free!

11. Don't eat or put food in your mouth because it is 'just there' or because you passed by

12. When preparing a meal, don't snack on the ingredients

13. Drink in a glass , not from bottle directly

14. Control your food consumption by restricting eating only 3 -4 times a day

15. While eating, avoid other activities such as watching television, reading or driving a car when eating or doing work-related activities such as meetings, working at your desk or making telephone calls

16. Take your time when eating your meal. Chew properly

17. Notice when you are satisfied and if so, stop eating even if you have not cleared your plate

18. When eating out or ordering takeaway food, decide in advance the serving size to eat and order smallest portion size

19. When eating out, only order a maximum of two dishes or share one or more dishes with someone else

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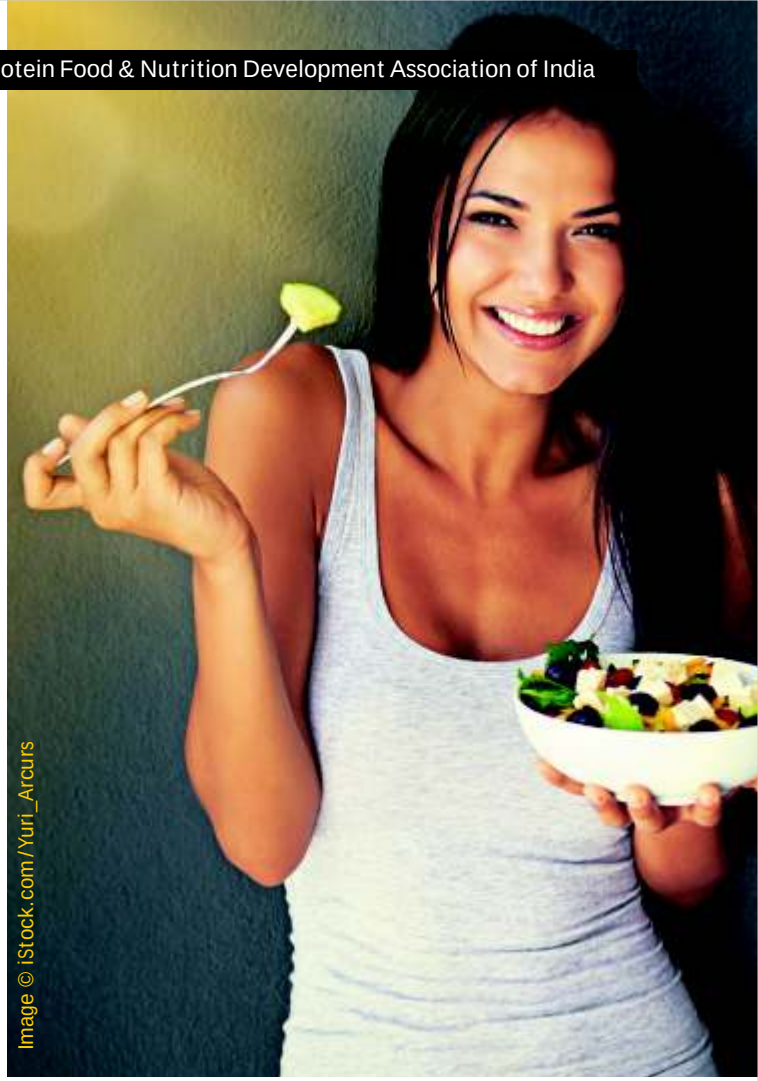
Use of Fork Vs Spoon for Eating:

There is increasing evidence that faster eating rate promotes energy intake and weight gain. Research has shown that obese individuals consume with larger bites (or spoonful), consume at a higher eating rate, and this has been associated with greater food intake. In general, more food fits on a spoon than on a fork, it is therefore expected that a spoon increase the bite sizes and therefore the eating rate. A study done in a lab setting compared the eating rate and food intake in spoon versus fork users and found that participants who chose to consume with forks ate slower compared to spoon users.

Use of Technology

E-health interventions are nowadays used as a tool for changing behaviour including eating , shopping etc. Smart phones providing online interventions are the latest advancements include internal sensors of user location, movement, emotion, and social engagement that raises the prospect of continuous and automated tracking of health-related behaviours. This also supports self monitoring and tracking. Also, connectivity allows the sharing of behavioural and health data among health professionals or peers, which may facilitate behaviour change.

Finally self – regulation is the ultimate strategy for controlled food consumption. Self-regulation refers to all efforts to steer attention, emotions and behaviours to reach beneficial long-term goals, even when there are short-term temptation.



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THE FUTURE OF MEAT: REAL OR UNREAL?

By

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Head- Technical Regulatory, Marico Ltd.
Immediate Past President- AFST Mumbai Chapter

&

Ms. Diana Dsouza,
Technical Regulatory Affairs Executive, Marico Ltd

Meat has a special place in the human diets. Modern human beings have an innate preference for meat as it is both energy dense and protein rich. In some low income countries, the consumption of meat is important in providing a full and nutritious diet.

Meat provides protein and a variety of micronutrients such as iron and B complex vitamins. In 1960, about 45 million tonnes of meat (beef, pork and chicken) was produced globally. Within a generation, human economic activity has urbanized, the journey out of poverty has materialized for many and the middle classes have mushroomed at an unprecedented rate. In the process, and in line with rising affluence, the demand for meat has exploded. Global meat production today stands at 263 million tonnes and is expected to nearly double again to 445 million tonnes by 2050. Over the same period, the global population is expected to triple – from roughly 3 to 9 billion people. A national survey in India recorded that over 71% of Indian population is non-vegetarian.

Meat consumption is continually reaching new heights around the world. With the demand for animal products rising from 60 billion animals in 2016 to 100 billion animals by 2050, the environmental and health impacts of eating meat are only bound to increase. According to the FAO, livestock generates just under 15% of the total CO2 equivalent greenhouse gas emissions a year, with beef cattle alone contributing about 6% of the global total – an equivalent of about three times that of the aviation sector.

Researchers also calculate that it can take about 15,000 litres of water to produce a kilo of beef. Additionally, meat production is a major driver of deforestation, habitat and biodiversity loss, through conversion of natural landscapes to pasture lands and to agriculture for feed production. To top it all, the large amounts of antibiotics given to animals in conventional livestock agriculture has led to an increase in antimicrobial resistant bacteria, a major public health concern.

By 2050, global food systems will need to meet the dietary demands of more than 10 billion people who on average will be wealthier than people today and will aspire to the type of food choices currently available only in high income countries. This food will have to be produced sustainably in ways that contribute to reducing climate change, and that address other environmental challenges.

Are we ready for a solution? Are we working on a solution? Do we have a solution?

The science fiction writer William Gibson once famously said: “The future is already here – it’s just not evenly distributed.” With the advancement of technology and growing needs of the population, plant based meat and cell based meat or clean meat are going to be the next breakthrough innovations. Producing meat in the laboratory without the involvement of living animals is a huge technical feat made possible by the Fourth Industrial Revolution.

Plant-based meat alternatives look to plants and their components to create products that mimic the traditional taste and feel of meat with plants. California based company ‘Impossible Foods’ produces the impossible burger that is like meat in every way.

The key protein that contributes to the bloody flavour and aroma of meat is heme. Impossible Foods identified a protein found in the roots of soybean plants that has the same properties as heme called soy leghemoglobin. Impossible Foods began to use yeast to grow the soy leghemoglobin protein. Not only is yeast more efficient, it is more environmentally friendly than regularly digging up soybean roots to extract the protein.

Besides their 'secret ingredient' of plant-based heme, the Impossible Burger also uses wheat and potato proteins as well as coconut oil to mimic the taste of meat. Impossible Foods says its burger patty uses 95% less land, a quarter of the water and produces an eighth of the greenhouse emissions compared to a regular meat burger.

Another such company is 'Beyond Meat' that uses pea protein and, through a process of pressure, heating, and cooling, changes the shape and texture of pea protein into meat-like fibres. This process, along with research into the molecular composition of meat, has helped Beyond Meat produce several plant-based meat products, including chicken-free strips and the Beyond Burger. When Bill Gates, an investor in both Beyond Meat and Impossible Foods tried Beyond Meat's chicken-free strips, he commented that he could not tell the difference between the actual chicken strip and the chicken-free strip. Beyond Meat commissioned the Center for Sustainable Systems at University of Michigan to conduct a "cradle-to-distribution" life cycle assessment of the Beyond Burger, a plant-based patty designed to look, cook and taste like fresh ground beef.

Based on a comparative assessment of the current Beyond Burger production system with the 2017 beef LCA by Thoma et al, the Beyond Burger generates 90% less greenhouse gas emissions, requires 46% less energy, has >99% less impact on water scarcity and 93% less impact on land use than a ¼ pound of U.S. beef.

In India, a group of animal lovers in Udaipur joined forces with an animal activist in America and 'Good Dot' was born. It is an Indian start up in the rapidly growing industry of plant based protein products. Their mission is to bring high quality, affordable, vegetarian meat to all of India. Multinational giants like Tyson, which is the world's second-largest processor of chicken, beef, and pork, have invested in plant-based meat companies. A $100 million venture capital fund was created by New Capital Crops in 2018 to improve the manufacture and distribution of plant-based meats and even consumer goods giants like Unilever are making bets.

Cultured meat or clean meat forms part of the emerging field of cellular agriculture. Cultured meat involves applying the practices of tissue engineering to the production of muscle for consumption as food. Sometimes also known as clean meat or in vitro meat, it is an emergent technology that operates as part of the wider field of cellular agriculture and in a relation of competition and collaboration with innovation in plant-based proteins.

In the early 2000s, two projects were conducted to produce cultured tissue for food purposes: one by a NASA-funded college-based group (Benjaminson, Gilchriest, & Lorenz, 2002), and another by a team of bio-artists in the Tissue Culture and Art Project (Catts &Zurr, 2010). Both projects produced small quantities of tissue, with the NASA group performing sniff-tests to assess palatability, and the bio-arts team conducting taste-tests as part of an arts performance piece. The technology involves expanding stem cells then differentiating them into muscle cells. This is typically done using chemical/biological cues in the cell culture media and mechanical stimulation.

Mark Post's Maastricht group produced the world's first cultured burger with primary bovine skeletal muscle cells and another US-based start-up company Memphis Meats have produced demonstration cultured products in the form of a meatball, beef fajita, chicken and duck. Typically cultured burgers are grown by taking tissues from a cow, extracting stem cells from the tissue, growing the stem cells into muscle fibers in a lab for six weeks, 20,000 muscle fibers are then coloured, minced, mixed with fats and shaped into burgers.

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The technology is at an early stage and prerequisites of implementation include a reasonably high level of consumer acceptance, and the development of commercially-viable means of large scale production. Recent advancements in tissue culture techniques suggest that production may be economically feasible, provided it has physical properties in terms of colour, flavour, aroma, texture and palatability that are comparable to conventional meat.

This novel protein source could be produced in urban "breweries", requiring just 2% of the land that the global livestock industry uses today. This would relieve 25% of the pressure on global agricultural water demands by 2030, and produce just 4% of the GHG emissions of today's global industrialized cattle herd, according to Professor Marc Van der Post of Maastricht University, a leading innovator in the cultured meat field and Chief Scientific Officer of MosaMeat. With a much lower land and resource footprint and no need for antibiotics, this meat could also be healthier for people and the planet.

India is all set to get a taste of cell-based or 'clean' meat as early as next year, with the Maharashtra government giving the state-funded Institute of Chemical Technology (ICT) a go-ahead to establish a cellular agriculture research centre in the state.
ICT has joined hands with The Good Food Institute, a global non-profit organisation engaged in promoting the plant- and cell-based meat sector through research and commercialisation, to establish a lab facility in Mumbai by 2020.
Even FSSAI has initiated first meeting of all stake holders last month and it seems regulators are very positive for creating regulations for clean meat products but big challenge is the product is not ready for any assessment but regulators have started dialogs with all stake holders and it is very positive and encouraging step.

But the question remains, WILL PEOPLE EAT IT?

A 2018 survey of 3,030 consumers found that 30% of US consumers, 59% of Chinese consumers and 50% of Indian consumers were very or extremely likely to purchase cell based meat regularly. Many consumers are excited about the potential benefits that cell based meat can contribute to society.

To conclude, we can expect a future that is real yet unreal on our plate by eating plant based meat alternatives and cultured meat products as part of our diet. More research is needed on how to effectively communicate and launch this product category in a way that builds consumer trust, familiarity and excitement among consumer segments.

Let's wait for future to unwind.

(Dr Prabodh Halde is Imm Past president of AFST India and was invited at 2018 Good Food conference at San Francisco USA for plant based meat and clean meat. He is approved mentor under startup scheme of Government of India and also mentoring few clean meat /plant based meat startups)

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WHEY PROTEIN ISOLATE, PREMIUM PROTEIN FOR HEALTHY AGING

By
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Email: Joanie.zhang@agropur.com

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It is not new that the world's population is aging. By the year 2030, the number of people in the world aged over 60 years is projected to grow by 56%, from 901 million in 2015 to 1.4 billion in 2030. By 2050, the global population of older persons is projected to more than double its size in 2015, reaching nearly 2.1 billion. In India, the projections show an increase to 173 million elders (aged 60 years or above) by 2026, around 15% of the population.

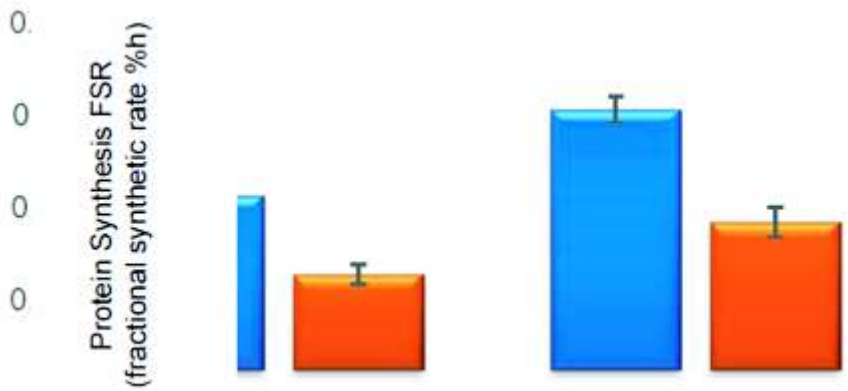
Health threats to aging population include loss of muscle mass and low bone density. Sarcopenia refers to the loss of muscle mass and function that many adults experience with age. This decline in muscle can begin as early as age 40 and more commonly after age 55, when muscles begin to atrophy. Lower muscle mass can also affect stability and increase the potential for an array of health risks including falls, bone fractures, obesity, insulin insensitivity, and diabetes. Meanwhile aging population is experiencing osteoporosis, that the density and quality of bone are reduced slowly. Skeletal structures become more fragile and prone to fractures and breaks.

Nutritional intervention with increased protein consumption can help maintain muscle and bone functional capacity throughout the health span of aging adults. Among all protein sources, whey protein isolate has been widely proven for its premium quality for healthy living, including in sports nutrition, weight management, healthy aging and other living conditions.

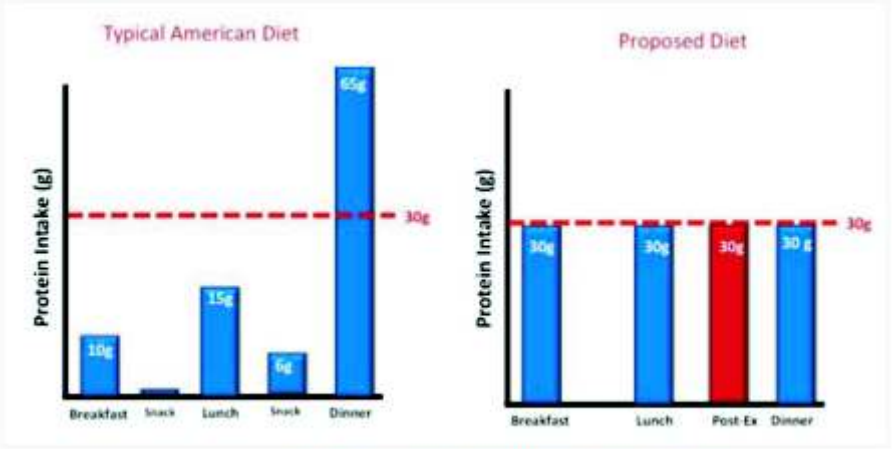
Whey protein in muscle health
Whey protein isolate is a complete protein manufactured from milk, with greater than 90% protein content and all essential amino acids (EAAs, around45% of protein). It is also an excellent source of the essential branched chain amino acids, especially leucine. Leucine is a branched chain amino-acid that triggers muscle protein synthesis. Research has shown that 2.5g of leucine per meal is optimal to initiate muscle synthesis for an average adult; lesser amounts of leucine will not signal the body to begin synthesis. While both soy and casein are also complete proteins, whey protein has greater EAAs and leucine contents than casein, soy, and collagen proteins. It is also a fast-digestible protein that does not coagulate under acidic conditions in stomach.

Together, the differences in digestibility, AAs content, and AAs bioavailability result in a significantly lower rise in blood leucine and blood EAAs concentration following

Whey protein enhanced muscle synthesis compared with other protein sources
Ref: Burd, Nicholas A., et al. British Journal of nutrition 108.6 (2012): 958-962



consumption of isoenergetic, isonitrogenous casein, collagen and soy beverages, as compared with whey. Whey protein has been shown to stimulate muscle protein synthesis MPS to a greater extent than casein and soy protein at rest and following exercise in young and older individuals. Whey protein supplementation improves body composition by modestly increasing lean mass without influencing changes in fat mass.



Protein distribution throughout a day

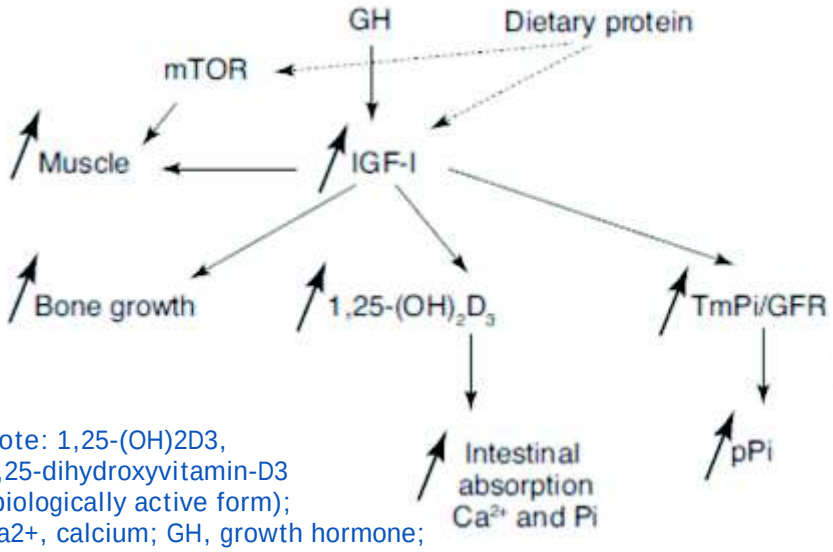
Whey protein in bone health

Not only does whey protein assist with maintaining muscle mass, but it can also have a positive impact on bone density. Dietary protein interacts synergistically with calcium to significantly and positively impact bone health as shown below. A dietary protein-mediated increase in the circulating level of IGF-I enhances the renal production of 1,25-(OH)2D3, which stimulates the intestinalabsorption of calcium and inorganic phosphate, and increases the tubular re-absorption of inorganic phosphate. This indirectly influences bone mineralization. Additionally, whey protein can serve as a good source of naturally available calcium from milk.

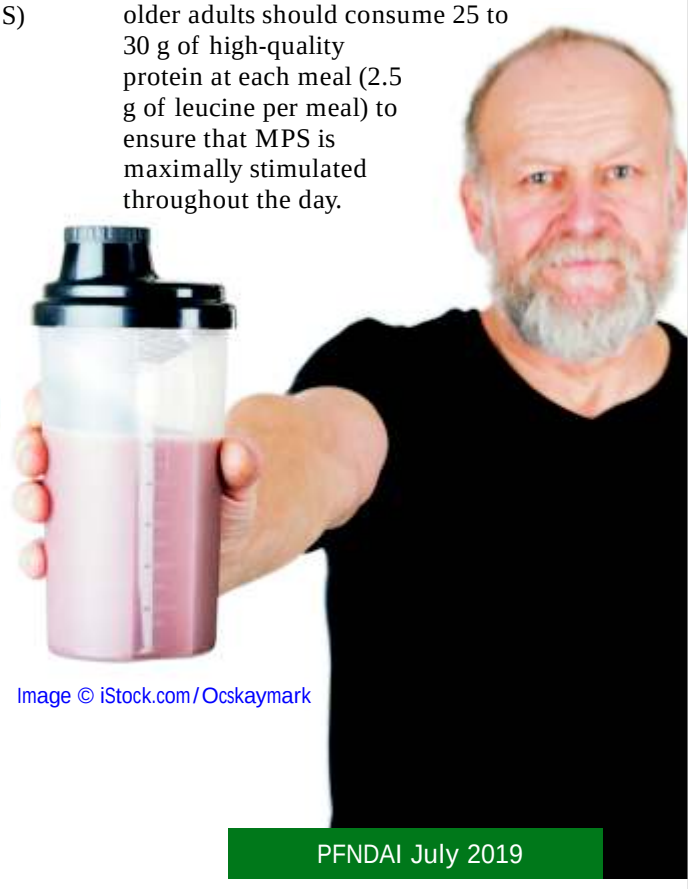
Dietary protein intake recommendation

Nutrition experts recommend increasing protein intake with whey protein isolate, at least 1.0 -1.2 g protein/kg/day for elders over65 years; 1.2 - 1.5 g protein/kg/day for those with acute or chronic diseases, since older adults are less sensitive to the stimulatory effects of protein on MPS. Data from the U.S. National Health and Nutrition Examination Survey (NHANES) show that older adults are not consuming adequate amounts of protein, with one-third not meeting the RDA (0.8 g/kg BW/day) for protein and up to 10% of older women not even meeting the Estimated Average Requirement (EAR, 0.66 g/kg BW/day).

The timing of protein intake is also an important consideration. Consuming a protein supplement during anabolic window willoptimize body metabolism. Recent recommendations state that older adults should consume 25 to 30 g of high-quality protein at each meal (2.5 g of leucine per meal) to ensure that MPS is maximally stimulated throughout the day.



Note: 1,25-(OH)2D3, 1,25-dihydroxyvitamin-D3 (biologically active form); Ca2+, calcium; GH, growth hormone; IGF-I, insulin-likegrowth factor-I; mTOR, mammalian target of rapamycin; Pi, inorganic phosphate; pPi, plasma inorganic phosphate; TmPi/GFR, maximum tubular reabsorption of Piper unit volume of glomerular filtration rate.



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This is because muscle protein synthesis only lasts about 3 hours after time of consumption. An even distribution of ~30g protein/meal for three meals causes a significant increase in protein synthesis. A research study with24 weeks of twice daily protein supplementation (15 g each at breakfast and lunch) has been shown to improve strength and physical performance in frail elderly individuals.

Therefore, the addition of whey protein supplements to each meal, especially breakfast and lunch, would be advantageous for older adults to achieve optimal stimulation of MPS throughout the day and thus decrease the severity of muscle mass loss that accompanies aging.

Whey protein for other catabolic effects during chronic disease Whey protein is also used to bolster immunity toprevent many immune complications, because it is rich inanother essential amino acid: cysteine. Cysteine is the rate-limiting amino acid for glutathione synthesis, the dietary antioxidant in defending body from stress. It is vital for fighting oxidative stressors and preventing redox imbalance-caused diseases.

The amino acid precursors to glutathione available in whey might increase glutathione concentration in relevant tissues and enhance immunity. Studies have shown that oral supplementation with whey protein increases plasma glutathione levels of post-surgery and chronic inflammatory diseases patients.

In addition, whey proteins and peptides are popular dietary supplements reported to provide anti-microbial and anti-inflammation activity, as well as to prevent cardiovascular and gastrointestinal disease. Therefore, increasing dietary whey protein intake would promote healthy aging in a variety of ways.

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REGULATORY ROUND UP

By
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Dear Readers,

FSSAI has draft notified the big-ticket regulation on Labelling and Display. The regulation has far reaching impact on all foods especially the fun foods like bakery, confectionery, snacks, etc.

The make-over of the labels to comply with the regulations will incur a huge cost and not much time (maximum of 6 months) is likely to be given for compliance after the final notification. Life has been made simple for B2B manufacturers.

A brief generic summary of the draft regulation is given below and the readers are strongly encouraged to read the regulation in detail to assess its impact. Another notification amending the Claims and Advertising is made. Please find below the summary of all the happenings since the last round up.

Draft Regulation on Food Safety and Standards (Labelling and Display) Regulation, 2019 . Please find below the summary.

• New definitions like HFSS foods, Total sugars, Added Sugars, Dietary fiber, etc have been introduced.

• Mandatory additional nutrient information includes Sugars, cholesterol and Sodium along with Energy, Protein, Fat, Saturated and Trans Fat.

• Front of the pack declaration of Energy, Saturated Fat, Trans fat, Added sugar and Sodium, per serving, as a percentage of defined RDA.

• Guidelines are given to arrive at the serve size. The net content of the serve in g or ml to be declared.
• Number of serves per pack to be declared.

• Front of the pack red colour coding of Saturated fat, Trans fat, Added Sugar and Sodium if they are above the defined upper threshold value as specified in the Schedules. A list of foods exempted from the colour coding is given.

• HFSS food products shall not be advertised to children in any form.

• Manufacturers have been given graded 3year grace period to comply with the upper threshold values of these nutrients. Till then, red colour coding is not mandatory.

• Beverages with less than 80 KCal per serving is exempted from colour coding

• New shape for vegetarian logo.
• A separate logo for Foods not meant for human consumption.

• Expiry date replaces Best Before. Expiry date and date of manufacturing to be in the same field of vision.

• Both height of numerals and alphabets are related to principal display panel

• Height of numerals and letters in case of Net weight and Expiry date declarations to comply with the requirements Legal Metrology (Packaged Commodity) Rules, 2011

• Special label declaration with respect to certain ingredients
• Label declarations of products which are "Not for Retail Sale" (B2B) have been simplified

The stake holders have been requested to send in their comments and suggestions to FSSAI in the prescribed format.

Amendments to Food Safety and Standards (Advertising and Claims) Regulation, 2018, which are operationalized, meaning can be implemented with immediate effect, if desired. However, six months have been given for compliance. The amendments include

• The present regulation requires a disclaimer on the label when the brand name implies a health claim. The size of the letters in the disclaimer is correlated to the size of the pack.

• Requirements of comparative claims have been redefined. The difference, in case of macro nutrients like sugar, fat, etc must be 30% as against the present requirement of 25%

• Amendments have been made in the threshold levels in nutrient content claim related to omega fatty acids.

• New nutrient content claim with regard to DHA, lactose free, gluten free and trans-fat free in vegetable oils have been introduced.

Final notification restricting the use of diacetyl as flavour in oils and fats

Final notification on the prohibition of use of non-iodized edible common salt as an ingredient in the manufacture of foods which hitherto was permitted.

The latest list of FSSAI approved food testing laboratories along with the validity of NABL accreditation.

FSSAI vide its order exempts last mile delivery persons, direct selling agents, food and water vending machines, individually owned branded food carts from registration under Food Safety and Standards (Licensing and Registration) Regulation, 2011.

FSSAI has launched a special "Licensing and Registration" drive to ensure compliance. The order dated 01 July 2019 notes that many FBOs either do not have valid license/registration or manufacturing products which are not endorsed on the license. The FBOs are given time till 30 September 2019 for necessary self-verification and rectification. Beyond this date, if no corrective action is taken by the FBO, prosecution may be launched.

FSSAI vide its order strongly discourages the use of staple pins as a food package closure.

Amendments related to labelling of blended vegetable oil is operationalized.

FSSAI vide its order dated 20 June 2019 has instructed the State Food Safety Commissioners to scrutinize all the health claims made by products manufactured under Food Safety and Standards (Health Supplements, Nutraceuticals) Regulation,2016

Proposed additional entry points for the import of foods.

RESEARCH IN HEALTH & NUTRITION

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Omega-3 and Air Pollution: Supplementation may help protect cardiovascular health – China RCT

By Cheryl Tay 10-May-2019 – NutraIngredients Asia

The intake of omega-3 fatty acids may have cardioprotective effects against air pollution, according to an RCT conducted by researchers in China and the US.

The cardiovascular health benefits of omega-3 have been widely reported, but rarely in the context of protecting against exposure to fine particulate matter with an aerodynamic diameter of under 2.5mm (PM2.5) in highly polluted environments.

Researchers from Shanghai's Fudan University, Texas A&M University and Michigan State University conducted a randomised, double-blinded, placebo-controlled trial to determine if dietary fish oi lsupplementation could protect cardiovascular health against PM2.5 exposure.

Protection against pollution

They recruited 65 healthy college students in Shanghai and randomly assigned them to either a placebo or intervention group. From September 2017 to January 2018, those in the intervention group each received dietary fish oil supplementation of 2.5g daily, in the form of two 1.25g capsules containing 60% omega-3 fatty acids (36%EPA and 24% DHA).

Those in the placebo group each received two capsules identical in appearance and dosage, containing sunflower seed oil (57.6% linoleic acid, 16% oleic acid and 14.4% palmitic acid). All participants underwent four rounds of health examinations during the last two months of treatment. The researchers measured fixed-site PM2.5 concentrations in real time on campus, as well as blood pressure and 18 biomarkers of systematic inflammation, coagulation, endothelial function, oxidativestress, antioxidant activity, cardio-metabolism, and neuro-endocrine stress response. They then assessed the acute effects of PM2.5 on these outcomes within each group using linear mixed effect models.

Overall, in the placebo group, most biomarkers of cardiovascular health tended to significantly and negatively respond to PM2.5 fluctuations during the study period; however, in the fish-oil group, the associations became much weaker and statistically insignificant. For example, when it came to inflammation, there was a significant difference in the biomarker interleukin-6 between the two groups.

Similar observations were also made for 2 biomarkers of coagulation, with vWF and fibrinogen both associated with PM2.5 level only in the placebo group, and not in the fish-oil group. And the pattern was epeated in terms of oxidative stress, endothelial function and stress hormone biomarkers. The researchers attributed these benefits to multiple mechanisms, saying that omega-3 fatty acids could act as "eicosanoid substrates to inhibit arachidonic acid (ARA) metabolism, deriving potent anti-inflammatorymediators, suppressing the expression of inflammatory genes and inhibiting platelet aggregation and fibrinolysis".

They added that mechanistically, omega-3 fatty acids could inhibit the recruitment of two types of white blood cells (monocytes and neutrophils) to the endothelium by influencing the formation of new blood vessels, as well as endothelial proliferation.

Strengths and weaknesses

The researchers said the RCT design of the study allowed for direct causal interference, thanks to their recruitment healthy college students to ensure relative homogeneity in study participation, treatment

adherence, and population characteristics. In addition, the study was conducted in a free-living population over a reasonably long period, instead of an exposure-controlled environment. This meant the findings were could be more easily generalised to real-world situations.
The researchers had also analysed a wide variety of biomarkers considered mechanistic markers that could mediate cardiovascular risk from high PM2.5 exposure, which allowed them to "comprehensively assess the potential benefits of omega-3 fatty acid supplementation against PM2.5-induced cardiovascular risks and relevant biological mechanisms".
However, they also lacked personal data on PM2.5 exposures, and had to estimate the exposures based on an outdoor monitor located on campus.
Still, they said that in previous longitudinal studies, fixed-sitemonitoring data had been found to be a 'good surrogate' for personal PM2.5 exposure. They had also conducted the study among healthy college students, who were likely less susceptible than at-risk populations to the adverse effects of PM2.5, and conversely, to the effects of omega-3supplementation.


Image © iStock.com/CentralITAlliance

As such, they chose to focus on sub-clinical biomarkers of heart health instead of direct functional or clinical measures, such as heart rate variability and flow-mediated dilatation. They added that in future, similar studies should target more susceptible populations, and use more 'clinically meaningful' measures.
Furthermore, despite using a food frequency questionnaire to record the profile of the participants' routine dietary nutrient intake, they could not exclude the confounding effects of the daily intake of dietary omega-3 and other nutrients. However, they also wrote that the potential confounders might not be 'substantial', since the adjustment of the participants' estimated daily dietary intakes had not changed the results significantly.
In conclusion, the researchers wrote: "This interventional study suggests that dietary omega-3 fatty acid supplementation may have short-term benefits in mitigating potential adverse cardiovascular effects in response to higher levels of PM2.5.In areas with relatively heavy air pollution, supplementation with omega-3 fatty acids may represent a simple and effective way to protect cardiovascular health against hazardous exposure to ambient PM."

Eating cheese may reduce insulin resistance

IFT Weekly May 15, 2019

Researchers from the University of Alberta examined the impact of both reduced- and regular-fat cheese on insulin resistance in the bodies of pre-diabetic rats.

The results, published in The Journal of Nutritional Biochemistry, shows that both types of cheese reduced insulin resistance, which is important to maintain normal blood sugars. The researchers used a rat model of insulin resistance that shares many characteristics with humans. They created the model by feeding the rats high amounts of lard. After four weeks, the rats were divided into three groups: lard diet; lard diet and reduced-fat cheddar cheese; and lard diet and regular fat cheddar cheese. All the diets had the same total amount of fat, only the source of it varied (lard versus cheese). The rats ate these diets for eight more weeks.
They found that both reduced- and regular-fat cheddar cheese reduced insulin resistance in the rats. This suggests that the beneficial effects of cheese might not be related to the amount of fat but to some other component, such as the protein or the calcium. The researchers also examined how metabolites in the blood changed after cheese feeding and found similar effects in reduced- and regular-fat cheese.
The changes are related to a specific type of molecule called phospholipids, which have many functions in the body. Interestingly, low-circulating phospholipids are linked with diabetes and insulin resistance in humans. The rats fed on a lard diet had lower phospholipid levels. These were normalized in the rats that ate cheese.

Nutrition: Substantial benefit from replacing steak with fish

Science Daily May 16, 2019

The average Dane will gain a health benefit from substituting part of the red and processed meat in their diet with fish, according to calculations from the National Food Institute, Technical University of Denmark. Men over 50 and women of childbearing age in particular would benefit from such a change in diet.

In a PhD study at the National Food Institute, Sofie Theresa Thomsen has developed a method to calculate the total health impact of replacing one food with another in the diet. The method has been used to assess the health impact that would be achieved by replacing red and processed meat with fish, so the intake reaches the recommended weekly intake of 350 grams of fish.


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- (Soyalecithin Substitute)
- M.C.T. Oils

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- Lecithin Replacer (Biscuit)
- Fondant
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Fish is an important source of healthy fatty acids and vitamin D, but may also contain potentially harmful substances such as methylmercury. Red and processed meat contributes to the intake of saturated fat in the Danish diet and is associated with the development of different types of cancer, but red meat is also an important source of e.g. dietary iron. Replacing red and processed meat with fish in the Danish diet can therefore have a health impact on human health.

Seven thousand healthy years of life to be gained annually

Risk-benefit assessments weigh up the beneficial and adverse health effects by estimating how many healthy years of life a population gains because of health improvements, or lose due to reduced quality of life or by dying earlier than expected. This is exactly what Sofie Theresa Thomsen has done in her calculations. "They show that the Danish population as a whole can gain up to 7,000 healthy years of life annually, if all adult Danes eat fish in the recommended quantities while at the same time reducing their meat intake. This estimate covers among others the prevention of approximately 170 deaths from coronary heart disease per year," she says. However, the health benefit depends on the type of fish people put on their plates, as well as the age and sex of the persons whose diet is being altered.

Go easy on the tuna

The greatest health benefit comes from eating only fatty fish (such as herring and mackerel) or a mixture of fatty and lean fish (such as plaice and pollock), while a smaller health gain is achieved by eating only lean fish. This is because fatty fish contain larger amounts of beneficial fatty acids. On the other hand, the calculations show a significant health loss if tuna is the only type of fish in the diet, because tuna is both low in beneficial fatty acids and can have high concentrations of methyl mercury. The health loss is calculated as particularly high among women of childbearing age, as intake of fish with a high concentration of methyl mercury can damage unborn children's brain development. Furthermore, the study shows that it is possible to reduce the proportion of Danes who have an insufficient intake of vitamin D significantly by replacing some of the red and processed meat with a mixture of fatty and lean fish. The study also points out that the proportion of Danes with an insufficient intake of dietary iron will not increase despite the lowered meat intake.

Greatest effect among men over 50 and childbearing women

The study shows large variations in the overall health impact when the red and processed meat gives way to fish. Everyone over the age of 50 -- but the men in particular -- as well as women of childbearing age will reap the greatest health benefits from eating 350 grams of fish weekly, of which 200 grams are fatty fish.
For men, this is because the group as a whole is at higher risk than other population groups of developing cardiovascular disease. The risk is reduced by replacing part of the red meat with fish that contain fatty acids, which can prevent cardiovascular disease.
"In women of childbearing age the health benefit is particularly large because the intake of fish containing healthy fish oils will not only benefit the women themselves. The health-promoting properties of fish will also have a beneficial effect in the development of their unborn children, which is taken into account in the overall calculations," Sofie Theresa Thomsen explains.

Useful when developed intervention strategies and dietary advice

The methods developed in the PhD study are useful e.g. when examining the health effects of various interventions designed to promote healthy eating habits or when developing official dietary guidelines.

Dietary cholesterol or egg consumption do not increase the risk of stroke, Finnish study finds

Science Daily May 20, 2019

A new study from the University of Eastern Finland shows that a moderately high intake of dietary cholesterol or consumption of up to one egg per day is not associated with an elevated risk of stroke. Furthermore, no association was found in carriers of the APOE4 phenotype, which affects cholesterol metabolism and is remarkably common among the Finnish population. The findings were published in the American Journal of Clinical Nutrition.

Findings from earlier studies addressing the association of dietary cholesterol or egg intake with the risk of stroke have been contradictory. Some studies have found an association between high dietary cholesterol intake and an increased risk of stroke, while others have associated the consumption of eggs, which are high in cholesterol, with a reduced risk of stroke. For most people, dietary cholesterol plays a very small role in affecting their serum cholesterol levels. However, in carriers of the apolipoprotein E phenotype 4 -- which significantly impacts cholesterol metabolism -- the effect of dietary cholesterol on serum cholesterol levels is greater. In Finland, the prevalence of APOE4, which is a hereditary variant, is exceptionally high, with approximately one third of the

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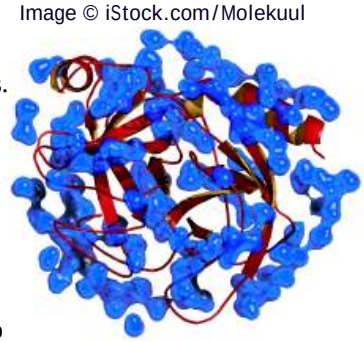

population presenting as carriers. Yet, research data on the association between a high intake of dietary cholesterol and the risk of stroke in this population group has not been available until now. The dietary habits of 1,950 men aged between 42 and 60 years with no baseline diagnosis of a cardiovascular disease were assessed at the onset the Kuopio Ischaemic Heart Disease Risk Factor Study, KIHD, in 1984-1989 at the University of Eastern Finland. APOE phenotype data were available for 1,015 of the men participating in the study. Of those, 32% were known carriers of APOE4.
During a follow-up of 21 years, 217 men were diagnosed with stroke. The study found that neither dietary cholesterol nor egg consumption was associated with the risk of stroke -- not even in carriers of APOE4.

The findings suggest that moderate cholesterol intake or daily egg consumption are not associated with the risk of stroke, even in persons who are genetically predisposed to a greater effect of dietary cholesterol on serum cholesterol levels. In the highest control group, the study participants had an average daily dietary cholesterol intake of 520 mg and they consumed an average of one egg per day, which means that the findings cannot be generalised beyond these levels. One egg contains approximately 200 mg of cholesterol. In this study, about a fourth of the total dietary cholesterol consumed came from eggs.

Furthermore, the generalisability of this study is also weakened by the fact that the study population did not have a pre-existing cardiovascular disease at baseline and the size of the study population was relatively small. Therefore, the findings of the study should be verified in a larger cohort as well as in people with a pre-existing cardiovascular disease, who are currently advised to limit their intake of cholesterol and eggs.

New pathway for improving metabolic health Blocking protein-digesting enzyme tricks mice into releasing more beneficial hormones

Science Daily May 8, 2019

Blocking the action of an enzyme involved in protein digestion may improve metabolic health, according to a new study published ahead of print in the American Journal of Physiology -- Gastrointestinal and Liver Physiology. The paper was chosen as an APS select article for May.

Trypsin -- an enzyme that bonds to proteins -- is the primary enzyme responsible for digesting protein in the digestive tract. Drugs (called serine protease inhibitors) that prevent enzymes such as trypsin from working have been found to reduce weight gain, high blood sugar and high cholesterol in rats. However, the process in which serine protease inhibitors improve metabolic health is not well understood.

Researchers from Janssen R&D in Pennsylvania looked at the effects of varied dosages of camostat, a serine protease inhibitor used to treat pancreatitis in Japan, on overweight mice. They found that one week of drug treatment reduced the amount of food the animals ate and led to weight loss. In addition, blood sugar levels and liver function improved when compared to animals that were simply given the same reduced amount of food. This suggested that in addition to caloric restriction, other factors contributed to the metabolic improvements. Bloodwork performed before and after the experiment showed that the mice had higher levels of the hormone fibroblast growth factor 21 (FGF21) during treatment. FGF21 is a hormone that suppresses appetite and manages metabolism, weight loss and glucose levels. In previous studies, FGF21 rapidly increased in mice that followed a protein-restricted diet. The research team also found that drug treatment activated a signaling pathway called the integrated stress response (ISR), which in turn caused FGF21 levels to rise. ISR can be triggered by a number of physiological stresses, including amino acid or protein deprivation. In this study, however, the dietary protein fed to mice was not restricted, but camostat tricked their bodies into thinking it was, which activated the ISR.
This finding is important because it sheds light on a new mechanism that links ISR and FGF21 in response to trypsin inhibition, the researchers explained. "Trypsin inhibition could be a way to enhance FGF21 production, resulting in beneficial effects," they wrote.

Soy protein lowers cholesterol, study suggests Meta-analysis finds soy protein reduced LDL cholesterol by 3% to 4%

Science Daily May 6, 2019

Soy protein has the ability to lower cholesterol by a small but significant amount, suggests a new study led by St. Michael's Hospital in Toronto.

Image © iStock.com/Vergani_Fotografia

With the U.S. Food and Drug Administration (FDA) planning to remove soy from its list of heart healthy foods, researchers at St. Michael's set out to provide a meta-analysis of 46 existing trials that evaluated soy and determine whether the proposed move aligns with existing literature.

Of the 46 trials, 43 provided sufficient data for meta-analysis. Forty-one trials examined the protein's effects on low-density lipoprotein (LDL) cholesterol, which is often referred to as the "bad cholesterol" because a high amount of it leads to a build-up of cholesterol in arteries. All 43 studies provided data about "total cholesterol," which reflects the overall amount of cholesterol in the blood.

Researchers found that soy protein reduced LDL cholesterol by three to four percent in adults -- a small but significant amount, noted Dr. David Jenkins, the lead author of the study, who is also the director of the Clinical Nutrition and Risk Factor Modification Centre, and a scientist in the Li KaShing Knowledge Institute of St. Michael's Hospital.

"When one adds the displacement of high saturated fat and cholesterol-rich meats to a diet that includes soy, the reduction of cholesterol could be greater," Dr. Jenkins said. "The existing data and our analysis of it suggest soy protein contributes to heart health."

A limitation of this study was that it exclusively analyzed the 46 trials the FDA had referred to previously, as opposed to casting a wider net.Dr. Jenkins and his team hope that this work is taken into account in the FDA's current evaluation of soy protein as it pertains to heart health.

"We hope the public will continue to consider plant-based diets as a healthy option," Dr. Jenkins said. "It is in line with Health Canada's recently released Food Guide, which emphasizes plant protein food consumption by Canadians."

Eat your greens: Positive food phrases may encourage children to eat healthier

Communicating food benefits to children prompts them to choose healthy foods, study finds

09 May 2019 Nutrition Insight

Affirming statements like "eat your lentils if you want to grow bigger and run faster," are more effective at encouraging children to choose healthy foods than presenting food repeatedly without conversation.

This is according to a new study from Washington State University (WSU) and Florida State University (FSU). Children who were told how food would benefit them in terms they could understand easily ate twice as much healthy food, as opposed to being given the food with no contextual information. The researchers concluded that, over time, positive phrases could help children consistently make healthy food choices.

"We expected that developmentally appropriate, accurate nutrition phrases might encourage greater consumption of healthier foods. What surprised us was that liking for the food offered repeatedly with the phrase did not increase significantly more than the food that was offered repeatedly without any conversation. That means child consumption of the phrase food doubled without any increase in liking," Jane Lanigan, Ph.D., Associate Professor, Department of Human Development Prevention Science at WSU and lead author, tells Nutrition Insight.

"Every child wants to be bigger, faster and able to jump higher," continues Lanigan. "Using these types of examples made the food more attractive to eat."

Liking the food is not a factor
Previous research has shown that offering foods repeatedly increases the likelihood that kids will try something new. But that research didn't look at the context of those offerings, according to Lanigan.

Lanigan and her colleagues ran a series of experiments offering healthy foods to a group of three-to-five-year-old children for seven weeks.In the study – published earlier this week in the Journal of Nutrition Education and Behavior – Lanigan and her colleagues wanted to see whether child-centered nutrition phrases (CCNPs), affirmative statements that simply convey the benefits of healthy food, encouraged young children to make healthier food choices. The phrases focus on goals children have and are based on accurate nutrition information.

Lanigan explains that the phrases did not tap into positive reinforcement, a pop psychology practice. "The phrases were about the nutritional benefits of the food. They do not reinforce trying, liking or consuming the food itself."The WSU and FSU research team ran an experiment where they offered healthy foods to a group of three-to-five-year-old children for a duration

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of seven weeks. Before beginning, the 87 children included in the experiment ranked how much they liked four foods (green peppers, tomatoes, quinoa and lentils), chosen from different food groups including, vegetables, grains and protein.

At least twice a week, the participants were offered two of the foods that they liked. Over the six-week experiment, the researchers presented the children with one of their low-rated foods with pre-selected age-appropriate facts about the benefits of the food. The other food was merely given to them to taste. A coin flip determined which food would be paired with the CCNP. The experiment was built into the children's normal class routine, Lanigan notes.

The researchers then measured how much the kids ate at three times: pre-test, post-test and one month after the study ended. The immediate post-test showed no result, likely because the children "got tired of eating the same foods," Lanigan says.

Study results and their effect on the children

The month-after measurement told a different story, however. A month later, the participants ate twice as much of their CCNP food with repeated exposure compared to the food without the positive words, according to Lanigan. "For example, when we presented lentils we would say: 'This will help you grow bigger and run faster.'"

Over time, Lanigan and colleagues' study shows that using CCNPs is likely to increase the amount of healthy food that children eat. The results serve as a reminder to the importance of having positive food conversations with children and helping them understand how healthy foods help them grow, run, learn and have the right energy to play, says Lanigan.

More research on children's nutrition

The researchers also just completed a qualitative study that examines the home feeding and communication environment of a subset of children who participated in the nutrition phrase study.

Healthy eating is pivotal for the physiological as well as the psychological development of children. A study from 2017 linked eating healthier foods to better self-esteem and fewer emotional and peer problems, such as having fewer friends or being picked on or bullied in children, regardless of body weight.

Another study showed that children who ate lunch for a period of three to five years scored 18 percent higher in reading tests and 9 percent higher in math tests than those with less than a year of school lunches.

By Kristiana Lalou

An exciting research avenue? Glucosamine may have unexpected heart health benefits, study finds

Widely used in joint health supplements, the ingredient may reduce users' heart health risks

16 May 2019 Nutrition Insight

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Glucosamine is used widely in joint health supplements to relieve osteoarthritis and joint pain, but it may also lower a person's risk of cardiovascular disease (CVD).

Published in The British Medical Journal (BMJ), these findings are based on a survey of nearly half a million British people. The avenue of research is certainly worth exploring, but controlled clinical trials are ultimately needed to establish cause and effect, notes Dr. Sonya Babu-Narayan, Associate Medical Director at the British Heart Foundation (BHF).

"One in four people in the UK still die from heart and circulatory disease, and around 7.4 million people live with the daily burden of these devastating conditions. We urgently need to fund research that could result in improved prevention, diagnosis and treatment. If a well known and widely available supplement like glucosamine could help prevent heart and circulatory diseases, including heart attack and stroke, it is an avenue of research worth exploring," Dr. Babu-Narayan tells NutritionInsight.

Glucosamine is made up of molecules naturally present in the connective and cartilage tissues of the body and ensure, among other things, the structure and elasticity of cartilage, tendons and skin It is a popular dietary supplement and in other countries such as the US and Australia, approximately 20 percent of adults consume it daily, notes the study. Glucosamine is made up of molecules naturally present in the connective and cartilage tissues of the body.

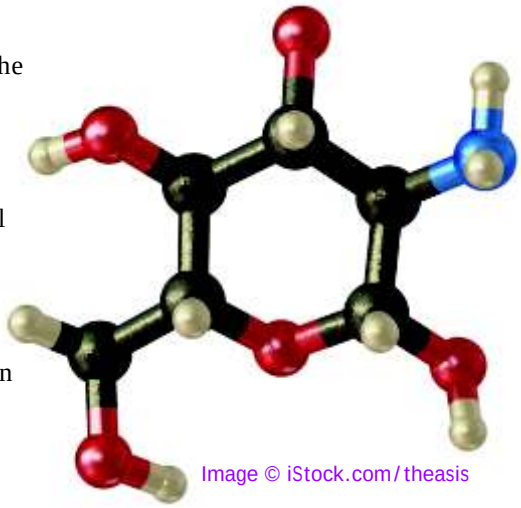
The findings are in line with a previous study that highlighted glucosamine's potential heart health benefits, note the researchers. In a cross-sectional study of nearly three thousand Australian participants, glucosamine use was found to be inversely associated with risks of heart attack, angina and other heart diseases. Meanwhile, in the Vitamins and Lifestyle (VITAL) cohort study, glucosamine use was significantly associated with an 18 percent lower risk of total mortality. Similarly, in the study at hand, it was found that glucosamine use was consistently associated with lower risks of subtypes of coronary heart disease (CHD), including fatal and non-fatal CHD.

The data used in the study were extracted from the UK Biobank, which is a national health resource in the UK designed to improve the prevention, diagnosis and treatment of a wide range of illnesses and to promote health throughout society. The platform recruited around 500,000 participants aged 40 to 69 in 2006 to 2010 from across the country, of which almost one in five said they took glucosamine.

The researchers then compared the occurrence of CVD events – including CVD death, heart disease and stroke – between the groups who used glucosamine and those who did not. Users of the joint health ingredient were far less likely to suffer from a CVD event. Habitual glucosamine use was associated with a 15 percent lower risk of total CVD events and a 9 percent to 22 percent lower risk of individual cardiovascular events (CVD death, heart disease and stroke). The findings were independent of traditional risk factors such as weight, diabetes, smoking and other supplement use.

Biological underpinnings

The researchers presented some potential biological mechanisms that could underpin the association. In the National Health and Nutrition Examination Survey (NHANES) study, regular use of glucosamine was associated with a statistically significant reduction in C reactive protein concentrations, which is a marker for systemic inflammation. In addition, a previous study found that glucosamine can mimic a low carbohydrate diet by decreasing glycolysis and increasing amino acid catabolism in mice. Taking this in consideration, glucosamine has been treated as an energy restriction mimetic agent.



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However, further investigations – especially clinical trials – are warranted to verify the findings. In addition, experimental studies will help to clarify the potential mechanisms, Lu Qi, study author and Director at the Tulane University Obesity Research Center, Department of Epidemiology, tells NutritionInsight.

CVD: A major risk factor for the global population

CVD is a major global health concern and the potential for any ingredient to mitigate it could be exciting for the industry. An American Heart Association (AHA) Heart and Stroke Statistics report has shown that 48 percent of Americans suffer from some type of cardiovascular disease (CVD).

AHA's updated 2019 Heart and Stroke Statistics were published in its journal Circulation. It includes data gathered in conjunction with the National Institutes of Health (NIH) and other US government agencies. The report showed that despite years of steady decline, CVD rates in the US are again on the rise. Healthy habits such as a healthy diet, remaining physically active and maintaining a healthy weight are essential in preventing CVD cases.In the UK, however, the death rate from CVD has been falling – but is still one of the leading causes of death. Blood pressure is a core factor that can increase CVD risk, but healthy habits such as a healthy diet, remaining physically active and maintaining a healthy weight are essential in preventing approximately 80 percent of all cases of CVD, according to the 2019 AHA report.

However, in the US, a lack of consumer knowledge around the health implications of obesity may be contributing to these high statistics. The report found that roughly 90 percent do not link obesity to cancer or atrial fibrillation. More than half of Americans also don't know that obesity is linked to high "bad" cholesterol levels (54 percent) or coronary artery disease (57 percent) and two-thirds (64 percent) are not aware it can lead to a stroke.

A further investigation by the British Nutrition Foundation (BNF) highlighted the link between gut health and heart disease, noting that eating whole grains and other fiber-rich foods are critical. The report also shared evidence that a good night's sleep is important for CVD health, as well as minimal workplace stress and eating a diet rich in essential vitamins and minerals. "An important way to reduce your risk is to maintain a healthy lifestyle and when relevant take medications as recommended to you by your doctor," Dr. Babu-Narayan concludes.

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Thirty-eight percent of colorectal cancer cases linked to nutrition, as research estimates rate of diet-related preventable cancer

Findings estimate that diet-related factors may account for 80,110 of the new invasive cancer cases reported in

23 May 2019 Nutrition Insight

A modeling study published in JNCI Cancer Spectrum estimates the number, proportion and type of specific cancers associated with the consumption of certain diets and sugar-sweetened beverages among US adults.

One of the main findings is that an estimated 38.3 percent of colorectal cancer cases in 2015 were linked to sub-optimal diets. The analysis is cited as one of the few to focus on the modifiable risk factors for cancer connected to food intake in the US. Authors also recommend this should be in greater focus as a preventative measure against the disease.

Findings of the research estimates that diet-related factors may account for 80,110 of the new invasive cancer cases reported in 2015, or 5.2 percent of that year's total among US adults. This is comparable to the cancer burden associated with alcohol, which has a four to six percent prevalence. Excessive body weight, meanwhile, is associated with 7 to 8 percent of the cancer burden, and physical inactivity is associated with two to three percent.

"Our findings underscore the opportunity to reduce cancer burden and disparities in the US by improving food intake," says first and corresponding author Fang Fang Zhang, a Cancer and Nutrition Researcher at the Friedman School of Nutrition Science and Policy at Tufts University.

To estimate the cancer burden associated with sub-optimal diet, the researchers utilized the risk estimates of diet and cancer relations based on a meta-analyses of prospective cohort studies, with limited evidence of bias from confounding. In this research, studies were primarily sourced from the World Cancer Research Fund International (WCRF) and the American Institute for Cancer Research (AICR) Third Expert Report.

The AICR Third Expert Report indicates that there is convincing or probable evidence for diets yielding low whole grains, low dairy, high processed meat and high red meat consumption on colorectal cancer risk; low fruit and vegetable consumption on risk of cancer of the mouth, pharynx, and larynx; and high processed meat consumption on stomach cancer risk. Researchers of this study also examined sugar-sweetened beverages, due to their known associations with obesity and 13 types of cancer.

Findings of the meta-analysis concluded:

- Colorectal cancer had the highest proportion of diet-related cases, with 38.3 percent of all cases in 2015 associated with suboptimal diets. This was followed by cancer of the mouth, pharynx and larynx, which the study linked to diet in 25.9 percent of all cases;
- Low whole grain intake was associated with the largest number and proportion of new cancer cases, followed by low dairy intake, high processed meat intake, low vegetable and fruit intake, high red meat intake and high intake of sugar-sweetened beverages;
- The largest number of cancer cases associated with poor diet was for colorectal cancer (52,225). That was followed by cancer of the mouth, pharynx and larynx (14,421), uterine cancer (3,165), breast cancer (post-menopausal) (3,059), kidney cancer (2,017), stomach cancer (1,564) and liver cancer (1,000);
- Of the diet-associated cancer cases, approximately 16 percent were attributable to obesity-mediated pathways.
- Middle-aged men (45-64 years) and some racial/ethnic groups (non-Hispanic blacks, Hispanics and others) had the highest proportion of diet-associated cancer burden compared to other age, gender, or racial/ethnic groups.

The researchers investigated cancer-associated dietary habits using data from two National Health and Nutrition Examination Survey cycles (2013-2014 and 2015-2016). The team linked consumption data with cancer incidences in 2015 recorded by the Centers for Disease Control and Prevention's National Program for Cancer Registries and the National Cancer Institute's Surveillance, Epidemiology and End Results program.

Optimal dietary intake was outlined based on assessments by the World Health Organization's Global Burden of Disease (GBD) project. The researchers modified the GBD comparative risk assessment framework's population-attributable fraction (PAF) equation to estimate the proportion of all cancer cases that can be attributed to the suboptimal diet in each age, gender and race/ethnicity stratum.

The researchers caution that self-reported dietary intake data is subject to measurement error. In addition, diet-cancer risk estimates may differ by sex, age, race/ethnicity and other modifiers. Therefore, it was not possible to account for how the dietary factors might interact with each other when consumed together.

This study is a part of the Food Policy Review and Intervention Cost-Effectiveness (Food-PRICE) research initiative, a National Institutes of Health-funded collaboration led by researchers at the Friedman School. It works to identify cost-effective nutrition strategies to improve population health in the US.

In recent years, dietary factors have been closely evaluated for their potential in either preventing or inducing cancer. UK Cancer Research notes that obesity causes more than 60 cases of cancer a day, making it the second biggest cause of cancer in the UK after smoking. And new research in probiotic treatment has unveiled the innate linkage between gut health and cancer, which can be shifted by a person's dietary choices.
By Benjamin Ferrer

Matters of the heart: Increased fiber consumption may boost heart health

New study highlights the importance of fiber for a healthier gut which may lead to a healthier heart

27 May 2019
Nutrition Insight

Heart health patients who consume higher amounts of fiber tend to have a healthier gut microbiome, which is linked to a reduced risk of death or need of a heart transplant.


Image © iStock.com/ simonidadjordjevic

This is according to a study presented yesterday at Heart Failure 2019, a scientific congress of the European Society of Cardiology (ESC). The researchers note that the findings should be further explored and that should they be confirmed, foods high in fiber such as cereals, fruits and vegetables should be chosen to stimulate a healthy gut flora.

"Our gut microbiota is composed of trillions of microorganisms that have the potential to affect our health," notes study author Dr. CristianeMayerhofer, of Oslo University Hospital, Norway. "Previous research has reported reduced biodiversity of microbes in the gut of patients with heart failure patients. Today we show for the first time that this is related to low fiber intake."

Heart health in relation to fiber
The new study also linked meat intake to higher levels of trimethylamine-N-oxide (TMAO) in patients with heart failure. Prior research has shown that increased TMAO levels are associated with a greater risk of cardiovascular events and that gut microbes play a role in its formation.

"We show an important pathway that connects diet, microbial activity, and cardiovascular disease," says Dr. Mayerhofer. "It would be prudent for patients with heart failure to limit their meat intake to two to three times a week."

To conduct the study, the investigators recruited 84 well-treated patients with chronic heart failure and 266 healthy people. The composition of gut microbes was assessed by sequencing the bacterial 16S rRNA gene in stool samples and compared between the two groups.

Heart failure patients had lower biodiversity of intestinal microbes than healthy controls, with differences in the two main phyla of bacteria present in the human gut. Patients with heart failure had a lower ratio of Firmicutes/Bacteroidetes (F/B) compared to controls and this difference was even more pronounced when the cause of heart failure was non-ischaemic.

Dietary and outcome analyses were performed in heart failure patients. Patients who had a heart transplant or died had lower biodiversity and a lower F/B ratio than controls. Regarding diet, bacterial diversity and Firmicutes levels were positively associated with fiber intake.

"Our findings suggest that the altered microbiota composition found in patients with chronic heart failure might be connected to low fiber intake," says Dr. Mayerhofer. "We are still just in the beginning of mapping and understanding the microbiota, how it works, and its potential for the clinical setting," notes Dr. Mayerhofer.

She is currently involved with GutHeart, the first randomized controlled trial on the effect of a probiotic and an antibiotic on the composition of gut bacteria, heart function and inflammation in patients with heart failure. "The trial will show the potential clinical effects of modulating our gut bugs in the setting of heart failure," she concludes.

Rising demand for fiber is driving NPD

There is renewed interest in fiber, as consumers are still mainly consuming fiber for digestive health, but newly discovered health benefits are driving applications too. A large number of people do fall short on their recommended daily fiber intake, however. For example, earlier in 2018, a Public Health England (PHE) survey found that only nine percent of adults were achieving the daily intake goal of 30g.

Product innovation within the fiber space suggests that this shortfall is being addressed in NPD. According to a 2018 consumer survey conducted by Innova Market Insights, 44 percent of US consumer are increasing their consumption of fiber, with 33 percent of UK consumers doing so. At the same time, 21 percent average annual growth has been reported in new product launches carrying a fiber claim.

Newly discovered health benefits are driving rising consumer interest in fiber applications. When asked for reasons why they are consuming fiber, unsurprisingly the majority of US consumers (64 percent) listed digestive health, but interestingly weight management (24 percent) and energy (16 percent) also featured. The market researcher also notes an Innova Market Insights notes 55 percent average annual growth in new sports nutrition launches with a fiber claim (Global, CAGR 2013-2017).

More research on fiber and its benefits

Earlier this year, a Lancet study found that higher intake levels of dietary fiber and whole grains are being linked with a lower risk of non-communicable diseases, body weight and cholesterol levels. The research highlighted the importance of carbohydrate quality in our diets, which may be particularly salient as low carb diets continue to trend. In relation to other noncommunicable diseases, a study published in the American Journal of Physiology-Endocrinology and Metabolism found that flaxseed fibers that ferment in the gut influence microbiota that can improve metabolic health, while protecting against diet-induced obesity. The study was carried out in mice and the data suggest that flaxseed supplementation may positively benefit obese individuals in reducing weight and improving glucose tolerance.

Moreover, dietary fiber may also shield against lung diseases, such as chronic obstructive pulmonary disease (COPD), as it boosts the production of anti-inflammatory short-chain fatty acids (SCFA). This is according to a mouse study from the Priority Research Centre for Healthy Lungs at the University of Newcastle, Australia and the Centre for Inflammation, which is a partnership between the University of Technology, Sydney and the Centenary Institute, Australia. The findings could prove useful for people at risk of COPD and help develop new therapeutic treatments.

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What a relief: Sunfiber may alleviate constipation and lessen irritability in autistic children

Using soluble fiber to support gut health may result in behavioral improvements, study finds

28 May 2019 Nutrition Insight

Soluble guar fiber may help improve constipation and irritability in children within the autism spectrum, according to a new pilot study from Kyoto Prefectural University of Medicine (KPUM) in Japan.

The researchers found that supplementation with six grams of Taiyo's Sunfiber modulated the gut microbiome and led to less irritability in the behavior of children taking part in the trial. The findings open opportunities for developing new formulations within the autism spectrum disorder (ASD) market, according to the researchers.

"These researchers found that a modest dose of Sunfiber produced results on four levels: tangible (less constipation); prebiotic (modulation of the gut microbiome); biomarker (fewer inflammatory cytokines), and behavioral (less irritability)," says Derek Timm, Ph.D., Technical Sales Director for Taiyo International .The study was published in the Journal of Clinical Biochemical Nutrition and followed 12 boys and one girl, ranging from four to nine years old.

The researchers supplemented the daily diet of the children, who have been diagnosed with ASD and were experiencing constipation and irritable behavior, with Sunfiber. The findings showed that within one week, all children experienced an increase in defecation, going from one-two times per week to two-four times per week. Their irritability, measured on a standardized scale, also improved significantly, according to the findings.

Approximately one out of 60 children in the US has been diagnosed with ASD. Most of these children also have chronic digestive issues – including constipation and a leaky gut – because their good gut bacteria (probiotics) are out of balance. These gut disorders can often contribute to a child's irritability.

Sunfiber is a water-soluble bean fiber derived from the Indian Guar Bean (Partially hydrolyzed guar gum, PHGG). It is prepared by enzymatic fermentation and is also tasteless, colorless and odorless. Sunfiber is touted as improving the functionality of foods and beverages, offering a high dietary fiber content and stability. Clinically proven to lower glycemic index, improve mineral absorption and promote intestinal regularity, Sunfiber is slowly fermented by the gut bacteria, especially by Bifidus bacteria. Sunfiber is also the first fiber and first standalone ingredient to become a Monash University Low FODMAP-certified product.

Good bacteria in the gut create most of the dopamine, serotonin and other neurotransmitters responsible for mood. When gut bacteria are imbalanced, they send improper signals to the brain. Soluble, prebiotic fiber feeds the gut's good bacteria and helps it establish a healthier probiotic balance in the gut. Essentially, using soluble fiber to support gut health may result in behavioral improvements.

Previously, Timm spoke to NutritionInsight about the company's soluble fiber ingredient; Although Sunfiberhas mainly been featured in medical and beverage applications, Taiyo plans to broaden this scope by combining the ingredient with other bioactives to target health concerns that go beyond digestion, the gut and regularity. For example, Taiyo's entry into the "mood food" space is signified by its range of products targeting the "gut-brain axis."
The company has also previously launched Sunphenon teas and Xia Oil as convenient, safe and suitable for a range of applications at Vitafoods last week. Taiyo also exhibited plans to further increase knowledge around tea as a health drink and its innovative beverage combinations with lasting Taiyo ingredients such as Sunfiber. The products in question can be used in an array of drinks applications, packing health punches that range from omega 3 boosts to fiber enrichment.

What are the best diets for ADHD?

Medical News Today 31 May 2019By Jayne Leonard

While there is no definitive ADHD diet, many sources claim that certain diets, foods, and meal plans can help reduce symptoms.

Various foods can affect energy and concentration levels. Certain choices may, therefore, be better for people with attention deficit hyperactivity disorder (ADHD). Some research suggests that following specific diets — such as elimination diets, the Few Foods diet, and the Mediterranean diet — could play a role in managing ADHD. In this article, we first take a look at specific foods that could improve or worsen ADHD symptoms. Then, we explore what the research says about specific ADHD diets.

Best foods for ADHD

Certain foods are better at keeping a person's energy and blood sugar levels stable and improving concentration. These foods may especially benefit people with ADHD. The following may be particularly helpful:

Protein-rich foods

Eggs and whole-grain bread may benefit people with ADHD. Protein is essential for the health of the brain, and it plays a key role in producing brain chemicals called neurotransmitters. Including protein in a meal also prevents spikes in blood glucose levels. Some people suggest that these surges increase hyperactivity. Foods rich in protein include:

- meat and poultry products
- fish and shellfish
- beans and lentils
- eggs
- nuts

Complex carbohydrates

Like protein, complex carbohydrates can help prevent blood sugar spikes. Eating this type of carbohydrate also keeps a person feeling fuller for longer, which may stop them from snacking on sugar-filled foods. In addition, when people eat them before bedtime, these foods may encourage better sleep. The foods below contain complex carbohydrates:

- fruits
- vegetables
- whole-grain bread and pasta
- brown rice
- beans and lentils

Vitamins and minerals

Some studies link ADHD with low levels of certain micronutrients, including iron, magnesium, zinc, vitamin B-6, and vitamin D. However, it is unclear whether these lower levels lead to the development of ADHD and whether consuming more of these nutrients can improve symptoms. Nonetheless, they are all essential nutrients in the diet, so eating more foods that contain them is unlikely to cause harm. People can find these nutrients in the following foods:

- iron: beef, liver, kidney beans, and tofu
- zinc: meat, shellfish, beans, and nuts
- magnesium: pumpkin seeds, almonds, spinach, and peanuts
- vitamin B-6: eggs, fish, peanuts, and potatoes
- vitamin D: fatty fish, beef liver, egg yolks, and fortified foods

Omega-3 fatty acids
Omega-3 fatty acids are essential fats that a person must get from their diet. They play a role in heart and brain health. Children with ADHD may have reduced levels of omega-3 fats. Some research suggests that consuming more omega-3s may help modestly improve symptoms. According to an interview conducted by a group of nonprofit organizations called Understood.org, omega-3s may improve attention,


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focus, motivation, and working memory in children with ADHD.

However, they caution that more research is necessary and that omega-3 fatty acids are not a substitute for ADHD medications. Some sources of omega-3 fatty acids include:

- fatty fish, such as salmon and tuna
- walnuts
- chia seeds
- flax seeds

Foods to limit or avoid

Adults and children with ADHD may feel better if they limit or avoid the following:

Sugar

Eating sugary foods can cause blood glucose spikes and crashes, which can affect energy levels. Some caregivers report a link between sugar consumption and hyperactivity in children with ADHD. While some studies indicate a link between high consumption of sugar and soft drinks with a higher prevalence of ADHD diagnosis, other research finds no connection. Even if it does not improve ADHD symptoms, limiting sugar intake is a healthful choice for everyone, as it may reduce the risk of diabetes, obesity, and tooth decay.

Other simple carbohydrates

Sugar is a simple — or refined —carbohydrate. Other simple carbohydrates can also contribute to rapid changes in blood sugar levels and people should only consume them in moderation.The foods below contain simple carbohydrates:

- candy
- white bread
- white rice
- white pasta
- potatoes without skins
- chips
- sodas
- sports drinks
- potato fries

Caffeine

Small amounts of caffeine may benefit some people with ADHD — some research suggests that it can increase concentration levels. However, caffeine can intensify the effects of certain ADHD medications, including any adverse reactions that a person may experience. Adults with ADHD should limit their caffeine intake, especially if they are taking ADHD medications. Children and teenagers should avoid tea, coffee, and cola completely.

Artificial additives

Some children with ADHD can benefit from removing artificial additives from their diets. The American Academy of Pediatrics (AAP) recommend that children avoid these additives, particularly food colorings because they can worsen ADHD symptoms. Artificial additives may also interfere with hormones, growth, and development. Many prepackaged and processed products contain artificial coloring, flavors, and preservatives, including some:

- breakfast cereals
- candies
- cookies
- soft drinks
- fruit punches
- vitamins for children

Allergens

Some researchers claim that removing potential allergens — such as gluten, wheat, and soy — can improve focus and reduce hyperactivity. However, eliminating these allergens likely only benefits those who actually have an allergy or intolerance. Consider discussing food allergies with a doctor or dietician before removing these foods from the diet.

Diets for ADHD

While there is no cure for ADHD, many people discuss certain diets or foods that they believe can help manage ADHD symptoms, such as hyperactivity and difficulty concentrating. The following sections look at the research behind various diets that people believe may reduce symptoms of ADHD.

An elimination diet: Removing artificial additives

The AAP recommend that children avoid artificial additives, warning that they could worsen ADHD symptoms. Following a diet that eliminates additives would involve not eating:

- artificial colors
- artificial flavors
- preservatives
- artificial sweeteners

Many breakfast cereals, candies, and sodas contain these chemicals. Over the years, various researchers have looked into the effects of additives on ADHD. According to a 2017 review, eliminating additives may have a small effect on ADHD symptoms. The authors suggest that the specific benefits may also extend to children without the condition.

The Few Foods diet

The Few Foods diet is a short-term intervention that helps people determine whether certain foods make their ADHD symptoms worse. It is highly restrictive and involves eating only a small number of foods that are unlikely to cause an adverse reaction. If a person notices a reduction in their symptoms after eliminating certain foods, this suggests that a food allergy or intolerance could be making their ADHD symptoms worse. After beginning with the Few Foods diet, people gradually reintroduce other foods and watch for a reaction.

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A different 2017 review confirms that the Few Foods diet could help children identify and eliminate problematic foods. The Few Foods diet is extremely restrictive at the start. For example, one diet plan involves eating only lamb, chicken, potatoes, rice, bananas, apples, and cruciferous vegetables.

The Mediterranean diet

The Mediterranean diet is well known for benefitting the health of the heart and brain. It involves eating mainly:

- fruits
- vegetables
- whole grains
- legumes
- nuts
- healthful fats, such as olive oil

Some research suggests that not following a Mediterranean diet is associated with ADHD diagnosis. However, the results do not suggest that a Mediterranean diet could prevent or treat ADHD symptoms. Nonetheless, because of the benefits to other areas of health, it is a safe diet for people with ADHD.

Other diet tips

The following diet tips may also benefit people with ADHD:

Eat balanced meals. Try to include a mix of vegetables, whole grains, protein, and omega-3 fatty acids in most meals.

- Schedule regular meal and snack times, as routine is important for children with ADHD.
- Do not skip meals, as this could lead to blood sugar crashes and excessive junk food consumption.
- Keep plenty of healthful foods on hand for a quick snack, such as fruits, nuts, and chopped vegetables.
- Speak to a doctor about taking a multivitamin and multimineral supplement, which may be especially helpful for picky eaters and people with nutrient deficiencies.
- Check all ingredient labels on food packaging, and avoid foods that contain artificial additives and high amounts of sugar.
- Shop around the perimeter of the grocery store, which tends to contain the most minimally processed whole foods.

Sample meal plan for children

Try the following healthful meal plan for children with ADHD:

breakfast: scrambled eggs with cherry tomatoes on whole-grain toast, and a small smoothie made with milk, spinach, banana, chia seeds, and frozen strawberries
snack: sticks of cucumber and bell peppers with hummus
lunch: a cheese and bean quesadilla with guacamole and salsa, and a slice of melon
snack: trail mix with walnuts, almonds, and dried berries
dinner: homemade salmon fish sticks, baked potato, and green vegetables
dessert (optional): frozen chocolate pudding made with low-fat milk

Sample meal plan for adults

This healthful meal plan may be a good option for adults with ADHD:

breakfast: avocado and eggs on whole-wheat toast, herbal tea or coffee
snack: yogurt with berries and chia seeds
lunch: a salad with baked salmon and quinoa on a bed of mixed leaves, cucumber, and bell peppers, topped with sunflower seeds
snack: sliced apple dipped in peanut butter
dinner: chicken and vegetable curry with brown rice
dessert (optional): 1 ounce of good-quality dark chocolate, and herbal tea

Summary

Some research suggests that certain dietary choices may help with some of the symptoms of ADHD. However, the evidence is limited. In general, the best diet for people with ADHD is the diet that doctors recommend for most other people — one that is rich in fruits, vegetables, whole grains, healthful fats, and lean proteins. It should include limited amounts of saturated fats and junk foods.P eople with food allergies or intolerances should avoid trigger foods. Also, some people require vitamin and mineral supplements, though it is important to speak with a doctor before taking them.

Sunscreen does not compromise vitamin D levels, study shows

By Nathan Gray 13-May-2019 – NutraIngredients

The use of sunscreen on sunny days with a high UV index does not compromise vitamin D levels, say researchers from the UK.

Writing in the British Journal of Dermatology , the team behind thestudy noted that suggestions sunscreen use can lead to vitamin Ddeficiency have been circulating for some time – however noresearch has looked into the potential issue.

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There are, of course, both short- and long-term risks associated with exposure to the sun's harmful ultraviolet (UV) rays, which has led to a concerted campaign for us all to cover up and use sunscreen. While this advice suggesting we need to protect ourselves from the damaging UV rays of the sun has been well received, and reduced levels of potentially deadly skin cancers, it has also created a more recent concern that consistent use of sunscreen may mean vitamin D levels become a worry."Sunlight is the main source of vitamin D. Sunscreens can prevent sunburn and skin cancer, but there has been alot of uncertainty about the effects of sunscreens on vitamin D," commented lead author Professor Antony Young, of King's College London.

"Our study, during a week of perfect weather in Tenerife, showed that sunscreens, even when used optimally toprevent sunburn, allowed excellent vitamin D synthesis."

Everybody's free (to wear sunscreen)
Young and colleagues studied the impact of sunscreens on vitamin D status during a one-week sun-holidayin Tenerife (28°N).Comparisons were made between two formulations, each with a sun protection factor of 15. The UVA protection factor (UVA-PF) was low in one case and high in the other.Healthy Polish volunteers (n=20 per group) were given the sunscreens and advised on correct application.

Comparisons were also made with discretionary sunscreen use (n=22) and non-holiday groups (51°5N,n=17).Sun screen use, behaviour, UVR exposure, clothing cover and sunburn were monitored, while serum levels of vitamin D were measured as 25(OH)D.

The team reported that the use of intervention sunscreens was the same, and that both equally stopped sunburn that was present in the discretionary use group. They also recorded an increase of vitamin D in participants during a week of cloudless weather, with very high UV index, even when sunscreens were used properly and prevented sunburn."A high UVA-PF sunscreen enables significantly higher vitamin D synthesis than a low UVA-PF sunscreen because the former, by default, transmits more UVB than the latter," added the team – noting that the synthesis of vitamin D relies on UV-B.As a result, the team concluded that the benefits of sunscreen use can be obtained without compromising vitamin D levels.

Probiotics and Helicobacter pylori: Supplementation increases eradication speed and decreases side effects

By Cheryl Tay 07-May-2019 – NutraIngredients Asia

The use of multiple probiotic strains can help to accelerate the eradication of the bacterial species Helicobacter pylori and minimise side effects in the human body, according to a Chinese review.

The bacteria, which live in the digestive tract, can lead to ulcers in the lining of the stomach or the upper part of the small intestine. For some people, an infection can even lead to stomach cancer. Medical professionals have been increasingly incorporating probiotics into standard eradication regimens for H. pylori, thanks to their ability to increase eradication rate and decrease side effects in patients undergoing such treatment.

Based on this, researchers at China's Guangxi Medical University set out to evaluate the effectiveness and safety of probiotics in facilitating the eradication of H. pylori through a meta-analysis.They also wanted to determine the optimal duration and timing of probiotic supplementation and the best strains to use for eradicating H. pylori, as well as the use of eradication techniques and their common side effects.

Eradication, effects, efficacy
Selecting from databases such as PubMed, EMBASE, the Cochrane Library, Web of Science and CNKI, they settled on 40 eligible studies involving a total of 8,924 patients to be included in the analysis. Using a random-effects model, they then analysed the eradication rate and incidence of total side effects by intention to treat (ITT).

They reported that the H. pylori eradication rate — obtained from 40 RCTs — was 81.5% in the patients supplemented with probiotics, compared to 71.6% in the patients in the control group. After two weeks of supplementation during treatment, patients in the intervention group saw a 92.6% eradication rate of H. pylori;

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this figure rose to 99.9% when the patients were placed on the bismuth quadruple regimen (a recommended eradication regimen).The researchers also took note of the eradication rate when the patients were supplemented with Lactobacillus (73.6%) or multiple probiotic strains (72.1%).

In the subgroup where the timing of probiotic supplementation was assessed, the eradication rate was also statistically higher than that of the control group. In the subgroup where the duration of supplementation was assessed, the researchers found that more than two weeks of probiotic supplementation, they observed a similar difference from the control group. They wrote: "Compared with the control group, Lactobacillus, Saccharomyces, and multiple strains exhibited statistically significant differences in the analysis of the probiotic species. Regarding different locations, China and other countries were statistically significantly different from the control group."

In terms of side effects, the incidence of total side effects in the intervention group obtained from the ITT analysis was 18.9%, compared to 39% in the control group. Based on the results of the standard meta-analysis, the researchers reported that the incidence of diarrhoea, abdominal pain, nausea, taste disturbance, vomiting, and constipation was significantly lower among those in the probiotic group than those in the control group.

Strains and regimens

The researchers also reported that combined probiotics with the bismuth quadruple regimen produced the best eradication impact in the current study, compared to the standard triple regimen; this meant probiotics could not be used in place of bismuth. They added that bismuth's strong antibacterial effect was complemented by the addition of probiotics ,thereby increasing the eradication rate of H. pylori.

However, bismuth also has an inhibitory effect on probiotics, which means it should be taken separately from probiotics so the latter's effects are not dulled. The superior eradication effects of Lactobacillus and multiple probiotic strains were attributed to their species specificity — Lactobacillus ' metabolites, for instance, possess strong antibacterial properties, which potentially strengthen humoral and cellular immunity.

However, Saccharomyces needed to cooperate with other probiotics to "more substantially improve the eradication effect". Due to the use of multiple probiotic strains and the bismuth quadruple regimen in China, the eradication effect among Chinese patients was better than that among patients in other countries.

Larger samples, better studies

The researchers also observed a high degree of heterogeneity in the analysis of total side effects despite having used a meta-regression analysis in their assessment of heterogeneity, and they could not properly explain the source of the heterogeneity. The study's small sample size may also have led to the treatment effects being overestimated, and the adult study population also meant that more studies with larger sample sizes (including children) and higher-quality trials were required for further analysis.

In conclusion, the researchers wrote: "Probiotics improved the eradication rate and reduced side effects when assisting with the eradication of H. pylori.T he use of probiotics before and throughout the eradication treatment, and the use of probiotics for more than two weeks, exerted a better eradication effect. Probiotics combined with the bismuth quadruple regimen was the best combination. Lactobacillus and multiple strains were the better choices for probiotic strains. The eradication effect reported in China was better than the rates reported in other countries."

Eating ginger may have long-term health benefits against type 2 diabetes: Chinese study

By Cheryl Tay 03-May-2019 – NutraIngredients Asia

Ginger (Zingiberofficinale) has long been among the range of dietary supplements and herbal medicines ancient medical practitioners used to recommend for the treatment of T2DM, thanks largely to its non-toxic nature, general safety, and negligible side effects.

Researchers at China's Youjiang Medical University for Nationalities conducted a systematic review andmeta-analysis to compare fasting blood sugar and glycated haemoglobin (HbA1c) between T2DM patients who had consumed ginger and those who had not.


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Treading gingerly

Using databases such as MEDLINE, Embase and the Cochrane Central, they selected eight English-languageRCTs involving 454 patients, which compared glucose parameters in T2DM patients who had been administered ginger and a control group. Those assigned to ginger therapy had each received a daily dose of between 1.6g to 4g of ginger, while those in the control groups had received an equivalent amount and frequency of placebo. Patients in both groups had their fasting blood glucose and HbA1c assessed at baseline and during followup. Initially, fasting blood glucose was compared in T2DM patients from baseline (prior to ginger consumption)to follow up (after ginger consumption). This showed no significant difference in fasting blood glucose — similar to T2DM patients who had not been administered ginger.

When it came to HbA1c, however, the researchers observed a "significantly improved" result between baseline and follow-up in the participants in the intervention group; a similarly significant result was not observed in the control group.

Past and present

The results differed somewhat from an earlier systematic review and meta-analysis, which reported that ginger consumption had managed to reduce fasting blood glucose and improve HbA1c in a significant manner. However, the researchers wrote: "Their analysis was not strictly based on diabetic control and our analysis was better in the way that it included even more trials to assess the corresponding endpoints as compared to the previous meta-analysis."

They added that another study had found the daily consumption of 1g of ginger to be able to help reduce plasma fasting sugar, therefore preventing complications such as dyslipidaemia, hyper insulinaemia, peritoneal membrane fibrosis, and cardiovascular disease in patients undergoing peritoneal dialysis. In addition to its anti-diabetic properties, previous research has also reported on ginger's effects against obesity and metabolic syndrome, as well as its protective effects on the liver, kidney, and neural system inT2DM patients.

Hypertensive patients and coronary artery disease patients may also benefit from dietary ginger consumption, which could even act as a "primary preventive measure" against chronic diseases.

Limitations and long-term prospects

The researchers acknowledged that the "restricted total number of participants could be a major limitation" of the current study, and that the variation in the length of the follow-up period for the different studies(eight to 12 weeks) could have affected the results. At the same time, most of the studies did not report on the duration of T2DM in the participants, and the different amounts of ginger administered daily could have also been a limiting factor in the current study. Lastly, none of the studies looked into any consumption of Western medicine by the patients, a factor that could have influenced the current study's final results.

In conclusion, the researchers wrote: "This analysis involving patients with T2DM showed no significant difference in fasting blood glucose with ginger consumption. However, dietary ginger significantly improved HbA1c from baseline to follow-up, showing that this natural medicine might have an impact on glucose control over a longer period of time in patients with T2DM."

Can chocolate have a positive influence on bone health? New review explores existing data

By Adi Menayang 30-Apr-2019 – NutraIngredients Asia

A review of published studies concerning chocolate consumption and bone health found that moderate chocolate intake was linked to greater longitudinal bone growth in adolescents, but little to negative bone effects for post-menopausal women.

These results came from researchers at West Virginia's Division of Animal and Nutritional Sciences in the US and the School of Nutrition at Ryerson University in Canada."Determining dietary recommendations for chocolate consumption relative to bone health is important because of the growing popularity of chocolate, particularly dark chocolate, and an expected increase in consumption owing to suggestions of chocolate's health benefits against various degenerative diseases," the researchers argued in their paper, published in the journal Nutrition.


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Their conclusion came from a review and synthesis of five studies published between 1997 and 2015 that investigated the effect of chocolate consumption on bone health—a relatively short list of studies, reflecting the trend for chocolate researchers to focus more on the ingredient's link to cardiovascular health due to its rich polyphenol content.

One notable finding was that post-menopausal women with daily chocolate intake were more at risk to bone density loss and related issues like osteoporosis compared to the general population. This stood in contrast with the correlation seen in children and teenagers, in which individuals who ate more chocolate were more likely to have greater bone growth.

The researchers were quick to add, however, that the studies they reviewed did not have one standard form of chocolate.

"The beneficial antioxidant and anti-inflammatory effects of flavonoids and mineral content of chocolate on bone health may be outweighed by other components in chocolate such as oxalate, added cocoa butter, sugar, and methylxanthines with potential to exert adverse effects on bone health," they reported.

"Based on flavonoid and mineral content, unsweetened cocoa powder appeared to be the best option, followed by dark chocolate with higher cocoa content, in terms of supporting and preserving bone health."

Why it matters

Despite the low number of studies that have investigated chocolate's role in bone health, the researchers thought it was an important topic to explore and continue to study because of the amount of conflicting information available to the public, such as media coverage, health policy, as well as food marketing that highlight chocolate as either a health food or health fiend"The 2015–2020 Dietary Guidelines for Americans list chocolate milk as a source of calcium, potassium, and vitamin D," they wrote.

"Moreover, both the U.S. Dietary Guidelines and the 2019 Canada's Food Guide advise that due to its high sugar and fat content, chocolate bars should be at the top of the nutritional pyramid under fats, oils, and sweets that are to be used sparingly," they added.

"Determining dietary recommendations for chocolate consumption and its implications for bone health and osteoporosis risk is a topic of importance given the widespread and growing popularity of chocolate consumption."

Unsalted tomato juice may help lower heart disease risk

Science Daily June 5, 2019

In a study published in Food Science & Nutrition, drinking unsalted tomato juice lowered blood pressure and LDL cholesterol in Japanese adults at risk of cardiovascular disease.

In the study, 184 male and 297 female participants were provided with as much unsalted tomato juice as they wanted throughout one year.

At the end of the study, blood pressure in 94 participants with untreated prehypertension or hypertension dropped significantly: systolic blood pressure lowered from an average of 141.2 to 137.0 mmHg, and diastolic blood pressure lowered from an average of 83.3 to 80.9 mmHg. LDL cholesterol levels in 125 participants with high cholesterol decreased from an average of 155.0 to 149.9 mg/dL. These beneficial effects were similar among men and women and among different age groups.

"To the best of our knowledge, the current study is the first to investigate the effects of tomato or tomato product intake on cardiovascular disease risk markers over the course of a year and over a wide age range," the authors wrote.


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FOOD SCIENCE & INDUSTRY NEWS

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Global food companies are increasingly sweet on sweet potatoes

IFT Weekly May 8, 2019

Global introductions of food and beverage products that use sweet potato as an ingredient, flavor, or more increased by a compound annual growth rate (CAGR) of 21% for the period from 2015 to 2018, according to Innova Market Insights.

This news comes on the heels of the U.S. Department of Agriculture's (USDA) just-released Census of Agriculture, which revealed that the amount of acreage devoted to sweet potatoes expanded 37.6% in the United States for the 2012–2017 period, far and away the biggest increase for any vegetable crop measured by the USDA.

The rise of the sweet potato reflects a major shift in global diet and nutritional preferences with consumers embracing "healthy swaps" that replace foods like white potatoes with more healthful alternatives. Sweet potatoes offer significantly higher levels of vitamins A and C than white potatoes, are rich in beta-carotene, have slightly more fiber than white potatoes, and have a lower glycemic index.

The baby meals category accounted for 14% of new sweet potato launches over the 2015–2018 period, the highest share for any category measured, according to Innova Market Insights. But launch growth was especially robust in five additional categories, each racking up CAGR gains of 25% or more over the period: cakes, pastries, and sweet goods; vegetables; ready meals; cassava and other root-based snacks; and gummies/jellies.

"Sweet potato is increasingly used as a base ingredient for natural red color alternatives to carmine, a food coloring derived from insects," said Tom Vierhile, vice president of strategic insights North America for Innova Market Insights. "Food makers that use carmine cannot label their products as 'vegan,' an increasingly attractive designation for consumers seeking to reduce or eliminate animal-based products in the diet. This is helping sweet potato gain traction in food ingredients like food colors."

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GM seed oil plant may be a good source of EPA, DHA

IFT Weekly May 8, 2019

The omega-3 fats that are mainly found in fish oil and oily fish, namely eicosapentaenoic acid (EPA) and docosahexaenoic acid (DHA), are important for health and development.

However, the UK population consumes less than half the recommended amounts of EPA and DHA. Moreover, the amount of EPA and DHA that can be produced by marine sources could only meet less than 15% of the global demand for these fatty acids. Therefore, there is a need for a source of EPA and DHA that is broadly acceptable to consumers, which can be scaled up to meet demands and is sustainable.

University of Southampton scientists, led by professor Johnathan Napier at the agricultural research institute Rothamsted Research, have developed a seed oil plant (Camelina sativa) using genetic modification to produce an enhanced vegetable oil that contains EPA and DHA in similar amounts to fish oil. The findings, published in the British Journal of Nutrition, show that when young and middle-aged men and women consumed the same amount of EPA plus DHA in a single standard meal, either as fish oil or as the oil from the genetically modified plant, there was no difference in the uptake of these fatty acids from the meal or the body processing these fats.

In addition, there was no difference between men and women, but the older participants appeared to take up EPA and DHA more efficiently than the younger ones. Significantly, there were no adverse effects on those who had consuming the modified oil.
Researchers at the University, led by professor Graham Burdge in collaboration with Rothamsted Research, have for the first time tested in people whether the oil from the genetically modified plant, which contains EPA and DHA, is as good as fish oil in providing these fatty acids.

“These findings show that the oil from this transgenic plant is an effective means of providing EPA and DHA in the diet which overcomes the negative effect on EPA and DHA intakes of consuming a diet that excludes animal products,” said Graham Burdge, professor of nutritional biochemistry within medicine at the University of Southampton. “Furthermore, subject to further testing and regulatory approval, this would represent a unique opportunity for British farmers that could have a positive impact on the nutrition of the global population.”

Dairy to be different? Protein enrichment remains in top demand, brain health holds potential

Protein waters enriched with whey and dairy as a snack see a boost in popularity, suppliers say

22 May 2019 Nutrition Insight

From the traditional infant nutrition space to sports nutrition and gut health, dairy products are hailed as nutritiously rich and able to support several areas of health.

The growing popularity of plant-based alternatives presents a challenge to which the dairy industry is responding by elevating the quality of its offerings and even stepping into previously unexplored terrain. While protein enrichment maintains its appeal, areas such as brain health – extending to mood and even sleep – present new NPD opportunities for the dairy industry.

“The protein enrichment of all sorts of dairy products has been a major trend over the last couple of years. And over this year and the next, we expect it to increase even further. We also believe we’re going to see dairy products being launched with ingredients offering new functional benefits – brain health for example,” Peter Schouw Andersen, Director, Application, Science & Technology, Arla Foods Ingredients (AFI), tells NutritionInsight.

According to Innova Market Insights data, brain health claims are on the rise, with more than twice as many products (excluding infant nutrition) reporting a brain health claim in 2017 than in 2013. As a result, fortification for a well-functioning brain through the use of nutritionals gains traction among consumers. Emerging science is highlighting the importance of the gut-brain axis, which underscores a symbiotic link between the body’s microbiota and overall mental wellbeing. Probiotic dairy ingredients may, therefore, present potential in this clinical space.

Recently, Australian-based dairy supplier Maxum Foods states its belief that this will be the year in which dairy will lead in terms of product innovation. The company identified gourmet butter, cheese coffee and protein as key dairy trends for 2019.

Functional hydration trend

No sugar, low-calorie and high-protein functional beverages, such as protein waters, are seeing a surge in popularity. Tapping into the high protein and clean labels trends, companies are exploring “functional hydration” through the launch of ingredients that will fortify water with these elements without changing its refreshing taste, while maintaining a “clean label” appeal. Whey protein is now being added to clear drinks in line with this trend. Schouw Andersen singles out whey protein as a significant dairy ingredient that is driving innovation in this space. “We’re discovering more about the wonders of whey every day – it’s an untapped gold mine,” he notes. Touching on the protein water trend, AFI launched Lacprodan, a whey protein isolate specially developed for crystal clear

protein beverages. It packs high-quality protein into a convenient format with good taste. "AFI invests heavily in innovation and product development. Our aim is to make it easy for consumers to enjoy great taste while meeting their nutritional needs and lifestyles. We are discovering more about dairy and dairy ingredients every day and are constantly on the lookout for new opportunities – both for us and our consumers," Schouw Andersen notes.

Protein-fortified and energy boosting food and beverages dominate the sports nutrition space. Sports nutrition is still going strong with new focus on the rise of "the active consumer." This new rank of consumers are not athletes by categorization, but individuals who seek to support their active lifestyles with enriched products that boost energy and boast nutritional benefits. In this space, Friesl and Campina Ingredients DMV launched "ultra-clean" whey protein, Nutri Whey Isolate.

The ingredient is touted as a pure, clean-tasting, nutritionally balanced protein that can deliver unprecedented clarity in protein water and clear drinks applications. Volac also released Volactive Pro2O, a whey protein ingredient, specifically designed for clear drinks. "It can make a drink look as clear as water and it tastes delicious with very little astringency," Alan Johnstone, Business Development Manager at Volac, told NutritionInsight.

In the broader beverage space, AFI recently launched a clean-label ingredient solution for calcium fortification in beverages. Capolac milk mineral concentrate is gently derived from milk and naturally contains a high content of bio-available calcium and phosphorus, making it a viable alternative to traditional calcium fortification in beverages, according to the company.

Healthier ice creams and yogurts as snacking trends

With cravings increasing as the day wears on, new opportunities are opening up to target the innovation sweet spot that exists between snacks and ready meals. In this category, dairy products such as high protein yogurts hold particularly strong potential. Innova Market Insights reports that the percentage of US consumers that consume yogurt for snacking moments is rising (2017 vs. 2015). A six percent rise has been reported in those claiming to consume it as an afternoon snack and four percent among those who consume the treat as an evening snack.


Image © iStock.com/Ivanko_Brnjakovic

Indulgent releases that satisfy consumers' sweet tooth with a healthier approach are enjoying an increase in NPD. Recently Nightfood Inc. launched a line of ice creams that boast a low-calorie, sleep-friendly formulation. Although the products do not contain any sleep activating chemicals such as melatonin, they are touted as not interfering with sleep due to their reduced sugar, caffeine and fat content.

Unilever also launched its version of a better-for-you healthy ice cream with probiotics and protein. New brand Culture Republick is a low-calorie alternative in the increasingly popular "healthy ice cream" category which saw Halo Top scoop up US grocery sales last year, taking market share away from iconic giants Ben & Jerry's and Häagen-Dazs.

Not everyone, however, opts for ice cream, as some consumers find the appeal of fermented dairy products stronger, making yogurt a favorite snacking choice. In this space, General Mills introduced YQ by Yoplait, a yogurt made with ultra-filtered milk that delivers big on protein with an intentionally less sweet taste.

Acknowledging the growing trend, last year, AFI decided to expand its Finnish brand, Ihana, a premium yogurt range, into Denmark and the UK. Made with natural ingredients, Ihana taps into key trends that fit with European consumer lifestyles and is marketed as providing an authentic and indulgent treat with a thick and creamy texture. Meaning "wonderful" in Finnish, Ihana was launched in Finland in 2016. In the same space, Yili, a leading Chinese dairy manufacturer, launched what is claimed to be the world's first ambient drinking yogurt with large fruit and cereal pieces.

What's next for functional dairy?

Consumers seek solutions that will deliver all the nutritional benefits that dairy has to offer, with added functional benefits and an indulgent taste to boot. This demand is driving NPD and allows the industry to explore more areas of innovation that extend beyond traditional applications. Brain health and mood, as well as the ever-popular protein fortification and probiotics spaces, are expected to receive increased attention from manufacturers in years to come.

By Kristiana Lalou


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Personalization could provide boost to healthy aging market, expert says

By Hank Schultz 20-May-2019 – NutraIngredients USA

The trend toward personalization and the concept of health aging are likely to converge in teh future, according to a dietary supplement industry expert.

Marc Brush is a former editor of Nutrition Business Journal and is principal in the consulting firm Bend LLC. Brush, who will participate asa panelist during a session of NutraIngredients-USA's Healthy AgingOnline Event, which is scheduled for May 29, shared some of his thoughts about where the sector is headed.

Broad category

Brush started by saying that the concept of healthy aging is so all encompassing that it makes it difficult for marketers to craft a message that connects broadly with consumers. Is healthy aging about joint mobility? Maintaining musclar strength? Keeping up a youthful appearance, i.e., a beauty-from-within idea? What about cognitive decline, the 800-lb gorilla in the room?"Healthy aging is a beast of a topic. How are you going to begin to say something meaningful about it?" Brush said."The reason healthy aging still exists as a viable concept is it can mean whatever you want it to mean," he said.

At its core, the aging process has to do with the erosion of cellular function. Cells as a matter of course live, die and are replaced. But as the body ages, more and more cells start to enter a senescent phase, where their function declines and where they no longer divide. As more of these cells accumulate in a tissue, that tissue's function is compromised, whether it's joint tissue or brain tissue we're talking about."I think a lot of these processes start with oxidative stress. You might be able to find some science that supports an anti oxidative stress or anti inflammation claim," Brush said.

In terms of what that might look like on the shelf, Brush said a product built along those lines might be a new healthy aging multivitamin that includes things like macular carotenoids for their antioxidant potential."So that would be something that would help you age well in one easy box. I don't think the market is going there, though," Brush said.

Opportunity in personalization

Rather, he believes the way forward in the health aging space is to connect the concept with the development of personalization strategies. Every consumer is going to have a unique set of concerns about their health as they age, and smart companies will try to meet them there, he said. "Where is personalization really working in the market now? It's working with highly motivated biohacker programmers in Silicon Valley who have a lot of time to spend on these ideas," he said."If we can get to solutions for health aging that are highly personalized, it could add some heft to the health aging market is not currently supplied because by its nature the category is so abstruse," Brush said.

Among those personalized concerns, cognitive decline takes center stage. According to a recent study in the Archives of Gerontology and Geriatrics, about 13% of respondents on a survey said they very worried or worried about developing Alzheimer's disease or dementia. Recent data from Natural Marketing Institute finds the concern greatest for people under age 50.

But crafting a dietary supplement that can address dementia is very tricky, Brush said. Even though there are few truly effective drugs to treat the condition, it is still considered the purview of pharmaceuticals. Brush said working around the margins of cognitive decline might be an easier path for marketers to take."You very quickly get to disease states in the claims," Brush said. "Personally, I think there is more opportunity in the mood support end of cognitive decline."

Beauty from within boom: Nutricosmetics sector looking good in India as consumer demand soars

By Cheryl Tay21-May-2019 – NutraIngredients Asia

Beauty from within could be 'the heart of market growth' in India's vitamins, minerals and supplements (VMS) industry, with physical appearance among the top three reasons for consuming VMS products.

According to a report by market intelligence agency Mintel, 28% of Indian consumers cite the


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appearance of their hair, skin and nails as their main reason for consuming supplements, while 41% do so for bone and joint health reasons, and 53% do so to boost their energy levels.

Based on a Mintel survey of 3,000 Indian adults aged 18 and above, only 37% of the overall population consume supplements regularly. Despite this, the nutricosmetics segment is growing fast, with functional claims such as 'skin, hair and nails'(14%), 'beauty benefits' (7%) and 'anti-ageing' (5%) among the beauty claims seen among VMS launches in India between 2014 and 2018.

Natural beauty

Mintel also found that 24% of Indians who take supplements feel that they should be formulated using only 'natural' ingredients. Industry seems to be catering to such preferences: between 2016 and 2018, the top three claims among new product launches in India were 'vegetarian' (67%), 'botanical / herbal' (61%) and 'all-natural product' (31%). Rimpie Panjwani, Mintel's Senior Beauty and Personal Care Analyst (India), said: "Indian consumers show a strong inclination towards natural products, which can be attributed to the familiarity of ayurveda and a trust in natural ingredients like ginger, turmeric, ashwagandha and kesar. This has led to a strong preference for natural VMS remedies derived from fruits and vegetables, as well as those with 'free from' claims. Brands can look to explore and innovate with botanicals and herbs within VMS based on traditional knowledge."

She added that brands marketing beauty-from-within benefits must also include specific expected outcomes among their products' functional claims, as opposed to generic or all-purpose enhancements.

Channelling for youth

Panjwani also stated that Mintel research had shown that brands should "leverage word-of-mouth and social media channels to build brand image, as consumers also seek recommendations by experts and brand when purchasing VMS" .Speaking to NutraIngredients-Asia , Sandeep Ahuja, director of Indian beauty and wellness firm VLCCHealthcare, said: "In the Indian context, beauty from within is not a new concept — it has been around as long as ayurveda has been in existence. But in recent years, formulations based on ayurveda have been packaged and marketed as supplements and nutraceuticals in the edible beauty space."

He further said that in India, the beauty-from-within market was largely driven by direct sales rather than retail channels, as consumers were less likely to use ingestible skincare products unless they were not only convinced of their effects but also their lack of side effects. Furthermore, with around 60% of the Indian population being under 35, online channels have also gained popularity among consumers in the country.

Ahuja said: "E-commerce is an emerging channel for such products as well. Most of the market is driven by younger consumers, many of whom are now looking at beauty rather than overall health. And being more Internet-savvy,they tend to do their own research online prior to making purchasing decisions."

He added that younger consumers were also interested in cosmetic innovations that went beyond the usual topical applications and that might offer additional health benefits apart from healthy hair, skin and nails. At the same time, a greater emphasis on preventive healthcare has led to more younger consumers investing in VMS to minimise their risk of health problems later in life, a strategy also applicable to nutricosmetics purhcases.

Ahuja said, "Younger people have also realised that the cost of curative healthcare has become prohibitively expensive. They have seen their parents incur the costs, or have incurred the costs themselves on behalf of their parents. This has given rise to the growing investment in preventive healthcare in India over the last 10 years, especially among younger consumers. What began as preventive healthcare has now evolved into widely available nutraceuticals and supplements, including nutricosmetics. These are seen as a more benign solution than more invasive and expensive cosmetic procedures."

Format and perception

While pill fatigue has led brands to innovate away from the traditional capsule, tablet and pill formats for VMS,62% of Indian consumers said they preferred their supplements in tablet format. Panjwani said: "Vitamins and supplements are regarded as medicinal in India and for many, (they are) only consumed if prescribed by a doctor, which is likely the reason why consumers prefer them in tablet format. However, brands can help change this image by formulating new and indulgent formats, including VMS

in drinks, sauces, on-trend spices, and vegetable dishes. Snack options like chips, cookies, bars, and cakes with fortified nutrients also have the potential to help make VMS a part of consumers' regular diet."

Affordable lab-grown meat: India looks to become global cell-based meat hub

By Pearly Neo10-May-2019 – Food Navigator USA

Image © iStock.com/anyaivanova

The world's first research centre focused on research and developme nt in the cell-based meat category has been announced in Maharashtra, India, with the first phase set to open by 2020.

Dubbed the Centre of Excellence in Cellular Agriculture, the facility is a collaborative effort by the Good Food Institute (GFI) India and the Institute of Chemical Technology (ICT) Mumbai. "From a broad perspective, the goal of the institute has always been to think of India as a manufacturing and scale-up hub for cell-based meat], and to reduce the barriers to entry for cell-based meat [into the market," GFIIndia Managing Director Varun Deshpande told FoodNavigator-Asia. "When it comes to hard technology like cell-based meat and other biotech, there is still a dearth in infrastructure and basic labs in terms of advancing these, and we hope to change that." The Centre was established with the partnership and encouragement of the government of Maharashtra in India. In terms of concrete agenda items, the centre will not only provide facilities for related start-ups to investigate and create proofs-of-concept, but also conduct contract research for relevant private industries and start-ups and create curriculum and training for the sector."Perhaps most importantly, we will also look at taking up open access research for the scale-up of cell-basedmeat," said Deshpande.

Major research areas will include those that are known to be challenges to the scale-up of the sector or relevant opportunities , such as efficient bioprocess to utilise and design bioreactors for more productive scale-up. Another major focus will be on creating a talent pool from allied sectors including mechanical engineering, chemical engineering, biopharma and the like."India is a hub of outsourcing in the biopharmaceutical industry as well, and we think that bringing in some of that expertise to cell-based meat manufacturing will also be applicable," he said.

Long-time goals

According to Deshpande, the major reason that India was selected to base the centre in was not only the country's strong potential as a manufacturing and outsourcing hub, but also the rising demand for protein in the country. "As the demand for protein rises in India, we're going to have to offer alternate production methods. As such, we want to focus on relentlessly driving down the price of this protein to make it affordable and accessible to all, so that it will become an engine of nutrition for the country," he said. "Additionally, apart from supplying locally, we also want to function as a manufacturing hub for the world eventually. Local demand may build more slowly than global demand, but we want to be ready with the infrastructure to support this."
He added that the overarching goal is to create a consortium across research institutes that have expertise in things like early-stage research and scale-up research, as well as involving private industry to move things forward. "In two years, I believe we would have this consortium in place to function as an engine of growth for start-upsand open access research in this area, and in 10 years we want to be front and centre when it comes to driving down the cost of cell-based meat," Despande said."This lowering in cost should be across all different categories, whether it's seafood, chicken, pork, or other kinds of meat."

Indian government grants funding for cell-based meat research
The Centre for Cellular and Molecular Biology (CCMB) in India has received INR 45mn (US$645,000) in grant funding from the Indian government's Department of Biotechnology for an eighteen month project on cell-based mutton production. CCMB has also been an affiliate partner with GFI for research into the cell-based meat sector across the past year. "As far as committed funds go, this is one of the largest grants of this kind anywhere in the world for this sector,"said Deshpande. With regard to regulations and how this governmental support is expected to affect regulatory control inthe future, he added that things looked 'hopeful'."We are talking to all the related stakeholders as well as the relevant regulatory body in India, which would be the Food Safety and Standards Authority India (FSSAI)," he said."Regulations and other guidelines surrounding cell-based meat will take a while, but I believe India is well equipped to handle this, and all this support also gives us hope that things will go smoothly."

Why cell-based meat?

Deshpande added that he believes Asia will definitely be the epicentre for the global cell-based meat sector moving forward, and that a lot more private sector involvement should also be expected. “We will see more from large meat producers, maybe even setting up their own labs and so on. There will definitely be something on the market in the next few years, and that will be the catalyst for everyone to move forward too,” he said.

From a scientific standpoint, sustainability foci aside, the goal of cell-based meat research is also to make meat even better.“Right now, there may be issues with the supply chain where every cut of meat is not of uniform quality and nutritional value,” Deshpande said.“So, if we are able to standardise manufacturing and create nutrition and quality parameters that are affordable in every single cut of meat, this is the ultimate, post-scarcity vision for meat and the future of this industry.”

Cultivation for commercialisation: Plant rich in omega-3 shows great potential for Indian public health

By Cheryl Tay 03-May-2019 Nutra Ingredients Asia

Scientists at India's Central Food Technological Research Institute (CFTRI) have discovered an oil crop that could potentially be on par with fish oil in terms of omega-3 content.

The plant in question, Buglossoides arvensis (also called field or corn gromwell, or bastard alkanet), can be found in the Indian state of Jammu and Kashmir, but can be adapted to the country's other agro-climatic conditions. The research team, led by Dr RV Sreedhar, reported in a recently published study in the Journal of OleoScience that B. arvensis was rich in polyunsaturated fatty acids (PUFAs) such as omega-3, which include gamma linolenic acid (GLA) and alpha linolenic acid (ALA).

Nine trends driving flavour innovation

By Oliver Morrison 17-Apr-2019 – Food Navigator

The ‘Instagram effect’ means consumers are more open than ever to new flavours. International Taste Solutions(ITS), which manufactures and supplies natural flavourings to the baking, snacks, dairy and active lifestyle sectors, teamed up with market research firm Innova to identify flavour trends that it claims will emerge during the next two years.

“Now is a great time to be on the market because consumers are open to emerging trends,” a spokesperson from ITS told FoodNavigator. “The overarching message from this research is that the flavour industry is excelling massively at the moment and the interest from consumers is driving new innovation.”

And with so many consumers sharing their eating via social media, trends are spreading a lot quicker than they used to, he added.“The world is a lot smaller than it was 20 years ago so with new flavours emerging in new countries it can spread much quicker. If someone puts a picture

of their new product on Instagram it can be shared everywhere. In the past it would become slowly more popular. Now it comes in a much quicker, intensive burst. Food manufacturers need to be aware of new trends before they suddenly explode on to the marketplace.”Here are the main flavour trends on the radar that will emerge, according to ITS.

VERY BERRY

Berry flavours are very much on

trend, says the study. “Berries are highly nutritional and healthy, they work well in endless applications and are attractive to the eye, which makes them 'instagramable' and shareable on any digital platform. We are talking about strawberries, raspberries or blueberries, but also new, more exotic varieties like açai berries or goji berries.”

TROPICAL TEMPTATION

“Consumers dream of being on vacation all year round and what flavours could be better to bring us on holidays than tropical flavours?” asks ITS. It suggests we will see more passion fruit, mango, guava, jackfruit and papaya in drinks, bakery, snacks and sports nutrition applications.

GREEN IS GO

The healthy trend is here to stay, believes ITS, and its colour is definitely green. "Green veggies, green fruits and anything naturally green fits in here, even herbs and spices. Their natural appeal will make the product a success, whether it is a shake, a cereal bar or a yogurt. Cucumber, kiwi, spinach, avocado… but also green tea, or basil are welcome."

ROOM FOR MUSHROOM

Following with the natural and healthy market move, earthy flavours are on the rise too, believes ITS."Mushroom flavours make us recall the pleasure of sniffing the earthy air that rises up after it rains. Shiitake, truffle or porcini flavours will be increasingly seen in delicatessen breads and buns, savoury biscuits or crisps."

CITRUS IS BACK

Lemon, and especially lime are on trend, reckons ITS. And so are tangerine, orange and mandarin. "We are seeing citrus in many different applications, which will increase even more during 2019-20," it says. "Yogurt, milkshakes, bars, sports nutrition gels and powders, and even crisps will include citrus flavours."

TRAVEL THE WORLD

Consumers want to travel the world through food, according to market research. "The amount of restaurants offering world cuisines is increasing everywhere and supermarkets are listing more and more options on world food. During the next two years, Italian spices and flavours will continue to grow, alongside Indian flavours and curries and Chinese meals and spices."

MEDITERRANEAN GOES EAST

Mediterranean flavours from Italy or Spain like rosemary, basil or garlic have been in the market for a longtime now. The next two years, though, will see a different range of Mediterranean flavourings being launched, believes ITS. "This time, it will be flavourings from the Eastern Mediterranean. We will see pistachio, olive oil, watermelon, date or mint will be used in bread, biscuits, drinks, cereals and dairy."

WARMING SPICES

The research discovered that seasonal products are very welcomed by consumers. "The Winter season is ideal for warming spices like pumpkin spice, orange spice, gingerbread or apple spice," it says. "We will see them in hot drinks, cereal bars, biscuits, dairy and sports nutrition amongst others."

SENSORY EXPLOSION

Today's consumers crave new, exciting experiences, reckons ITS. "Following with this trend, we will see more products aiming for a temperature or texture shock. Hot spices combined with sour flavours, popping candy or extreme combinations will be seen within this category."

Protein powerhouse: Asia the 'key protein market' by 2025 with China and India leading the charge

By Pearly Neo29-Apr-2019 – Food Navigator Asia

A recent report on global protein consumption has predicted that by 2025 China and India will lead global protein demand with some 50% of total consumption worldwide.

The report was commissioned by Food Innovation Australia Limited (FIAL), and comprised an in-depth analysis of 50 protein types classified into six protein categories across11 regional markets, with a granular focus on Australia and Asia. The six protein categories were: Plant-based, Meat, Eggs & dairy, Wild catch fisheries, Aquaculture and Non-traditional (Insects, Micro-algae and Lab-grown meat).

The researchers conducted analyses on protein supply, demand and future implications. "Global protein consumption has risen 40% since 2000, with more than half of the increase being driven by Asia,"said the researchers. This growth is expected to continue into 2025, by when China's protein consumption is anticipated to grow to 70m tonnes up from 57m tonnes in 2018. As a whole, the country will contribute 31% of the total global increase during this period.

Protein consumption in India is expected to reach 38m tonnes in 2025, up from 30m tonnes in 2018, and will contribute 16% as a whole to the global increase. Together, both countries will likely take up some 47% of the increase in global protein consumption demand by 2025.

"China is a key protein market to focus on: it ranks first globally on both volume and value and on its own is predicted to account for 35% of global protein market value in 2025," said the report authors. It is also projected to be the largest market across all protein categories, except plant-based proteins."

Image © iStock.com/tbralnina

China also ranks third in terms of value per tonne of protein, which the authors said is due to the high prices of pork and beef in the country. As a whole, global protein demand is predicted to grow by some 20% from 2018 to 2025.

Image © www.theamazingchickpea.com

Japan and Australia trail in numbers, lead in value

Conversely, Japan and Australia ranked last in terms of protein consumption demand amongst all 11markets, but emerged as the first and second respectively in terms of value per tonne of protein. In terms of global protein consumption growth, Japan is expected to contribute no more than 0.1% and Australia 0.4%. In Japan, this could be attributed to a decline in fish consumption, as predicted by an Asia Research and Engagement (ARE) report published last year.“Fish consumption in Japan has steadily declined […] from nearly 70% of total animal protein consumption(including animal-derived products such as dairy and eggs) in the early 1960s to about 38% in 2014,” said the report.

Key drivers

The researchers stated population growth to be the key driver of protein demand worldwide since 2000, attributing some 80% of global demand to this. That said, moving forward a growing consumer middle class, technology and urbanisation rates are expected to replace this.“The rising affluence of the rapidly expanding consuming class is likely to drive another surge in protein demand,” said the authors. The advent of technological breakthroughs is also likely to facilitate major shifts in protein production that were previously unfeasible due to production constraints.”

Nut butter… minus the nuts? The Amazing Chickpea offers a pulse-based alternative

By Elaine Watson 04-Apr-2018 – Food Navigator USA

The nation’s top selling nut butter - peanut butter – is not actually made from nuts (peanuts are legumes), so if you think about it, a spread made from chickpeas (also legumes) is a logical extension for a category that now includes everything from cashew butter to pumpkin seed butter, says Sunil Kumar.

A chickpea enthusiast who grew up in India but has spent his adult life in the US, Minnesota-based Kumar first started making chickpea butter a few years ago for friends of his daughter with nut allergies, realized he might be onto something good, and founded The Amazing Chickpea.

If you add dry roasted sunflower seeds and olive oil to dry roasted chickpeas, plus a small amount of cane sugar, sea salt and organic palm oil (as a stabilizer), the net result is remarkably similar to peanut butter, making it an ideal alternative for shoppers looking for avoid nuts or those simply looking for more options in the emerging alternative butters segment, Kumar told FoodNavigator-USA.

From a nutritional perspective, Kumar's chickpea butter is pretty similar to peanut butter, with a similar level of fiber and sugar, slightly less fat and sodium and slightly less protein (however each serving still contains 5g protein), while chickpeas are also packed with micronutrients including vitamin K, folate, phosphorus, zinc, copper, manganese, choline, selenium, iron, vitamin B-6, and magnesium.“We're not marketing it as better than peanut butter; it's just another healthy option in the alternative nut butter category."

80-90% of our customers don’t have nut allergies

As for the target market, he originally thought the nut-free part of the story would be the key purchase driver - and some retailers have looked to merchandise it next to allergy-friendly foods - but has discovered that the product has far more mainstream appeal."We’ve had a lot of interest from parents who want to make peanut butter sandwiches for their kids but their schools don’t allow peanuts, so they love this alternative.

But we’re also finding that more than 80-90% of our customers don’t have nut allergies at all, they just love the taste of chickpea butter and love having more options in the nut and seed butter aisle," said Kumar.

Choc 'a chic: Half the sugar of Nutella

A new choc-a-chic variant – in which cocoa powder is used instead of sunflower seeds – has also been popular with kids, while parents see it as a healthier alternative to Nutella (it has half the sugar, less than half the saturated fat, twice the fiber and slightly more protein) that tastes just as delicious, said Kumar. “It's vegan, with no dairy, and much less sugary than Nutella, so it's a healthier option.”

But being first in any category is a double-edged sword, in that it's great being ahead of the game, but you also have to educate consumers, and that's tough for any start-up, said Kumar, who says the price – at $7.99 for a 12oz jar and $9.99 for a 16oz jar - is the same or better than most alternative nut butters."The biggest challenge is encouraging trial, because when people try it, they love it, but they don't know what it's going to taste like, so sampling is going to be key. It's not hummus, the taste and texture is much closer to peanut butter."


Image © iStock.com/al62

That said, the growth of the hummus category coupled with the emergence of chickpea-fueled brands such as Biena Foods, The Good bean, Hippeas and Banza and the launch of chickpea flours and proteins are all slowly helping to raise awareness of chickpeas in the US, he said.

The go to market strategy
Right now, the bulk of Kumar's business is online, via his own website and through Amazon, but after exhibiting at the Fancy Food Show and Expo West this year, he's now aggressively pursuing bricks and mortar accounts to take the business up a gear in 2018. Right now, the one frustration he has is that the products are nut-free, but are made in a factory that processes nuts, which is clearly stated on pack.

While the factory carefully controls for cross contamination, individuals with severe nut allergies typically avoid products with such disclaimers, so Kumar is looking for a nut-free site that could meet his needs in future.

There's a new kid on the plant-based protein block, and it's going to be disruptive, predicts Nutriati

By Elaine Watson
09-Jul-2018 – Food Navigator USA

Plant-based proteins are hot property, but organoleptic and functional challenges continue to hold the market back, claims Virginia-based Nutriati, which says its new chickpea protein concentrates can open up new application opportunities and give soy, pea and rice a serious run for their money.

Nutriati's artesa chickpea protein - debuting at the IFT show next week - is white, odorless, and neutral tasting with a smooth mouthfeel (no 'beany' or 'earthy' taste or grittiness), which makes it very attractive for manufacturers of products such as plant-based milks, said Nutriati co-founder Michael Spinelli, a food R&D veteran who rose up the ranks at Ben & Jerry's and chickpea-fueled brand Sabra, and teamed up with Altria exec Richard Kelly to form Nutriati in 2013.

Thanks to a patent-pending proprietary production process, the protein has a small, uniform particle size that delivers a superior taste, aroma, mouthfeel, and appearance, and helps it beat plant-based rivals in the functionality stakes, delivering superior water and oil binding qualities, freeze/thaw stability, solubility/dissolution and suspendability, allowing for higher inclusion levels and shorter, cleaner labels, Spinelli told FoodNavigator-USA.

"The fine, consistent, particle size is unique for plant proteins. If you drop it into filtered water and look at taste, texture, aroma and acceptability, it eclipses all of the other plant-based proteins, and lines up very nicely against whey protein.

It has a very clean flavor profile that you don't get with yellow pea, hemp or rice or soy. It's as close to dairy as any plant protein we've tested. It also works better than other plant-based proteins in low moisture bars, cookies and dry blended powders and nutrition supplements. Plant proteins can be very challenging to work with due to the variable particle sizes, whereas we're offering consistency and predictability."

We make things possible that cannot be made adequately with other plant proteins

Artesa protein could also function as a drop-in replacement for dairy proteins in multiple applications, and is attracting interest from formulators in every application area from plant-based milks, cheese, yogurts, mayo and meat alternatives to nutritional supplements, extruded snacks, crisps, cereals, bars, baked goods, pastas, noodles and sports beverages, he added.

"A lot of proteins started life in nutrition supplements, whereas we came from the starting point of creating a food ingredient that has the sensory and functional qualities food formulators are looking for. We make things possible that cannot be made adequately with other plant proteins."

When it comes to acidic (low pH) beverages, plant-based proteins such as pea can precipitate out of solution, or are not able to solubilize, he said. However, artesa protein's fine particle size helps it remain suspended.

"Any protein will crash out below a certain isoelectric point, but if you get some sedimentation after a month on shelf, you can gently shake the bottle and all of the artesa re-suspends in the solution. With pea protein, which has large, inconsistent particle sizes, you could literally turn the bottle upside down and shake it and that sediment would stay where it is."

Protein concentration… how much is enough?

Asked about protein concentration - and whether buyers are looking for higher concentration levels (eg. 70%+), Spinelli explained that "a lower concentration protein (eg. artesa chickpea protein c.62%) imbued with the right set of functional qualities could achieve a higher in-product formulation load of protein versus a higher concentration product " because it tastes better and has superior functional capabilities. He added: "There are taste, processing, and in-product quality issues associated with higher concentration products such as yellow pea protein rendering the final product unacceptable to the general consumer. To make an acceptable product, formulators typically either need to pull back on the gross amount of the high concentration protein, or they are obliged to add a challenging matrix of masking agents, sweeteners, conditioners and other excipients – rendering a clean label plan obsolete."

As to how concentrated protein has to be to be considered a 'concentrate,' he said: "There is no regulatory basis for the 70% number as defining a concentrate. The insistence on a certain concentration of protein is a legacy viewpoint that remains from the early days of plant protein (soy) marketing. It's also an attitude that you see coming from the supplement and sports nutrition segment."In both cases, consumers were willing to sacrifice on organoleptics, clean label, and product experience to get their protein in a specific way. These people tend to gravitate toward isolates and hydrolysates in point of fact. At the same time, product developers commonly have a range of difficulties in processing with these plant proteins -not the least of which is adding the aforementioned masking agents and other additives."

We had to invent a new process

While a growing number of brands from The Good Bean and Biena Foods to Hippeas, Banza and neatare built around chickpeas, chickpea protein is not produced on a commercial scale by any of the major players in plant proteins, despite the fact that chickpeas are very widely grown and relatively cheap compared to some other potential new sources of plant-based protein, he explained."We had to invent a new process and we've filed patents around the process and the composition of the resulting product as a function of that process, so we couldn't just sign up any contract manufacturer to produce this for us. We needed to build, design, and invent this ourselves, and we have partner manufacturers that have agreed to allow us to design and invest in the equipment and build facilities in conjunction with their facilities. It's definitely an atypical relationship." He added: "A lot of proteins require heavy energy use and water consumption, acid based chemistry, enzymatic reactions to separate starches and cleave peptides and then intense centrifugal energy to separate, followed by heat steps. We realized that wasn't a recipe for creating highly functional and taste oriented proteins, so we took a very different approach that's the antithesis of what's typically done."

It's slightly more expensive than standard pea protein

Devin Stagg, chief operating officer at PLT Health Solutions, an early investor in Nutriati, and its exclusive sales and marketing partner, added: "Companies we've been talking to are often trying to get to a certain inclusion level – x grams of protein per serving – but have been running into taste, functionality or process limiting steps when they use other plant-based proteins, but by incorporating artesa they have been able to meet those targets. It's slightly more expensive than standard pea protein but it's unique taste and functional advantages make it very compelling."

Chickpea flour

Nutriati's artesa chickpea flour ,which is made from co-products of the protein production process, has proved equally attractive to food formulators, who have been working with both materials for some time, noted Spinelli, who said Nutriati had raised an initial $750k, followed by $1.5m from NRV before closing its latest, $8m, funding round. The latest $8m funding round was supported by London-based Tate & Lyle Ventures, L.A-based PowerPlant Ventures, Virginia-based New Richmond Ventures (NRV), and San Francisco-based Blueberry Ventures.


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REGULATORY NEWS

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Health advocacy groups, top food brands, urge Health Canada to permit term 'potassium salt' on food labels

By Elaine Watson 06-May-2019 – Food Navigator USA

Leading executives at Heart & Stroke, Hypertension Canada, Diabetes Canada, and Dietitians of Canada have joined a growing number of food manufacturers and retailers urging Health Canada and the Canadian Food Inspection Agency (CFIA) to allow 'potassium salt' as a permitted synonym for the popular salt replacer potassium chloride on food labels.

In a letter urging regulators to add potassium salt to the Permitted Synonyms for Food Additives Table in order to facilitate sodium reduction in Canada, the non profits argue that a friendlier name would demystify the ingredient and help the industry achieve the dual goals of lowering sodium and increasing potassium intakes. Consumers are looking for clean labels and becoming increasingly suspicious of 'chemical-sounding' ingredients, says the letter: " Health Canada's current ingredient labelling policies require that potassium salt be labelled as 'potassium chloride' on food labels. This requirement is inconsistent with growing consumer demands for clean label food ingredients and it could inhibit consumer acceptance of this salt substitute."

Consumer research shared with Health Canada in November 2018 showed that consumers have concerns regarding the term 'chloride,' said leading food manufacturers in a letter penned to Health Canada earlier this year."Some consumers regard potassium chloride as an ingredient to be avoided, mistakenly believing it to be an undesirable chemical substance (i.e. chlorine) rather than an essential mineral / nutrient. Many food companies are therefore hesitant to employ potassium salt substitution within recipes when such use must be declared as'potassium chloride.'"

The CFIA has previously established precedents for synonyms for a variety of ingredients and food additives, permitting 'baking soda' for sodium bicarbonate, 'lye' for sodium hydroxide, and 'Graham's Salt' for Sodium Hexametaphosphate, for example, noted the food companies."It is somewhat ironic when one considers that sodium chloride may be declared on the label merely as 'salt' and not as 'sodium chloride.'"

NuTek Food Science - which has patented a process that suppresses potassium chloride's metallic taste without requiring companies to add expensive flavor masking ingredients – filed a citizen's petition with the US Food and Drug Administration (FDA) in 2016 urging the agency to permit the term 'potassium salt' on US food labels."Although we continue to wait on FDA action regarding our potassium salt petition, stakeholders in Canada have aligned to address the same issue with Health Canada," NuTek president and COO Brian Boor told FoodNavigator-USA.

"Both the Canadian health community and the Canadian food industry have amassed very broad-based and prominent public support for the potassium salt labeling option. We are hopeful, based on outgoing FDA Commissioner Gottlieb's comments about the near-term release of the two-year sodium guidelines, the FDA will also act on our petition in the nearer term. We are cautiously optimistic that with the broad-based support this has in both Canada and the US, both HealthCanada and FDA will elevate this and act in the nearer term."

SafeTraces granted U.S. patent for DNA-based barcoding technology to improve traceability

IFT Weekly May 15, 2019

SafeTraces has announced that the U.S. Patent and Trademark Office granted the company a U.S. patent titled "DNA Based Bar Code for Improved Food Traceability."

The patent discloses a novel method for encoding and decoding digital information to and from DNA strands. The SafeTraces technology uses DNA strands drawn from seaweed and allows the food and agricultural industries to create and apply unique, edible, flavorless DNA barcodes directly to the food, not the packaging. These barcodes carry complete source data, stay on the food throughout the supply chain, and can be read in minutes to confirm provenance and purity of any food item.

The SafeTraces DNA barcodes, marketed as safeTracers, can be read anywhere, anytime by minimally trained personnel in minutes, while conventional DNA barcodes require specialized laboratories, clean rooms, and highly trained personnel—a process that normally takes days. Unlike 2D barcodes, the safeTracers are inseparable from the food or product, representing the connecting link between the food and blockchain or other supply chain systems. Developed for low margin industries, such as fresh produce, tropical oils, and bulk foods and grains, safeTracers offer processors and consumers complete source assurance within minutes.

"This patent is a critical component of our intellectual property portfolio that includes many innovations to create a more digital, transparent, and safer food system while also addressing consumer demands for quick access to information about where foods come from, how they're produced, and whether the food is the subject of an ongoing recall," said Anthony Zografos, CEO, SafeTraces. safeTracers are affirmed GRAS (Generally Recognized as Safe) by the U.S. Food and Drug Administration.

Label (mis)understanding: Nearly half of US consumers purchase products despite uncertainty over their claims

The findings arguably underscore the need for independent third-party certification of food, dietary supplements and personal care

20 May 2019 Nutrition Insight

A new study shows that 61 percent of US consumers are concerned about the products they put in and on their bodies, but 34 percent say they rarely or never research product claims.

Almost half (46 percent) of participants say they have purchased a product despite being unsure of the validity of its claims, while the majority of millennials are concerned about potentially harmful food. These are the main findings of an online survey conducted on behalf of NSF International, an independent public health and safety organization in the US. The organization says the findings underscore the need for independent third-party certification of food, dietary supplements and personal care products. The findings also suggest many consumers are unsure how to research and verify claims for themselves, and may be unaware of third-party certification programs operated by independent organizations and governmental agencies.

The rapidly growing probiotic market recently sparked concerns about transparency and quality on the market. Members of an expert panel convened by the US Pharmacopeia (USP) published a paper earlier this month calling for more quality assurance for consumers purchasing probiotic products. As well as products undergoing third-party evaluations, labels could communicate genus and species names, strain designations and quantities for all strains present, a use-by date, storage instructions and company contact information. As the probiotic market continues to proliferate, improving transparency – even in the absence of regulatory requirements to do so – is paramount, the researchers note.

"It's clear that many consumers have questions and concerns about the safety and authenticity of the products they buy, but they don't always know whom to trust or where to turn for an honest answer," says Lisa Yakas, Senior Product Certification Manager at NSF International. "As consumers, we increasingly want brands and marketers to back up their claims with data and to prove products contain only the ingredients that are listed on the label."


Image © iStock.com/Goran13

A sample of 1,000 people took part in the survey about their concerns related to food, dietary supplements, personal care products as well as home cleaning products. The survey reveals an almost 50/50 split between people who say product claims are helpful and those who say they are confusing, overwhelming or meaningless. Notably, the survey also showed that consumers trust claims tested and certified by independent organizations more than claims made by product manufacturers and brands.

These findings suggest self-declared claims made by brands and manufacturers without any independent verification may contribute to consumer confusion and mistrust. The majority of consumers prioritize food quality over safety with 81 percent of assuming the food products they consume adhere to strict safety standards. This may help explain why most consumers focus on food quality over safety, notes NSF International. The survey also notes that 36 percent of consumers rarely or never look at claims made on food items. "Given the complexity of global supply chains and the fact that health and safety standards vary by country, it's challenging for consumers to conduct their own research into everything they buy," adds Yakas. "Independent third-party certification is the easiest way for consumers to check the safety and authenticity of products and the validity of product label claims."

From verification of claims like gluten-free, non-GMO and raised without antibiotics to certification of products such as dietary supplements and bottled water, NSF International tests and certifies more than 30,000 products a year. NSF experts also conduct more than 220,000 audits and inspections of manufacturing facilities worldwide each year. "When consumers see the NSF mark on a package, they can be sure the product has gone through extensive testing and review for potential health and safety risks as well as testing for the accuracy of label claims," Yakas explains.

Highlights from the 2019 survey include:

• Third-party certification is highly trusted. Across all four product categories, 85 percent trust independent, third-party certification organizations and 78 percent trust claims made by government agencies. Conversely, only 32 percent trust claims made by celebrities and influencers;
• Men are significantly more likely to trust claims on social media (44 percent vs. 31 percent of women), as well as claims made by celebrities or influencers (39 percent vs. 26 percent of women);
• Millennials have much greater concern over product safety and younger US consumers are generally more trusting of claims made on social media. Seventy-four percent of millennials are concerned about potentially harmful food and other consumer products. By comparison, only 64 percent of Gen X and 53 percent of Baby Boomers are concerned about the safety of these products. Nearly half of millennials (48 percent) and half of Gen Xers (51 percent) trust claims on social media;
• Parents have much greater concern over the safety of products with 79 percent being concerned compared to 55 percent of non-parents. Forty-five percent of parents (compared to 17 percent of non-parents) admit they have purchased a product despite realizing its claim was invalid.

The use of seals and logos on products offered to consumers can serve to communicate transparency and trust. Such messaging on packaging should be as simple as possible, as well as scientifically substantiated, found a research project earlier this year. The four-year project, CLYMBOL – Role of Health-related Claims and Symbols in Consumer Behavior – studied consumer understanding of health claims and symbols on packaging.

An EU-wide simplified nutrition label: Consumer groups launch petition calling for rollout of Nutri-Score

"The time is ripe to make healthy food choices easy for consumers, one of its priorities for the recent EU elections."
28 May 2019 Nutrition Insight

Shifting to a unified nutrition labeling system that is as simple as possible may bear the best results in terms of health for consumers.

This is according to a European Consumer Organization (BEUC) executive, Pauline Constant, who speaks to NutritionInsight days after seven national consumer organizations from the BEUC network launched a petition calling for the rollout of Nutri-Score nutrition labeling across Europe on food and drink packaging.


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BEUC applauds this action, reminding EU institutions that "the time is ripe to make healthy food choices easy for consumers, one of its priorities for the recent EU elections."

One notable trend from the EU elections, which took place between May 23 and 26, was the gains made by the liberal Green Party. In Germany, for example, the party doubled its share of the vote. Couched with the party's narrative of sustainability is health and wellness, perhaps reflecting a European population that is calling on institutions to translate this further into policy.

The Nutri-Score system gives food & beverages an overall nutritional rating on a scale which goes from "A" to "E," with corresponding colors ranging from dark green to red. It takes into account both nutrients to avoid, such as sugar or salt, and those elements to favor, such as fiber, fruit and vegetables.

"The time is ripe to make healthy food choices easy for consumers, one of its priorities for the recent EU elections," say BEUC.
The petition marks the first time that consumer groups are joining forces to start a European Citizens' Initiative, coordinated by French consumer group UFC-QueChoisir. The petition is open until 8 May 2020. Organizers thus have one year to gather 1 million signatures across the EU, meeting minimum thresholds in at least seven countries. If these conditions are met, the EU Commission (EC) will have to look at the request and provide an answer.

A root reason for the petition was scientific research, in the form of a real-life experiment in France, that showed Nutri-Score was the label that helped best consumers to improve the nutritional quality of their shopping basket, Pauline Constant of BEUC, tells NutritionInsight.

The Nutri-Score has also shown to have the most considerable improvements in the nutritional quality of the shopping baskets in households with the lowest income, she explains. A further study conducted online in 12 countries found that Nutri-Score is currently the best-performing scheme in both aiding consumers to compare the nutritional quality of foods across a range of products and to make healthier purchasing choices, she notes.
Spanish supermarket chain Eroski became the first European store to introduce the Nutri-Score system, doing so on a handful of its own-brand products in January. The cooperative proposed the Nutri-Score initiative to its Member Customers in September 2018, following a prior assessment of several existing nutrition labeling models carried out of food experts with the advice of the Eroski Scientific Committee.

A lack of unity in nutritional labeling?

Aside from Spain, France and Belgium also use the labeling system voluntarily. The global diversity in nutrition label use is clear, however. In Europe, color-coded schemes may come under consideration in Portugal, Poland and Ireland, while Germany plans to develop an understandable and comparable Front of Pack (FOP) label, but has not elaborated on the format.

"We know obesity rates continue to rise, and that part of the solution is to make it easier for consumers to make sense of nutritional information on food labels. We need strong political will to make it a reality so that consumers across Europe can choose healthier foods more easily," says Monique Goyens, Director General of BEUC.

The Nutri-Score system.

"A color-coded label on the front of pack helps busy shoppers compare foodstuffs and to spot the healthier yogurt or snack instantly. Being a consumer should not be a full-time job. Few of us have the time to decipher complex figures on the back of packages at the supermarket," she adds.

Indeed, simplicity may well be essential when it comes to communicating the nutritional levels of products to busy consumers. Findings from a 4-year EU-funded research project, CLYMBOL – Role of Health-related Claims and Symbols in Consumer Behavior – found that health and nutrition messaging on packaging should be as simple as possible, as well as scientifically substantiated.

Additionally, last year, the European Food Information Council's (EUFIC) 2018 edition of the Global Update on Nutrition Labeling similarly noted that appropriate and meaningful nutritional information should be based on science and take into account consumer use, interpretation and understanding of different labeling schemes.

Front-of-pack nutritional labeling has been identified by national governments, international public health bodies and consumer groups as one of the tools to help consumers make more informed and healthier food and drink choices, Constant asserts.
By LaxmiHaigh

Adulteration anger: 84% of Indians say local food authorities 'not active' in cracking down on culprits

By Pearly Neo28-May-2019 – Food Navigator Asia

Despite ongoing efforts by the Food Safety and Standards Authority of India (FSSAI) to bring food adulteration under control in the country, a recent survey has revealed that 84% of local consumers do not feel that their local authorities are actively suppressing these activities.

The survey was conducted by social platform Local Circles, and included responses from over 13,000 participants nationwide. When asked whether local or state food safety departments were active in cracking down on food adulterators, 84% of respondents said no.

"It is very clear from the responses that adulteration is a serious matter, and FSSAI and other Government agencies have their work cut out to stop this and ensure that the people's health is not put at risk," said the Local Circles' survey report authors.

They suggested that heightening awareness and placing more focus on reacting to consumer reports should be a 'first step which has been missing for all practical purposes' so far."FSSAI will need to initiate this in mission mode with state food departments and district administration if public health is a Government priority."

The majority of respondents (68%) also felt that they could not trust the fruit/vegetable suppliers they generally buy from to not sell artificially ripened or coloured fresh produce.

Artificial ripening chemicals included both calcium carbide, which is illegal, and ethylene, which FSSAI has permitted at 100 ppm (parts permillion). "Calcium carbide [is known to have carcinogenic properties] and extremely harmful to the human body, while artificial ripening agents in general can lead to headaches, dizziness, mood disturbances, sleepiness, mental confusion, memory loss, cerebral edema, seizures and prolonged hypoxia," said the authors.

Only 15% of respondents said they knew how to differentiate between naturally and artificially ripened fruits, whereas 78% said they did not. Although fruits and vegetables were identified as the food products most commonly found to be adulterated (30%), other items were not far behind including general grocery items such as flour and spices (29%). Milk was another commonly adulterated item, coming in at 13%.

Delay debacle: FSSAI postpones enforcement of wheat flour labelling regulations – its fifth hold-up this year

By Pearly Neo 15-May-2019 – Food Navigator Asia

The Food Safety and Standards Authority of India (FSSAI) has ordered for the postponement of yet another food related regulation implementation, this time surrounding the labelling of wheat flour.

Earlier this year in February, FSSAI had issued a directive that all food products containing maida (a finely milled, refined and bleached wheat flour) were to be re-labelled as 'refined wheat flour' as opposed to 'wheat flour' ."It has been observed that [food companies] are using maida (wheat flour) on the label of the food products, which does not convey the exact nature of the ingredient," said FSSAI Regulatory Compliance Joint Director Parveen Jargar in the order letter.

"As such, after detailed examination, it has been decided that maida should be re-labelled as 'Refined Wheat Flour (Maida)' wherever the same is used as singly or as ingredient in food items (sic)."Atta (wholemeal wheat flour) was initially also set to be re-labelled as 'Whole Wheat Flour (Atta)'. The deadline to re-label products containing both types of flour was set for April 30 this year, giving companies three months to comply.

Image © iStock.com/MarcoCavina

The difference between atta and maida is significant, especially when it comes to food companies making health claims about the wheat component in products. According to DNA India , medical experts have deemed maida less beneficial for health, especially for those with medical conditions such as Polycystic Ovarian Syndrome (PCOS). “PCOS is a common condition in women that can lead to hormonal imbalances and high insulin levels. It is important for them to eat foods to help maintain blood sugar levels and avoid refined foods such as those with maida] that could cause a spike,” it said.

That said, Jargar issued another order on the April 30 deadline announcing the extension of the initial order by a further three month to July 31 due to ‘representations received from various Industry Associations and food companies’.“Considering these submissions, FSSAI has decided to extend the time period for compliance of the previous order by another three months, i.e. up to July 31 2019,” said Jargar.

Additionally, further adjustments have been made to the original directive, whereby labels using India’s local Devanagiri script have now been allowed to continue using the Hindi nomenclature ‘atta’ for wheat flour and ‘maida’ for redined wheat flour. Atta flour will also no longer be labelled as ‘whole wheat flour’, but as ‘wheat flour’.The rules governing the labelling of the various wheat flours falls under Section 16 (5) of the Food Safety and Standards Act, 2006.

Fifth postponement this year
This postponement is the fifth one announced by FSSAI this year in relation to food products (excluding regulations related to food service).Last month, the agency delayed its enforcement of the Food Safety and Standards (Organic Foods)Regulations 2017 by one year . These regulations were set to be enforced starting April 1, but FSSAI issued a new order for small organic firms relaxing these rules for them, again due to the agency ‘receiving several representations (sic)’ about the ‘challenges faced in implementation’. “One of the challenges is that many of the producers are not certified under either of India’s two organic certification systems, the National Programme for Organic Production (NPOP) and Participatory Guarantee System-India (PGS-India) ,” said FSSAI CEO Pawan Agarwal.

“Efforts are currently underway to make PGS-India more small producer friendly, and in the interim we have decided to deem the Regulations to be ‘Enabling Regulations’, which means that small organic firms will not be considered for prosecution during the initial phase of its implementation till April 1 2020.”

Additionally, standards related to honey quality which were initially scheduled for enforcement in January this year saw certain elements of this (regarding rice syrup and oligosaccharides) postponed to June 302019, again after the agency saw ‘representation from various stakeholders’ .

The use of staple pins in tea bags has been postponed twice, from January 2018 to January 2019 and thento June 2019, after requests from food firms. The enforcement of implementation of alcohol warning labels in the country was set to start on April 1after a year’s transition period. FSSAI announced on April 4 that this transition period had been extended by six more months and alcoholic beverages manufactured prior to this date could still be sold in the market up to March 31 2020.

India's ban on China formula: Industry expert frowns upon regulator's call to extend 11-year-old restrictions

By Cheryl Tay 07-May-2019 – Food Navigator Asia

Indian regulator, the Food Safety and Standards Authority of India (FSSAI), has urged the government to again extend its 11-year-old ban on Chinese milk products until labs at Indian ports have been upgraded for melamine testing.

The ban, which was first imposed by the Indian Ministry of Commerce and Industry’s General Directorate of Foreign Trade(DGFT) in September 2008, was brought about by the infamous and tragic melamine milk scandal in Chinathat killed six infants and put 54,000 in hospital.The initial ban was to last three months as an interim measure, but a notice issued on December 1, 2008 said the ban would be extended for another six months to June 23, 2009.


Image © iStock.com/Paperkites

Multiple extensions

Since then, the ban has been extended multiple times. On December 6, 2018, the FSSAI met with government authorities to review the issue, and agreed that the ban should be extended from December 24, 2018 to April 23, 2019. On December 21, 2018, however, the FSSAI announced that the ban would be further extended, though itdid not specify an end-date this time around. In addition to milk products, including formula, the ban also covers chocolate products, confectionery, and foods containing milk or milk solids.

According to the FSSAI, it had once again reviewed the matter during a recent meeting with the relevant government ministries. In an advisory letter released afterwards, it stated: “The ban on the import of milk and milk products, including chocolates and chocolate products and candies / confectionery / food preparations from milk and milk solids as ingredients from China may be extended until the capacity of all laboratories at ports of entry have been suitably upgraded for testing melamine.”

Overreaching and overreacting?

One industry expert has expressed her disagreement with the ongoing ban and its repeated extensions surrounding milk products from China. Cathy Yu, GM of the Food Business Division at China’s Chemical Inspection and Regulation Service (CIRS), argued that safety standards in China’s milk product segment were sufficient, saying the FSSAI’s push for the ban to continue was unnecessary. Indeed — at least in China’s infant formula sector — safety standards have risen significantly over the last decade. This looks unlikely to change, especially as the State Administration for Market Regulation (SAMR) has been cracking down on the domestic health food and supplement market in quick succession. In fact, industry believes China’s domestic formula products are now ‘safer than ever’, with an unprecedented safety rating of 99.5%.

Speaking to NutraIngredients-Asia, Yu said: "In my opinion, the regulations and standards in China, especially for infant formula, are strict enough.“Any company that wants to manufacture formula in China must show their products are safe and that the ingredients are fully and accurately declared. It also has to go through multiple levels of registration, which costs a lot of time and money. This is not something they can afford to take lightly."

She did, however, acknowledge that the 2008 incident involving domestic formula firm Sanlu’s melamine tainted infant formula was well known globally, and might still affect consumer confidence in China-made milk products. “Maybe the Indian government is still worried about this issue (of melamine). But as far I know each batch of infant formula manufactured in China needs to be tested for melamine before it is permitted for sale, both in China and in other countries.”

She added that there might still be room for improvement when it came to Chinese-made milk products, possibly in the areas of testing and research, but also said there were no urgent or drastic changes needed at the moment.“Although the safety standards for other dairy products are not as strict as those for infant formula, the Chinese government is still very concerned about melamine contamination. Updated regulations have ensured that dairy products in general are now much safer than before, and considering how tough the SAMR is on offenders, I doubt anyone would dare add melamine to their products.”

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Coconut oil adulteration: FSSAI bans 14 brands in India as new detection method gains traction

By Pearly Neo 07-May-2019 – Food Navigator Asia

The Food Safety and Standards Authority of India (FSSAI) has banned 14 brands of coconut oil in the southern state of Kerala, citing the detection of adulteration.

In an article published on the FSSAI website, an official confirmed that laboratory tests had conclusively proved that the coconut oil products had been adulterated.“FSSAI has banned the production, procurement and distribution of these 14 coconut oil brands, [and] these will face strict action,” she said. Amongst the brands named as offenders were Surabhi and Soubaghya, both produced by Balakumaran Oil Mills.

Of note is the fact that such bans have taken place multiple times before in Kerala. In December last year, FSSAI had banned another 70 coconut oil brands in the state, June saw 51 bans and May saw 45 bans. Including the latest ban updates, the total number of coconut oil bans that have been instated in the state so far has reached 180.“If the unsafe food articles are not recalled with immediate effect, the very purpose of the Food Safety Act will be defeated and it may lead to serious public health issues,” said FSSAI.

India is well-known for being protective of its coconut oil, as previously evidenced by a strongly-wordedletter by an Indian governmental official against a Harvard adjunct professor who had declared coconut oil to be 'pure poison'. Harvard later distanced itself from any direct connection with the claims, saying that the professor in question was not a 'Harvard professor'.

New adulteration detection method for vegetable oils

The ban comes of the heels of FSSAI's implementation of an adulteration technique late last month. The new technique was targeted at ghee containing vegetable oils, specifically coconut oil, sunflower oil, soybean oil and groundnut oil. According to a separate FSSAI order: "All FSSAI Notified Laboratories and State Food Testing Laboratories are requested to use the aforesaid method (technique) with immediate effect. The method is based on the detection of cholesterol and β-sitosterol as markers,where the latter serves as anindicator for the adulteration in ghee according to plant type and specific dosages."

India re-enacts tea advisory body

Meanwhile, the Tea Board of India announced that it would be reactivating the Tea Council of India advisory body in order to ensure that tea in the country was of a quality that meets FSSAI standards. Tea Board Chairman Arun Ray told local media that the council would be randomly sampling tea companies in the nation, and those with samples that failed to meet FSSAI standard would be penalised. "Two consultants have been appointed by the board for this: One for the computerisation of processes, and the other for identifying processes that are not required," he said.

Earlier this year, the FSSAI had officially accredited the Tlabs chain of tea testing laboratories for testingand monitoring tea quality in the country. Tlabs is a laboratory chain operated by the Tea Research Association (TRA) in India, and was initially established under the Tea Board of India."Tlabs has two labs, and basically operates to investigate tea quality according to pesticide parameters in onelab, and quality parameters in the other," TRA Secretary and Principal Officer Joydeep Phukan previously told us. Parameters that Tlabs focuses on during its analyses are generally in accord with the ISO 3720 standards for tea,as well as according to FSSAI norms for the local tea market.FSSAI has a list of pesticide MRLs and quality parameters for tea, and Tlabs can test for overall everything (sic)within our labs."

FSSAI monitors various quality parameters including pesticide residues, heavy metal presence, iron filings and toxic substances.

Tea quality and industry compliance in India 'very good': Newly accredited FSSAI lab

By Pearly Neo18-Apr-2019 – Food Navigator Asia

The Tlabs chain of laboratories has recently obtained official accreditation by the Food Safety and Standards Authority of India (FSSAI), and has been tasked with monitoringtea quality in the country according to FSSAI parameters.

Tlabs is a laboratory chain operated by the Tea Research Association (TRA) in India, and was initially established under the 11 Plan Project of the Tea Board of India as a pesticides residue lab in 2010/2011."We now also have a quality control laboratory, so Tlabs basically operates on both ends to investigate teaquality according to pesticide parameters in one lab, and quality parameters in the other," TRA Secretary and Principal Officer Joydeep Phukan told FoodNavigator-Asia.

Parameters that Tlabs focuses on during its analyses are generally in accord with the ISO 3720 standardsfor tea, as well as according to FSSAI norms for the local tea market."The FSSAI recognitionis a big boost for TLabs to do more in quality moving forward," said Phukan. "FSSAI has their own list of pesticide MRLs and quality parameters for tea and Tlabs can test for overall everything (sic) within our labs."

FSSAI monitors various quality parameters including pesticide residues, heavy metal presence, iron filings and toxic substances. He declined to reveal further data about the issues faced during testing or what the most commonly-seen contaminants observed were, saying that this was not allowed according to National Accreditation Board for Testing and Calibration Laboratories (NABL) norms.

However, he described compliance levels within the Indian tea industry as 'very good'. "What I can say is that the Tea Board of India would pick random samples of teas meant for export and send them to us, which we would test and upload on their portal. This appears to have lead to improvement of quality and compliance levels.


Image © iStock/RenysView

For Indian tea, I think we have been able to help the export scenario in the country." The Tea Board of India acts as the secretarial authority and regulatory body for the tea industry in th ecountry, and the TRA acts as a research body for the board.

Worldwide recognition

Apart from local tea testing and analysis, Tlabs has collaborated with various industry organisations worldwide that deal with teas. Examples include Tea and Herbal Infusions Europe (THIE) in the United Kingdom and the Iran Tea Association, which both hail from countries that are big importers of Indian tea."We have tested a lot of tea for those markets, and worked with scientists too. I think in this way, we have managed to facilitate tea trade in a better way for both sides," said Phukan.

Nielsen: 'Buying local' has strong consumer pull, but how is it being defined?

By Mary Ellen Shoup01-May-2019 – Food Navigator USA

The term 'local' is important to consumers when making grocery purchases, but shoppers' definition of a local product is on a sliding scale (depending on the category) ranging from being produced within the same city to thousands of miles away across the country, according to Nielsen market research.

A recent Nielsen study found that 46% of consumers are more aware of the term 'buy local' compared to other food-related causes such as food waste in home (22%) and foods that provide a functional benefits (22%)."We know the term local is important to consumers, but in order to deliver on what consumers want, manufacturers and retailers need to understand what consumers are actually looking for," Nielsen said. Defining local is a challenge as it has no formal definition and there are many interpretations that vary by retailers, manufacturers, and consumers. Nielsen currently tracks $239m of CPG sales that call out 'local' on pack.

What's the cut off point for local?

Consumers' definition of local varies by category and by product, according to Nielsen. In some cases, consumers define local as products from their local city and in other cases, products are perceived as local when they come from the same state."There are even products that Americans view as local just as long as they come from within the US," noted
Nielsen, which found that in a survey of 20,000 consumers (US Homescan Panel Survey, December 2018), the highest agreement of a local definition was for shelf stable products -- 34% said products in this category can be local as long as they come from within the US.

Local can be informally defined as the number of miles a product had to travel to get to the grocery store. Nielsen asked respondents what they believe is the maximum distance from a store that a product can be produce and still be considered 'local'."Less than 50 miles had the highest consensus among the respondents across all products, but the level of agreement varied from the highest (50%+) for bakery and food service to the lows (low 20%) for frozen and shelf-stable foods, " Nielsen said.

For bakery, eggs, food service, and produce, respondents' local radius was much smaller, preferring these products to come from no more than 50 miles away. For dairy and meat, respondents concept of local expanded to coming from within the same state as the store. Frozen goods, seafood, and shelf stable goods were perceived as local as long as they were produced within the US, according to Nielsen research.

Who feels most strongly about buying local?

Nielsen found that across consumer groups, low-income consumers are more likely to say that buying local is 'extremely important' to then across all products compared to the general population. Young families say buying local is extremely important to them for their deli items, bakery, produce, as well as their shelf-stable and frozen goods. Millennials say local matters most in the frozen department.


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