PFNDAI

PFNDAI Bulletin

FOOD, NUTRITION & SAFETY MAGAZINE

OCT 2018

SOCIAL CONNECT WITH THE CONSUMERS

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Legal outputs to social outcomes

Report of Golden Jubilee Seminar of PFNDAI
on "Emerging Foods for Healthier India" held on
5th & 6th October, 2018 at Hotel Kohinoor Continental, Mumbai

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PFNDAI Bulletin

FOOD, NUTRITION & SAFETY MAGAZINE

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EDITORIAL

Recently a report appeared in Times of India (TNN Oct 24, 2018) with a scary headline "FSSAI claims your moong, masoor dal is poisonous! …". We do not need such scare without any justification with responsible people making careless statements when it is difficult to make people eat adequate nutritious foods.

They are claiming that moong and masoor dal imported into India is having toxic levels of glyphosate. The paper writes "The Food Safety and Standards Authority of India (FSSAI) has warned the consumers to stop having these daals regularly as laboratory testing found high traces of chemicals in the final samples. It included herbicides like Glyphosate, which is a weedkiller mostly used in the farming community to get rid of rodents and weeds."

This kind of statement in newspapers is extremely dangerous by itself and is followed by another statement: "Commenting on the issue, an FSSAI official said, 'There is a possibility of higher levels of residues of the herbicide Glyphosate in pulses which could adversely affect the health of consumers here. Since the maximum residue limits (MRL) for Glyphosate in pulses has not been specified in the FSSAI regulations, we have asked the concerned officials to follow the Canadian standards for the herbicide as specified in the Codex standards.'"

They further give analytical data of glyphosate contents in daals as 282 ppb in lentil daals and 1000 ppb in moongdaals in thousands of samples calling them "extremely high by any standards".

FSSAI has by an order dated 12th Oct 2018, has specified limits of glyphosate in dry pulses as 2mg/kg (2000 ppb) for beans, 5mg/kg (5000 ppb) for lentil (masoor), 5mg/kg (5000 ppb) for peas and 20mg/kg (20,000 ppb) for soya beans which are specified in Codex and may be considered for import. These limits are much higher than the above contents found in analysis claiming them to be extremely high by any standards.

Newspapers have become sensationalist and to provide them with such dangerous fodder would scare general public which does not have capability to distinguish which is domestic daal and which is imported. Protein intake of Indians is less than recommended and their major protein intake comes from pulses. Responsible officials should realise the implications of such reports appearing in papers which will scare people into stopping consumption of such essential staples.

There is no effort to do risk analysis of any food or ingredient and so we depend on international standards. Then because of some reports we add to the confusion that already exists without verifying our own orders and create scare among population. Our officials should counteract such reports stating that these values are well within the prescribed norms and are considered safe everywhere. Just because values are shown to be bigger by using ppb instead of ppm the situation does not change and papers get sold.

Prof. Jagadish S. Pai,
Executive Director,
PFNDAI

SOCIAL CONNECT WITH THE CONSUMERS

By
Ms. Naaznin Husein,
President, Indian Dietetic Association-Mumbai Chapter

& **Mrs. Sukhada Bhatte-Paralkar,**
Sr Manager Regulatory and Nutrition (Hexagon Nutrition Pvt Ltd)

Time has come when the leaders of the nation chat with you on twitter or your house-help can be reminded on WhatsApp to come in early to work or you can simply order food over an app without ever talking to an actual person.

Recent times have expanded the usage of technology, making social media apps very popular amongst all sections of the society irrespective of their educational background. Telecom network has reached the Himalayas and the other remote areas of our country, making everyone highly accessible to these apps. Using the social media to reach out to your consumers is the way to connect with the new age customer. However, it is not as simple as it sounds. With accessibility comes responsibility and if not handled well, social media can act like a double edged sword causing much harm.

According to the report by IAMAI and Kantar IMRB, the number of internet users has reached 500 million in June 2018. About 182.9 million users are urban users while 98 million arerural users, says a report published in Times of India.1 The opportunity to build your nutrition or food entrepreneurship brand through access to these users is a success waiting to happen. Not everyone however, is able to achieve the same results. Being on the social media as a nutritionist or a food entrepreneur makes you a content builder as well. This brings in responsibility to put evidence based scientific information on to the world wide web on your shoulders.

How do you then begin building your brand and which social media apps would you choose?
Social media success is never overnight. It takes a lot of sweat and blood but, you have plenty of help available online to make it easy for you. Follow these two simple steps to achieve your goal of building your brand online.

Step 1: Content is the King:

Begin with building content which is true to yourself, unique and not plagiarised. Original and scientific content goes a long way in achieving success online. A good place to start is to look at recent evidence based literature, and share your expert opinion on it. Tools that can be useful is building sound content are Google Scholar, Pubmed which is a database of high impact journals and articles published in a wide spectrum of topics. Certain nutrition software like the 'Nutritify India Now' (NIN) Mobile app,Ntuitive and the IFCT database are also useful applications that can be used to access factual information. Some of these apps are available on desktop as well as mobile and can be used to carry out diet calculations, record client information and share diet plans with them.


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The type of content also has a bearing on how successful, a particular post will be. Usually short videos or visual content like pictures receive more hits (visits, likes etc) than content which is plain text. A longer video or a picture with a lot of crowded content may not be as effective as a shorter video, as an average internet user usually has a shorter span of attention.

Step 2 Share on the right platforms

Once content is built, it is important to know which platforms to use for sharing the content. Some of the most popular apps that businesses can use are WhatsApp, Instagram, Facebook, LinkedIn, Wordpress or Blogger.

• WhatsApp has over 1.5 billion monthly active users, according to the Financial express.2It is one of the most user friendly apps that can be used to send messages to clients, daily reminders, follow up messages, as well as for online consultations via the calling or video calling feature. Dietitians can also share short videos with motivational messages or other informative links to help the client stay connected with you at all times. It is important that if you use this app, you must have a good reply time. A delay in reply may upset the consumer, and they may lose interest in your content.

• Facebook is another popular app. Making a Facebook page may help your brand grow exponentially. It can be used to share all kinds of content like nutrition rich recipes or videos, your blog posts, motivational messages or even run awareness campaigns like 'Campaign Against Quacks' to educate the general public on the importance of seeking guidance from a qualified nutritionist. Besides several groups on Facebook may help you connect with fellow dietitians in India and abroad and you can help each other's practice/business grow. The new Facebook live feature helps you connect with your consumer and answer real time questions that they may have. Consumers/clients from around the world can attend your Facebook live if they have liked your page.

• Instagram started as a photo app but, today can be used to upload videos, create Instagram live sessions and share short stories/narratives about your daily success stories. It is a great tool, to share information and keep your client motivated. The app is relevant to nutritionist or entrepreneurs whose target consumers are young populations. It's a great platform that you can use for motivation, healthy eating inspiration, exercise motivation and showing how you try to practice what you preach!

• Twitter About336 million users currently have an access of twitter. Simple and short health guidelines can be posted to keep the user interested also can be used for advertisement. One can link the Facebook page, Instagram account and twitter account to their blogs to have similar content being shared simultaneously on all platforms.

• Youtube is another popular medium to advertise your content. It can be used to share presentations, videos, documentaries with the end user. If the content is to the point and short, it can go viral and can be shared on other mediums like Facebook, WhatsApp and twitter as well.

• Zomato being a food app can be used to rate food available in various restaurants based on their nutritional content. Dietitians can recommend their clientele on a specific diet on where to eat and what to choose from the menu. It can also be use by food and beverage entrepreneurs to sell their food to the consumer. There are several other apps available in this area like Uber eats, Fresh Menu etc.

• Amazon as the name suggests sells everything from A to Z. Many nutritionists today venture into running their own business of healthy snacks, diets foods or healthy tiffins. This is a great platform to sell you products to a wide range of audience for a nominal fee.

• Tumblr, Blogger and Word Press are popular blogging sites that you can use to write your own evidence based articles and even make a low budget website for yourself. Tutorials are easy to understand and one can make use of this app for a variety of functions apart from article sharing, sharing of news, researches etc.

• LinkedInis a professional platform to connect with peers in your field. Connect here with your professors, role models and friends you look up to. It's a great place to seek professional advice and seek jobs relevant to your area of work. You can also participate in debates and discussion on this forum.

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*Source: The Times of India, July 2017

Loggerheads_2018

Some unwritten rules of social media

We cannot emphasize enough on the importance of unique, well referenced content. Its ok sometimes, to share someone else's post, or an article on your page or a picture on your Instagram as long as you give due credit to the original creator of the content. It is good to discuss things you feel strongly about on social media platform on various groups and forums. However, it is futile to waste too much time trying to prove a point or arguing with someone. One must not share personal information and confidential client information on social media. These apps usually have 'policies of use or agreements' which may allow you to select the audience of your post. This helps you in reaching the right target group and achieving the end results you are looking for.

The key to a successful social media entrepreneur is consistency and quality. You need to have quality content that is unique, reflects your personality and is put up at regular intervals reminding your consumer about your brand. Be patient and soon your social media presence will help you grow you business by leaps and bounds.

Reference:
1. NEWS, B., News, I. and Ayyar, R. (2018). Number of Indian internet users will reach 500 million by June 2018, IAMAI says - Times of India. [online] The Times of India. Available at: https://timesofindia.indiatimes.com/business/india-business/number-indian-internet-users-will-reach-500-million-by-june-2018-iamai-says/articleshow/62998642.cms [Accessed 1 Sep. 2018].

2. Online, F. (2018). WhatsApp now has 1.5 billion monthly active users, 200 million users in India. [online] The Financial Express. Available at: https://www.financialexpress.com/industry/technology/whatsapp-now-has-1-5-billion-monthly-active-users-200-million-users-in-india/1044468/ [Accessed 2 Sep. 2018].

COMING EVENTS

Food Tech
Food Expo
December 1-4, 2018
Chandigarh
T: +91 92160 00125,
E: agnivesh.joshi@cii.in
W: www.agrotech-india.com

Food Tech Kerala
December 6-8, 2018
Cochin, Kerala
W: www.foodtechkerala.com

IFCON 2018
AFST (I)
December 12-15, 2018
CFTRI Mysore
Thanjavur, Tamil Nadu
T: +91 821 2515557, 2518670
E: ifcon2018mysore@gmail.com
W: http://afsti.org/ifcon

CILSI 2019
A Brave New World in Nutrition & Food Safety
December 12-15, 2018
Clearwater, Florida, USA
E: annualmeeting@ilsi.org
W: www.ilsi.org

Agro F&B Pro Expo'18
December 18-20, 2018
Bombay Exhibition Centre
Goregaon East, Mumbai
W: www.agrofnbpro.com
T: +91 84529 29818

Platinum Jubilee Conference of All India Food Processors' Association
Food Sustains Life, Processing Sustains Food
December 20-21, 2018
Vigyan Bhawan, New Delhi
T: +91-11-2651 0860
E: aifpa75pjc@gmail.com

Food Tech Pune 2019
February 23-24-25, 2018
HA Exhibition Ground
Pimpri, Pune
T: 011-2953 5593/5872
E: foodtechpune@gmail.com
W: www.foodtechpune.com

PROMISE OF FOOD LAW: LEGAL OUTPUTS TO SOCIAL OUTCOMES

By
Dr. JI Lewis,
Food Regulatory Consultant & Vice Chairman,
Regulatory Affairs Committee, PFNDAI

Image © iStock.com/serggn

Laws like comets display a rare frequency of occurrence - even within one's lifetime - food law is no exception.

Food laws existed in some form in most ancient cultures; as early as 375BC, Chanakya in his 'Arthashastra' writes about food adulteration and punishments. Before independence, Indian provinces had their own acts and rules to deal with food adulteration; for example the Bengal Food Adulteration Act (1919), Bombay Prevention of Food Adulteration Act 1925, The Madras Prevention of Food Adulteration Act 1918, the Punjab Pure Food Act 1929 etc. These laws were based on the British Food and Drug Act 1892 designed to combat economic deception and fraud; the Prevention of Food Adulteration 1954 is one such law of independent India. They were essentially enforcement procedures for inspections, seizures and prosecution. Such Acts are reactive in nature; activated routinely by food failures; they fall short in intent of protecting life and health of the consumer.

A food law intended for consumer protection must be designed upon preventive measures of reducing failures before reaching the market. Economic fraud alone – as with adulteration acts - cannot be its sole purpose, ignoring the larger issue of safety and health. The FAO/WHO(2002) noted that many food scares were not associated with adverse health effects and may present little or no risk but the sensational and dramatic coverage by media can precipitate consumer reaction beyond reasonable behaviour. India too, in recent times has experienced food scares blown out of proportion, exposing the regulator's inability to communicate the true nature of the riskin an authoritative way. In the public eye this is often construed as acquiescence to media reports. Unless the regulator communicates forthrightly and effectively on health risks consumer confidence will continue to erode.

In early 2000 several countries realized that marketplace testing for food failures – as is the case in food adulteration based law - is too late especially when the food is infected with pathogenic bacteria. To achieve a preventive food safety control system, food risks must be reduced along the entire food chain – including primary production – as a policy.At a global level modern food laws are now enacted on a common framework of risk analysis;also referred to as science-based law. In 2002, EU enacted what is commonly known as the General Food Law (EC 178/2002) shifting the arena of food safety from the marketplace to the food chain: all stages of food production, processing and distribution.
The United States passed the Food Safety Modernization Act (FSMA, 2011) a major reform of previous US food law shifting from responding to food failures to prevention-based controls covering food manufacture, harvesting, processing, packing, and storage.

India's new - but no longer new (implemented in 2011) -food law, the Food Safety and Standards Act 2006 (FSSA) is modelled on the risk analysis (science-based) framework; similar to EU's General Food Law, though excluding primary production, possibly for political considerations. Excluding this point of entry into the food chainof "agriculatural practice hazards" such as residues, contaminants, and toxinsknowing well that subsequent processing steps areincapable of reducing or eliminating them undermines the safety of the food chain.

Image © iStock.com/Vardhan

In a preventive food safety act, regulators are required to spend more time monitoring risks existing or emerging in the food chain and provide information to stakeholders. It you don't monitor you cannot predict, is the core of a predictive – preventive system envisioned by Parliament in 2006. Amassing compendia of standards for products without evidence of their accompanying risk it (standard) seeks to address only imposes an unnecessary cost burden on industry (compliance), government (enforcement) with little or no benefit for the consumer.

Consumers, eventually, bear all regulatory costs in perpetuity unless an ineffective regulation is withdrawn; a rare occurrence. Risk analysis prioritizes the agenda of the regulator and regulatory impact analysis holds the regulator accountable for the cost benefit for all to see. Performance based regulation is an essential feature of modern science based Acts and regulators and businesses are held accountable to achieving pre-set public health goals. Those engaged in food science, nutrition and public health should strengthen the regulatory deliberations and objectives by engaging on risk analysis principles as applied to an issue of safety. A process provides a superior platform of reaching the right or optimum goal.

Asignificant statute of the FSSA is specifying the process of rulemaking intended to discourage – if not prevent – arbitrary and capricious regulationsfrom emerging. To ensure that regulations remain science- based, the functional roles of risk assessors (Scientific Panels and Committee) and risk managers (Food Authority) are separated. When risk assessors and risk managers belong to the same organization (FSSAI), it is critical to preserve their integral roles through exclusive procedures, oversight and transparency.

For Panels and the Committee to engage with drafting regulations is in conflict with the Act. Codex and the EU follow these distinctive roles scrupulously and they share the same risk framework as FSSA. Indian participation at Codex meetings should have provided a grand view of how risk analysis plays out in the preparation, discussion or review of standards.

This brings us to the international necessity of harmonization of food regulations. Parliament recognized early enough the importance of aligning with international food law in a growing global economy. Harmonization –a misused word – essentially works on a risk analysis framework to narrow down differences in food regulation and to ensure the highest level of protection to the consumer without undue restriction of trade.

PFNDAI founded in 1968 is fortunate to see a new food law being enacted during its 50 years of its existence; the earlier one, Prevention of Food Adulteration Actwas enacted in 1954. The Food Safety and Standards Act 2006, by all accounts registers as a landmark event for the Indian food sector; being a science- based law.

PFNDAI has been actively engaging with the Act, nudging awareness, encouraging recourse to its statutes in response to notices and drafts and attempting to foster changing attitudes to the way regulations are made. It has campaigned, taken positions and provided inputs at several stakeholder meetings, workshops, seminars, government consultations, academia and Industry. Several of its members have served on Scientific Panels and Committee.

On everyone's mind is whether the new law will bring about socially desirable outcomes of safety and health or merely continue the extended life of its predecessor adulteration act – even after its repeal - under a new title.The question to be asked is whether there are lessons to be learned by regulatory officialdom and stakeholdersfrom the previous regime spanning 55 years.

Whether energies are diverted towards relatively insignificant issues and superficial remedies than removing entrenched patterns of failures and practice. Whether FSMS installed by food businesses can showcase sector wise types risks associated with their products andreductions in failures.

Finally are we on track to deliver socially relevant outcomes in food safety and health.

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REPORT ON
ANNUAL GENERAL MEETING 2018


Members

Fiftieth Annual General Meeting of PFNDAI was held on Friday 5th October 2018 at Hotel Kohinoor Continental in Mumbai when a good number of members attended the meeting as it was the Golden Jubilee of the association.

After going through the normal activities of the AGM of the association including approval of the Annual Report as well as the accounts of the association and appointment of auditors, the Executive Director announced the Results of the Election and following members were declared elected:

Mr Bhupinder Singh, Chairperson
Dr Shatadru Sengupta, Vice Chairperson
Mr. V. Mohan, Member
Dr N Ramasubramanian, Member
Ms Anshu Gupta, Member
Ms. Madhavi Trivedi, Member
Dr Prabodh Halde, Member
Ms Shilpa Telang, Member
Mr Arun Kelkar, Member
Mr Prakash Chawla, Member
Mr Indranil Chatterjee, Member
Mr Shaminder Pal Singh, Member

After the Chairperson gave some plans for the activities, it was time to felicitate some of the past Chairpersons. We had invited the past chairpersons to this occasion and following persons came: Mr Nadir Godrej, Dr Vilas Adhikari, Dr R Jayaram, Mr JA Sakhavalkar, Mr RD Shenoy, Dr JI Lewis, Dr SanjogSurve and Mr Bhupinder Singh. Each of them gave glowing tributes to the work of PFNDAI in the past fifty years and gave some of their anecdotes about their periods. They were all extremely happy to be part of the journey and wished the Association further success in carrying out the good work in food safety, nutrition and quality.

Finally each one of the past chairperson was felicitated with a Gold Coin with PFNDAI Logo printed on it as a token of appreciation and to remember the association by.

Chairman Adressing AGM

Mr. Nadir Godrej


Members


Mr. Bhupinder Singh Felicitating Mr. Nadir Godrej

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Members


Members

GOLDEN JUBILEE 1968 - 2018

SEMINAR ON

EMERGING FOODS FOR HEALTHIER INDIA

HELD ON 5TH & 6TH OCTOBER, 2018 AT HOTEL KOHINOOR CONTINENTAL, MUMBAI

By

Ms. Swechha Soni,
Nutritionist, PFNDAI

This year PFNDAI completed its 50 years and to celebrate this occasion PFNDAI had organised a Seminar on "Emerging Foods for Healthier India" in collaboration with the Indian Dietetic Association (IDA) - Mumbai Chapter. The Sponsors for the seminar were as follows:

Gold sponsors: Vista processed foods, AAK Kamani, Tata Chemicals and Mondelez India Foods.

Silver Sponsors: DuPont Nutrition &Health, Kellogg India, Herbalife Nutrition India, Coca Cola India, Hindustan Unilever, Fine Organics Industries, Danone India, Marico, PepsiCo India.

Mr. Bhupinder Singh, Chairman of PFNDAI in his inaugural address highlighted the Future trends in the Food Industry and gave an overview of the Seminar by talking about the Emerging Foods and the techniques behind its processing and how the industries should come together in building a Healthy nation.Ms.NaazninHusein, President of Indian Dietetic Association – Mumbai Chapter in heraddress stated that food industries along with the nutritionists and the dieticians should undertake various strategies to make the population healthier. She also added that as the lifestyle of the people is changing hence there is also a need for changing the diets they consume.

Dr. Sesikeran, former Director of National Institute of Nutrition, Hyderabad gave a keynote address on Global warming & its Effects on Nutrition. He in his speech stated that the Greatest Challenge of Climate change will be its impact on Food and Nutrition security and the way to manage them. Climate change is likely to cause multiple effects on food and nutrition security due to multiple environmental impacts affecting agriculture and the small holder farmers who are the majority would likely be most affected. The consequences of all these would be higher food prices, inability of classical agriculture to increase production and further worsening of malnutrition in the country.

First Session: Nutraceuticals & Functional Foods

The session was chaired by Dr. Sanjog Surve, Director – R&D, Abbott India and in his opening remarks he mentioned the importance of the nutraceuticals and functional foods in our diets. Dr. U. V. Babu, Head –Phytochemistry, R & D, Himalaya Drug Company delivered a talk on The Untapped Potential of Indian Herbs: Nutraceuticals& Functional Foods. He talked about the Ayurvedic Nutrition and stated that Food taken in proper quantity provides Strength, Vigour, good complexion and nurtures the health of the tissues. He further added that "The diet which besides providing the basic nutrition to the body, helps to maintain the healthy state of the body and prevents the occurrence of diseases should be consumed". He also brought into focus why there is a rising demand of Nutraceuticals& Functional supplements.

Dr. B. Sesikeran delivered a talk on Traditional Functional Foods. He started his talk stating that "Most traditional Foods were functional and was considered at times as medicine with Traditional sources, unique composition and traditional processes of preparation and consumption. He also talked about the major food categories and their functional components. He further talked about the bioactive molecules in foods and their characterization. He mentioned about the Principles for Addition of Dietary Active Compounds in Foods and concluded by saying that Safety and Quality of the foods must be the ultimate goal.

Followed by the first session was a Panel on "Beverages as Functional Foods" that was moderated by Dr. P. B. Kanade, Food Industry Consultant. He gave a market perspective of the beverages to the audience along with covering some advantages of beverages that contains functional components.

The panel had the following members- Dr. Agatha Betsy Manager- Scientific, Nutrition & Regulatory Affairs, Mondelez; Ms.Mili Bhattacharya, Senior Manager- Scientific, Nutrition and Regulatory, Coca Cola; Mr. AtanuHaldar, Chief R&D Officer, Mother Dairy; Dr. Nandan Joshi, Head - Nutrition Science & Medical Affairs, Danone. Each speaker shared their views on the various parameters of the functional beverages. As of today,Functional beverages are getting more focused than other foods and the greatest challenge of functional beverages is its taste. A strong point was made on fortifying the beverages with micronutrients to ensure it has some health benefits. Beverages having citrus components should be fortified with iron. Milk that is calcium rich should be fortified with vitamin D.

The session on Newer Techniques for Conserving Quality of Foods was chaired by Ms.ShilpaTelang, Head of Business Tata Nx, Tata chemicals. She welcomed the speakers of this session to deliver their respective talks. Dr. TSR Murali, Founder CEO of Urjita Food Business Consultants, spoke on Novel Non-Thermal processing/ Preservation Methods. He stated that the main objective of Food processing is presenting a Great Product that meets Consumer Demand. He further added that the basic principles of Food processing are to make it safe, make it consistent, verify compliance and deliver consumer appreciated quality. He explained about various non-thermal processing techniques like High Pressure Processing, Pulsed Electric Fields, Radio Frequency Drying, Microwave Heating, Membrane Filtration, Ozonation, Osmotic Treatment and other Hurdle technologies with some more emerging techniques.

Dr. Sandeep Kale, Associate Professor of Bioprocess Tech in ICT, Mumbai delivered a talk on Scalable Extraction and Purification Processes for Nutraceuticals and Health Supplements. He explained the different methods of extraction and purification of foods. He also shared the need and importance of bioactive compounds for human body. He also talked about plant proteins and their purification.

Dr. N. Ramasubramanian, Founder Director, VR FoodTech presented a talk on Emerging Technologies for better Nutrition. In his talk he mentioned about various upcoming technologies which can contribute towards better nutrition by making the food affordable, accessible and bioavailable. These techniques like Micro-emulsion, Nano Technology, Synbiotics in Mineral absorption, Transdermal Patches were discussed and the challenges associated to these were pointed.

Ms. Richa Arora, Chief Operating Officer, Consumer Products Business; Tata Chemicals then delivered a keynote address on Marketing Aspects of Nutrition from Consumer Perspectives. She in her speech said that people do not care for nutritious food if the taste of food is not satisfactory. Taste is the first thing the consumer is concerned about any food he or she tends to try and so the food should not just be tasty but it should also look appealing so that people have a temp to try out any nutritious food.

The second day started with the keynote address by Dr. Jasvir Singh, Regulatory, Scientific and Government Affairs Leader; DuPont Nutrition & Health- South Asia. He in his speech brought into focus the basic concepts and trends of regulatory frameworks. He explained that more regulations put more burdens on society hence it is first necessary to understand what is required to be regulated and what does not. He also gave an insight of innovation and its interplay with regulatory frameworks. He mentioned that sufficient time is not given to the companies by the regulators for innovation.

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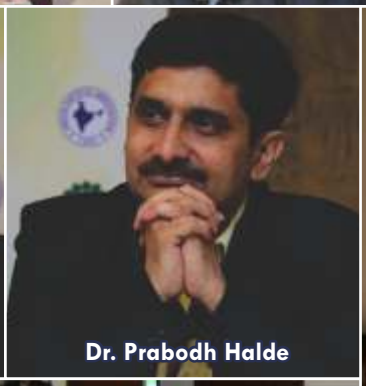
Dr. Kanade


Dr. K. D. Yadav


Dr. Lewis


Dr. Nandan Joshi


Dr. Prabodh Halde


Audience


Audience


Audience


Audience


Dr. Ramasubramanian


Dr. Sandeep Kale

Dr. Sesikeran, Dr. Surve & Dr. Babu


Dr. T. S. R. Murali


Dr. Sesikeran


Dr. Shatadru Sengupta


Dr. Usha Antony


Dr. Shweta Khandelwal


Ms. Naaznin Husein

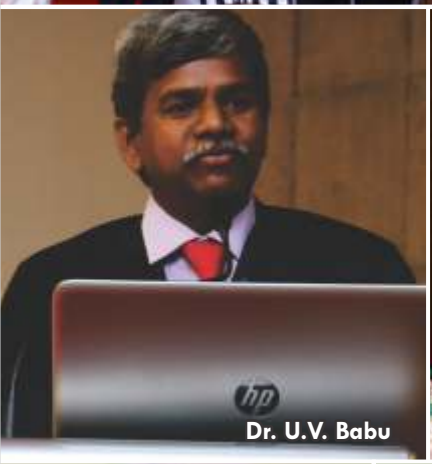

Audience


Audience

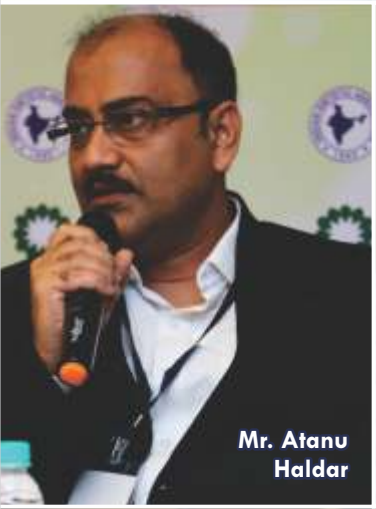

Dr. Swati Gupte with Ms. Nadiya & Ms. Madhavi


Charming Delegates


Ms. Mili Bhattacharya


Dr. U.V. Babu

Panel on Functional Beverages


Mr. Atanu Haldar


Mr. Shaminder Pal Singh


Mr. Shiv Shankar


Ms. Madhavi Trivedi


Audience

Panel on HFSS

Ms. Richa Arora

Ms. Salome Benjamin

Technologists

Ms. Shilpa Telang

Ms. Sukhada Bhatte

Audience

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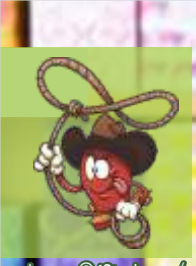

REGULATORY ROUND UP

By
Dr. N. Ramasubramanian,
VR Food Tech Private Limited
n.ram@vrfoodtech.com

Dear Readers

There was a big buzz in a popular news paper recently about the forthcoming regulation on Labelling and Claim as to how it will impact claims like "Natural", "Pure", etc. The report also stated that the regulation is likely to be out in the next couple of days. I just checked the FSSAI website but no luck. Meanwhile, an important amendment to Food Products Standards and Food Additives regulation has been notified.

Standards

Final notification amending Appendix A of Food Products Standards and Food Additives regulation. The amendment permits additional additives in different food categories, making up for some of the missed ones. It also redefines certain categories. A very important amendment and to be studied thoroughly.

Final notification describing the process of appointing reference laboratories, criteria for notifying and recognizing laboratories.

A FAQ on the fortification regulation. The document gives all the answers to questions you wanted to ask on the regulation. Please have a closer look at question No 3. The regulation specifies nutrients along with their levels in different products. As you are aware, fortification is not mandatory. Edible oil can be fortified with Vitamin A and D and fortification logo may be used. The answer to Q3 permits the addition of vitamin E in edible oil but fortification logo is not allowed and product cannot be termed as "fortified". It is very surprising that such an important explanation to the regulation is coming months after the notification. Presently there are number of edible oils in the market which contain vitamin E and carry the fortification logo. The regulation has to be complied by 1 January 2019.

Notices/Orders

In an reassuring press release, FSSAI has announced that pulses and beans imported into India are safe. In a previous notice, FSSAI had instructed all Authorized officers at the ports to monitor the herbicide, glyphosate, in the imported consignments of pulses and beans. Such assurances from the horse's mouth is welcome to quell rumours and half-truths.

All imported crude vegetable oils to carry expiry date. Manufacturing date has been made optional.

Guidelines/Best practices

FSSAI has issued an important guideline on the handling of oil used for cooking or frying. It brings out the food safety hazards associated with the repeated use of cooking oil. It lists the precautions to be taken while using cooking oil. The guideline document specifically recommends the sale of used cooking oil only to Authorized dealers and Aggregators like States Biodiesel Boards, Biodiesel Association of India and other agencies nominated by the State government. Food business operators who handle more than 50 kg or litres of cooking oil per day to maintain records as per the given format which includes mode and date of disposal, name of the agency, etc. It is hoped that the State government will follow it up by naming the authorized agencies dealing with used oil.

Reports

FSSAI has released an interim report of a major and pan India survey on the quality and safety of milk. 6432 samples (both raw and processed) were analysed for contaminants and quality parameters. It was reassuring to note only 12 samples were found to contain adulterants and less than 10 % of the samples were contaminants that made the milk unsafe. High percentage of samples did not meet the quality parameters.

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For details, please contact our India partner VR Food Tech Private Limited, Mumbai.
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RESEARCH IN HEALTH & NUTRITION

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How fiber and gut bacteria reverse stress damage

Medical News Today 2 August 2018 by Tim Newman

In the stressful world we inhabit, many of us are keen to protect our bodies from the harmful effects that stress can produce. A new study hints that a high-fiber diet might go some way to achieving this.

A new study looks deeper at links between gut bacteria and stress.
The bacteria that live in our gut are as numerous as the cells in our body. As medical research progresses, the influence that these billions of tiny creatures have on our health is becoming ever more apparent.
It comes as no surprise that they might play a role in gastrointestinal issues, but the microbiome's influence flies much further afield. Most recently, it has become apparent that there is a significant relationship between gut bacteria and mental health issues, such as depression and anxiety.

Stress, the gut, and the brain

Although the thought of a microorganism in our intestines affecting our mental well-being seems like a leap, the gut and brain are deeply entwined. As an example, most people will know how a nerve-wracking situation can influence the speed of our bowels and, vice versa, how being hungry can cast a shadow over our mood. A troubled brain can inform the gut, and a troubled gut can inform the brain.

Stress, although it is a mental state, can physically affect our gastrointestinal system and the bacterial residents within it. A recent study found that high levels of stress can affect gut bacteria to a similar degree as a high-fat diet; while other studies have shown that reducing the number of bacteria in the gut can produce stress-induced activity in mice.
So, it seems that the road runs both ways: stress can alter gut bacteria, and gut bacteria can influence stress levels. It is a complicated web. A recent piece of research, published in The Journal of Physiology, takes a fresh look at how gut bacteria are involved in gut health problems induced by stress. The work was carried out at APC Microbiome Ireland at University College Cork and Teagasc Food Research Centre in Ireland.

The role of SCFAs

The team of scientists was interested in short-chain fatty acids (SCFAs). Gut bacteria produce SCFAs when they digest fiber; the cells of the colon then use SCFAs as their primary source of energy, making them vital for good gut health.
The researchers found that when they introduced SCFAs to the guts of mice, stress and anxiety-based behaviors were significantly reduced.
After demonstrating that SCFAs reduce anxiety, they wanted to understand how these small molecules influenced physical, stress-related gut damage. Known as a "leaky" gut, high levels of stress over time increase the intestine's permeability. This means that particles, such as bacteria and undigested food, can move more easily into the bloodstream, which can cause damaging chronic inflammation.

The researchers found that by introducing SCFAs, they reduced the gut leakiness caused by persistent stress. "There is a growing recognition of the role of gut bacteria and the chemicals they make in the regulation of physiology and behavior. The role of short-chain fatty acids in this process is poorly understood up until now." Lead author, Prof. John F. Cryan.

What does it all mean?

Fruits, vegetables, and grains naturally contain high levels of fiber. Although this study was conducted on mice, the inference is that a high-fiber diet might prompt gut bacteria to produce more SCFAs — thereby bolstering our gut's natural defenses against the damage caused by stress. Of course, plenty more research will be necessary before that conclusion can be written in stone; as Prof. Cryan

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says, "It will be crucial that we look at whether short-chain fatty acids can ameliorate symptoms of stress-related disorders in humans."
Future work will also need to dig deeper to get a better understanding of exactly how SCFAs provide these benefits. Unwrapping the molecular shenanigans behind the scenes is likely to be challenging.

The authors hope that the current findings will, eventually, help in the "development of microbiota-targeted therapies for stress-related disorders." However, for now, attempting to minimize stress in one's life while upping consumption of fruit and veg is likely to be a sensible recommendation, whether it impacts levels of SCFAs or not.


Image © iStock.com/naito8

A soy-based diet could help strengthen bones

Medical News Today 9 August 2018 by Tim Newman

A new study has investigated the impact of dietary soy on bone strength in postmenopausal women.

The authors conclude that eating more soy might in fact strengthen bones in women of all ages.The reduction in bone density and strength that is common in postmenopausal women is of huge concern.As women age, osteoporosis, reduced activity levels, and weight gain act together to decrease bone health and negatively impact metabolism.Osteoporosis and bone weakness increases the risk of fractures, which then lead to even more inactivity and weight gain, exacerbating the issue further.

As the population becomes — on average — older and heavier, bone health is an important area of medical science to study.Recently, researchers from the University of Missouri in Columbia set out to test how alterations to a woman's diet might impact the resilience of her bones. In particular, they were interested in the effects of soy-based proteins.

Soy and bone strength
To investigate, the scientists utilized so-called low-capacity running rats, which have low fitness levels. Study co-author Victoria Vieira-Potter explains why they chose this model. "Prior research has shown," she says, "that these rats are good models, as average American women are relatively inactive both before, and especially after, menopause."

The researchers surgically removed the ovaries of half of the rats to mimic menopause. They have now published their findings in the journal Bone Reports.The scientists fed half of the rats a soy-based diet and the remaining animals a corn-based diet. Both diets contained the same amount of calories. They weighed the rats every week for the duration of the 30-week trial.
Then, the team took blood samples, tested bone strength, and assessed body composition using EchoMRI, an imaging technique that can accurately measure levels of body fat and water mass in live animals.

From the blood, they assessed markers for bone formation and bone resorption, a process wherein bones are broken down and minerals released into the blood. Markers of resorption and formation are collectively known as bone turnover markers.The scientists inspected the microscopic structure of the animals' bones, and they also tested them mechanically to breaking point.
Marked improvements in bone strength
The analysis showed that, although turnover markers were not significantly altered, the leg bones of soy-fed rats were stronger than the bones of the rats that were fed a corn-based diet.

"Bottom line, this study showed that women might improve bone strength by adding some soy-based whole foods to their diet." Lead study author Prof. Pamela Hinton

Prof. Hinton continues, "Our findings suggest that women don't even need to eat as much soy as is found in typical Asian diets, but adding some tofu or other soy, for example, foods found in vegetarian diets, could help strengthen bones."
The study also showed that the soy-based improvement in bone strength occurred in rats with and without ovaries; the authors write that, in both sets of rats, soy "significantly improved whole-bone strength and stiffness." In other words, even "postmenopausal" rats' bones benefited from the change in diet.

As Prof. Hinton concludes, "The findings suggest that all women might see improved bone strength by adding some soy-based whole foods, such as tofu and soy milk, to their diet. We also believe that soy-based diets can improve metabolic function for postmenopausal women."
The results are interesting and merit further investigation. The next step will be to understand the molecular mechanisms that underlie the benefits of increased soy intake.Once the team understands the process in more detail, it might be possible to harness the reactions involved and find ways to yield even greater benefits to bone strength.

What are the health benefits of cranberry juice?

Medical News Today 9 August 2018 by Zawn Villines

Some research has found that cranberry juice may prevent infections, delay or reduce the severity of chronic disease, and prevent age-related oxidative damage.

For most healthy people, cranberry juice is safe.Cranberry juice can temporarily make conditions, such as acid reflux, worse because it is mildly acidic. Some people find that cranberry juice leaves an unusual taste in their mouth, or that it temporarily irritates gums and lips.

Research into the benefits of cranberry juice is mostly preliminary, but the antioxidant and antibacterial benefits look promising.Most people can safely include cranberry juice in their diets, and they are adding a serving of fruit to their diet when they do so.

Six benefits of drinking cranberry juice

Potential benefits of cranberry juice include:

1. Fighting age-related damage

Cranberry juice may help fight age-related damage.
Chemicals called free radicals accumulate in the body as people age. Free radicals cause oxidative damage. There is a link between oxidative damage and health issues, including:

- cancer
- diabetes
- heart disease
- digestive health
- urinary tract health

Some of the chemicals in cranberry juice are antioxidants or compounds that fight harmful free radicals. The presence of antioxidants means that cranberries and cranberry juice might help fight age-related damage to the body's tissues.

A 2011 study found that chemicals in cranberries promoted better antioxidant activity the lower their pH was. That study also found that the berries were significantly more potent antioxidants than cranberry juice, although cranberry juice still offered some benefits.

2. Improving heart health

Studies show that various ingredients in cranberry juice may improve heart health.
Cranberries are high in chemicals called polyphenols that may support heart health. A 2011 study of females with metabolic syndrome found that cranberry juice increased the antioxidants in the blood plasma. People who drank cranberry juice also had lower low-density lipoprotein (LDL). LDL is known as the "bad" type of cholesterol.

Another 2011 study found that cranberry juice could improve health in people with coronary artery disease. Mean carotid-femoral artery pulse wave velocity, which is a way to measure the stiffness of arteries, was reduced among the people in the study who drank a laboratory preparation of double-strength cranberry juice.

3. Treating or preventing urinary tract infection (UTI)

The antibacterial effects of cranberry juice were reported to reduce the incidence of UTIs in mice, according to a 2017 study in Frontiers in Microbiology.The reduction of UTI incidence is thought to be due to the ability of antibacterial properties to reduce the colonization of Escherichia coli in the bladder. The bacteria, which is known better as E. coli, is the cause of most UTIs.

A 2016 study, reported in Alternative Therapies in Health and Medicine, showed less bacterial infections in urine cultures from uncircumcised boys who drank cranberry juice and had previously had repeated UTIs compared to those who drank a placebo and those who had been circumcised who also drank the placebo.
The authors concluded that cranberry juice might be beneficial against the growth of bacterial pathogens.

4. Supporting digestive health

There is growing evidence that the phytochemicals contained in cranberries play an important role in digestive health.Evidence for the digestive health benefits of cranberry juice, in addition to other benefits, was reported in a study from 2018 in the Journal of the Science of Food and Agriculture. The paper noted that inhibiting the production of another bacterium called H. pylori in the stomach is thought to promote digestive health. The researchers also suggested further research is needed on cranberry juice.

5. Preventing infections

Studies suggest that cranberries may inhibit the growth of bacterial microbes.Some chemicals in cranberries may help fight viruses and bacteria.
A 2011 study found that cranberries inhibited the growth of seven bacterial microbes. The study did not assess whether cranberries or cranberry juice could prevent infection with these microbes in humans.

Similarly, a 2010 study found that cranberries could fight some viruses, includingnorovirus, which s a common cause of food-borne illness.The authors of the study caution that more research is needed, but argue that cranberries might be a useful method of treating or preventing food-borne illness.

6. Supporting post-menopausal health
The risk of heart problems increases after menopause compared to the risk in all other groups of people of the same age.A 2013 study investigated this phenomenon in rats that had their ovaries removed. Researchers found that daily cranberry consumption reduced total cholesterol, suggesting cranberry products might be useful dietary supplements after the menopause.

Side effects of cranberry juice
Some research has found that cranberry juice may interact with certain medications. One concern is that cranberries may intensify the effects of a blood thinner called warfarin.
Research on other drugs is less consistent. Preliminary research, however, suggests the possibility of interactions between cranberries and:
• cyclosporine
• flurbiprofen
• diclofenac
• amoxicillin
• ceflacor
• midazolam
• tizanidine
People taking these drugs or any other medications should talk to a doctor before using cranberry juice. It may be necessary to monitor the doses and effects on medications rather than avoiding cranberry juice entirely.

Takeaway
Cranberry juice is safe for most people and has several potential benefits.The American Academy of Pediatrics recommends limiting fruit juice intake in toddlers and children and advises against giving babies juice. Parents who want to add cranberry juice to their children's diet should, therefore, only do so in small quantities and should not give them other juices.

People should choose varieties that are not from concentrate, with no sugar added, to get the most out of cranberry juice. Alternatively, a person can consider making fresh cranberry smoothies at home by putting cranberries in a blender with other ingredients. Adding a sweet fruit, such as an orange, can help it taste sweeter. As with any diet change or supplement, people should talk to a doctor or dietitian first.

How much salt does it really take to harm your heart?

Medical News Today
13 August 2018 by
Maria Cohut

Too much salt is bad for you, particularly because it is associated with an increased risk of heart problems – but how much is too much?


Image © istock.com/apodiam

A new study suggests that we may not have to worry so much about how salty we like our food to be.A new international study suggests that we may want to rethink how much salt is actually harmful.Table salt, which we commonly use to season our food, contains sodium.Sodium, if often ingested in large quantities, can lead to a range of cardiovascular problems, including hypertension.

The World Health Organization (WHO) say that a person should not consume more than 2 grams of sodium per day, which is about 5 grams of salt per day.The American Heart Association (AHA) recommend no more than 2.5 grams of sodium per day, though they state that the ideal intake is of no more than 1.5 grams per day for an adult. However, researchers from a range of international institutions — including McMaster University and Hamilton Health Sciences, both in Hamilton, Canada, as well institutions from 21 other countries — suggest that these limits are unnecessarily low.

Researcher Andrew Mente and colleagues conducted a study of 94,000 people aged 35–70, aiming to establish how much sodium really is too much for heart health.

Current guidelines, the team notes, push for standards that are unrealistic for many, seeing as salt is often an almost invisible ingredient contained by numerous packaged foods.
"The [WHO recommend] consumption of less than 2 grams of sodium — that's one teaspoon of salt — a day as a preventative measure against cardiovascular disease," says Mente.
He also adds, however, that "there is little evidence in terms of improved health outcomes that individuals ever achieve at such a low level."

The new study, whose results are now featured in The Lancet, now suggests that we can be more lenient about our salt consumption without fearing that it will harm our cardiovascular health.

Slightly higher sodium intake is safe
The study followed the participants — who were based in communities across 18 different countries — for an average period of 8 years. Mente and his colleagues revealed that a high intake of sodium did lead to an increased risk of cardiovascular disease and stroke — but only in

communities where the average intake for an adult was greater than 5 grams per day.
This amounts to about 2.5 teaspoons of table salt, the researchers explain.Encouragingly, the researchers also noticed that under 5 percent of the participants coming from developed countries exceeded the 5-gram cutoff point for sodium intake.

In most of the countries, the majority of the communities that the researchers observed had an average sodium intake of 3–5 grams of sodium — or 1.5 to 2.5 teaspoons of salt — per day.
In fact, of all the populations in the study, only those from China showed a consistently high intake of sodium. Specifically, 80 percent of the communities from China had a sodium intake that was higher than 5 grams per day.

"Only in the communities with the most sodium intake — those over 5 grams [per] day of sodium — which is mainly in China, did we find a direct link between sodium intake and major cardiovascular events like heart attack and stroke," Mente explains.

On the other hand, he adds, "In communities that consumed less than 5 grams of sodium a day, the opposite was the case. Sodium consumption was inversely associated with myocardial infarction or heart attacks and total mortality, and [there was] no increase in stroke."

Community interventions can help
Even in the case of individuals who do consume too much table salt, however, the situation is not unsalvageable, the researchers say. Mente notes that people can easily redress the balance and protect their heart health by making a few simple adjustments to their diets, such as adding more fruits, vegetables, and foods naturally rich in potassium.

"We found all major cardiovascular problems, including death, decreased in communities and countries where there is an increased consumption of potassium which is found in foods such as fruits, vegetables, dairy foods, potatoes, and nuts and beans," says the study author.

Another one of the researches involved with the current study, Martin O'Donnell, notes that most of the studies looking at the relationship between sodium intake and cardiovascular risk so far have focused on individual data, rather than information collected from larger cohorts.
This, he suggests, may have skewed the best practice guidelines into a direction that is both unrealistic and perhaps too cautious.
"Public health strategies should be based on best evidence. Our findings demonstrate that community-level interventions to reduce sodium intake should target communities with high sodium consumption, and should be embedded within approaches to improve overall dietary quality."
Martin O'Donnell

"There is no convincing evidence that people with moderate or average sodium intake need to reduce their sodium intake for prevention of heart disease and stroke," O'Donnell adds.

Which foods lower blood sugar?

Medical News Today 23 August 2018
By Jennifer Huizen

When a person has diabetes, either their body does not produce enough insulin, or it cannot use the insulin correctly, so glucose accumulates in the blood. High levels of blood glucose can cause a range of symptoms, from exhaustion to heart disease.

One way to control blood sugar is to eat a healthful diet. Generally, foods and drinks that the body absorbs slowly are best because they do not cause spikes and dips in blood sugar.
The glycemic index (GI) measures the effects of specific foods on blood sugar levels. People looking to control their levels should pick foods with low or medium GI scores.A person can also pair foods with low and high GI scores to ensure that a meal is balanced.

Below are some of the best foods for people looking to maintain healthy blood sugar levels.
1. Whole wheat or pumpernickel bread
Pumpernickel has a low GI score and fewer carbs than other breads.Many kinds of bread are high in carbohydrates and quickly raise blood sugar levels. As a result many breads should be avoided.However, pumpernickel bread and 100 percent stone-ground whole wheat bread have low GI scores, at 55 or less on the GI scale. Pumpernickel and stone-ground whole wheat breads have lower GI scores than regular whole wheat bread because the ingredients go through less processing.Processing removes the fibrous outer shells of grains and cereals. Fiber slows digestion and helps to stabilize blood sugar levels.

In a 2014 study, researchers reported that spelt and rye both caused low initial glycemic responses in rats. They also found that these ancient wheat types, as well as emmer and einkorn, suppressed genes that promote glucose metabolism.

Image © iStock.com/simpson33

2. Most fruits

Except for pineapples and melons, most fruits have low GI scores of 55 or less. This is because most fruits contain lots of water and fiber to balance out their naturally occurring sugar, which is called fructose.

However, as fruits ripen, their GI scores increase. Fruit juices also have very high GI scores because juicing removes the fibrous skins and seeds. A large 2013 study found that people who consumed whole fruits, especially blueberries, grapes, and apples, had significantly lower risks of developing type 2 diabetes.The researchers also reported that drinking fruit juice increased the risk of developing the condition.

3. Sweet potatoes and yams

Regular potatoes have a high GI score, but sweet potatoes and yams have low scores and are very nutritious.Some research indicates that the flesh of the sweet potato contains more fiber than the skin, indicating that the whole vegetable could be beneficial for those with diabetes. Reporting the findings of an animal study, the researchers also noted that sweet potato consumption may lower some markers of diabetes. While there is still no conclusive evidence that sweet potatoes can help to stabilize or lower blood sugar levels in humans, they are undoubtedly a healthful, nutritious food with a low GI score.People can substitute sweet potatoes or yams for potatoes in a variety of dishes, from fries to casseroles.

4. Oatmeal and oat bran

Oats contain B-glucans, which help maintain glycemic control.Oats have a GI score of 55 or lower, making them less likely to cause spikes and dips in blood sugar levels.
Oats also contain B-glucans, which can do the following:
• reduce glucose and insulin responses after meals
• improve insulin sensitivity
• help maintain glycemic control
• reduce blood lipids (fats)

A 2015 review of 16 studies concluded that oats have a beneficial effect on glucose control and lipid profiles in people with type 2 diabetes. Determining the impact of oat consumption on type 1 diabetes requires more research.Doctors still recommend that people with diabetes limit their consumption of oatmeal because 1 cup contains roughly 28 grams of carbohydrates.

5. Most nuts

Nuts are very rich in dietary fiber and have GI scores of 55 or less.Nuts also contain high levels of plant proteins, unsaturated fatty acids, and other nutrients, including:
• antioxidant vitamins
• phytochemicals, such as flavonoids
• minerals, including magnesium and potassium

A 2014 systemic review concluded that eating nuts could benefit people with diabetes.As with other foods in this article, it is best to eat nuts that are as whole and unprocessed as possible. Nuts with coatings or flavorings have higher GI scores than plain nuts.

6. Legumes

Legumes, such as beans, peas, chickpeas, and lentils, have very low GI scores.They are also a good source of nutrients that can help maintain healthy blood sugar levels. These nutrients include:
• fibre
• complex carbohydrates
• protein

A 2012 study found that incorporating legumes into the diet improved glycemic control and lowered the risk of coronary heart disease in people with type 2 diabetes.

Avoid legume products that contain added sugars and simple starches, such as those in syrups, sauces, or marinades. These additions can significantly increase a product's GI score.

7. Garlic

Garlic is a popular ingredient in traditional medicines for diabetes and a wide variety of other conditions.The compounds in garlic may help reduce blood sugar by improving insulin sensitivity and secretion.

In a 2013 study, 60 people with type 2 diabetes and obesity took either metformin alone or a combination of metformin and garlic twice daily after meals for 12 weeks. People who took metformin and garlic saw a more significant reduction in their fasting and post-meal blood sugar levels.People can eat garlic raw, add it to salads, or use it in cooked meals.

8. Cold-water fish

Cod does not contain carbohydrates and may reduce the risk of developing type 2 diabetes.Fish and other meats do not have GI scores because they do not contain carbohydrates.However, cold-water fish may help manage or prevent diabetes better than other types of meat.

A 2014 study included data taken from 33,704 Norwegian women over a 5-year period. The researchers found that eating 75–100 grams of cod, saithe, haddock, or pollock daily reduced the risk of developing type 2 diabetes.
However, the researchers were uncertain whether the reduction in risk was a direct result of eating the fish or whether other healthful lifestyle factors, such as exercise, could have influenced the findings.

9. Yogurt

Eating plain yogurt daily may reduce the risk of type 2 diabetes. Authors of a large 2014 meta-analysis concluded that yogurt may be the only dairy product that lowers the risk of developing the condition. They also noted that other dairy products do not seem to increase a person's risk.

Researchers are still unsure why yogurt helps lower the risk of type 2 diabetes.However, plain yogurt is generally a low-GI food. Most unsweetened yogurts have a GI score of 50 or less. It is best to avoid sweetened or flavored yogurts, which often contain too much sugar for a person looking to lower their blood sugar levels. Greek-style yogurt can be a healthful alternative.

Other ways to lower blood sugar levels
Eating a healthful, well-balanced diet is key. Additional strategies to help lower or manage blood sugar levels include:
• staying hydrated by drinking plenty of clear liquids
• exercising regularly
• eating small portions more frequently
• not skipping meals
• managing or reducing stress
• maintaining a healthy body weight or losing weight, if necessary
People with diabetes may also need to take medications and measure their blood sugar regularly to reduce the risk of potentially dangerous symptoms and complications.Speak with a doctor about how to incorporate a healthful diet into a diabetes care plan.

As CO2 levels climb, millions at risk of nutritional deficiencies

Science Daily August 27, 2018

Rising levels of carbon dioxide (CO2) from human activity are making staple crops such as rice and wheat less nutritious and could result in 175 million people becoming zinc deficient and 122 million people becoming protein deficient by 2050, according to new research led by Harvard T.H. Chan School of Public Health. The study also found that more than 1 billion women and children could lose a large amount of their dietary iron intake, putting them at increased risk of anemia and other diseases.

"Our research makes it clear that decisions we are making every day -- how we heat our homes, what we eat, how we move around, what we choose to purchase -- are making our food less nutritious and imperiling the health of other populations and future generations," said Sam Myers, lead author of the study and principal research scientist at Harvard Chan School. The study will be published online August 27, 2018 in Nature Climate Change.

Presently, more than 2 billion people worldwide are estimated to be deficient in one or more nutrients. In general, humans tend to get a majority of key nutrients from plants: 63% of dietary protein comes from vegetal sources, as well as 81% of iron and 68% of zinc. It has been shown that higher atmospheric levels of CO2result in less nutritious crop yields, with concentrations of protein, iron, and zinc being 3%-17% lower when crops are grown in environments where CO2concentrations are 550 parts per million (ppm) compared with crops grown under current atmospheric conditions, in which CO2 levels are just above 400 ppm.

For this new study, researchers sought to develop the most robust and accurate analysis of the global health burden of CO2-related nutrient shifts in crops in 151 countries. To do so, they created a unified set of assumptions across all nutrients and used more detailed age- and sex-specific food supply datasets to improve estimates of the impacts across 225 different foods. The study built on previous analyses by the researchers on CO2-related nutritional deficiencies, which looked at fewer foods and fewer countries.

The study showed that by the middle of this century, when atmospheric CO2 concentrations are expected to reach around 550 ppm, 1.9% of the global population -- or roughly 175 million people, based on 2050 population estimates -- could become deficient in zinc and that 1.3% of the global population, or 122 million people, could become protein deficient. Additionally, 1.4 billion women of childbearing age and children under 5 who are currently at high risk of iron deficiency could have their dietary iron intakes reduced by 4% or more.

The researchers also emphasized that billions of people currently living with nutritional deficiencies would likely see their conditions worsen as a result of less nutritious crops.
According to the study, India would bear the greatest burden, with an estimated 50 million people becoming zinc deficient, 38 million becoming protein deficient, and 502 million women and children becoming vulnerable to diseases associated with iron deficiency. Other countries in South Asia, Southeast Asia, Africa, and the Middle East would also be significantly impacted.

“One thing this research illustrates is a core principle of the emerging field of planetary health," said Myers, who directs the Planetary Health Alliance, co-housed at Harvard Chan School and Harvard University Center for the Environment. "We cannot disrupt most of the biophysical conditions to which we have adapted over millions of years without unanticipated impacts on our own health and wellbeing."

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Dietary carbohydrates could lead to osteoarthritis, new study finds

Do your knees ache? Your diet could be a culprit

Science Daily August 9, 2018

Do your knees ache? According to new findings from the Oklahoma Medical Research Foundation, your diet could be a culprit.

In a study led by OMRF scientist Tim Griffin, Ph.D., researchers found that the carbohydrate composition of diets increased the risk of osteoarthritis in laboratory mice -- even when the animals didn't differ in weight.

"We know increased body fat elevates risk, but we haven't appreciated as much how diet itself affects the disease risk," said Griffin. "These findings give us new clues that there can be significant dietary effects linked to increased OA risk even in the absence of obesity."

Osteoarthritis, or OA, is the most common form of arthritis and the most widespread form of disability in the country, affecting nearly 27 million people in the U.S. It occurs when the cartilage that cushions bones in the joints breaks down and wears away, causing the bones to rub against one another.

Several factors can increase risk, including high-impact physical jobs, previous joint injuries, age and genetics, but carrying extra body weight is among the most proven contributors.

"Obesity is the one of the most significant factors for developing disease in the knee joint," said Griffin. "However, therapeutic strategies to prevent or treat obesity-associated OA are limited because of the uncertainly about the root cause of the disease."

To study how, exactly, obesity contributes to osteoarthritis, Griffin and his lab placed groups of mice on different high-fat diets. However, over time, they observed that the carbohydrate makeup of the rodents' low-fat control diet was alone sufficient to alter their chances of developing OA.

The primary culprits: fiber and sugar. In particular, Griffin's team found that changing the amount of sucrose -- table sugar -- and fiber in the diet altered OA pathology in the rodents. The high-sucrose diet increased signs of joint inflammation, while the high-fiber diet caused changes in cartilage genes and cellular stress-response pathways.
While the study involved mice, Griffin said the findings could ultimately have human implications.

“It's important to understand how our diet affects the health of our joints," he said. "We were surprised to see so many OA-related differences between the two high-carb diets even though body weight and body fat were the same."
Griffin next plans to investigate how different types of dietary fiber and other components of our diets can contribute to OA, and also look at the role the body's microbiome and gut bacteria play in the disease.

Makeup of an individual's gut bacteria may play role in weight loss

Science Daily August 1, 2018

A preliminary study published in the August issue of Mayo Clinic Proceedings suggests that, for some people, specific activities of gut bacteria may be responsible for their inability to lose weight, despite adherence to strict diet and exercise regimens.

"We know that some people don't lose weight as effectively as others, despite reducing caloric consumption and increasing physical activity," says Purna Kashyap, M.B.B.S., a Mayo Clinic gastroenterologist and co-senior author of the study. Dr. Kashyap and his colleagues wondered if there may be other factors at work that prevented these patients from responding to traditional weight-loss strategies.

"Gut bacteria have the capacity to break down complex food particles, which provides us with additional energy. And this is normally is good for us," says Vandana Nehra, M.D, a Mayo Clinic gastroenterologist and co-senior author of the study. "However, for some individuals trying to lose weight, this process may become a hindrance."
Drs. Kashyap, Nehra and their colleagues decided to test if certain functions performed by gut bacteria that provide people with more energy may be responsible for the inability of some individuals to lose weight.

The Mayo Clinic research team collected and analyzed gut bacteria samples from a group of 26 participants enrolled in the Mayo Clinic Obesity Treatment Research Program between August and September 2013.


Image © iStock.com/metamorworks

They found that gut bacteria among individuals who did not lose weight were different from gut bacteria in patients who lost weight. Specifically, the bacteria Phascolarctobacterium was associated with weight loss success, while the bacteria Dialister was associated with failure to lose weight. More importantly, the increased ability to use certain carbohydrates was associated with failure to lose as much weight. "This suggested to us that gut bacteria may possibly be an important determinant of weight loss in response to diet and lifestyle changes," Dr. Kashyap says.

Dr. Kashyap emphasizes that this is a preliminary finding in a small study, and more research is needed to confirm the role of gut bacteria in weight loss. "While we need to replicate these findings in a bigger study, we now have an important direction to pursue in terms of potentially providing more individualized strategies for people who struggle with obesity," Dr. Kashyap says.

Few people at risk for heart disease understand food labels, Irish survey reveals

30 Aug 2018 Nutrition Insight

Many consumers have difficulty understanding food labels, especially men and people at risk for heart disease, according to research presented at ESC Congress 2018. To remedy this, the lead researcher is calling for label improvements to avoid gaps in consumers' use and interpretation of food labels.

The research is based on an Irish survey which examines awareness, understanding and use of food labels in preventing lifestyle-related disease in a primary care setting. Diet is considered a modifiable risk factor for heart disease prevention. In Ireland, as in many other nations, food labels provide nutritional information to help consumers make informed food choices.

However, "people find food labels confusing and don't know what to look for," says Claire Duffy, a clinical nurse specialist in general practice, MSc preventive cardiology, in Ballina, Ireland, and the study's lead author. "They still have difficulty understanding and interpreting food labels."

The study involved 200 men and women, ages 18 to 85, attending a primary care practice. Participants supplied demographic data and answered questions about risk factors for cardiovascular disease as well as use and understanding of food labels.

Seventy-five percent were female; 40 percent self-reported being overweight or obese. Significantly more women than men (65 percent versus 37 percent) always or often read food labels, the study found. Just 5 percent of females said they never look at food labels, compared with more than a third (35 percent) of males.

Having a risk factor for cardiovascular disease (CVD) did not necessarily translate into greater use of food labels. Notably, 40 percent of participants with CVD said they do not read food labels. Among CVD patients that do read labels, two-thirds (67 percent) read about fats, but only a third (33 percent) read about saturated fats, fiber and salt.

Among participants who had a family member with diabetes, 56 percent read the sugar and 60 percent read the salt content of foods.
The study also reveals an important gap in label usage among people with elevated blood cholesterol.

When asked to gauge whether a sample food product had low, medium, or high levels of fat, sugar, fiber and sodium based on its nutrition label, participants had difficulty making sense of the information. Only 20 percent knew the product had a medium level of fat, and just 14 percent correctly identified its low-sugar content.

By contrast, most participants successfully deciphered a "traffic light" food label, where green, amber and red colors are used to signify levels of fat, saturated fat, sugar and salt.
According to Duffy, these findings point to the need for improved food labels, especially for illiterate groups and those with color and vision deficiency.

She adds that the study findings highlight the need for enhanced public education. This should begin with efforts across all educational settings to teach children and their parents about food labels, healthy eating and nutrition. This should continue in adulthood with education provided through primary care, community settings and media outlets.

Perhaps supermarkets and Internet sites could establish dedicated "healthy food" sections with foods where people could easily find items low in sugar, salt, and fat and high in fiber, Duffy suggests.


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Lutein may boost physical activity and mitigate chronic disease, study finds

30 Aug 2018 Nutrition Insight


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Higher levels of lutein status may be associated with higher levels of physical activity, which may contribute to a reduced risk of chronic disease, a study published in Nutrients has found. The research could pave the way for lutein to be used in a wider range of supplements or sports products.

Lutein is a carotenoid that reduces the risk of some chronic diseases, possibly by altering physical activity behavior. It is one of the most prevalent carotenoids in the human diet and is found in high levels in colorful fruit and vegetables, such as green leafy plants. Nutritionists have long hailed the benefits that carotenoids, such as lutein, can add to health.
According to Innova Market Insights data, new product launches (including supplements) tracked featuring lutein, as well as the carotenoid zeaxanthin, saw a compound annual growth rate (CAGR) of 25 percent and 18 percent, respectively, between 2012 and 2016, when 2012 is taken as a base of 100.

The University of South Australia researchers note that the health benefits of lutein have been primarily ascribed to antioxidant, anti-mutagenic, and/or other effects on cell function. However, physical activity is also associated with a reduced risk of these same chronic conditions and preliminary evidence from randomized controlled trials (RCTs) in rats and humans showed that increasing circulating lutein concentrations through an increased intake was associated with increased physical activity.
A total of 1,267 articles were assessed in the review. Overall, there was significant heterogeneity between reported measures of association for physical activity and lutein status. However, of the 17 eligible studies, 11 reported positive associations between lutein status and physical activity, three reported mixed results and three reported no association. No studies reported a negative association.

The researchers conclude that the systematic review provides evidence of a positive relationship between lutein status (dietary intake and/or blood lutein concentration) and physical activity. Increasing lutein status, or possibly also the status of other carotenoids, is able to increase physical activity. These findings, the researchers note, may be useful in improving physical activity to mitigate the risk of chronic disease. However, large-scale randomized controlled trials are required to confirm the effects on physical activity and other associated health benefits.

Lutein in the market

Lutein has a strong profile in the eye health space. This space is experiencing growth which is arguably due to the demands of the modern lifestyle on eyesight, such as the increased time spent on technology. "Over the years there has been a tremendous increase in demand for eye health supplements globally. Data obtained from Innova Market Insights shows that between the years of 2012 to 2016, new products launched with an eye health positioning increased by over 70 percent, with the leading markets being North America, West Europe and Asia," says Maryanne Mburu, Senior Key Account Manager at AstaReal.

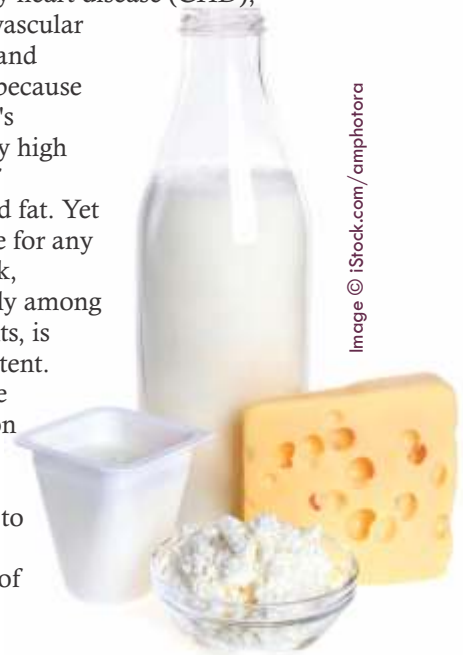
Lutein has also been used in the cognitive health space, in nootropics, also known as "smart drugs" or "cognitive enhancers."
Within this space, OmniActive offers its Lutemax 2020, which delivers all three macular carotenoids (lutein, RR-zeaxanthin and RS (meso)-zeaxanthin). The ingredient has a particularly strong market potential for long-duration digital device users due to its beneficial effects on ocular health and performance, sleep quality and eye strain and fatigue during long-duration exposure to digital devices and screens.

Guidelines to limit dairy intake need to be reconsidered, research suggests

29 Aug 2018 Nutrition Insight

Current guidelines to limit consumption of dairy products should be relaxed, according to research presented at ESC Congress 2018, the annual congress of the European Society of Cardiology.

The consumption of dairy products has long been thought to increase the risk of death, particularly from coronary heart disease (CHD), cerebrovascular disease and cancer, because of dairy's relatively high levels of saturated fat. Yet evidence for any such link, especially among US adults, is inconsistent. With the exception of milk, which appears to increase the risk of CHD,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Therefore, current guidelines to limit consumption of dairy products, especially cheese and yogurt, should be relaxed; at the same time, the drinking of non-fat or low-fat milk should be recommended, especially for those who consume large quantities of milk.

"A meta-analysis of 29 cohort studies published in 2017 found no association between the consumption of dairy products and either cardiovascular disease (CVD) or all-cause mortality," says Professor MaciejBanach, from the Department of Hypertension at Medical University of Lodz, Poland.

"Yet a large 20-year prospective study of Swedish adults, also published in 2017, found that higher consumption of milk was associated with a doubling of mortality risk, including from CVD, in the cohort of women," he adds.
Professor Banach and his co-researchers examined data from a 1999-2010 National Health and Nutrition Examination Surveys (NHANES) study of 24,474 adults with a mean age of 47.6 years, 51.4 percent of whom were female. (NHANES is conducted by the US's Centers for Disease Control and Prevention.)

During the follow-up period of 76.4 months, 3,520 total deaths were recorded, including 827 cancer deaths, 709 cardiac deaths, and 228 cerebrovascular disease deaths. The researchers found consumption of all dairy products to be associated with a 2 percent lower total mortality risk and consumption of cheese to be associated with an 8 percent lower total mortality risk (hazard ratio [HR]: 0.98, 95 percent confidence interval [CI]: 0.95-0.99; HR: 0.92, 95 percent CI: 0.87-0.97, respectively).
For cerebrovascular mortality, they found a 4 percent lower risk with total dairy consumption and 7 percent lower risk with milk consumption (HR: 0.96, 95 percent CI: 0.94-0.98; HR: 0.93, 95 percent CI: 0.91-0.96, respectively).

A meta-analysis by Professor Banach and his co-researchers of 12 prospective cohort studies with 636,726 participants who were followed for approximately 15 years confirmed these results. But milk consumption was also associated with a 4 percent higher CHD mortality, while consumption of fermented dairy products such as yogurt was associated with a 3 percent lower rate of total mortality. The yogurt finding, however, was determined to be not significant after further adjustment (Q4: HR: 0.98, p=0.125).

The researchers conclude that among US adults, higher total dairy consumption protected against both total mortality and mortality from cerebrovascular causes. At the same time, higher milk consumption was associated with an increased risk of CHD, an association that needs further study. Causality, however, could be difficult to determine, as most people who consume milk also consume other dairy products.
"In light of the protective effects of dairy products, public health officials should revise the guidelines on dairy consumption. And given the evidence that milk increases the risk of CHD, it is advisable to drink fat-free or low-fat milk," says Professor Banach.

Drink up: Dehydration can affect human brain shape and task performance

22 Aug 2018 Nutrition Insight

When dehydration strikes, part of the brain can swell, neural signaling can intensify, and doing monotonous tasks can get harder, exercise physiologists at the Georgia Institute of Technology have found.

With the help of brain scans and a simple, repetitive task to test responsiveness, the researchers studied volunteer subjects who sweated a lot and did not hydrate.

The fluid loss led most of the subjects to make more goofs on the task, and areas of participants' brains showed conspicuous changes.

The researchers also found that even without dehydration, exertion and heat put a dent in test subjects' performance, but water loss made the dent about twice as deep.

"We wanted to tease out whether exercise and heat stress alone have an impact on your cognitive function and study the effect of dehydration on top of that," says Mindy Millard-Stafford, the study's principal investigator and a professor in Georgia Tech's School of Biological Sciences. "We found a two-step decline."

Heat, strain, accident

The researchers hope that someday this kind of research will offer insights into how increased cognitive slipups in hot settings with strenuous labor and poor hydration may endanger occupational safety, especially around heavy machines or military hardware.

The fuzzed cognition could also contribute to reduced performance in competitive sports.


Image © iStock.com/PraewBlackWhile

"When I was just getting interested in this subject, my brother was doing an internship at a steel plant, where I visited him, and it was extremely hot," says the study's first author Matt Wittbrodt, a former graduate research assistant at Georgia Tech. "In addition, everyone had on layers of protective clothing. We want to figure out if we can help prevent accidents in those environments."

Millard-Stafford and Wittbrodt, who is now a postdoctoral researcher at Emory University, published their study the week of August 20, in the journal Physiological Reports. Their research was partly funded by The American College of Sports Medicine Foundation.

Brain ventricles expand
In the experiments, when participants exercised, sweated and drank water, fluid-filled spaces called ventricles in the centre of their brains contracted. But with exertion plus dehydration, the ventricles did the opposite; they expanded.
Functional magnetic resonance imaging (fMRI) revealed the differences. Oddly, the ventricle expansion in dehydrated test subjects may not have had much to do with their deeper slumps in task performance.

"The structural changes were remarkably consistent across individuals," said Millard-Stafford a past president of The American College of Sports Medicine. "But performance differences in the tasks could not be explained by changes in the size of those brain areas."
Changes in neural firing patterns showed up during dehydration, too.

"The areas in the brain required for doing the task appeared to activate more intensely than before, and also, areas lit up that were not necessarily involved in completing the task," Wittbrodt said. "We think the latter may be in response to the physiological state: the body signalling, 'I'm dehydrated'."

Mind-numbing task
The task the subjects completed was mindless and repetitive.
For 20 straight minutes, they were expected to punch a button every time a yellow square appeared on a monitor. Sometimes the square appeared in a regular pattern, and sometimes it appeared randomly. The task was dull for a reason.

Past studies have indicated that this kind of task reflects the neural processing involved in real-life motor functioning, especially in the repetition common in manual labour or military exercises. Such monotony can foster attention lapses that heat, strain, and fluid loss may exacerbate.

Overhydration also bad
Going forward, the researchers would like to know if hydrating with electrolyte drinks might mitigate performance slumps even better than water did.

"Blood plasma gets diluted with water replacement alone," Millard-Stafford says. "If blood sodium – plain old salt – drops too much while water in the blood increases too much, that's dangerous. It's a condition known as water intoxication or hyponatremia."

Ultra-endurance athletes who end up in the medical tent are sometimes suffering from dehydration but also sometimes from water intoxication. Just the right balance of water seems to be important for the brain.

Aging gracefully: Overall quality of diet, not specific nutrients, is key, study says

22 Aug 2018 Nutrition Insight

Eating a diet that is rich in fruits, vegetables and whole grains and low in added sugar, sodium and processed meats can help promote healthy cellular aging in women, according to researchers at the University of Michigan School of Public Health.

"The key takeaway is that following a healthy diet can help us maintain healthy cells and avoid certain chronic diseases," says lead author Cindy Leung, Assistant Professor of Nutritional Sciences at the University of Michigan School of Public Health. "Emphasis should be placed on improving the overall quality of your diet rather than emphasizing individual foods or nutrients."

In the study, published in the American Journal of Epidemiology, researchers used telomere length to measure cellular aging. Telomeres are DNA protein structures located on the ends of chromosomes that promote stability and protect DNA. Age is the strongest predictor of telomere length – telomeres shorten in length during each cell cycle.

However, recent studies have shown that telomeres can also be shortened due to behavioural, environmental and psychological factors. Shorter telomeres have been associated with an increased risk for heart disease, Type 2 diabetes and some cancers.too much while water in the blood

Leung and colleagues examined the diets of a nationally representative sample of nearly 5,000 healthy adults and how well they scored on four evidence-based diet quality indices,


Image © iStock.com/laflor

including the Mediterranean diet, the DASH diet and two commonly used measures of diet quality developed by the U.S. Department of Agriculture and the Harvard T.H. Chan School of Public Health.
For women, higher scores on each of the indices were significantly associated with longer telomere length.

"We were surprised that the findings were consistent regardless of the diet quality index we used," says Leung. "All four diets emphasize eating plenty of fruits, vegetables, whole grains and plant-based protein and limiting consumption of sugar, sodium and red and processed meat."

"Overall, the findings suggest that following these guidelines is associated with longer telomere length and reduces the risk of major chronic disease."

Essentially, all of the diets are antioxidant and anti-inflammatory diets and create biochemical environments favourable to telomeres, adds co-author ElissaEppel, Professor of Psychiatry at the University of California, San Francisco.

Interestingly, in men, the findings were in the same direction but nowhere as near as statistically significant. "We have seen some gender differences in previous nutrition and telomere studies," Leung says. "In our study, as well as in previous studies, men tended to have lower diet quality scores than women. Men also had higher intakes of sugary beverages and processed meats, both of which have been associated with shorter telomeres in prior studies."

"It's possible that not all foods affect telomere length equally and you need higher amounts of protective foods to negate the harmful effects of others. However, more research is needed to explore this further."

A recent study published in The Lancet Public Health similarly identified the importance of diet for a healthy life, stating that following a low-carb diet could shorten life expectancy by four years, with the replacement of carbohydrates with animal proteins and fats being particularly detrimental to health and longevity. While an International Food Information Council (IFIC) study found that the over 50s in the US are increasingly concerned with health and use nutrition and food to manage or prevent chronic disease. The study also noted, however, that there is a broad lack of understanding on how to achieve these health-based goals.

Omega 3 potential for treating depression in heart failure subjects, study finds

22 Aug 2018 Nutrition Insight

Supplementing with omega 3 may lower the risk of cognitive depression in people who experience depression and chronic heart failure, a study published in the Journal of the American College of Cardiology's Heart Failure edition has found. The study found significant correlations between blood levels of EPA plus DHA omega 3s in cognitive, as opposed to somatic, depression among the participants.

"This was a study in already depressed individuals, which meant the researchers are looking to high-dose (although it could have been higher) omega 3 supplements to improve depressive symptoms, like a drug," says Dr. Bill Harris, one of the study's authors and the co-inventor of the Omega 3 Index Test.
The study included 108 subjects who were assigned to one of three groups each taking two grams per day of either a 2:1 mg EPA/DHA supplement, a high EPA product, or a placebo. The study lasted 12 weeks with blood testing (i.e., omega 3 index and RBC levels of EPA and DHA) completed pre- and post-supplementation.
The results demonstrated that the omega 3 index reached 7.3 percent in the EPA/DHA group, 7.1 percent in the EPA group and 4.4 percent in the placebo group. This indicates that the dose was adequate to significantly improve the omega 3 index in the space of three months.

The depression was measured using the Beck Depression Inventory-II (BDI-II), which is the most widely used instrument for detecting depression. Significant correlations between the omega 3 index and measures of cognitive depression where found.

The researchers note two drawbacks of the study: The study was a pilot, meaning the p-values were not adjusted for multiple comparisons, so there is a higher likelihood that they were chance findings.
Secondly, the study was relatively small with limited power and there was no significant effect of either omega 3 formulations on a variety of psychological measurements, in particular on the Hamilton Depression Score (HAM-D). So, the primary findings related to correlations between changes in the omega 3 index and the BDI-II cognitive depression metric.

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"Generally, we think of the function of omega 3s as preventative rather than as a treatment. If used as treatment, the dose must be fairly high – 4 grams is a typical 'drug' dose – and blood levels must be measured," Dr. Harris continued. "In their larger follow-up study, I would recommend they choose just one of the supplements (probably the pure EPA product) and increase the dose and duration of the study."
The authors were also exploring different supplement options, focusing on recent evidence that EPA might be more effective for treating depression while DHA may be better for general cognition. "From this study, it's not clear to me that one supplement type was better than the other," says Dr. Harris, adding, "However, linking higher blood levels of omega 3s to improved depression symptoms in people with both depression and heart failure is encouraging and hopefully leads to better treatment for their conditions."

Consuming milk at breakfast found to lower blood glucose throughout the day

20 Aug 2018
Nutrition Insight


Image © iStock.com/naturalbox

Consuming milk with breakfast cereal helps reduce postprandial blood glucose concentration compared with water, while a high dairy protein concentration also reduces postprandial blood glucose concentration compared with normal dairy protein concentration, according to a new study published in the Journal of Dairy Science.

The high-protein treatment also decreased appetite after the second meal compared with the low-protein equivalent. As a result, this breakfast routine may provide benefits for the management of Type 2 diabetes, the researchers say.
"Metabolic diseases are on the rise globally, with Type 2 diabetes and obesity as leading concerns in human health," says Dr. H. Douglas Goff, who led the research team of scientists from the Human Nutraceutical Research Unit at the University of Guelph, in collaboration with the University of Toronto.

"Thus, there is an impetus to develop dietary strategies for the risk reduction and management of obesity and diabetes to empower consumers to improve their personal health," he says.
In this randomized, controlled, double-blinded study, the team examined the effects of increasing protein concentration and increasing the proportion of whey protein in milk consumed with a high-carbohydrate breakfast cereal on blood glucose, feelings of satiety, and food consumption later in the day.
Digestion of the whey and casein proteins naturally present in milk releases gastric hormones that slow digestion, increasing feelings of fullness. Digestion of whey proteins achieves this effect more quickly, whereas casein proteins provide a longer lasting effect.

Although the team only found a modest difference in food consumption at the lunch meal when increasing whey protein at breakfast, they did see that milk consumed with a high-carbohydrate breakfast reduced blood glucose even after lunch, and high-protein milk had a greater effect. Milk with an increased proportion of whey protein had a modest effect on pre-lunch blood glucose, achieving a greater decrease than that provided by regular milk.

According to Dr. Goff and colleagues, "This study confirms the importance of milk at breakfast time to aid in the slower digestion of carbohydrate and to help maintain lower blood sugar levels. Nutritionists have always stressed the importance of a healthy breakfast, and this study should encourage consumers to include milk."


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Weekly Roundup: Curcumin extract may prevent non-alcoholic fatty liver disease, eggs recommended in early weaning

03 Aug 2018 Nutrition Insight

The weekly roundup is NutritionInsight's collection of global nutrition stories from the past week.

In research news, bioactive curcumin extract BCM-95 was noted for its role in preventing and treating Non-Alcoholic Fatty Liver Disease (NAFLD), folic acid supplementation may be key to lowering the risk of language skill

delays in children whose mothers take drugs for epilepsy and women appear to have a more considerable aversion to eating meat than men after seeing pictures of baby animals.

Lastly, British Lion Eggs, a UK food safety scheme, notes that a UK government report has highlighted the benefits of feeding the allergenic foods of eggs and peanuts to babies from the age of six months old.

In brief: Research studies

New research has highlighted the potential of BCM-95, a high potency turmeric extract, as a preventive and treatment agent for NAFLD. The turmeric extract is marketed by DolCas Biotech, in a joint venture with Arjuna Naturals Extracts.

The study identified that supplementation with the curcumin ingredient reduced the development of NAFLD and diminished its progression to more severe forms in rats, via its ability to reduce inflammation, oxidative stress and hepatic steatosis, the researchers report.

Women who take epilepsy drugs while pregnant may have a lower risk of having a child with delays in language skills if they supplement with folic acid before and early in pregnancy, says a Norwegian study. The study found that epileptic mothers who did not supplement with folic were four times as likely to have children with language skills delays. Researchers note the significance of the study as Norway does not fortify foods with folic acid, as is done in the US.

"The apparent protective effect of taking folic acid supplements was striking," says Elisabeth Synnøve Nilsen Husebye, study author. "Half of the risk of having language delays at 18 months could be attributed to the lack of folic acid in children exposed to epilepsy drugs, while in children of mothers without epilepsy only 6 percent of the risk was attributed to the lack of supplements."

Lancaster University and University College London researchers found that both men and women find pictures of baby animals – such as lambs, piglets and calves – "cute and vulnerable," but that women experience a more significant reduction in their appetite for eating meat following exposure to the images.

The researchers note that this could be due to women's greater "emotional attunement" toward babies, and go on to suggest that animal advocacy groups would be wise to focus on images of "cute" baby animals in their publicity, particularly when focused on young women. Interestingly, no appetite reduction was found in men or women when shown images of adult animals, such as cows, pigs and sheep.

In brief: Miscellaneous

British Lion Eggs, part of the British Egg Industry Council, has highlighted aspects of a UK Government report – Feeding in the first year of life – in relation to allergenic foods. The report confirms that allergenic foods, including hen's eggs and peanuts, can be introduced to a child's diet from around six months of age.

The report also notes that the deliberate exclusion of eggs beyond six to 12 months of age may increase the risk of allergy once initial exposure occurs. The attitudes of mothers toward solid foods was also considered, with the report highlighting that 12 percent said they avoided giving their infants eggs, while 73 percent reported giving them less than once per week.

By LaxmiHaigh

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Biofortification: The answer to boosting academic performance in India?

02 Aug 2018 Nutrition Insight

The consumption of iron-biofortified pearl millet can significantly improve cognitive abilities in Indian adolescents, a study published in the Journal of Nutrition has found.

Biofortification uses conventional crop breeding to increase micronutrient levels, to help address preventable deficiencies of key vitamins and minerals.

The researchers note that the study findings indicate the potential long-term effects of boosting Indian adolescents' cognition, potentially increasing social mobility through improved academic and professional performance. Iron deficiency remains the most prevalent micronutrient deficiency


Image © iStock.com/ subodhsathe

globally, with nearly half of all Indian women and children under five being anemic. However few studies have examined how iron status relates to cognition in adolescents. This landmark study marks the second to link iron biofortification with functional cognitive improvements.

"This was a proof of concept study (an efficacy trial, with tightly-controlled conditions and pearl millet provided freely at a single school), not an effectiveness trial which mimics what would happen in the real world. In terms of real-life implications, the results suggest that if iron-deficient populations consume iron-rich pearl millet in sufficient quantities, we could see some improvements in cognitive function," Samuel Scott, Associate Research Fellow at the International Food Policy Research Institute (IFPRI) tells NutritionInsight.

"That will benefit different people in different ways; in school-going adolescents, you could suggest that improved cognitive function would lead to better learning, ability to pay attention in class, faster processing of education materials, etc., and that these could lead to future benefits as they enter young adulthood for college and jobs," he adds.

Shev - local snack that was made with biofortified pearl millet.
The study
Conducted in Maharashtra, India, the study included 140 economically-disadvantaged 12-16 year olds, who consumed biofortified iron pearl millet twice daily in the form of bhakri (a local flatbread) or shev (a savory snack) for six months. The effects were compared to a group eating conventional pearl millet. Computer-based tasks were administered before and after the six months to measure cognitive skills.

Adolescents are particularly vulnerable to iron deficiency because they experience periods of rapid growth, the onset of female menstruation and poor dietary habits. Addressing adolescent iron deficiency is crucial to ending the intergenerational cycle of malnutrition, especially as more than half of females in India marry by 18 years old, and often quickly after bear children. In the study, iron deficiency was two to three times more prevalent in females.

The findings demonstrate that daily iron intake from pearl millet was higher in the biofortified group and that its consumption results in a greater improvement in attention and memory. The biofortified group became faster on the most basic cognitive tasks, simple attention tasks and memory tasks.

Potential for change

"Biofortification holds immense promise in helping people and economies reach their full potential. This study reinforces that functional impacts are achievable with a food-based, low-dose intervention like biofortification, which does not require changes to eating behavior or access to dietary supplements or commercially fortified foods," Erick Boy, Head of Nutrition at Harvest Plus, which manufactures the biofortified product, tells NutritionInsight.

Bhakri - local flatbread that was made with biofortified pearl millet.
According to Harvest Plus, over two billion people suffer from "hidden hunger." Meaning, they do not get enough micronutrients, such as vitamin A, zinc and iron, from the foods they eat to lead healthy, productive lives.

Although the body only requires micronutrients in minimal amounts, they are essential to good health and preventing illness. Typical diets in developing countries can consist of significantly number of staple foods but very few micronutrient-rich foods such as fruits, vegetables and animal products.

Therefore, a vital component of the potential of biofortified iron pearl millet is that it does not cost more than the ordinary strain as these varieties are considered public goods, so they go onto the commercial market at a comparative price, Boy explains, thereby, increasing access to lower-income groups.

The potential for reducing global malnutrition, and in turn, enhancing the chance to escape the poverty cycle could lie in biofortification. However, the interventions require a solidly multi-sectoral approach, as Scott explains, "One of the important and challenging areas is farmer adoption of biofortified crops. And then to really have population-level effects and scale up, at least in India, I think social safety nets that are already in place to deliver food and have high coverage need to be leveraged."

Boy adds that biofortification should be a core activity of all agricultural research centers, in order to work toward the mainstreaming of biofortification.

By LaxmiHaigh

Higher omega 3 index linked to better brain function in children

01 Aug 2018 Nutrition Insight

New research published in the July edition of the Journal of Nutritional Biochemistry has pointed to a strong correlation between blood levels of omega 3s, especially docosahexaenoic acid (DHA), and better brain function in children aged two to six years old.


Image © iStock.com/wojciech_gajda

Although the benefits of omega 3s in certain populations are hotly debated, the authors of this study conclude that these findings provided an "impetus for further studies into possible interventions to improve essential fatty acid status of children in developing countries."

The objective of this cross-sectional study was to investigate the relationship between whole-blood fatty acids (FAs) and executive function in 307 children (two to six years old) from Northern Ghana.

The aim of researchers was to examine the extent to which higher levels of EPA and/or DHA were associated with better cognitive performance. Dried blood spot samples were collected and analyzed for FA content.

The children underwent a battery of cognitive function tests. Specifically, the dimensional change card sort (DCCS) task was used to assess executive function. The DCCS asks that the child sort a series of bivalent cards based on one of two instructed dimensions (i.e., either color or shape).

Following sorting an initial series of eight cards based upon color, the child is instructed to switch the categorization dimension and sort another series of eight cards based upon shape.

This dimensional change in sorting behavior provides an index of executive function as the child must suppress their previously learned set of rules (i.e., sorting by color) and attentional inertia towards those attributes in order to flexibly adjust their behavioral actions and attention to sort the cards by a new set of rules (i.e., sorting by shape).

The average mega 3 Index (red blood cell EPA + DHA level) in this group was 4.6 percent, with a range of 2.3 percent to 11.7 percent. Significant differences in mean percent total whole-blood fatty acids were observed between children who could not follow directions on the DCCS test (50 percent of the sample) and those who could (50 percent of the sample).

Children with the highest levels of total omega 3s and DHA were three and four times, respectively, more likely to pass at least one condition of the DCCS test of executive function than those with the lowest levels.

According to the authors, this study, Whole blood n-3 fatty acids are associated with executive function in 2-6-year-old northern Ghanaian children, has several strengths. One of these is that it used an objective biomarker to assess dietary fatty acid intake (i.e., the Omega-3 Index), as opposed to other conventional and less precise methods such as food frequency questionnaires or diet history techniques.

Food frequency questionnaires are not highly accurate at estimating circulating blood levels of fatty acids.

One of the study's investigators, Dr. Bill Harris, founder of OmegaQuant, and co-inventor of the Omega-3 Index test, says the results are very encouraging for these children, who are probably the most disadvantaged when it comes to omega 3 consumption.

"Children in developing countries like Ghana do not have the access to omega 3-rich sources that children from other parts of the world do. This has several ramifications, particularly in the area of brain development and cognitive function," Harris says.

"We were happy to see the positive correlation between omega 3 levels and better brain function, especially since an omega 3 deficiency is so easy to correct. All it requires is consuming more of the right omega 3s, especially DHA which in this case was the standout fatty acid here."

FOOD SCIENCE & INDUSTRY NEWS

Highly effective natural plant-based food preservative discovered

Science Daily August 16, 2018

Nanyang Technological University, Singapore (NTU Singapore) scientists have discovered a plant-based food preservative that is more effective than artificial preservatives.

The organic preservative comprises a naturally-occurring substance known as 'flavonoids', a diverse group of phytonutrients found in almost all fruits and vegetables. The flavonoids created by NTU scientists have strong anti-microbial and anti-oxidant properties; two key traits of preservatives that inhibit bacterial growth and keep food fresher for longer.

In tests carried out on on meat and fruit juice samples, the organic preservative kept its samples fresh for two days without refrigeration, compared to commercial-grade artificial food preservatives. The experiment was conducted at room temperature (about 23 degrees Celsius) where the other food samples with artificial preservatives succumbed to bacteria contamination within six hours.

The NTU research team was led by Professor William Chen, Director of NTU's Food Science & Technology programme. The team is already in talks with multinational companies to further develop the new food preservative.

The team's findings were published last month in the scientific journal Food Chemistry - one of the top three research-based food science publications.

Prof Chen said, "This organic food preservative is derived from plants and produced from food grade microbes, which means that it is 100 per cent natural. It is also more effective than artificial preservatives and does not require any further processing to keep food fresh. "This may open new doors in food preservation technologies, providing a low-cost solution for industries, which will in turn encourage a sustainable food production system that can produce healthier food that stay fresh longer."

Harnessing nature's gifts
Flavonoids are naturally occurring chemicals in plants which are responsible for defending plants against pathogens, herbivores, pests, and even environmental stress such as strong ultraviolet rays from prolonged hours of sunshine. Found in almost all fruits and vegetables, it is responsible for inducing vivid colours in them. These include onions, tea, strawberries, kale, and grapes.

Though flavonoids' anti-microbial potential have been reported, they have not been used as a food preservative because they require further processing before they can mitigate bacteria. This is known as 'prenylation' -- a process involving the addition of hydrophobic molecules onto a protein to facilitate cell attachment -- which is not cost-effective or sustainable.

NTU researchers have not only found a way to grow flavonoids with high anti-microbial and antioxidant properties but also in a natural and sustainable manner. They achieved this by implanting the flavonoid-producing mechanism from plants into baker's yeast (a species known as Saccharomyces cerevisiae).

Similar to how vaccines are manufactured using yeast, the researchers found that the yeast produced flavonoids with high anti-microbial properties, which are not even present in pure flavonoid samples extracted directly from plants.

Prof Chen said, "Anti-microbial and anti-oxidant properties are key elements in food preservation. Flavonoids extracted directly from plants need to be further processed to be antimicrobial whereas our flavonoids produced from yeast do not require this. Secondly, there have been no reports on anti-oxidant properties in flavonoids while our yeast-based flavonoids naturally come with it."

Image © iStock.com/YinYang

Growing international concern on artificial preservatives

This research comes at a time when there is a growing body of scientific evidence on how artificial preservatives affect the body's long-term growth and development.

Last month (23 July), the American Academy of Pediatrics, which represents some 67,000 pediatricians in the United States, issued an announcement expressing concerns about chemicals used in food preservatives especially for meat products. These include nitrates and nitrites, which can interfere with thyroid hormone production that is essential for the regulation of metabolic processes, and has also been linked with gastrointestinal and nervous system cancers.

Sharing an independent view on the research, Dr. Gabriel Oon Chong Jin, a Consultant Medical Oncologist at Mount Elizabeth Hospital, said, "The new source of natural food preservatives from flavonoids safely produced from yeast by NTU is brilliant, as this species of yeast has been used in brewing beer and in the manufacture of hepatitis B vaccines.

Dr Oon, a former consultant and adviser to the World Health Organisation and a pioneer in implementing the universal vaccination programme in Singapore, added, "Flavonoids are important natural food supplements with vitamins, but also used as food additives, without causing harm to the human system. This is unlike currently available artificial preservatives used in most processed foods such as aspartame and nitrates, which may cause cancer among other adverse health effects."

The NTU research team aims to further develop their findings with the food industry and enhance its efficacy and safety so that it can be used in all packaged food products.

Waste not, want not: Food scientists in Singapore create gut-friendly drink from soy by-product

28 Aug 2018 Nutrition Insight

Food scientists at the National University of Singapore (NUS) have developed a refreshing drink that contains live probiotics, dietary fibre, free isoflavones and amino acids from okara - the residue from the production of soy milk and tofu, which is usually discarded.

The researchers say that by encapsulating these nutrients in a beverage, they can be easily absorbed into the body and promote gut health. The researchers have filed a patent for their novel technique and are also looking to collaborate with industry partners to introduce the drink to consumers.

"The okara drink can be stored at room temperature for up to six weeks, and high counts of live probiotics to better deliver health effects. This is unlike commercially available probiotic drinks which are mainly dairy-based and require refrigeration to maintain their levels of live probiotics," Weng-Chan Vong, a Ph.D. student from the NUS Food Science and Technology Program, tells NutritionInsight.

Moreover, she says, these beverages have an average shelf-life of four weeks and do not contain free isoflavones, which have a host of health benefits. As no dairy is used in its creation, the drink is suitable for lactose intolerant consumers as well as those looking to follow a more plant-based diet.

About 10,000 tonnes of okara are produced yearly in Singapore. As it turns bad easily, causing it to give out an unpleasant smell and a sour taste, okara is usually discarded by soy food producers as food waste.

"Okara has an unpleasant smell and taste – it smells fishy, tastes bland, and has a gritty mouthfeel. Our breakthrough lies in our unique combination of enzymes, probiotics and yeast that work together to make okara less gritty, and give it a fruity aroma while keeping the probiotics alive. Our final product offers a nutritious, non-dairy alternative that is eco-friendly," says project supervisor Associate Professor Shao-Quan Liu, who is from the Food Science and Technology Program at the NUS Faculty of Science.

The idea of using fermentation to produce a drink from okara was first conceived by Weng-Chan Vong.

"During my undergraduate studies at NUS, I worked on a project to examine how soy milk can be infused into different food items, and I realized that a huge amount of okara was being discarded. It occurred to me that fermentation can be one good way to convert unwanted okara into something that is nutritious and tastes good," she adds.

Under the guidance of Associate Prof Liu, Ms. Vong took a year to devise a novel recipe that converts okara into a beverage that is fruity and refreshing. She experimented with 10 different yeasts and four different enzymes before coming up with an ideal combination.

The final recipe uses the probiotic strain Lactobacillus paracasei L26, the Viscozyme L enzyme and the Lindnerasaturnus NCYC 22 yeast to convert the okara into a nutritious drink that achieves a minimum of 1 billion probiotics per serving, which is the current recommendation by the International Scientific Association for Probiotics and Prebiotics to achieve maximum health benefits. The drink, which takes about one and a half days to produce, also contains free isoflavones, which are naturally occurring antioxidants that maintain cardiovascular health, as well as dietary fibre and amino acids.

The NUS researchers have filed a patent for the technique used to create the beverage, and are currently experimenting with different enzymes and microorganisms to refine their recipe. They are also looking to collaborate with industry partners to introduce the drink to consumers. "We expect [the product] to be cheaper than other commercially available products because okara is easily available. And if we find partners, we hope to see our drinks in the stores within 12 to 18 months," Liu tells NutritionInsight. "In recent years, the food and beverage industry has been intensifying efforts to develop products that appeal to consumers who are increasingly health conscious. Our new product offers soy food manufacturers a viable solution to reduce waste, and also enables them to provide a healthy and eco-friendly beverage for their customers," says Liu.

This is not the first time researchers at NUS have created a novel gut-friendly beverage. Last year, Liu was also involved in the creation of a novel probiotic sour beer, which incorporates the probiotic strain Lactobacillus paracasei L26.

By Lucy Gunn

Asian collagen market is booming, but scientific substantiation crucial, says BioCell Technology

23 Aug 2018 Nutrition Insight

The Asian collagen market is booming, but consumers are increasingly demanding quality and scientific substantiation, according to BioCell Technology.

In light of this, BioCell collagen will be presented at Vitafoods Asia, September 11-12 in Singapore, with an accompanying scientific session to highlight supporting clinical trials of the product. BioCell collagen is a naturally occurring matrix of hydrolyzed type II collagen, chondroitin sulfate and hyaluronic acid.

"In Asia, collagen has long been established in the region's beauty-from-within and joint health markets. However, what we see there is that consumers are becoming increasingly savvy and demanding high-quality collagen that's backed up by scientific substantiation," SuhailIshaq, President of BioCell Technology, tells NutritionInsight.

BioCell collagen stands out from other collagen offerings because it is substantiated with human trials, Ishaq explains. In one study of 80 people, it was confirmed safe and effective and, compared to a placebo group, significantly promoted joint comfort and mobility.

The results corroborated an earlier trial, says Ishaq, which found that it helped joint comfort by as much as 40 percent. One last study found that daily ingestion of BioCell collagen for 12 weeks led to a 13 percent reduction in wrinkles and a 76 percent reduction in dryness and skin scaling.

The scientific substantiation of the collagen ingredient has led to a surge in global interest, "I don't see these positive trends abating, but I think quality and scientific substantiation are going to become more important in future. In this information age, consumers are increasingly skeptical and interested in the provenance of ingredients," says Ishaq.

"The advantage of a branded ingredient like BioCell Collagen is that consumers know it's made by a reputable company that has carried out quality scientific research and produces a consistent product they can rely on for efficacy."

The collagen market is also growing outside of Asia, "In North America, there's been a significant increase in sales over the past couple of years, partly because of the mainstreaming of beauty-from-within as a concept, but also because of the rapidly expanding body of evidence for collagen's effectiveness for joint and skin health. In the EU most of our customers are positioning BioCell Collagen for joint health," Ishaq adds.

In terms of applications, BioCell collagen can be used in dietary supplements and functional foods. As a B2B supplier, the company license and supply BioCell collagen to consumer-packaged goods companies for use in their finished products.

An overview of this growing body of research will be presented at Vitafoods Asia by Dr. Vincenzo Boldrini, Scientific Manager of Sochim International, a distributor for BioCell.

REGULATORY NEWS

Image © iStock.com/andresr

Food fortification in India: Regulator FSSAI publishes updated dosage levels as it strives for national adoption

By Cheryl Tay 21-Aug-2018
-NutraIngredients Asia

India regulator FSSAI has published updated rules for foodfortification standards, as part of its efforts to make the practice partof the national agenda.

The regulator first implemented the Food Safety and Standards (Fortification ofFoods) Regulations in October 2016, with fortification guidelines for staples such asrice, wheat flour (folic acid, iron, and vitamin B12), milk, edible oil (vitamins A and D) andsalt (iodine and iron).

In addition, the '+F' logo was introduced to identify fortified foods, and the Scientific Panel on Nutrition and Fortification approvedthe Scientific Health Claims for label declaration of fortified foods.The latest notification refers to the updated set of regulations as the Food Safety and Standards (Fortification of Foods) Regulations2018.

By January 1 2019, all food business operators must comply with "all the provisions of these regulations", with permitted dosages ofadded micronutrients recommended by the panel adjusted to provide 30% to 50% of each individual's daily requirements.The permitted dosages provide a minima and maxima range for the fortification of staple foods like wheat flour (also called atta ormaida), rice, salt, milk, and vegetable oil.

The range allows for an additional 10% of micronutrients above the dosage recommended by the panel, though the figure is 20%for vitamins A and D.The updated regulations also state that "every manufacturer and packer of fortified food shall give an undertaking on quality assuranceand submit evidence of steps taken" to the FSSAI twice a year.

These undertakings are to include details such as certification by an FSSAI-approved food laboratory that the fortified food complieswith the official standards, regular technical equipment and process audits, and good manufacturing practices (GMP).

Additionally, every package of fortified food must have the words "fortified with", followed by the name of the added micronutrients,along with the '+F' logo in either blue or black.The FSSAI has also made clear its intention to "encourage the production, manufacture, distribution, sale and consumption of fortifiedfood — including fortification through conventional breeding or hybridisation — in cooperation with concerned departments of the Government of India (or) governments of states / union territories".

More micronutrients Quality, labelling and promotion

From recommended to mandatoryAt present, 110 brands of all five fortified staples by 62 of India's major firms have hit the open market across the country — amarked contrast from just eight months ago , when companies were slow to make the necessary changes, especially for milk andedible oils.Today, 21% of the milk industry adheres to the fortification standards, while 47% of the edible oil industry doing the same.

In light of these positive developments, the FSSAI has proposed mandatory fortification of staples as "the way forward". Already, the Ministry of Women and Child Development and Ministry of Human Resource Development have made fortified staplesmandatory, with government programmes such as Integrated Child Development Services (ICDS), Mid-Day Meal (MDM) and thePublic Distribution System (PDS) using them.

Scaling up

Just last month, the Indian government announced that 118 districts in the country would receive fortified rations. Shortly after, thegovernment of Haryana announced an extension of fortified food supply under the PDS.Today, 15 states in India — including Odisha, Karnataka, Gujarat, Uttar Pradesh, Maharashtra, Tamil Nadu, West Bengal, and Keralaas well as three union territories, have adopted the fortification of certain commodities on the district level, or to varying extentsunder programmes such as the ICDS, MDM and PDS.

In fact, the FSSAI has published a report entitled Food Fortification in India: Status and Road Ahead — Need for a Strategic Shift forFurther Scale Up , which details the need for a strategic shift to scale up government-funded fortification programmes.The report also estimates that an additional Rs 300bn — approximately 1% of the overall existing budget for the ICDS and MDM —would enable fortification to be implemented across the entire country.

FSSAI initiates framing of GM food regulations after trace ingredientsfound in products

By Lester Wan09-Aug-2018 -Food Navigator Asia

The Food Safety and Standards Authority of India (FSSAI) says it has begun framing regulations for genetically-modified (GM) food, shortly after being accused of failing to restrict the import of such items.

FSSAI said the regulations would "lay down procedures for safety assessment andapproval of foods including imported foods, derived from genetic modification processesbased on the internationally well established and accepted scientific principles, proceduresand practices before being approved for food purposes" .

After formal approval of FSSAI's Scientific Panel, Scientific Committee and the authority itself, the draft regulations will be notified inthe Gazette of India to elicit comments from various stakeholders. FSSAI said these will be duly considered, after which theregulations will be finalised with the approval of the Government of India.

Prior to the approval of such foods, FSSAI would be in charge of the assessment of their food safety, while the Genetic EngineeringApproval Committee (GEAC) of India's Ministry of Environment, Forest and Climate Change would assess aspects related to their environmental impact.

Fallout after recent scandal

Recently, stores in Delhi, Punjab and Gujarat were found to be selling genetically-modified (GM) foods, according to the Centre for Science and Environment's (CSE) Pollution Monitoring Laboratory of India. CSE claimed that out of 65 products tested, 21 werefound to be GM-positive.These products included cooking oil, packaged food and infant food. Some also made false claims of being GM-free.

Under India's Food Safety and Standards Act, 2006, no person shall manufacture, distribute, sell or import any genetically modified(GM) article of food except under the Act and regulations made thereunder.In the wake of that scandal, the Coalition for a GM-Free India had accused the Government of India of "actively jeopardising the healthof all Indians by allowing illegal hazardous GM foods" and that it "knowingly created a regulatory vacuum in which there is no authoritytaking responsibility to put a check on such GM foods from coming into our food supply chain".

"This is highly irresponsible and reprehensible," said the Coalition."The fact that every regulator and ministry has failed in the discharge of its responsibility shows a sinister and wilfully dangerous pattern that seeks to jeopardise and compromise on the health safety of citizens of India.

The Coalition for a GM-Free India now appeals to thePrime Minister of India to urgently intervene in the matter, to fulfil the BJP Manifesto promise of 2014, and ensure that citizens are notsubjected to the hazards of GM foods."

Lack of action damning?

Furthermore, the Coalition recently wrote to FSSAI CEO Shri Pawan Kumar Agarwal"seeking concrete action". The Coalition pointed out that it first wrote to Agarwal and FSSAI months before, on March 16, on the illegal import and sale of GM foods in India, that were in violation of the Food Safety and Standards Act on GM foods.

Image © iStock.com/badmanproduction

"The lack of action by FSSAI tells the citizens of this country that, as the food safety regulator, you are knowingly allowing this illegal proliferation of unpermitted and hazardous GM foods in the country," said Kavitha Kuruganti, co-convenor, on behalf of the Coalition.

The statement further called FSSAI's response "wholly inadequate" and said it "does not create any confidence in ordinary consumers/citizens that FSSAI is serious about regulating unsafe illegal foods in the country".

GM labelling threshold

These new FFSAI regulations will be in addition to the Food Safety and Standards (Labelling and Display) Regulations , 2018, which the regulator said would for the first time include mandatory labelling for packaged food items with 5% or more GM ingredients.

Agarwal had said this would help to "bring clarity" but critics, including CSE, had said that not only is this measure not stringent enough, there is also a question about enforcement.

CSE said, "We believe that the criteria for exemption from labelling of food containing GM ingredients needs to be much stricter. "Considering that GM food is not allowed in India, we believe that the limit of 5 per cent for three ingredients is too high. We recommend that limits for individual ingredients should be set in line with the EU regulations of 0.9 per cent."

Nonetheless, FSSAI reiterated, "These proposed regulations will further bind food businesses to provide appropriate information to the consumers so as to enable them to exercise their informed choice in respect of purchase of foods, including GM foods, should any such foods be approved for manufacture or import in India."

FSSAI stressed that the threshold level for labelling of GM foods refers to the maximum permissible level (in percentage) of unintentional and technically unavoidable GMO content in food that does not call for labelling and that a large number of countries including Japan, Canada, Thailand and Indonesia prescribe such a threshold value of 5% by weight.

FSSAI further pointed out that the cost of demonstrating or verifying compliance to the specified threshold increases as the threshold level decreases."The proposed labelling of GM food in India falls within the range of internationally followed threshold level and seems to be practical and cost effective," it stated.

Permitted health claims and TULs: How India's supplement market can grow to US$10bn by 2025

By Cheryl Tay 01-Aug-2018 – Nutra Ingredients Asia

Establishing tolerable upper limits (TUL) and allowing health claims based on regulations from overseas can help India's supplement sector 'self-regulate', and grow the market to US$10bn by 2025.

Moreover, both will help improve public health, according to Sandeep Gupta, vice chairman of the India Drug Manufacturers' Association's (IDMA) nutraceutical committee.

Speaking to NutraIngredients-Asia, he highlighted the importance of considering TUL — in addition to the recommended daily allowance (RDA) — in establishing guidelines for the supplement and nutraceutical industry, saying this would better aid the process of self-regulation.

With this in mind, a 20-member industry committee recently compiled and submitted a report on regulatory suggestions to the Food Safety and Standards Authority of India (FSSAI). Gupta said, "In the past, it was difficult to determine the safety of the vitamins and minerals used in health supplements.

Now, those responsible for evaluating this safety will have clear guidelines for doing so, and manufacturers will not be allowed to go beyond the RDA, unless they have been approved to produce


Image © iStock/simarik

FSMP (foods for special medical purposes).

"However, the TUL concept has already been established in other parts of the world, especially Europe and the US, just never in India."

He added that the proposed TUL framework would offer helpful guidelines for businesses in India to determine the safety of different amounts of vitamins and minerals."

In the US, the industry has a category for medical foods and medical nutrition, (which falls) between pharmaceutical drugs and dietary supplements. Right now, India has a category for drugs, and another for health supplements. But the RDA is for healthy individuals — there is basically one RDA per supplement or drug category per healthy individual.

"The updated regulatory system will help regulators carve out a niche to address the medical food and nutrition category, where TUL will play a critical role in designing the regulations for such foods. This is in line with global practices, and it is within the FSSAI's authority to institute and implement the principles of TUL in the country."

Global standards for local regulations

India's rapidly growing supplement and nutraceutical industry is expected to be worth USD$10bn by 2025, and in preparation, theFSSAI has taken steps to amend the regulatory system, primarily by using international best practices as an example.

In December 2016, it introduced a set of regulations for health supplements, nutraceuticals, foods for special dietary use, foods forspecial medical purposes (FSMP), functional foods, speciality foods containing plants or botanicals, foods containing probiotics and /or prebiotics, and novel foods, covering details such as composition, claims, labels and so on.

To support the effective enforcement of these rules, the FSSAI has been looking to global best practices to aid in regulatory harmonisation, especially with regards to vitamin and mineral content in supplements and nutraceuticals. As a result, the Confederation of Indian Industry (CII) collaborated with the International Alliance of Dietary / Food Supplement Association (IADSA) to set up the Resource Centre for Health Supplements and Nutraceuticals (ReCHaN), which has begun scientific dialogues on global best practices between industry stakeholders and international experts.

ReCHaN had previously issued two guidance documents on compliance and good manufacturing practices (GMP), followed by a training manual and presentation deck on food safety management under the FSSAI's Food Safety Training and Certification(FoSTaC) initiative, all of which are applicable to both food businesses and regulators..

Good for business...and public health

Gupta added that while the existing guidelines cover the safety and permitted concentrations of ingredients, labelling, and generalclaims, guidelines on health claims would be announced separately in the near future."We've been working very closely with the FSSAI, the basic idea (of these changes) being that people should know what is and isn't allowed,and should then be able to practise self-regulation.

"The FSSAI is asking stakeholders to share any health claims that have been accepted elsewhere, based on scientific studies and tests, sothey can adopt global standards. In response, we are sending claims that have been approved by EFSA, FDA and other such bodies inEurope and the US to the FSSAI, so they can be reviewed and adopted in India.

"This so that when the new health claim regulations are released, companies do not need to approach the FSSAI individually for approval of these claims on their products. However, they must ensure the ingredients and their quantities, as well as the health claims, are identical to what has been approved in Europe and the US. It's a balanced approach in terms of public health, stakeholder interests, and prospective industry growth."

He added that the regulatory progress in India's supplement and nutraceutical industry so far has been encouraging, with rules having been made more practical. However, he also advised businesses to be prepared for evolving challenges, emphasising constant cooperation between companies and the authorities.

"We need to maintain regular dialogue between regulators and industry stakeholders. Nothing is constant — we must keep reviewing theregulations and making sure businesses take responsibility in keeping with the guidelines of the current regulations.

"There's a big opportunity for the industry to grow, and the FSSAI has already predicted the kind of growth it's expecting by 2025. There willbe many new entrants, mergers and acquisitions, and new product launches. Many start-ups will be introduced to the Indian nutraceuticalsector.

"Ultimately, the nutraceutical industry will be driven by innovation, science, and excellence in manufacturing. I believe self-regulation would fit well into these dynamics and provide the necessary support."

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