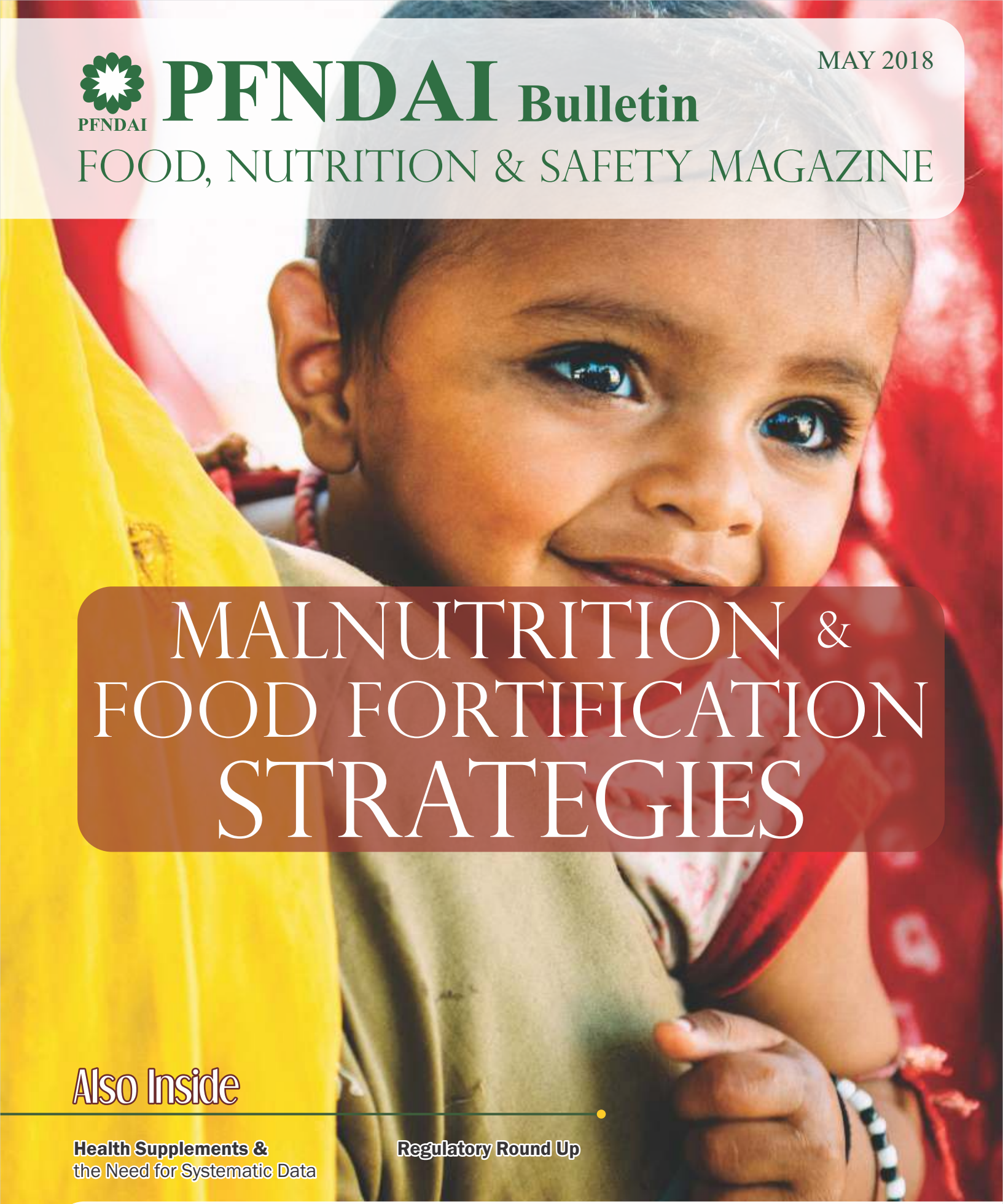
MAY 2018

PFNDAI Bulletin

FOOD, NUTRITION & SAFETY MAGAZINE



MALNUTRITION & FOOD FORTIFICATION STRATEGIES

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PROTEIN FOODS AND NUTRITION DEVELOPMENT ASSOCIATION OF INDIA

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FOOD, NUTRITION & SAFETY MAGAZINE

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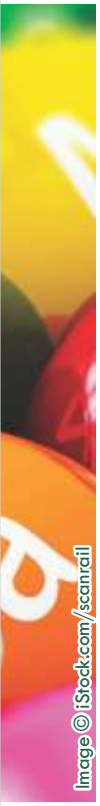
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EDITORIAL

Our Association will complete 50 years this year. This is a big milestone for the association and the members who started it and who supported it during all these decades. One of the basic objectives of the founders was creating awareness about proteins in diet as well as other nutrients so people get balanced diet. This association has been doing just that for all these years diligently with its science-based approach.

Our Governing Board has many ideas of activities, some of them new, in order to mark this milestone. We will certainly be conducting many events such as workshops, seminars and other meetings but there are some new activities that are planned.

We now have the newer avenues of communication. The electronics and internet has made communication much easier. Emails and smart phones are being extremely useful when information is needed to be spread rapidly. People are using mobiles not only for talking to people, they are taking photos and sending instantly by net, they are paying their bills and also doing banking, and they are also entertaining themselves by movies and other videos but also searching net for information, guiding themselves to destinations and also playing games. These are only a few things out of a vast number of things that are possible.

There are apps that tell consumers how to plan better diet and also apps that would help the user plan individualised nutrition. Research is providing many newer means of teaching as well as applying nutrition. It may also be possible to plan our recipes using some new apps which will tell us which ingredients to use in which proportion and how to prepare the food so it would satisfy not only our nutritional needs but also be great tasting. You may probably decide whether you want Chinese or Indian style and then add seasonings accordingly guided by the apps.

Social media has become a big revolution in information technology with many apps like WhatsApp, LinkedIn, Instagram, Google+, Twitter etc. helping people interact with each other and exchange information for all purposes. They have advantages and also disadvantages. Information and misinformation both get circulated extremely rapidly.

We are also joining this revolution by having a Facebook page of our own so we would be able to communicate better with not just our members but also anyone wanting information about food science and nutrition as well as our activities. We have our website which is visited by quite a few but we are expecting a much larger number of visitors on our Facebook page. We certainly hope you help us in that. Thanking you and see you soon,

Prof. Jagadish S. Pai,
Executive Director,
PFNDAI

MALNUTRITION & FOOD FORTIFICATION STRATEGIES

By Ms. Nadiya Merchant,
Senior Manager - Nutrition
Kellogg India Private Limited

Malnutrition refers to deficiencies, excesses, or imbalances in a person's intake of energy and/or nutrients.

The term malnutrition addresses 3 broad groups of conditions:
1. Under-nutrition, which includes wasting (low weight-for-height), stunting (low height-for-age) and underweight (low weight-for-age);
2. Micronutrient-related malnutrition, which includes micronutrient deficiencies (a lack of important vitamins and minerals) or micronutrient excess; and
3. Overweight, obesity and diet-related non-communicable diseases (such as heart disease, stroke, diabetes and some cancers).
Therefore, malnutrition is considered a silent killer, silent emergency and an invisible enemy.

Prevalence of Malnutrition:

Approximately 3.5 billion people in the world suffer from various forms of malnutrition, which equals to half of the world's population. Out of which, it is an underlying cause for 2.6 million children's death each year. 1 in 4 of the world's children is stunted. This means that 1 in 4 children's body fail to develop fully because of malnutrition.

- Data suggests that each day **795 million people starve from hunger.**
- Close to **2 billion people** survive on diets that **lack the vital vitamins and nutrients** needed to grow properly, live healthy lives, and raise a healthy family.
- **1.4 billion** People worldwide struggle with **overweight and obesity.** That's more than the number of people who are hungry worldwide. Changing lifestyles and cheap calories mean many people find it hard to balance their diets and lifestyles.
- Each year, malnutrition undermines billions of people's health. It kills **3.1 million children under 5 and leaves 161 million stunted.**

Key nutrition issues in India:

Double or triple burden of malnutrition?
India has been grappling with the problem of malnutrition for decades now. The triple burden includes:
1. Persistent under-nutrition, which includes:
Underweight and stunting: It makes children in particular much more vulnerable to disease and death.
Low weight-for-height known as wasting and indicates recent and severe weight loss, because a person has not had enough food to eat and/or they have had an infectious disease.
Low height-for-age known as stunting is the result of chronic or recurrent under-nutrition.
A child who is underweight may be stunted, wasted, or both.

On Global Hunger Index, India ranks 66th out of 68 countries.

2. Rising over-nutrition which includes
-Overweight and obesity resulting from an imbalance between energy consumed and energy expended.
- Non communicable diseases which account for 60% of total deaths &include cardiovascular diseases, certain cancers, and diabetes.
3. Increasing rates of micronutrient deficiencies.
Iodine, vitamin A, iron, Folic acid and Zinc are the most important in global public health terms.

Nutrient Intake of Indians:

As per NNBM report, 2017, nutrient intake of Indians is below RDA:

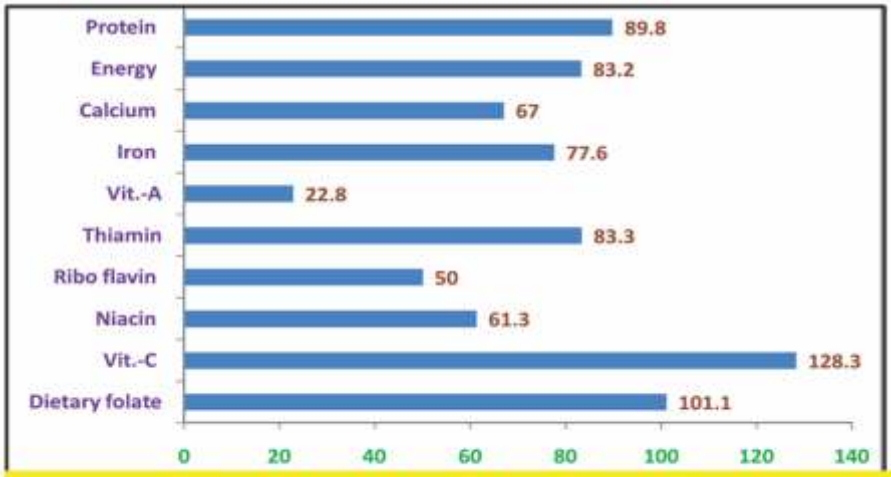

Fig: Average household consumption of nutrients as %RDA

- Average intake of energy, protein, iron, thiamine and niacin were found to be below RDA.
- Intakes of vitamin A and Riboflavin (Vitamin B2) were grossly inadequate
- Proportions of pre-schoolers consuming <50% of RDA for vitamin A, riboflavin, vitamin C, folate and calcium was significantly high (2% - 93%) and that of iron, thiamine and niacin ranged from 5% to 88%.
- Pregnant women consuming <50% RDA, in general was significantly high with wide variations within states.

Micronutrient malnutrition (hidden hunger) is rampant in India
- With one sixth of the global population residing in India, one third of about two billion people suffering from vitamin and mineral deficit are in India.
- Vitamin A, iron, iodine, zinc and folic acid deficiencies are common among women and children.

- The intake of micronutrients in the daily diet of over 70% Indian population is reported to be less than 50% of the RDA.
- In children aged 6 to 24 months, 39% consume vitamin A-rich foods and 11% consume iron-rich foods regularly
- In India, more than 6,000 children below the age of 5 are reported to die. **More than half of these deaths** are known to be caused by **malnutrition** – mainly lack of Vitamin A, iron, iodine, and zinc and folic acid.

"The disease burden caused by micronutrient deficiencies is substantial but completely preventable"

Micronutrient deficiencies of greatest concern

- Iron :
  - Iron deficiency is the most common MND in the world affecting more than 30% of the world's population, an estimated 2 billion people.
  - Anaemia prevalence among children under 5 years is 69% and among women it is over 55%.
- Vitamin A
  - VAD has been associated with increased rates and severity of infections and is a primary cause of childhood morbidity and mortality in the developing world.
  - About 57% of pre-schoolers and their mothers have sub-clinical Vitamin A deficiency.
- Iodine
  - India has the largest number of children born vulnerable to iodine deficiency.
  - It is the greatest single cause of mental retardation and brain damage.
- Folate
  - Folate deficiency causes megaloblastic or macrocytic anaemia and increases the likelihood for pregnancies affected by neural tube defects.
  - Nearly 50000 children are born deformed each year in India mainly due to folic acid deficiency.
- Zinc
  - An essential mineral is involved in multiple aspects of cellular metabolism.
  - Almost 26% of India's population is zinc deficient which contributes directly to stunting in young children
  - Zinc supplementation in pregnancy is associated with a significant reduction in preterm births.

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Nutrela
LIVE HEALTHY. LIVE HAPPY.

52% PROTEIN

GOOD BUY!
NUTRELA SOYA.
GOODBYE!
INDIA'S PROTEIN-DEFICIENCY.

Recent survey suggests that 73% of Indian diets are protein-deficient*. Part of the reason lies in the insufficiency of protein content in conventional protein sources such as eggs, lentils, meat, milk etc. Moreover, the steep cost (per 100 gms of protein) of these sources further makes it difficult for families to fulfil their daily protein need. We at Ruchi Soya; the makers of Nutrela Soya Chunks & Mini Chunks and Soya Granules, help consumers bridge this gap by providing the richest source of protein at the most affordable price. Soya contains 52% protein which is significantly above the protein content in eggs, lentils & milk all put together. We urge you to make soya an integral part of your diet recommendations. Let us join hands to help India say a GOODBYE to protein-deficiency!

FOOD	Approx Protein% /100gm	Approx Price/100gm
NUTRELA SOYA CHUNKS	52	9
DAL	25	10
MEAT	22	45
PANEER	19	32
EGG	14	12

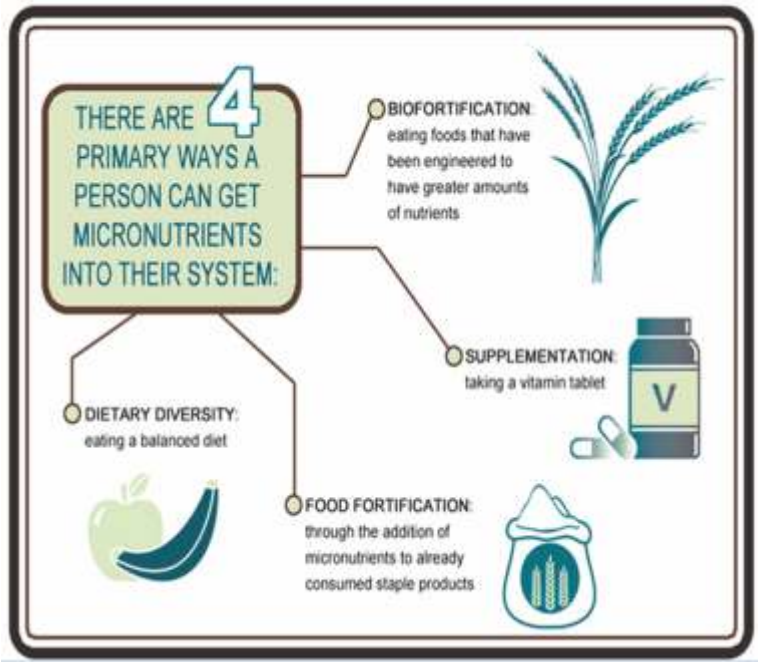
NUTRELA 0% PROTEIN DEFICIENT INDIA

www.nutrelahealth.com www.facebook.com/nutrela

*Source: The Times of India, July 2017

Strategy to combat micronutrient malnutrition

Addressing MNDs has been accomplished through supplementation, fortification and various food-based approaches including dietary diversification. Supplementation is a cost effective solution but does not address the root cause of the MND. Food fortification seems to be an effective means to address MNDs, as it enables a larger segment of a population to be targeted.



Micronutrient malnutrition usually occurs when diets lack variety. While short-term Interventions have a role in providing specific target groups with vitamin and mineral supplements at certain times, only food-based approaches can prevent micronutrient deficiencies in a sustainable manner for most of the population.

Benefits of Food-based Strategies

The benefits of Food-based strategies go beyond the prevention and control of micronutrient deficiencies.

- They are preventive, cost-effective and sustainable.
- They can be adapted to different cultural and dietary traditions and locally feasible strategies.
- Because they are broad-based, aiming to improve the overall quality of the diet of a population, they can address multiple nutrient deficiencies simultaneously.
- Because the amounts of nutrients consumed are within normal physiological levels, the risk of toxicity is minimized.
- Food-based strategies support the crucial role of breastfeeding and the special diet and care needs of infants and young children.
- Food-based approaches foster the development of sustainable, environmentally sound food production systems. Agricultural planners are alerted to the need to protect the micronutrient content of soils and crops.
- Food-based strategies build partnerships among governments, consumer groups, the food industry and other organizations to achieve the shared goal of overcoming micronutrient malnutrition.

Government Programs to tackle malnutrition

Micronutrient malnutrition is a serious health risk in India, mostly for those who are economically disadvantaged and do not have access to safe, nutritious food. Either they do not consume a balanced diet or they lack variety which results in inadequate micronutrients being consumed. For these reasons, state-wide fortification initiatives have been implemented for various food commodities such as wheat flour, rice, oil and milk under different Government Schemes.

1. The Integrated Child Development Services (ICDS) is an Indian government welfare programme, which provides food, preschool education and primary healthcare to children under 6 years and their mothers.
2. The Public Distribution System (PDS) is an Indian food security system maintained by the Food Corporation of India to distribute subsidised food and non-food items to India's poor through a network of fair price (ration) shops.
3. The Midday Meal Scheme (MDMS) is a school meal programme to improve the nutritional status of school-age children through free lunches on working days in primary and upper primary classes in government & government aided education centres.

Fortification

It is "the practice of deliberately increasing the content of an essential micronutrient, i.e. vitamins and minerals (including trace elements) in a food, so as to improve the nutritional quality of the food supply and provide a public health benefit with minimal risk to health."[WHO/FAO (2006) Guidelines on food fortification with micronutrients, Geneva, Switzerland] Its aims are as follow:

- Supply micronutrients in amounts that approximate to those provided by a good well balanced diet.
- Replace nutrients lost in food processing, thus playing a valuable role in preventing dietary deficiencies/ substantial reduction/ elimination of a number of micronutrient deficiencies.
- Fortified staple foods will contain 'natural' or near natural levels of micronutrients, which may not necessarily be the case with supplements.
- Fortification has the potential to improve the nutritional status of a large proportion of the population, both poor and wealthy.

• It requires neither change in existing food patterns/ habits – which are notoriously difficult to achieve, especially in the short-term- nor individual compliance.

Benefits of food fortification include the following:

• It can provide wide population coverage.
• Combined nutrient fortification can address multiple deficiencies.
• It encourages industries to be socially concerned and to add nutritional value to their products.
• It provides opportunities for consumers to become involved in food quality issues and creates demand for safe, wholesome food.

Food Safety & Standards (Fortification) Regulation, 2017 has introduced the mandatory fortification of foods; the foods have been chosen as they are consumed on a large scale.

Food/vehicle	Fortifying reagent
Salt	Iodine, iron
Wheat and corn flours, bread, pasta, rice	Vitamin B complex, iron, folic acid, vitamin B12
Milk, margarine, yoghurts, soft cheeses	Vitamin A and D
Sugar, monosodium glutamate, tea	Vitamin A
Infant formulas, cookies	Iron, vitamin B1 and B2, niacin, vitamin K, folic acid, zinc
Vegetable mixtures, amino acids, proteins	Vitamins and minerals
Soy milk, orange juice	Calcium
Juices and substitute drinks	Vitamin C
Ready-to-eat breakfast cereals	**Vitamins and minerals**
Diet beverages	Vitamins and minerals

▲ **Widely used fortified foods**

Dietary studies have demonstrated that eating breakfast cereals containing vitamins and minerals make a significant contribution to the intake of these vital micronutrients:
Studies have reported better intakes of B vitamins (thiamin, riboflavin, niacin, folic acid, B6 and B12) and iron in those children who eat breakfast cereal regularly.

A higher percentage of children who skip breakfast have reduced intakes of many nutrients such as vitamins A, E, C, B6, B12, folate; iron; calcium; phosphorus; magnesium; potassium; and dietary fibre.

Nutritionists recommend that around 20-25% of the day's requirement of vitamins and minerals should be met at breakfast. One bowl of breakfast cereal each day provides up to 20-25% of daily intakes of essential vitamins and minerals, thereby making a valuable contribution to an Indian diet.

Fortification Programs in India

1. Global Alliance for Improved Nutrition (GAIN) aims at improving nutrition for entire populations with large scale food fortification and making healthier food choices more affordable, more available, and more desirable. It was launched to tackle the human suffering caused by malnutrition. GAIN's purpose is to improve nutrition outcomes by improving the consumption of nutritious and safe food for all people, especially the most vulnerable.

FOOD	NUTRIENT	LEVEL OF FORTIFICATION
Salt	Iodine (Manufacture level)	Not less than 30 ppm on dry weight
	Iodine (Distribution channel)	Not less than 15ppm on dry weight
	Iron	850-1100ppm
Oil	Vitamin A	25 IU per mg
	Vitamin D	4.5 IU per mg
Milk	Vitamin A	770 IU
	Vitamin D	550 IU
Vanaspati	Synthetic Vitamin A	Not less than 25 IU per g
Atta	Iron	20mg
	Folic acid	1300µg
	Vitamin B12	10µg
Maida	Iron	60mg
	Folic acid	1300µg
	Vitamin B12	10µg
Rice	Iron	20mg
	Folic acid	1300µg
	Vitamin B12	10µg

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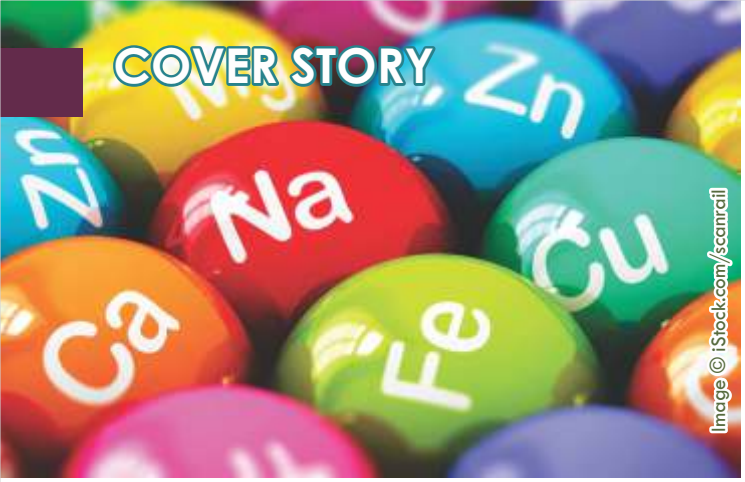

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and equipment procurement and manufacture, quality assurance and quality control for fortification of foods. FFRC's approach is to motivate, nudge and facilitate the food industry to adopt Food Fortification as a norm30.

3. The Food Fortification Initiative (FFI) is an international partnership working to improve health through fortification of industrially milled grain products. Their Vision: Smarter, stronger, healthier people worldwide by improving vitamin and mineral nutrition.
Mission: Support fortification of industrially milled cereal grains by collaborating with multi-sector partners31.

2. Food Fortification Resource Centre (FFRC) is a Resource and Support Centre to promote large-scale fortification of food across India. It is a resource hub which provides information and inputs on standards and food safety, technology and processes, premix

"Nutrition is the most powerful adaptable environmental factor that can be targeted in order to reduce the burden of disease across an individual's entire life span"

COMING EVENTS

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IFT 18
A Matter of Science + Food
July 15-18, 2018
Chicago, IL, USA
W: Iftevent.org

21st World Congress on Nutrition & Food Sciences
July 09-10, 2018
Sydney, Australia
E: worldnutrition@ conferencesworld.org

15th India Hospitality F&B Pro Expo, Goa
August 2-4, 2018
Dr Shyama Prasad Mukherjee AC Stadium, Panaji, Goa
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E: cmd@trinityworld.biz
W: www.trinityworld.biz

Conference on Recent Advances in Food Processing Technology
August 16-18, 2018
Indian Institute of Food Processing Technology
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Aahar: International Food & Hospitality Fair
August 23-25, 2018
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Thanjavur, Tamil Nadu
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E: maurya@aifpa.net

National Seminar on Indian Dairy & Food Industry
September 14-15, 2018
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Annapoorna World of Food India 2018
Sept 27-29, 2018
Bombay Exhibition Centre, Goregaon, Mumbai
T: +91 22 2496 8000,
E: narendra.naik@ficci.com
W: www.ficci.com

IDACON 2018
Annual National Conference of Indian Dietetic Association
Sept 30- Oct 2, 2018
Brilliant Convention Centre, Indore (MP)
T: 09977600104,
E: idacon2018@gmail.com
W: www.idacon2018.com

IUFoST 2018 India
World Congress of Food Sci & Tech
October 23-27, 2018
Mumbai
W: https://www.iufost2018.com/index.php

HEALTH SUPPLEMENTS & THE NEED FOR SYSTEMATIC DATA

(FOR CONSUMER & PROFESSIONAL CONFIDENCE)

By

Dr. B Sesikeran,
Ex-Director, NIN

&

Ms. Swechha Soni,
Nutritionist, PFNDAI

Food/ dietary supplements are an increasing trend nowadays as it claims to enhance dietary intake and/or improve health and is attracting a large number of the population, may it be young adolescents or adults.

FDA defines dietary supplements in part as "products taken by mouth that contain a dietary ingredient." Dietary ingredients include vitamins, minerals, amino acids, and herbs or botanicals, as well as other substances that can be used to supplement the diet.

The Food Safety and Standards Authority of India (Regulations, 2016) for Nutraceuticals are as follows:-

1. Health supplements:
Health supplements may be used to supplement the normal diet of a person above the age of five years. It shall contain concentrated source of one or more nutrients, namely, amino acids, enzymes, minerals, proteins, vitamins, other dietary substances, plants or botanicals, prebiotics, probiotics and substances from animal origin or other similar substances with known and established nutritional or beneficial physiological effect.

2. Nutraceuticals:
The nutraceuticals shall provide a physiological benefit and help maintain good health. A food business operator may extract, isolate and purify nutraceuticals from food or non-food sources that is preparing amino acids and their derivatives by bacterial fermentation under controlled conditions. A food business operator may prepare and sell the nutraceuticals in the food-format of granules, powder, tablet, capsule, liquid, jelly or gel, semi-solids and other formats and may be packed in sachet, ampoule, bottle, and in any other format as measured unit quantities except those formats that are meant for parenteral administration.

3. Foods for Special Dietary Uses:
These are intended to be taken under medical advice wherein the composition of these foodstuffs must differ significantly from the composition of ordinary foods of comparable nature, if such ordinary foods exist and are Specially processed or formulated to satisfy particular dietary requirements which may exist or arise because of certain physiological or specific health conditions, namely:-
(a) Low weight, obesity, diabetes, high blood pressure;
(b) Pregnant and lactating women; and
(c) Geriatric population and celiac disease and other health conditions.

4. Foods for Special Medical Purposes:
These foods are intended for the exclusive or partial feeding of persons with a limited, impaired or disturbed capacity to take, digest, absorb, metabolize or excrete ordinary foodstuffs or certain nutrients contained therein or metabolites or Other medically determined nutrient requirements, whose dietary management cannot be achieved only by modification of the normal diet, by food for specific nutritional use, or a combination of them;

5. Specialty foods (Plants/ Botanicals):
This is food which is shown to be containing plant or botanical ingredients with a history of safe usage.


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6. Foods containing probiotics:
Food with live micro-organisms beneficial to human health, which when ingested in adequate numbers as a single strain or as a combination of cultures, confer one or more specified or demonstrated health benefits in human beings. The viable number of organisms in food with added probiotic ingredients shall be >108 CFU/g; provided that a lower viable number may be specified with proven studies on health benefits with those numbers subject to the prior approval of the Food Authority.

7. Foods containing Prebiotics:
Food that contains added prebiotic ingredients which are nonviable food components that confer health benefits to the consumer by modulation of gut microbiota. The prebiotic component, not an organism, to which the claim of being made, shall be characterized for a given product by providing the source, origin, purity, chemical composition and structure, vehicle, concentration and amount in which it is to be delivered to the host.

8. Novel foods:
A food or ingredient obtained by new technology with innovative engineering process, where the process may give rise to significant change in the composition or structure or size of the food or food ingredients which may alter the nutritional value, metabolism or level of undesirable substances.

Table 1: Source & Health benefit of Functional Components/ Bioactive compounds

Functional Component (Bioactive Compound)	Source	Health Benefit
Alpha-carotene Beta-carotene	Carrots Fruits, vegetables	Neutralize free radicals
Lutein	Green vegetables	Reduce risk of macular degeneration
Lycopene	Tomato	Reduce risk of prostate cancer
Insoluble Fibre	Wheat bran	Reduce risk of breast or colon cancer
Beta-Glucan Soluble Fibre	Oats psyllium	Reduce risk of CVD
Stanol ester	Corn, soy, wheat	Inhibit cholesterol absorption
Fructo-oligosac-charides (FOS)	Onion	Pre-biotics
Lactobacillus	Yogurt, other dairy	Gut health
Isoflavones: Daidzein Genistein	soya- soy-based foods	Menopause, CVD, lower LDL
Lignans	Flax, vegetables	Menopause, CVD, lower LDL
Proanthocyanidins	Cranberries, cocoa, chocolate	Improve urinary tract health, Reduce CVD Complications of DM
Omega-3	Fish and fish oils	Reduce risk of CVD Improve mental, Visual functions
Flavonoids Anthocyanidins	Fruits Fruits	Neutralize free radicals Reduce cancer risk
Catechins	Tea	Reduce cancer risk
Flavanones Flavones	Citrus Fruits/ Vegetables	Reduce cancer risk

A simplistic definition of a Health supplement is carrot which is a vegetable that prevents blindness due to Vitamin A deficiency; so here the carrot becomes the functional food, whereas the carotenoids present in carrot which is a pro-vitamin A acts as a bioactive molecule. Commercially available are the β-carotene supplements which come under the category of a nutraceutical/ food supplement.

These functional components/ bioactives may probably confer the health benefits, only if present in the food in required quantities to prevent/treat the disease. There are many other factors that should be considered for the efficacy of the compound to provide the health benefits:

1. Historical Characterization:
The characteristics of the bioactive compound should be well studied.

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EASILY TIRED?

CONCERNED ABOUT YOUR WEIGHT?

#TAKETHEHINT

GET THE PROTEIN ADVANTAGE.

JOIN THE CONVERSATION

Protinex to be consumed as a part of balanced diet and healthy lifestyle

Ready to Serve Nutritional Beverage Mix


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• A detailed review of the compound is necessary, such as the source of the compound, taxonomy of the plant, its origin, etc.
• The history of safe human consumption should be analyzed as to whether the compound has been used traditionally and is safe or if any research has been published providing evidence of its safety. There should be no observed defect level.
• The safe level of consumption/ upper safe limit of consumption of the bioactive compound in any form should be known. The safe level of consumption is per serving of the product that is effective in a particular level.

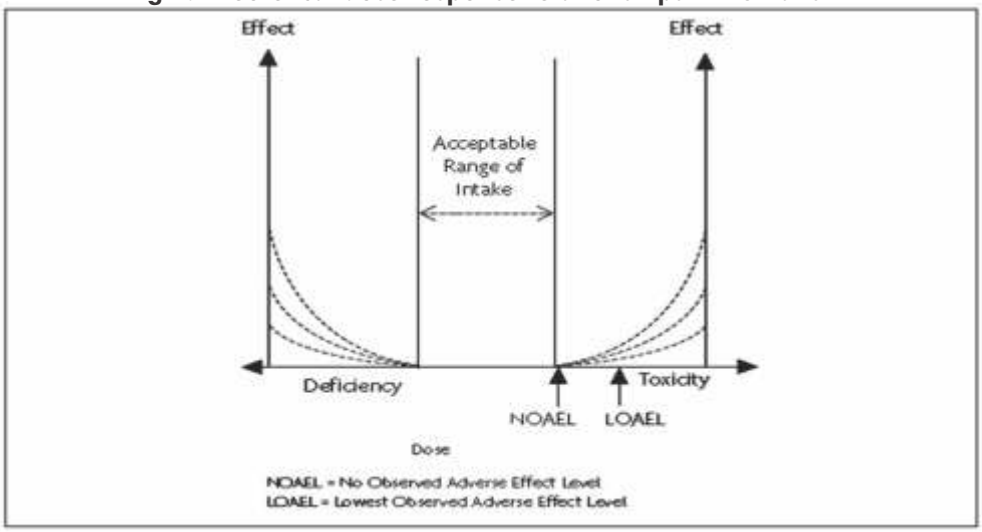
2. Physico-chemical characterization: It is very important to have a complete literature and mention about the different parameters of the compound such as:
• Structure, molecular formula, chemical composition of the component.
• The available family of molecules should also be studied and must know the category and other variants of the component.
• The molecular weight, solubility, stability, etc of the compound also plays a significant role in conferring the health benefit.
• The thermodynamic and spectral data should also be maintained.
• The data for sample preparation, isolation of the compound as to how is it extracted, is also necessary. Sometimes solvents used for extraction maybe toxic. Hence, its synthesis and the purity and quantity of the final reside after extraction is the most important aspect.
• Finally, the preservation, storage conditions and interactions of the component with other substances should also be known.

3. Pharmaco-kinetics:
• The Bioavailability of the component is the most essential. It is not necessary that the amount we consume is completely available for the body. Presence of certain inhibitors in the body alters the bioavailability of the component. The bioavailability must be studied and mentioned.
• Absorption of the compound is better with food or any other ingredient or as a sole supplement itself.
• Once absorbed, how long will the compound stay in the body, what is its half-life, what is its distribution pattern, where is it going to accumulate and is there any safety issues on its accumulation.
• Furthermore, the metabolism and the excretion process of the component should also be detailed.

4. Biological Activity:
• The bioactivity of the compound whether it is anti-oxidant, anti-inflammatory, anti-cancerous etc. is important to know and shall be consumed only when required. For example, there are antioxidants present naturally in the body hence antioxidant supplements should be taken only when the natural level goes down.
• There should be methods to assess the activity and quantification of such components in the body. There should be a scientific base, as to why at all is it even consumed and does it render any toxicity in the body.
• The adverse effect level, safety upper limit, acceptable daily intake in normal individuals and other physiological states like pregnancy, lactation and its effect in the babies and children must have been studied on animals with similar physiology.

5. Bioinformatics:
• Structure function similarities with other known molecules should be checked. A go through of the allergen database, toxicity database and drug interaction database should be done in order to check for any ingredient in the compound which may be allergic, toxic and drug interactive respectively.

Fig 1: Theoretical dose-response relationships in humans



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Supplemental intake + Dietary and other known + exposures = Estimated SUL (total)

Risk assessments:

Hazard identification (adverse effects) and characterization (including dose-response assessment) should be done and Documents for how to assess and mange any kind of risks associated with the bioactive compound should be submitted.

❖ PRINCIPLES FOR ADDITION OF DIETARY ACTIVE COMPOUNDS IN FOODS

- Active compounds should be present at a level which will not result in either excess or insignificant intake
- Should be sufficient to exercise its beneficial effect
- Should not result in an adverse effect on the metabolism of any other nutrient
- Should be stable in food under customary conditions of packaging, storage, distribution and use
- Should be biologically available from the food
- Methods of measuring should be available.

6. Identification of the biomarkers:

• Biomarkers in the bioactive compound must be identified and validated for their predictive value.

❖ Markers related to level of consumption and bioavailability-

✓ E.g.: Plasma levels of the bioactive molecule

❖ Markers correlated to outcomes are indicator markers/ effect markers

✓ E.g.: Stanol consumption and Serum Cholesterol

❖ If the markers are related to risk of disease they are known as susceptibility markers.

✓ E.g. : Ratio of LDL cholesterol to Total Cholesterol and risk of CHD

Guidance Levels

An approximate indication of levels that would not be expected to cause adverse effects, but have been derived from limited data and are less secure than SULs (Safe Upper Levels).

SULs or Guidance Levels are the doses of vitamins and minerals that susceptible individuals could take daily on a life-long basis, without medical supervision

Human Studies

Related data from other countries should be reviewed for the efficiency of the bioactive compound on different target groups- men, women, children, elderly, etc. Comparative studies including Placebo vs. Nutraceutical; Low dose vs. High dose; Traditional vs. Test should be conducted and clear cut outcomes should be obtained.

Claims

Every food business operator may make nutritional or health claims in respect of an article of food. Claims applicable to the product having the bioactive ingredient may be:

Nutrient content claim: e.g. Low sodium, low fat, rich in n3, high soluble fibre etc.

Structure/function claim: e.g. Calcium builds strong bone, lycopene reduces prostate cancer risk.

Risk reduction claim: e.g. Fibre and CHD , folic acid and NTD

The industry stretches such claims pertaining to the health supplements, maybe or may not be true. The claims need to be supported by a strong evidence for its validation.

Hence, it could be concluded that it is very important, to critically understand the complete science behind a supplement. Of utmost importance is also the ensuring of safety, with associated evidence of safe use. The efficacy of the supplement by measuring its dose, bioavailability, kinetics and efficacy markers should be evaluated. Claims related to health supplements must be examined carefully and supported by strong evidence. Also, the product should be thoroughly evaluated for specific outcomes and the prescription/judicious usage should be mentioned. It is always better to reach out to the consumers through a food based approach rather with the tag of supplement to make it more friendly and acceptable to them.

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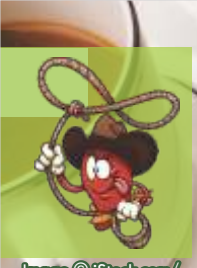

REGULATORY ROUND UP

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

Dear Readers

The draft regulation on Labelling and Display has generated an animated debate within the food industry and am sure many presentations must have been made to the Authority. I want to present a few points on this draft regulation which has a far-reaching consequence.

The first and foremost is the time that would be given for compliance. It should not be less than 2 years from the date of implementation as too many changes are envisaged. The Food Business Operators would require this time to exhaust the present stocks of label and print the new ones complying with the regulation. I for one will never suggest FBOs to make changes based on the draft as the final may be different after taking into account the comments and suggestions from the stakeholders.

Among the fundamental changes, it is proposed to amend the logo for vegetarian food from the present green circle within a square to a triangle shape. This change is essentially to meet the challenge faced by persons who are colour blind. "Expiry Date" has been made mandatory. This is not likely to make any material difference as "Best Before" was de facto "Expiry date" as far the consumers were concerned.

FSSAI through this regulation attempts to bring down the consumption of fat, sugars and salt which are implicated in non-communicable diseases. However, the assumption that "Processed Foods" as the sole culprit is not tenable for variety of reasons. Consumption of processed foods is just 15% in India. Rest of it is "In Home Consumption". Salt is liberally added to various dishes made at home . Again, the labelling does not address the other important aspect of non - communicable diseases which is **"Physical Inactivity"**. It may be argued that this is beyond the purview of FSSAI.

In case of nutritional facts, Saturated Fat, Cholesterol, Trans fat, Sodium as Sodium Chloride and Sugars (including mono and di saccharides) are part of mandatory declaration. Single ingredients like sugar, salt, etc are exempted from declaring the nutritional facts. I find this little odd as these ingredients in a formulated product requires declaration. Will this exemption include "Ghee"? These products must carry nutritional fact to reduce their in-house consumption. No exemption to be given for pre-packaged foods from the declaration of nutritional fact. The biggest challenge would be in case of non pre-packaged food like the ones served in restaurants.

The regulation requires that shops and restaurants which are operating under the license issued either by state or centre, must provide the nutritional information of their products to the consumer on demand. The regulation exempts such provisions in case Food Business Operators who are registered. The road side vendors who dish out high fat, sugar, salt foods are not required to provide such information which is usually consumed by daily wage earners and the poor. They have no way to make an informed choice. Then comes the issue of "Traffic Light" declaration of Fat, Trans fat, Sugar and Salt on the Front of the Panel (FOP) which is causing considerable heartburn among the food business operators.

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DECERNIS

The regulation has set a daily value or threshold value for Energy, Fat, Trans fat, Total sugar and Salt. On the FOP, these nutrients are to be declared as a percentage of the daily value contained in each serve of the product. The basis for deciding the daily value is little unclear. For example, in case of energy, 2000 kcal per day is considered as the daily value. However, according to ICMR 2010, a man with sedentary work style requires minimum 2320 kcal. Serve size, which is the basis for the FOP declaration, is not defined and hence open to each manufacturer's definition. Here, possibly a guideline could be issued by FSSAI in similar lines of US FDA.

Then the "Traffic Light" declaration comes in. The regulation defines threshold value for Fat, Trans fat, Sugar and Salt for different products and product categories. These threshold levels are based on 100 g or 100 ml of the product If these are above the threshold level, then those declaration are to be highlighted "Red". It is expected that the red light will hint the consumer to restrict the daily consumption of such foods.

The two FOP declaration is on two different bases. More importantly, "traffic light" system only highlights the negative aspect of the food and not the positive one. The normal traffic light we encounter on a daily basis has red, amber and green. Similarly the regulation should have threshold range which would categorize fat, trans fat, total sugars and salt on the FOP as green (low), amber (medium) and red (high) and such a system would help the consumer, depending on his physiological conditions, make an informed choice about the food. The consumer may avoid the red and restrict the amber. Similar attempt is made by United Kingdom for packaged foods sold through retail outlet, which is voluntary. The threshold levels are termed as "Guideline Daily Amounts" and are related to 100 g of the product. Here, green, amber and red are used to indicate the levels.

Not many countries have adopted such FOP declaration on pre-packaged foods as it is fraught with problems. It is important to note that it is voluntary in UK. It requires thorough study in terms of pattern of consumption, identification of nutrients to be controlled, the local issues. For example, in case of ice cream, it will have to bear red light on the pack while it complies with the standards of identity prescribed in Food Safety and Standard Regulation.

It is sincerely hoped that the authorities would look into these aspects before finalizing the Labelling and Display Regulation.

Standards

It is almost 7 years since the Food Safety and Standards Act (2006) has been operational. Usually problems would surface only while complying with the Act. FSSSAI has published a draft containing proposed amendments in the ACT. All are requested to send in their suggestions. The ACT contains certain technical provisions like limiting the addition of vitamins and minerals to 1 RDA (Section 22) which is causing considerable constraints in health supplements and functional foods. This is purely a technical matter which should be looked into by scientific panels and committees and manage through appropriate regulations. Definition of consumer is expanded. Above 100 amendments are proposed and the stakeholders are requested to respond by 02 July 2018 giving barely 2 weeks. Hope the deadline would be extended.

A draft notification covering whole range of meat productsrelated to standards on Canned/ Retort Pouch, Comminuted /Restructured, Cured/Pickled and/or Smoked, Dried/Dehydrated ,cooked /semi-cooked meat products, fermented, marinated meat products and fresh/chilled/frozen rabbit meat.

Introducing draft standards for dried oregano (whole and powder), pimento (Allspice) (whole and powder), laurel (Bay Leaf)(Whole and Powder), Dried Mint and Dried Rosemary. The draft also proposes changes in the existing standards of coconut milk and cream.

Draft regulation setting standards for non-fermented soy products like soy beverage (plain and flavoured), soybean curd and tofu. The draft lists permitted coagulating agents for making soybean curd. Sets standards in terms of moisture, protein content and urease activity. The regulation looks incomplete as heading in some of the columns are missing. It is interesting to note that the word "milk" is not mentioned. In my opinion, the products presently sold as soy milk may have to rename it as "soy beverage". Water extract of soybean is an essential ingredient of the soy beverage. As per the standard, soy beverage cannot be formulated by recombining soy isolate and oil. Wonder why different standards are set for soy curd and tofu.

Draft notification amending the label declarations of blended oil. The draft proposes to increase the font size of the statement "Blended Edible Vegetable Oils" to 5 mm. In my opinion, this draft appears superfluous as completely a new draft regulation on labelling and display is proposed.

Ban on the import of milk and milk products from China has been extended till 23 December 2018.

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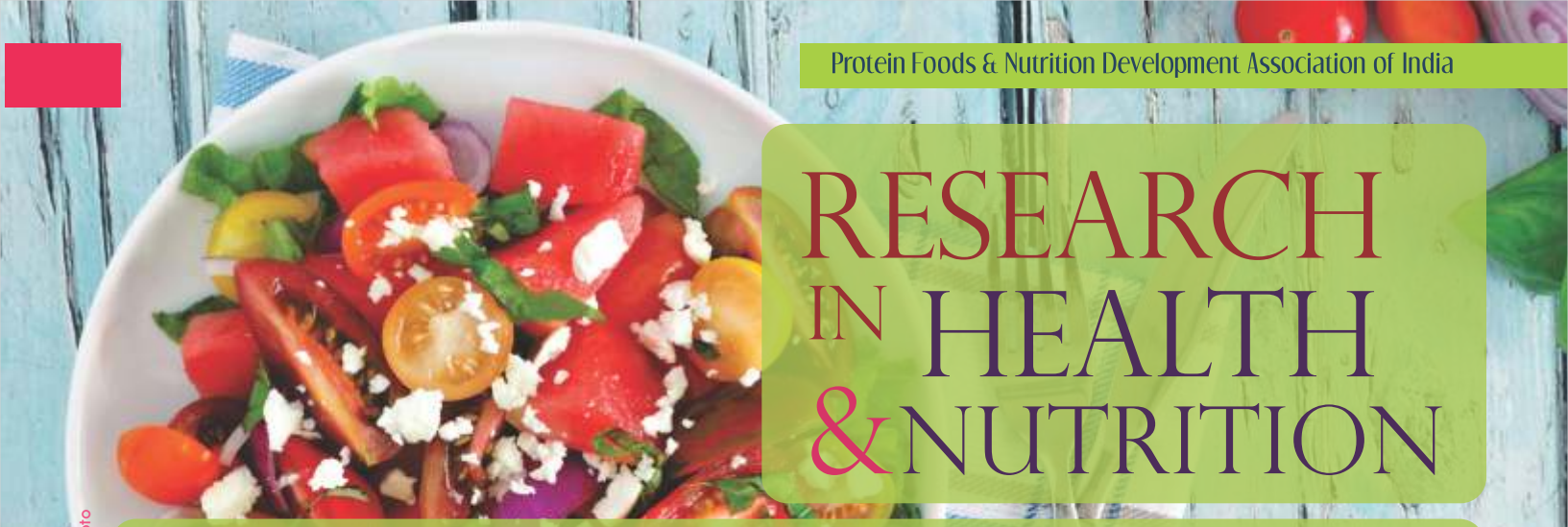

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RESEARCH IN HEALTH & NUTRITION

Vegetarian and Mediterranean diets both prevent heart disease

IFT Weekly February 28, 2018

A lacto-ovo-vegetarian diet, which includes eggs and dairy but excludes meat and fish, and a Mediterranean diet are likely equally effective in reducing the risk of heart disease and stroke, according to new research in the American Heart Association's journal Circulation.

Previous separate studies have shown that a Mediterranean diet reduces certain risk factors for cardiovascular disease, as does a vegetarian diet; however, this was the first study to compare effects of the two distinct eating patterns. The study authors said they wanted to evaluate whether switching to a lacto-ovo-vegetarian diet would also be heart-healthy in people who were used to eating both meat and fish. "To best evaluate this issue, we decided to compare a lacto-ovo-vegetarian diet with a Mediterranean diet in the same group of people," said Francesco Sofi, lead study author and professor of clinical nutrition at the University of Florence and Careggi University Hospital in Italy.

Participants in the study were 107 healthy but overweight adults, ages 18–75, who were randomly assigned to follow either a low-calorie vegetarian diet, which included dairy and eggs, or a low-calorie Mediterranean diet for three months. The Mediterranean diet included poultry, fish, and some red meat as well as fruits, vegetables, beans, and whole grains. After three months, the participants switched diets. Most participants were able to stay on both diets. Researchers found participants on either diet lost about four pounds overall, including about three pounds of body fat; they also experienced about the same change in body mass index, a measure of weight in relationship to height.

The study authors cited two differences between the diets that may be noteworthy. The vegetarian diet was more effective at reducing LDL ("bad") cholesterol, while the Mediterranean diet resulted in greater reductions in triglycerides, high levels of which increase the risk for heart attack and stroke. Still, the take-home message of the study, says Sofi, is that "a low-calorie lacto-ovo-vegetarian diet can help patients reduce cardiovascular risk about the same as a low-calorie Mediterranean diet. People have more than one choice for a heart-healthy diet."

Why you should avoid sipping your drinks

Medical News Today 26 February 2018 By Honor Whiteman

If you are sipping hot fruit tea as you read this, you might want to rethink your drinking technique.

A new review uncovers that it is not just what we eat and drink that can affect tooth erosion, but how we eat and drink. Researchers have found that the way in which we consume dietary acids can affect our risk of tooth erosion.

Researchers from King's College London in the United Kingdom sought to find out which acidic foods and drinks are the worst for tooth erosion, and whether the way in which we consume them has an effect.Study leader DrSaoirse O'Toole — who works in the Department of Tissue Engineering and Biophotonics at the King's College London Dental Institute — and colleagues report their findings in the British Dental Journal.

Tooth erosion — also known as dental erosion or acid erosion — occurs when acids wear away tooth enamel, which is the substance that coats the outer layer of each tooth. Over time, this erosion could give rise to tooth discoloration, sensitivity, and even tooth loss.One leading cause of tooth erosion is acids in our foods and drinks, and soda and fruit juices are among the biggest offenders.

That said, as Dr O'Toole and colleagues note, some individuals who consume such foods do

Image © iStock.com/ Martin Dimitrov

not experience tooth erosion, which begs the question: does how we consume dietary acids impact our risk of tooth erosion? To find out, the researchers primarily drew on data from a previous study, which included 600 adults. Of these, 300 had severe tooth erosion, while the remaining 300 did not.

As part of the study, subjects were asked to report their frequency, timing, and duration of dietary acid consumption. Additionally, participants were asked to report any drinking habits prior to swallowing acidic drinks — for example, sipping hot drinks or swishing them in the mouth. The researchers also looked at data from other studies to determine which are the worst foods and beverages for tooth erosion.

Acidic foods, drinks worst for tooth erosion

Unsurprisingly, the analysis revealed that acidic foods and drinks posed the greatest risk of tooth erosion. The team found that the risk of moderate or severe tooth erosion was 11 times higher for adults who drank acidic beverages twice daily, particularly when they were consumed between meals, compared with those who consumed such beverages less frequently.

When acidic drinks were consumed with meals, the risk of tooth erosion was slashed by half."It was also observed that one or less dietary acid intakes a day was not associated with erosive tooth wear," the researchers note. "If a patient must go above one dietary acid intake per day, it would be prudent to advise them to consume the acids with meals."

When consumed regularly, fruit teas and fruit-flavoured candies — even fruit-flavoured medications — may pose a risk for tooth erosion, the team reports, as can vinegars and pickled foods. Interestingly, the researchers found that adding fruit flavourings to beverages — for example, adding lemon to hot water — made them just as acidic as cola. What is more, sugar-free soda was found to be just as erosive for teeth as sugar-sweetened soda, and hot drinks were found to have greater erosive potential than cold drinks.


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Sipping, swishing drinks may erode teeth

Importantly, however, the scientists found that it's not just the type of foods and beverages we consume that affect our risk of tooth erosion; the study revealed that the risk of tooth erosion is increased when we sip drinks, as well as when we swish, hold, or rinse them in the mouth before swallowing.'It is well known that an acidic diet is associated with erosive tooth wear. However, our study has shown the impact of the way in which acidic food and drinks are consumed." DrSaoirse O'Toole.

The American Dental Association recommend against holding or swishing acidic beverages in the mouth — advice that is backed up by this latest research. They also explain that drinking water or milk when eating and rinsing the mouth after consuming acidic drinks may help to reduce tooth erosion."With the prevalence of erosive tooth wear increasing," adds Dr O' Toole, "it is vitally important that we address this preventable aspect of erosive tooth wear."

“Reducing dietary acid intake can be the key to delaying progression of tooth erosion," she continues. "While behaviour change can be difficult to achieve, specific, targeted behavioural interventions may prove successful."

Salt causes hypertension, but can fruits and veg save the day?

Medical News Today 5 March 2018
By Honor Whiteman

It's no secret that consuming too much salt has the potential to raise our blood pressure. And according to a new study, this association remains even when our diet is packed full of healthful foods.

In a study of more than 4,000 adults, scientists revealed that a diet rich in foods that are linked with lower blood pressure — such as fruits and vegetables — did not offset the blood pressure-increasing effects of consuming too much salt.

Co-lead study author Dr Jeremiah Stamler — who works in the Feinberg School of Medicine at North-western University in Chicago, IL — and colleagues recently reported their results in the journal Hypertension.High blood pressure, or hypertension, occurs when the force of blood that pushes against the artery walls becomes too high. This can cause damage to the heart and blood vessels and raise the risk of stroke and heart disease.

According to the Centers for Disease Control and Prevention (CDC), around 75 million people in the United States — or 32% of the country's population — have high blood pressure.However, revised guidelines from the American Heart Association (AHA) and the American College of Cardiology — which were published in November last year — now mean that almost half of U.S. adults can now be classed as hypertensive.

Under these new guidelines, a person is categorized as having high blood pressure if their systolic blood pressure (or the top number that

measures the blood pressure when the heart beats) is 130 millimetres of mercury (mmHg) or higher and their diastolic blood pressure (or the bottom number that measures blood pressure between heart beats) is 80 mmHg or higher.

Salt and blood pressure

Eating too much salt is considered a key risk factor for high blood pressure. So, the 2015–2020 Dietary Guidelines for Americans recommend that we limit our intake of sodium — which is the primary component of table salt — to no more than 2,300 milligrams, or approximately one teaspoon, each day. But despite this recommendation, most adults in the U.S. consume more than 3,400 milligrams of sodium daily.

Health organizations state that a diet rich in fruits and vegetables can help to lower blood pressure, but can such a diet counteract the effects of a high salt intake? Not according to DrStamler and colleagues. The researchers came to their findings by analysing the data of 4,680 men and women who were a part of the International Study on Macro/Micronutrients and Blood Pressure.

Subjects were from the U.S., the United Kingdom, China, and Japan, and they were all between the ages of 40 and 59.Over a 4-day period, two urine samples were taken from each subject per day. These were tested for levels of sodium, as well as potassium. Potassium is a mineral commonly found in fruits and vegetables, including leafy greens, broccoli, carrots, and pumpkin.
Also, on each of the 4 days, participants were asked to recall their food and drink intake over the past 24 hours. The team used this information to calculate the subjects' intake of more than 80 nutrients — including fats, proteins, amino acids, vitamins, and minerals. The participants' blood pressure was also measured twice per day over the study period.

'Having a low-salt diet is key'

The results of the study revealed that participants who had a high amount of sodium in their diet were more likely to have hypertension than those with low dietary sodium, regardless of their intake of fruits and vegetables.

In detail, the scientists found that each additional 118.7 millimoles of sodium in urine excretion over a 24-hour period was linked with a systolic blood pressure increase of 3.7 mmHg, even after controlling for levels of potassium and other blood pressure-lowering nutrients in the urine.Based on these results, the researchers conclude that eating high amounts of fruits, vegetables, and whole grains will not offset the negative effects of too much salt. "We currently have a global epidemic of high salt intake — and high blood pressure. This research shows there are no cheats when it comes to reducing blood pressure. Having a low-salt diet is key — even if your diet is otherwise healthy and balanced."Co-lead study author Dr Queenie Chan, Imperial College London, U.K.

The team notes that around 75% of salt intake in the U.S. comes from restaurant foods or foods that are pre-packaged or processed. As such, the team calls for food manufacturers to reduce the amount of salt that they add to their products, as a way of helping to protect our heart health.

"We're learning more about the role other nutrients play in influencing the blood pressure-raising effects of sodium, and that the focus on sodium remains important," says Cheryl Anderson, Ph.D., vice-chair of the AHA's Nutrition Committee, who was not involved in the study."Restaurant and pre-packaged food companies must be part of the solution," she writes, "because Americans desire the ability to choose foods that allow them to meet their sodium reduction goals."

Could vitamin D lower cardiovascular death risk?

Medical News Today 3 March 2018by Honor Whiteman

People who have cardiovascular disease can reduce their risk of death by almost a third simply by maintaining normal vitamin D levels.

This is the finding of a new study recently published in The Journal of Clinical Endocrinology & Metabolism.Cardiovascular disease (CVD) is an umbrella term for conditions that affect the heart and blood vessels, including heart disease, heart attack, heart failure, and stroke.CVD is the number 1 killer in the United States. Heart disease alone is responsible for around 610,000 deaths in the country every year.Previous research suggests that vitamin D status may play an important role in cardiovascular health.

A study reported by Medical News Today in 2016, for example, associated low vitamin D levels with greater risk of stroke, heart failure, heart attack, and cardiovascular death. The new study — led by ProfJuttaDierkes, of the Department of Clinical Medicine at the University of Bergen in Norway — further investigated the role that vitamin D levels play in the risk of death from CVD.


Image © iStock.com/EMPPhotography

CVD mortality reduced by 30%
In order to reach their findings, Prof Dierkes and colleagues analysed the blood samples of 4,114 adults who had suspected angina pectoris, which is chest pain as a result of coronary heart disease.Subjects were an average age of 62 at study baseline, and they were followed-up for an average of 12 years.The team assessed the subjects' blood samples for levels of 25-hydroxyvitamin D3, or 25(OH) D, which is the primary circulating form of vitamin D. During follow-up, there were a total of 895 deaths. Of these, 407 were related to CVD.According to the National Institutes of Health (NIH), a 25(OH) D level of 50–125 nanomoles per litre (nmol/l) is "generally considered adequate for bone and overall health in healthy individuals."

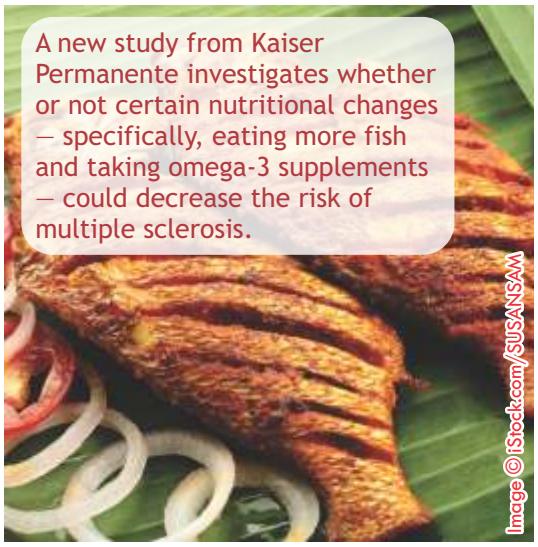
In the study, the researchers found that the optimal 25(OH) D blood concentrations for mortality risk were 42–100 nmol/l. Concentrations lower than 42 nmol/l and higher than 100 nmol/l were associated with a greater risk of death from CVD.In fact, the researchers found that participants with the optimal 25(OH) D concentrations were 30% less likely to die of CVD."We discovered," says ProfDierkes, "that the right amount of vitamin D reduces the risk of death substantially. However, too much or too little increase the risk."

Based on these results, Prof Dierkes recommends that all people with CVD have their vitamin D levels measured and monitored. If levels are below normal, vitamin D supplementation might be required.That said, the researchers note that the optimal amount of vitamin D is not the same for everyone. "It depends where you live, and what kind of diet you have," Prof Dierkes adds.

The primary source of vitamin D is sunlight, but we can also get it from certain foods — including salmon, tuna, and eggs — and dietary supplements, which are available to purchase online.However, it is worth noting that further studies are needed before vitamin D can be recommended as a beneficial supplement for people with CVD.

Could eating more fish lower MS risk?

Published Friday 2 March 2018 By Maria Cohut



In multiple sclerosis (MS), myelin — the "coating" that protects nerve cells — is wrongly attacked and damaged by the immune system.MS is often characterized by fatigue, weakened muscles, disturbed vision, and difficulties with balance and coordination.

The first clinical signs of MS are referred to as "clinically isolated syndrome," defined by the initial, isolated attack of myelin in the central nervous system (CNS).The causes that trigger this condition remain unclear, and there is currently no cure for it. Current treatments focus on symptom management. This being the case, researchers seek to find out which factors could reduce the risk of developing MS. Recently, Dr Annette Langer-Gould — who works at Kaiser Permanente Southern California in Pasadena — explored the relevance of certain nutritional choices in the likelihood of developing this condition.

Dr Langer-Gould wanted to explore whether there was any association between a high intake of omega-3— obtained by adhering to a fish-rich diet and taking fish oil supplements — and a reduced risk of MS."We are increasingly recognizing that MS is not only a chronic inflammatory disease of the central nervous system," Dr Langer-Gould explained to Medical News Today, "but also often leads to diffuse neuro-degeneration [neural degradation spread to various parts of the CNS]. While the cause is not known," she continued, "the rising prevalence of MS has led to increased interest in identifying modifiable risk factors including diet." She is due to present the study's findings at the American Academy of Neurology's 70th Annual Meeting, which will be held in Los Angeles, CA.

'Omega-3 is neuro-protective'
Dr Langer-Gould took special interest in the role played by dietary omega-3 and its potential link to reduced risk for MS, because this fatty acid has been tied to a wealth of health benefits. Also, omega-3 deficiency seems to play a role in the advent of neurological conditions."Fish or other seafood consumption," she told us, "is particularly interesting because it is the main determinant of circulating and tissue levels of omega-3 polyunsaturated fatty acids (omega-3 PUFAs)."

"Omega-3 PUFAs have been shown to be neuro-protective during aging and suppress MS-related inflammation through multiple mechanisms in cell cultures and animal models. This provides at least two biologically plausible mechanisms whereby higher omega-3 PUFA intake and biosynthesis could protect against development of MS." Dr Annette Langer-Gould.

In the new study, the team worked with 1,153 participants — aged 36, on average — approximately half of whom had a diagnosis of clinically isolated syndrome or MS. Dr. Langer-Gould and team analyzed the participants' dietary habits, focusing on their intake of fish and fish oil dietary supplements.

Depending on how much fish they ate on a regular basis, the participants' diets were catergorized as either:

- "high-intake," which was defined as one serving of fish per week (or one to three servings per month) plus daily fish oil supplement intake
- "low-intake," which was defined as fewer than one serving of fish per month with no fish oil supplement intake

Some of the fish or seafood that the participants reported eating were salmon, tuna, and shrimp. After analysing the data provided by the participants, the scientists found that a regularly high intake of fish was linked to a 45% lower risk of clinically isolated syndrome or MS when compared with a low intake of fish.

Of those with an MS diagnosis, 180 reported eating fish regularly and taking fish oil supplements, whereas 251 of the overall healthy control participants declared the same.

"This study provides more evidence that a diet rich in fish and omega-3 PUFAs has health benefits," noted Dr Langer-Gould. "In addition to promoting improved cardiovascular health, a high-fish/seafood diet may also reduce the risk of developing MS."

Further studies aim to 'replicate findings'

The researchers also examined 13 variations of a gene cluster that is associated with the regulation of fatty acid levels in the body. They discovered that two of these variations seemed to be linked to a decreased risk of developing MS — independently from any benefits potentially provided by a high intake of fish.According to the team, this suggests that individual genetic makeup plays an important role in the regulation of nutrient levels that may influence the risk of MS.

Dr Langer-Gould explained that the study's "findings could certainly lead to lifestyle modification interventions that could improve overall health for MS patients and perhaps prevent MS in their offspring.

"Nevertheless, she cautions that these results do not indicate a clear "cause and effect" relationship, and that further studies should aim to clarify the role played by omega-3 fatty acids in the context of MS prevention."The next step," Dr Langer-Gould explained to MNT, "is [to] try and replicate our findings in another dataset."

"If our findings are confirmed," she added, "it will be important to determine whether the protective effective is mediated by the anti-inflammatory, metabolic, and/or neuro-protective actions of omega-3 fatty acids and whether fish/fish oil consumption could improve MS prognosis."

High-fiber diet may help those with type 2 diabetes

IFT Weekly March 14, 2018

A study published in Science suggests that a high-fiber diet—one rich in fruit and vegetables—may help treat type 2 diabetes by making changes to the gut microbiome.

The researchers compared the effects of two different diets in people with type 2 diabetes. For 12 weeks, 16 of the study participants followed a standard low-fat, low-carb diet, while 27 participants ate a lot of high-fiber foods, such as whole grains, seeds, and vegetables. In addition, both groups took a drug called acarbose, which slows the digestion of starch allowing it to reach the large intestine.

The researchers found that at the end of the 12 weeks 89% of those on the high-fiber diets showed signs that their bodies were regulating their blood sugar levels more effectively, compared to 50% of the control group. Those on the high-fiber diet also lost more weight and had better blood lipid profiles than those on the low-fat, low-carb diet.

To see how the high-fiber diet affected the participants' microbiomes, the researchers examined strains of bacteria that produce short-chain fatty acids in the gut. They found that 47 strains decreased in number during the 12 weeks and 15 other strains became more abundant.

These 15 strains make butyric acid, which can boost the production of insulin, lowering blood sugar levels.The researchers now hope to use their findings to develop probiotic treatments for diabetes.

Results revealed that the subjects who took curcuffects of curcumin on mood and memory.

Can beets tackle Alzheimer's at its root?

Published Thursday 22 March 2018By Maria Cohut

Alzheimer's disease is characterized by beta-amyloid plaques in the brain that disrupt the normal functioning of neurons. Could a common vegetal pigment provide the fix?

The most prominent physiological characteristic of Alzheimer's disease is the over-accumulation of clusters of amino acids called amyloid beta in the brain.These clusters may sometimes come together into even larger formations, known as beta-amyloid plaques. When too many groupings of beta-amyloid are able to "pile up" in the brain, it disrupts the normal signalling between neurons.

Beta-amyloid groupings also trigger the nervous system's inflammatory response, which has been linked with the progression of this condition. But what if some of these physiological processes could be slowed down thanks to a common substance found in a widely available root vegetable? Researchers from the University of South Florida in Tampa have experimented with a compound called betanin, which is the pigment that gives beets their dark red colour.

Li-June Ming, Darrell Cole Cerrato, and their colleagues explain that this vegetal pigment interacts with amyloid beta, preventing some of the processes that may have harmful effects on the brain. The results of the team's research were presented this week at the 255th National Meeting & Exposition of the American Chemical Society, held in New Orleans, LA.

Betanin may prevent oxidation
A study published last year in The Journals of Gerontology Series A showed that drinking beetroot juice before aerobic exercise made the aging brain look younger by increasing blood flow to the brain and regulating the circulation of oxygen.

Intrigued by this and similar research, Ming and team decided to see whether betanin, commonly found in these root vegetables, could be used to prevent amyloid beta from forming into clusters that impacted communication between brain cells.

Studies show that the aggregation of amyloid beta into harmful clusters is often dependent on their interaction with metal molecules — especially those of zinc and copper — in the brain. When such clusters do form, the researchers of the new study explain, amyloid beta facilitates brain inflammation and the oxidation of neurons, which results in irreparable damage to these brain cells.

Ming and colleagues decided to see whether adding betanin into the chemical mix could disrupt the process of aggregation and prevent the harm.To do so, they conducted a series of laboratory experiments in which they monitored the activity of amyloid beta in different contexts using 3,5-Di-tert-butylcatechol (DTBC), a compound that allows researchers to observe the process of oxidation.

By employing ultraviolet-visible spectrophotometry, the researchers then observed whether and under what circumstances amyloid beta was able to oxidize DTBC. Unsurprisingly, they saw that amyloid beta on its own did not produce much oxidative damage — but when it bound to copper molecules, the oxidation was considerable.

However, in a further experiment that added betanin to the mix, Ming and colleagues saw that the pigment reduced the amount of oxidation caused by amyloid beta by up to 90 percent. Such a discovery prompted the researchers to hypothesize that the beet-derived compound may be a good place to look for better Alzheimer's drugs.

"Our data suggest that betanin, a compound in beet extract, shows some promise as an inhibitor of certain chemical reactions in the brain that are involved in the progression of Alzheimer's disease," says Ming.

"This is just a first step, but we hope that our findings will encourage other scientists to look for structures similar to betanin that could be used to synthesize drugs that could make life a bit easier for those who suffer from this disease." Li-June Ming

While the scientists are wary of claiming that the beet-derived compound may prevent Alzheimer's entirely, they do suggest that it may provide the key to tackling its physiological roots."We can't say that betanin stops the misfolding [of amyloid beta] completely, but we can say that it reduces oxidation," explains Cerrato.

"Less oxidation," he continues, "could prevent misfolding to a certain degree, perhaps even to the point that it slows the aggregation of beta-amyloid peptides, which is believed to be the ultimate cause of Alzheimer's."


Image © iStock.com/Fertnig

Fibre-fermenting bacteria improve health of type 2 diabetes patients

Science Daily March 8, 2018

The fight against type 2 diabetes may soon improve thanks to a pioneering high-fiber diet study led by a Rutgers University-New Brunswick professor.

Promotion of a select group of gut bacteria by a diet high in diverse fibres led to better blood glucose control, greater weight loss and better lipid levels in people with type 2 diabetes, according to research published today in Science. The study, underway for six years, provides evidence that eating more of the right dietary fibres may rebalance the gut microbiota, or the ecosystem of bacteria in the gastrointestinal tract that help digest food and are important for overall human health.

"Our study lays the foundation and opens the possibility that fibres targeting this group of gut bacteria could eventually become a major part of your diet and your treatment," said Liping Zhao, the study's lead author and a professor in the Department of Biochemistry and Microbiology, School of Environmental and Biological Sciences at Rutgers University-New Brunswick. Type 2 diabetes, one of the most common debilitating diseases, develops when the pancreas makes too little insulin -- a hormone that helps glucose enter cells for use as energy -- or the body doesn't use insulin well.

In the gut, many bacteria break down carbohydrates, such as dietary fibres, and produce short-chain fatty acids that nourish our gut lining cells, reduce inflammation and help control appetite. A shortage of short-chain fatty acids has been associated with type 2 diabetes and other diseases. Many clinical studies also show that increasing dietary fiber intake could alleviate type 2 diabetes, but the effectiveness can vary due to the lack of understanding of the mechanisms, according to Zhao, who works in New Jersey Institute for Food, Nutrition, and Health at Rutgers-New Brunswick.

In research based in China, Zhao and scientists from Shanghai Jiao Tong University and Yan Lam, a research assistant professor in Zhao's lab at Rutgers, randomized patients with type 2 diabetes into two groups. The control group received standard patient education and dietary recommendations. The treatment group was given a large amount of many types of dietary fibres while ingesting a similar diet for energy and major nutrients. Both groups took the drug acarbose to help control blood glucose.

The high-fiber diet included whole grains, traditional Chinese medicinal foods rich in dietary fibres and prebiotics, which promote growth of short-chain fatty acid-producing gut bacteria. After 12 weeks, patients on the high-fiber diet had greater reduction in a three-month average of blood glucose levels. Their fasting blood glucose levels also dropped faster and they lost more weight.

Surprisingly, of the 141 strains of short-chain fatty acid-producing gut bacteria identified by next-generation sequencing, only 15 are promoted by consuming more fibres and thus are likely to be the key drivers of better health. Bolstered by the high-fiber diet, they became the dominant strains in the gut after they boosted levels of the short-chain fatty acids butyrate and acetate. These acids created a mildly acidic gut environment that reduced populations of detrimental bacteria and led to increased insulin production and better blood glucose control. The study supports establishing a healthy gut microbiota as a new nutritional approach for preventing and managing type 2 diabetes.

Care providers' understanding of obesity treatment is limited

Science Daily March 23, 2018

Despite the high prevalence of obesity among U.S. adults, provision of recommended treatments for obesity remains low.

Providers cite lack of time, lack of reimbursement, and lack of knowledge as major barriers to treating patients with obesity. A new study published in Obesity assessed health care professionals' (HCPs') knowledge of evidence-based guidelines for nonsurgical treatment of obesity.

In this study, the authors conducted a web-based survey of a nationally representative sample of 1506 internists, family practitioners, obstetricians/gynecologists, and nurse practitioners to determine their understanding of obesity treatment guidelines. The results indicate that most providers lack knowledge and understanding of recommended obesity treatments, such as behavioural counselling and pharmacotherapy.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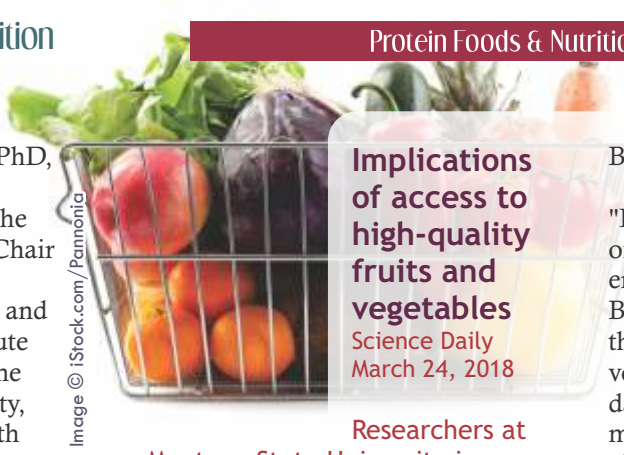
Author William Dietz, MD, PhD, FTOS, Past President of The Obesity Society, Director of the STOP Obesity Alliance and Chair of the Sumner M. Redstone Global Center for Prevention and Wellness at the Milken Institute School of Public Health at The George Washington University, said, "Our findings offer health professionals and medical educators a strong rationale for incorporating enhanced training on the prevention and management of obesity into their curricula."

The Obesity Society Spokesperson Ken Fujioka, MD, FTOS, Director of the Center for Weight Management and Director of the Nutrition and Metabolic Research Center at Scripps Clinic, said, "This is a big-time paper that clearly demonstrates the lack of basic knowledge about obesity in the health care community. Admittedly, we have always known this, but this is clear evidence that we have a major problem because obesity is the most common disease seen in primary care." These findings strongly suggest that additional obesity training is needed.

Additionally, in an accompanying editorial published in Obesity, Robert Kushner, MD, FTOS, examines the impact of this study.

"The study suggests that more obesity education is needed among primary health care providers that focuses on knowledge along with enhanced competencies in patient care management, communication, and behaviour change," said Dr Kushner, Past President of The Obesity Society, Professor of Medicine at North-western University Feinberg School of Medicine, and Director of the Center for Lifestyle Medicine at North-western Medicine in Chicago, IL.

Overall, more obesity education and training are needed among health care professionals.



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Implications of access to high-quality fruits and vegetables

Science Daily
March 24, 2018

Researchers at Montana State University in Bozeman have published a study showing how access to high-quality fruits and vegetables -- or lack thereof -- strongly influences whether healthy foods make it to a person's breakfast, lunch or dinner plate.

"Fruit and vegetable desirability is lower in more rural built food environments of Montana, USA using the Produce Desirability(ProDes) Tool" was published Jan. 23 in the journal Food Security.

The researchers developed and used a food environment measure, the Produce Desirability (ProDes) Tool, to assess consumer desirability of fruits and vegetables. With the tool, the researchers found fruit and vegetable desirability is lower in more rural areas of Montana.

"This is important because it has the potential to impact consumer selection and consumption in rural areas, furthering health disparities," said Selena Ahmed, MSU professor of sustainable food systems and one of the study's authors. Carmen Byker Shanks, professor of food and nutrition and sustainable food systems, was co-author. Ahmed and Byker Shanks, both in the College of Education, Health and Human Development's Department of Health and Human Development, also serve as co-directors of the Food and Health Lab at MSU.

The research findings indicate a potential for long-term health implications based on access to high-quality fruits and vegetables, Byker Shanks said.

"It turns out that the overall quality of food available in a food environment really matters," said Byker Shanks. "Whether or not there's access to quality fruits and vegetables in a given area affects the daily choices people are able to make about what they eat. The food choices made each day add up to a person's overall dietary quality and impacts long-term health."

Although food deserts -- areas lacking affordable, high-quality food -- can exist anywhere, Byker Shanks said that in Montana they're most prevalent in rural areas.

"We have measured fruit and vegetable quality in several different ways across rural and urban areas of Montana," she said. "We're seeing real disparities along rural and urban lines in grocery stores, where fresh fruit and vegetable quality in Montana's rural grocery stores tend to be significantly lower than in urban settings.

"The Dietary Guidelines for Americans recommends five to 13 servings of fruits and vegetables per day -- an amount that is difficult to achieve if the fresh fruits and vegetables are not as desirable to the consumer due to quality," she added.

Micronutrient boost: Research uncovers path to healthy, climate-friendly diets in India

26 Mar 2018 Nutrition Insight

A study by a team of IIASA researchers has

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explored ways to reduce micronutrient deficiencies in India affordably while also reducing greenhouse gas emissions.

The researchers used the National Sample Survey of Consumption Expenditure in India to examine Indian diets, which showed that more than two-thirds of the Indian population, around 500 million people, are affected by deficiencies in micronutrients such as protein, iron, zinc and vitamin A, which contributes to lower life expectancies. Iron deficiencies, in particular, are close to 90 %, vitamin A deficiencies stand at around 85 % and more than 50 % of diets are protein-deficient.

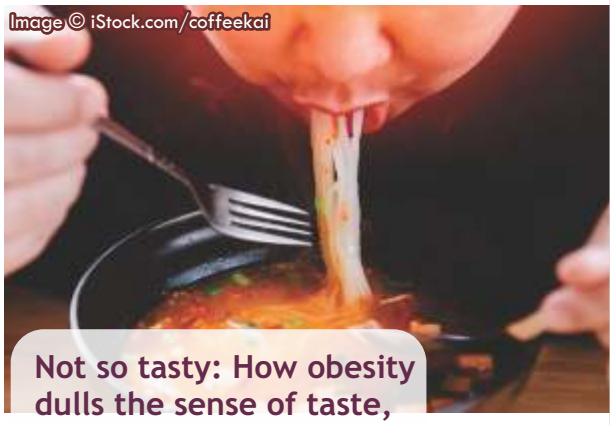
India has the second-lowest per capita meat consumption in the world and most Indians have a largely vegetarian diet, with low bioavailability of iron. In many areas of India, polished white rice, which has little nutrient content, is predominant in diets, partly due to food subsidies which make it cheaper than other coarse cereals. "The conventional wisdom is that calories have to increase to improve nutrition, which is associated with higher food production and higher greenhouse gas emissions," says lead author NarasimhaRao.

The researchers compared nutritional information for different food types including rice, cereals, meat and dairy products, as well as looking at the cost to households and the greenhouse gas emissions. By looking at various scenarios, including with and without food subsidies, the researchers found that at current prices households can affordably improve micronutrition by moving away from consuming white, polished rice and instead choose wheat, maize and millet products, and choosing chicken and legumes over beef and eggs to boost protein intake. Adding green leafy vegetables and coconut would also reduce deficiencies cost-effectively, even for those living in poverty.

These diet changes would reduce overall greenhouse gas emissions, due predominantly to rice production's high methane emissions. Rao says that policymakers should consider introducing subsidies for nutrition – and climate-friendly food products such as coarse cereals, pulses and dark green vegetables. He adds that the insights provided by the research on the possible improvements to diet also hold true outside India. "The next stage in the research should be to investigate the acceptability of possible diet changes, the feasibility of shifts in agricultural production patterns, and any other potential environmental impacts," he says.

"A food-based approach like dietary diversification is one of the known strategies for improving the nutritional intake of the population. However, there could be situations when food alone may not solve a nutritional problem of large magnitude and we need to adopt parallel strategies like fortification and supplementation to solve it," study author SuparnaGhosh-Jerath tells NutritionInsight. "Though this was not the focus of our paper, fortification programs can be supported by food industry especially those foods which are used as a vehicle for fortification for example: salt."

A strategy such as food fortification has already addressed some of India's nutritional issues,e.g. the incidences of iodine deficiency disorder. This is linked to the iodine-deficient soil, which in turn leads to a deficiency of iodine in crops grown on iodine-deficient soil with consequently low iodine in the diet for livestock and humans. "In India, it is mandatory to fortify salt with iodine. This holds true for all the commercial producers also," Ghosh-Jerath notes.
"For iron deficiency and anemia also, the magnitude of the problem is so large, that we have national iron supplementation program with a life cycle approach. Under the program iron and folic acid supplements are provided to adolescents, children, women in the reproductive age group, pregnant and lactating women," Ghosh-Jerath says. "However, nutritional supplementation programs are always complemented with food-based approaches which are known to be sustainable along with behaviour change communication and nutrition education."
by Lucy Gunn



Not so tasty: How obesity dulls the sense of taste, prompting overeating

21 Mar 2018 Nutrition Insight

A new study in PLOS Biology by researchers at Cornell University has shown that inflammation, driven by obesity, can reduce the number of taste buds on the tongues of mice.

According to the researchers, the data suggests that gross adiposity stemming from chronic exposure to a high-fat diet is associated with an inflammatory response causing a disruption in the balancing mechanisms of taste bud maintenance and renewal. The reduction of taste buds can cause further overeating.

A taste bud comprises of approximately 50 to 100 cells of three major types, each with different roles in sensing the five primary tastes (salt, sweet, bitter, sour and umami). Taste bud cells turn over quickly, with an average

lifespan of just ten days. To explore changes in taste buds in obesity, the authors fed mice either a normal diet made up of 14 % fat, or an obesogenic diet containing 58 % fat.

After eight weeks, the mice fed the obesogenic diet weigh about one-third more than those receiving normal chow. But strikingly, the obese mice had about 25 % fewer taste buds than the lean mice, with no change in the average size or the distribution of the three cell types within individual buds.

The turnover of taste bud cells normally arises from a balanced combination of programmed cell death (a process known as apoptosis) and generation of new cells from special progenitor cells. However, the researchers observed that the rate of apoptosis increased in obese mice, whereas the number of taste bud progenitor cells in the tongue declined, likely explaining the net decline in the number of taste buds.

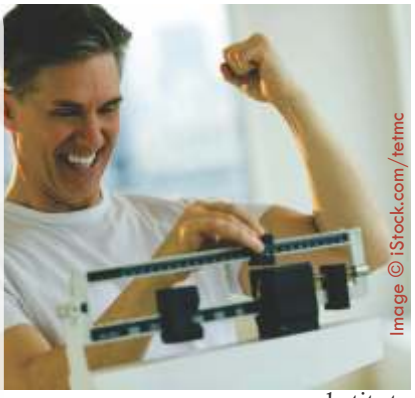
Mice that were genetically resistant to becoming obese did not show these effects, even when fed a high-fat diet, implying that they are due not to the consumption of fat per se, but rather the accumulation of fatty tissue (adipose).

Obesity is known to be associated with a chronic state of low-grade inflammation, and adipose tissue produces pro-inflammatory cytokines – molecules that serve as signals between cells – including one called TNF-alpha. The authors found that the high-fat diet increased the level of TNF-alpha surrounding the taste buds; however, mice that were genetically incapable of making TNF-alpha had no reduction in taste buds, despite gaining weight. Conversely, injecting TNF-alpha directly into the tongue of lean mice led to a reduction in taste buds, despite the low level of body fat.

"These data together suggest that gross adiposity stemming from chronic exposure to a high-fat diet is associated with a low-grade inflammatory response causing a disruption in the balancing mechanisms of taste bud maintenance and renewal," Dando says. "These results may point to novel therapeutic strategies for alleviating taste dysfunction in obese populations."

Significant weight loss boosts chances for type 2 diabetes remission, stresses Diabetes UK

16 Mar 2018
Nutrition Insight



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In light of studies finding that weight loss may make remission possible in type 2 diabetics, new nutritional guidelines from Diabetes UK will encourage healthy and personalized eating patterns.

Diets should be specific to patients as "there is not [a] one-size-fits-all approach" for diabetics. The guidelines are evidence-based and reflect recent research advances, chiefly of a Diabetes UK funded study called DIRECT. The study – DIRECT – suggested that type 2 diabetes remission can occur with significant weight loss. This echoes findings from The Lancet in 2016, which also found that weight management programs can have this effect.

The guidelines outline the consistently strong evidence that suggests that eating certain foods can help reduce the risk of type 2, can manage blood glucose levels in people with type 2 and reduce the overall risk of cardiovascular disease. The suggested foods include vegetables, fruits, whole grains, fish, nuts and pulses. Eating less red and processed meat, refined carbohydrates and sugar-sweetened beverages is also recommended.

These recommended foods are often associated with the Mediterranean-style diet, but can be adapted to take into account cultural and personal preferences. Previous recommendations had relied on more nutrients, but this food-based approach provides people at risk and with diabetes more flexibility.

Following a low-glycemic diet can also help regulate blood glucose levels, previous studies have found, and they commonly feature metabolic regulating products such as whole grains and pulses. Furthermore, sugar substitutes and fiber have been found to be useful additions.

"These new guidelines support an individualized approach to managing both type 1 and type 2 diabetes. The recommendations are more specific about clinical outcomes, so we hope they will help all people with diabetes to better understand what they can do to manage their condition. For people with type 2 diabetes, the potential to put their condition into remission is very exciting," says Dr Pam Dysons, Research dietician at Oxford University and co-chair of the guidelines group.

The call for further individualization of diabetes treatment was covered by NutritionInsight, regarding a study that identified at least five additional sub-categories of diabetes, as opposed to the commonly accepted 'type 1 and type 2' The study suggested that each group required individualized treatment, due to differentiation in health risks.

Saffron extract may help prevent depression in teens, study shows

07 Mar 2018 Nutrition Insight

Depressed teenagers treated with saffron extract showed improvements in symptoms, according to a study published in The Journal of Affective Disorders.

The study had positive effects although it is needed to "replicate these studies to confirm our initial positive findings," says Adrian Lopresti, Senior Research Administrator at Murdoch University. Saffron is most commonly known as an expensive, golden-hued ingredient mostly used in cooking. However, it has been traditionally used as a treatment for depression in Iran.

Lopresti tells NutritionInsight how teenagers can experience depression differently than adults, especially in terms of "increased withdrawal and reduced interaction with peers, irritability, drug use, and at times engagement in risky/dangerous behaviours." These factors make a study focusing on teenagers exclusively particularly important.

Results from 80 volunteers between 12-16 years old with mild to moderate depression symptoms were analysed. The administration of the standardised form of saffron extract (crocus sativus) – Affron, manufactured by Pharmative – for eight weeks improved anxiety and depressive symptoms in the volunteers, at least from the perspective of the adolescent.

The study found improvement amongst the internalizing symptoms of separation anxiety, social phobia and depression in the teens. The total scores of internalizing symptoms decreased by an average of 33 % in the affron group, as opposed to 17 % in the placebo group.Affron has previously shown positive mood effects in adults, but this study is the first that points to its potency in teenagers' mood.

However, the study has some limitations. For example, a self-report system was used and the beneficial effects self-reported by the teenagers were inconsistently corroborated by parents.

"What is important to note is that parents did report positive improvements in their child's mood while taking saffron (overall 40 per cent reduction in depressive and anxious symptoms), however, it seems that they were also more susceptible to the 'placebo effect' as, on the whole, they reported an average 26 % reduction in their child if they were taking a placebo," Lopresti clarifies.
"Further research with teens and even younger children will be important. We need to replicate these studies to confirm our initial positive findings. It is also important in future research to identify optimal treatment dosages of saffron."

"What we don't know is if positive findings would occur with different saffron extracts (quality can vary significantly), or if we would get even better changes if we increased the dose with non-responders. We are also about to start a study investigating the effects of saffron as an add-on to antidepressant medications. Does taking saffron and a pharmaceutical antidepressant work better than and antidepressant alone. Stay tuned. I hope to have the results next year," says Lopresti.

Traditional mood foods
The Western study of traditional ingredients that have been utilized in Eastern traditions for mood and brain health is nothing new. The exciting benefits of turmeric is just one example.The potential ability of saffron to increase neurotransmitters in the brain is leading research in its direction.One of the identified causes of depression is the reduction of certain neurotransmitters in the brain that are related to mood. There are namely serotonin, norepinephrine and dopamine.

"It increases neurotransmitter levels, normalizes our stress response, is a powerful antioxidant and anti-inflammatory, and may even increase proteins linked with enhanced neuroplasticity," adds Lopresti.
Many of the antidepressants currently used are selective inhibitors of the reuptake of these neurotransmitters, but these drugs have adverse side effects associated. Therefore, the search for natural ingredients, which could potentially be side-effect free, is attracting scientific attention.

Past studies that have reviewed the effect of saffron intake on mood and depression have proved positive. For example, in Iran, a nine-month study of 40 patients saw half take their conventional drug alongside crocin (saffron), while the other half only took their usual medications. The participants who took the combination of crocin and drugs experienced significant reductions in their scores for depression, anxiety and their overall health status scores were higher.Although the potency of natural ingredients may be lower than conventional drugs, the positive aspect of few side effects might make them worth trying.

In further Mood news, NutritionInsight has reported on how nuts have been found to have brain health benefits, as well as gut microbiome's connections the degenerative conditions of Parkinson's and Alzheimer's and lastly, glucosamine's connection to epilepsy. The potential for natural ingredients to benefit our brain health is exciting, and new studies are continuously opening our minds to new natural options.
By LaxmiHaigh

Hearty results: MenaQ7 K2 study confirms vascular health benefits for men and women

01 Mar 2018

A new one-year clinical trial has just been completed showing that a daily nutritional dose of MenaQ7 vitamin K2 as MK-7 improved vascular health in both male and female healthy participants.

This study adds support to the substantial body of evidence confirming Vitamin K2 is a cardiovascular-support nutrient. Completed by the expert researchers at VitaK, the placebo-controlled randomized clinical trial demonstrated the benefits of 180 µg/day of MK-7 (as MenaQ7 from NattoPharma) on vascular health and body composition in 243 healthy subjects (77 men and 166 women) with a poor vitamin K status, as measured by dp-ucMGP (inactive Matrix Gla Protein, a marker for cardiovascular health).

According to the researchers, "We enrolled participants with poor K status; however, in West most are K deficient as measured by activation of K-dependent proteins." In the total group MK-7 decreased dp-ucMGP significantly compared to placebo after 1 year. The researchers conclude that 1-year supplementation of MK-7 tended to improve vascular health in men and women with a poor vitamin K status. The beneficial effect was more pronounced in post-menopausal women and in subjects with a high Stiffness Index.

"This study is extremely important because this is the second trial to demonstrate benefits of MenaQ7 for cardiovascular health. But where participants in our first study were healthy postmenopausal women, this is the first trial where the effects were examined in both men and women," says HogneVik, NattoPharma Chief Medical Officer. "In this study, the participants taking MenaQ7 maintained arterial flexibility and the stiffness did not increase, whereas placebo group became stiffer and less flexible. "These results mirror what we have seen in epidemiological studies, where populations who consume a lot of dietary vitamin K2 have healthier hearts and more flexible arteries," Vik continues.

Three-step plan unveiled to achieve harmonised nutritional labelling in ASEAN

By Gary Scattergood 27-Feb-2018
Food Navigator Asia

A three-step approach has been put forward to help ASEAN move towards a more harmonised regime for nutritional labelling, with a new report revealing that varying standards are contributing towards "the lacklustre export performance of the packaged foods sector".

The report, published by the ASEAN Food and Beverage Alliance (AFBA), found the region's packaged food sector to be highly regulated, with 42.75% of the region's non-tariff measures (NTMs) affecting the industry. And despite many of the regulation being broadly similar, crucial, "nuanced differences in the labelling requirements prevail across the region," noted the report.

"Specifically, regulatory incoherence is evident from the breakdown of the seven core elements of nutrition labelling. The non-harmonised labelling regulation and the high export coverage of labelling would therefore have profound implications for export performance of packaged foods." The report then surveyed 26 food exporters in Malaysia, Thailand, Philippines and Indonesia to gauge their views. Their feedback revealed that reveal nutrition (function) claims and nutrition reference values (NRVs) in the region are more complex than the International Codex benchmark.

Cost impact

"Importantly, the inconsistencies in regulations are noted even for the established markets in ASEAN, such as Malaysia, Thailand, the Philippines and Indonesia," added the report, authored by Dr Evelyn S. Devadason, an Associate Professor at the Faculty of Economics and Administration, University of Malaya.

"Multiple costs are incurred in complying with nutrition labelling due to an introduction or change in legislative requirement in the ASEAN export market. Apart from the impact on business compliance costs, complex nutrition labelling schemes are found to distort trade through product price increases and/or market- and product losses."

Therefore, while most of the measures affecting the industry are non-tariff policies, the eventual impact is that they become a barrier to trade.Despite this, the report found that not all firms surveyed supported mandatory nutrition labelling in ASEAN as a means to achieve harmonisation. "However, all firms want some form of consistency in nutritional labelling, and therefore support the alignment of the guidelines with Codex and the harmonisation on grounds that common labelling schemes are needed to reduce compliance costs and address the existing information overload on nutrition for consumers for some food products."

Three factors
In order to move forward the report recommends three next steps to boost trade.First, it is recommended that industry adopts a standard format, aligned to Codex, and identifies the minimum requirements within the code's basic nutrient list that should be made mandatory.The second is to streamline Nutrition Reference Values as a priority across the region.Thirdly, it calls for a consensus to be achieved around a standardised Nutrition Information Panel format and design, a common declaration list of carbohydrates, minerals and vitamins, and a common approach for functional claims.

The report concluded that ASEAN should nurture bottom-up approach, especially in dealing with the harmonisation or streamlining of technical requirements. "At the regional level... input from the food industry is important to harness the concerns of the industry players and undertake regulatory changes that benefit the industry. Representation from the food industry...is essential to inform the discussion on the complexity of the regulations, the extent of incoherence in the regulations, and more importantly on the minimum similarities in the requirements that would benefit the industry and facilitate regional trade."

Experts reveal the most suitable probiotics for infant gastrointes-tinal diseases in APAC

By Cheryl Tay 28-Feb-2018 Food Navigator Asia

Image © iStock.com/greenaperture

Probiotic treatment guidelines in Asia Pacific must be fine-tuned in order to properly treat gastrointestinal disorders in children, according to paediatric experts in the region.

Gastrointestinal illnesses are a key contributor to child morbidity and mortality in developing countries, and diarrhoeal diseases are among the top five causes of death in children below the age of five.

Malnutrition in both developed and developing countries over-nutrition in the former and undernutrition in the latter has given rise to intestinal diseases by disrupting gut microbiota, and geographic variations (including diet, culture and genetics) in gut microbiota composition could influence the risk of developing certain illnesses.

As such, several paediatric experts from the region, as well as from the U, Netherlands and Italy, discussed over two meetings sponsored by pharmaceutical firm Biocodex suitable recommendations for probiotics for children in APAC.

Professional proposals
The clinical patterns and epidemiology of intestinal diseases, as well as evidence-based recommendations and RCTS in APAC countries were discussed, with factors such as culture, health management and economy also taken into account.

After using the Likert scale and GRADE system to approve final recommendations, the experts strongly recommended Saccharomyces boulardii CNCM I-745 (Sb) and Lactobacillus rhamnosusGG (LGG) as "adjunct treatment to oral rehydration therapy for gastroenteritis" , adding that Lactobacillus reuteri (L. reuteri) was also an option.

They also said probiotics could be used for preventing antibiotic-related diarrhoea (LGG or Sb), diarrhoea triggered by Clostridium difficile (Sb), nosocomial diarrhoea (LGG), and infantile colic (Lreuteri), as well as in the form of adjunct treatment of Helicobacter pylori (Sb , among others).Furthermore, they wrote: "Specific probiotics with a history of safe use in preterm and term infants may be considered in infants for prevention of necrotising enterocolitis."

However, they added that they lacked the necessary evidence to propose recommendations for other conditions. Still, they said, similar recommendations could apply in APAC across a variety of socioeconomic, epidemiological and health system conditions, though these must be validated via local RCTs.

Factors to Consider

They wrote that factors such as "the availability of specific probiotic strains in local markets, costs, patient and physician access to probiotic products, and personal / cultural beliefs" must be considered when assessing the applicability of probiotic guidelines for the region.

In addition, existing APAC regulations on probiotics differ from country to country, leading the experts to suggest a standardised regulatory framework for probiotics, which they said would aid both research and application.

They concluded:"Given this complex scenario and the need for supporting evidence, the recommendations are provided as proposed, and their potential benefits need to be confirmed at the local level with well-conducted RCTs."

Fat-soluble vitamins may lower heart failure mortality risk...but only in women: Japan cohort study

By Cheryl Tay 26-Mar-2018 Nutra Ingredients Asia

Higher dietary consumption of certain fat-soluble vitamins may help lower the risk of death from heart failure – but only in women, according to a Japanese study.

Heart failure is a prevalent public health issue in countries where there is an ageing population, such as Japan.Researchers from several Japanese universities therefore conducted a study to assess the link between dietary intakes of the fat-soluble vitamins A, D, E and K, and the morality rate in heart failure patients in Japan.

They recruited 23,099 men and 35,597 women between the ages of 40 and 79 to participate in the Japan Collaborative Cohort Study, and to complete a questionnaire on their food frequency, so they could calculate their intakes of the four vitamins. During the median 19.3-year follow-up period, 567 (240 men, 327 women) participants died from heart failure.

Feminine advantage

The researchers estimated the sex-specific risks of death from heart failure and found it to be unrelated to dietary vitamin A intake in both sexes. However, when it came to the consumption of vitamins D, E and K, a lowered risk was observed, but only in women.

They added that the association between the intake of each vitamin and the risk of death from heart failure "was slightly attenuated but remained statistically significant after mutual adjustment for intakes of the other vitamins".

This led them to state that high dietary consumption of the fat-soluble vitamins D, E and K was linked to a lower risk of death from heart failure in women but not in men.

Lacking specifics

In terms of limitations, they wrote: "The use of death certificates to ascertain heart failure deaths in the early years of the study (i.e., prior to 1994) was questionable, because most deaths of unknown origin, such as cardiac arrest or arrhythmic death — which are classified as ischaemic heart disease deaths in the United States — were registered as due to 'unspecified heart failure' in Japan.

"This classification accounted for 27% to 50% of diagnosed heart failure cases. Accordingly, the number of heart failure deaths in this study was contaminated by a number of cardiac arrest deaths and may have affected the association between dietary intakes of fat-soluble vitamins and heart failure."

However, they also said that sensitivity analyses to exclude deaths from heart failure had occurred within a decade of the follow-up period showed similar links.

They concluded: "In this large, community-based, prospective cohort study, higher dietary intakes of fat-soluble vitamins (K, E, and D) were associated with a reduced risk of mortality from heart failure among Japanese women but not men."

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FOOD SCIENCE & INDUSTRY NEWS

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Seasoning enhances appeal of vegetables

IFT Weekly February 28, 2018

According to recent findings, 87% of the U.S. population fails to meet vegetable intake recommendations, with unpleasant taste being the primary reason for the shortfall.

A study in the Journal of Food Science investigated whether consumer acceptance could be increased if spices and herbs were used to enhance palatability. In total, 749 panellists were screened and recruited, either as likers of the vegetable being tested or as general vegetable likers.

Four sessions evaluated the effect of seasoning within each type of vegetable, including broccoli, cauliflower, carrot, and green bean. Each panellist was allowed to evaluate only one vegetable type, to mitigate potential learning effect. Overall, the results showed that seasoned vegetables were significantly preferred.

When general vegetable likers and specific vegetable likers were compared in terms of their preference between seasoned and unseasoned vegetables, the pattern varied across different vegetables; however, seasoned vegetables were generally preferred. The study's findings demonstrate the effect of seasoning in enhancing consumer liking of vegetables, which may lead to increased consumption.

Evaluating high fiber by-products for potential value-added ingredient use

IFT Weekly March 14, 2018

A study published in the Journal of Food Science examines the composition and physicochemical properties of fiber-rich food processing byproducts for potential use as value-added ingredients.

The researchers inspected eight fiber-rich by-products from different sources—oat hull, sugarcane bagasse, pea hull, potato skin, and pomaces from blueberry, cranberry, Concord grape, and apple. They were fractionated into two different particle-size ranges.

The researchers found that dietary fiber was the main component of the by-products. In addition, the moisture content ranged from 3.84% to 14.93% and protein content ranged from 0% to 12.46%.

They reported that the fat content ranged from 0.04% to 8.67% and that sugar content ranged from 0.90% to 34.98%. These results revealed the variation in composition of by-products from different sources and within the same source.

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Furthermore, the by-products of different fractions also exhibited different compositions. In general, smaller size fractions had higher moisture, protein, ash, and soluble dietary fiber content than the larger size fractions. The larger size fractions generally had higher sugar and insoluble dietary fiber content than the smaller size fractions.

These properties enabled the researchers to perform a hierarchical cluster analysis and principal component analysis to group the by-products into three different clusters by functionality.

From this, they assigned ingredients in each cluster to potential end uses. Some end use examples include as a source of fat, protein, sugar, and insoluble fiber; and for uses as a thickening agent, water binder, emulsion enhancer, and fat binder.

Microbial diversity of milk during processing and storage

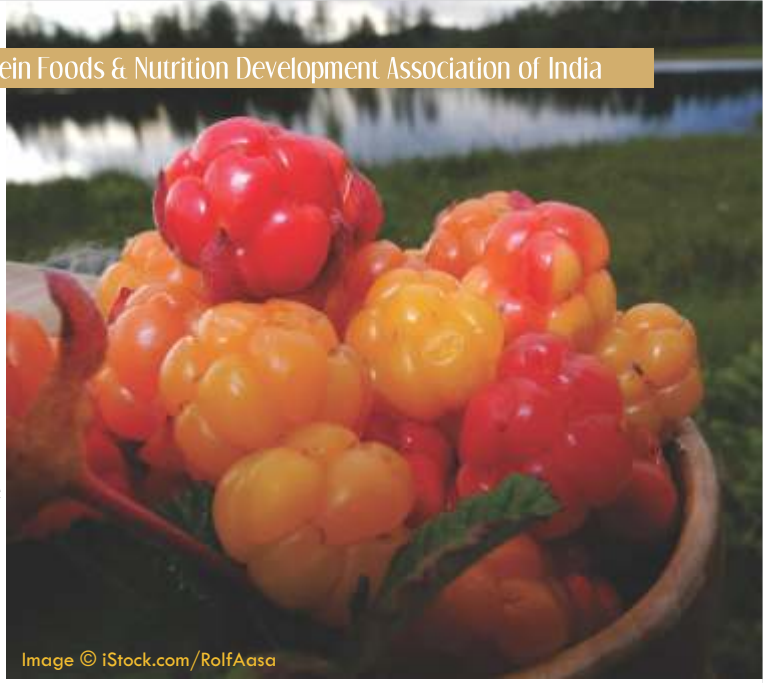
IFT Weekly March 14, 2018

Bovine milk contains a complex microbial community that affects the quality and safety of the product. Detailed knowledge of this microbiota is, therefore, of importance for the dairy industry.

A study published in the International Journal of Food Microbiology examines the bacterial composition of milk during different stages in the production line and during storage in cartons by using culturing techniques and 16S rRNA marker gene sequencing. The researchers analyzed monthly samples from two dairies to capture the seasonal variations in the milk microbiota. Although there was a core microbiota present in milk samples from both dairies, the composition of the bacterial communities were significantly influenced by sampling month, processing stage, and storage temperature.

Overall, the researchers detected a higher abundance of operational taxonomic units (OTUs) within the order Bacillales in samples of raw and pasteurized milk from the spring and summer months, while Pseudomonadales and Lactobacillales OTUs were predominant in the winter months. OTUs belonging to the order Lactobacillales, Pseudomonadales, Clostridiales, and Bacillales were significantly more abundant in milk samples taken immediately after pasteurization compared to raw milk samples.

They found that during the storage of milk in cartons at 4°C, the bacterial composition remained stable throughout the product shelf life, while storage at 8°C significantly increased the abundance of OTUs belonging to the genus Bacillus and the plate count levels of presumptive Bacillus cereus.



Tasty superfood from plant cell cultures

March 14, 2018 Science Daily

VTT Technical Research Centre of Finland is developing a new and promising method of producing healthy and tasty plant-based food through plant cell culture (PCC) technology rather than field cultivation.

The development work was elevated to a whole new level by a study on the nutritional properties of PCCs grown from cloudberry, lingonberry and stoneberry.

Their nutritional value was proven to be much higher than anticipated, in addition to having a nice sensory profile.

In recent years, VTT has developed plant cell culture technologies with the aim of creating a completely new and groundbreaking method of producing vegetable foodstuffs and ingredients.

As shown by the results of the study published in an article in the food science and technology journal Food Research International in February 2018, the production method developed at VTT is looking more promising than ever.

Population growth and food demands

"This is not only a completely new opportunity for the food industry but to society as a whole. There is not enough arable land to meet the growing global population's food demands; new solutions are desperately needed. Cell cultures have serious potential for meeting this need," says Emilia Nordlund, Leader of VTT's Food Solutions Team. Cell culture production of meat has been a popular topic in public discussion. In the future, however, PCCs can be used to produce food that has higher nutritional value in a considerably faster and easier way and at lower costs.

Nutritional and sensory properties
The objective of VTT's study was to examine the nutritional and sensory properties of dried and fresh cells grown from cloudberry, lingonberry and stoneberry by using PCC technology.

The PCC samples had a pleasant, fresh and mild flavour, which resembled that of corresponding fresh fruits. The berry-like flavour was more intense in the dried samples, which were also melting appealingly in mouth. The visual appearance of cell cultures also resembled that of the corresponding fresh fruits.

The plant cells were proven to be nutritionally valuable -- in most respects even more so than fruits. The PCC samples had high protein content of 14-19%, and in vitro analysis showed good protein digestibility. The contents of essential amino acids important to muscle, bone and tissue health were higher than those reported for soy, which is considered an excellent source of amino acids.

The dietary fibre of the samples varied between 21 and 37%, which is clearly more than in breakfast cereals, for example. Energy content was also higher than anticipated. The PCC samples were also found to be rich sources of unsaturated fatty acids. A previous study of VTT has shown that cell cultures have high contents of polyphenols that are known for their health-promoting effects (Ref. Planta, 2017).

Limitless variations

"Biomass produced with plant cell culture technology should be considered as completely new food material, which is why their characteristics should not necessarily be compared with corresponding fresh fruits.

Their excellent nutritional properties are a sign of great future potential of plant cell cultures in creating new types of superfoods. The variations produced by using different plants offer limitless possibilities," says HeikoRischer, Leader of VTT's Plant Biotechnology Research Team.

For the food industry, plant cells and their dried versions offer opportunities to create new types of healthy food products and ingredients, such as smoothies, caviar-like compotes and snack foods. The key thing to remember in product development and from the logistics point of view is that all materials are always at their best when they are fresh. However, only the sky seems to be the limit when exploring new product innovations with the cell materials.

For example, in the "Food My Way" project, VTT's scientists are currently coming up with ideas for future food vending machines that enable consumers to buy healthy food products tailored to their personal tastes.

An appliance designed for use in a café or restaurant could include a bioreactor for growing fresh cell compote to be added to a food product.

In addition to further research on the subject with new cell lines and food design, the market entry of PCCs requires regulatory approval as a novel food. VTT is actively developing the concept further in the frame of the strategic Food 4.0 vision and invites parties interested in developing new plant materials, the related production processes and equipment to collaborate.

Pulse-powered pasta: Chickapea launches organic pulse based Mac & Cheese

02 Mar 2018

US based company Chickapea has launched a new line of pulse based Mac and Cheese to the market. The “mac” is created from chickpeas and lentils, while the “cheese” is organic, according to Chickapea.

The product boasts 19g of protein, 8g of fiber and less than 500mg of sodium per serving. The product joins an established market of pulse-based pasta products.

“We're so excited to bring Chickapea Mac and Cheese to market,” says Shelby Taylor, founder and CEO at Chickapea. “It's packed full of nutrients and tastes like the cheesy traditional comfort food we all love and grew

Image © www.choosechickapea.com

up on. Our mission at Chickapea is to make healthy eating simple, convenient and delicious by reinventing comfort foods with only nutritious, organic ingredients."

Chickapea's founder, Shelby Taylor, had a difficult time creating a pasta that had absolutely no fillers in it, especially in terms of taste and shape, Kim Masin, Chickapea Marketing Manager, tells NutritionInsight.

But from Taylor's experience of working in a health food store, she says she knew what customers wanted and what was missing in the healthy food market: "Something that was familiar and good for you — not just better for you."

Chickapea's Mac and Cheese is available in three different flavours, although a vegan variety with a "creamy vegetable sauce" is in the pipeline.

Alternative pastas, crackers and breads made from pulses have begun making their appearance in supermarket aisles globally. A sure draw for certain consumers is the wheat-free - and therefore often gluten-free – status of these products.

Aside from the benefits of being gluten-free, pulse-based pastas are nutritionally richer than their wheat based cousins. They are high in protein and fiber yet also lower in carbs and are made from more satiating complex carbs, over simple carbs.

Our sister website, FoodIngredientsFirst, has further explored pulse-based protein sources that can be used to create products, such as pasta.
By Laxmi Haigh

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Instant vitamin fix: Instavit launches children's oral vitamin spray

07 Mar 2018 Nutrition Insight

Oral spray provider Instavit has released a range specifically aimed at supporting the nutritional needs of children.

The spray format is touted as being easier to stomach for the kids than traditional pills. This product joins an increasingly busy shelf of pill-free supplement delivery systems, such as gummies, gels, beadlets and now, sprays, offering increased convenience to users. "Research shows 40 % of adults hate swallowing pills and kids are no different," says InstaVit inventor Dr Jatin Joshi.

"Not only as a doctor but also a parent, I know how difficult it is for our children to get the required vitamins they need for healthy development. That's why I expanded InstaVit's line to provide options especially formulated to meet the needs children have today. It's the foundation to good health and a bright future." The sprays allow active ingredients to be quickly absorbed, without fillers, binders or excipients to tax the digestive system, according to InstaVit.

Innovative supplement dosage forms

NutritionInsight has investigated innovative supplement delivery systems in a special report. Here, we spoke to Efrat Kat, VP Marketing & Sales at Algatechnologies who noted that, "Unique delivery formats is also a growing trend and we are seeing new types of beadlets, vegan capsules and liquid formulations on the rise."

A key category seeing significant growth is gummy supplements. Emerging from the confectionery industry, this delivery form has seen a considerable increase in the dietary supplement market, with Innova Market Insights reporting a CAGR of 23.9 % for this category over the past five years. In the US, the gummies category now represents "more than 10 % of the supplement market, a statistic that is projected to grow by over 50 % the next few years."

However, with the physical appearance of gummies resembling candy, some parents may be intrigued by the easy-to-use spray format. There is no health more critical than the health of children. Parents and manufacturers alike are continually striving to supplement children to give them the best nutritional start in life. According to the Dietary Guidelines for Americans, a vast number of people consume more calories than needed without taking in the appropriate number of nutrients. For children especially, calcium, potassium, fiber, magnesium and vitamin E are crucial.

Although supplements are not an ideal replacement for the nutrients gained directly from food, they can be a welcome addition to a healthy, well-rounded diet for children. As long as the consumer is aware of the potential cross interaction between different ingredients and the optimal dosage amounts, adds Kat on this topic.

InstaVit formulations for kids include "Kids Complete Multivitamin," "Kids Natural Sleep" and "Kids Vitamin D3." Their classic range for adults includes Vitamin D3, Sleep, B12, Instant Energy, Prenatal, Daily Health, Clearer Thinking and Immune Strength.

Healthy indulgence: Guilt-free frozen desserts on the rise

21 Mar 2018 Nutrition Insight

Recent innovations in ingredients and processing techniques have deemed the phrase "Healthy indulgence" as far from oxymoronic. Consumers are seeking out indulgence, without the "guilt," and a host of manufacturers have responded to provide indulgence with added health benefits.

Lighter choice options have flooded the market, from reduced sugar content to lighter alcohol options and smaller portion sizes. Innova Market Insights data demonstrate that more than twice as many bakery launches featuring a "thin" and snacks featuring a "lightly" claim were reported in 2016 when compared to 2012. NutritionInsight takes a look at some guilt-free indulgence ideas within the frozen dessert and confectionary world.

Ice cream with a drizzle of health

"In ice cream, we are moving from guilty pleasures (normal ice cream), via permissive indulgence (low calorie or low sugar ice cream) to healthy indulgence (low calorie and low sugar ice cream with health benefits)," Jaco Piepers, Owner of Koupe, tells NutritionInsight. Typically, ice cream requires fat and sugar to achieve soft, creamy textures and rich, sweet flavours. A range of manufacturers have maneuvered their way around such undesirable traits and created healthy, yet indulgent ice cream ranges. For protein ice-cream brand Koupe, whey was the key ingredient.

"We worked from the idea that with whey protein we could achieve the same creaminess, while losing all the fat. We also reduced and replaced the sugar. This is how protein ice cream was born: not just to create an ice cream for people enjoying sports, but mainly to reinvent ice cream for people that wanted it delicious, but healthier," says Piepers. The resulting protein ice cream contains 13 grams of whey protein isolate. This is an ice-cream to count macros, not calories.

NutritionInsight has previously covered VolactiveUltraWhey-Velicious, a high protein whey concentrate powder. It can be added to products, such as frozen desserts to add that desired creamy mouthfeel and extra nutrition. Whey based products that are in this market go beyond targeting post-fitness hunger. Koupe, for example, advertises as ideal for post-workout nutrition but also young women and men who enjoy desserts but want something beyond "permissive indulgence," elderly people who need more protein in their diet and in the future, they state that "children are a very promising market."

Bastian Hoermann, Product Manager Food, EMEAI WILD Flavors and Specialty Ingredients, explains to The World of Food Ingredients in the March 2018 issue how consumers are seeking a moment of pure peace and indulgence to contrast their busy lifestyles when picking a healthy indulgence treat. To make these limited moments worthwhile, he goes on, the flavours must reflect pure indulgence such as "decadent inclusions, fillings and toppings, such as fruity ripple sauces or chocolate and caramel cores," this, he predicts, will become more prevalent in the coming years. Koupe reflects this trend prediction, as Piepers tells NutritionInsight how the salted caramel trend is set for a revival and their own "Salted Caramel Koupe" will soon be launched.

Another route taken to elevate frozen desserts from a "permissible" treat to a "healthy" indulgence is the addition of fruit, vegetables and other natural ingredients. Jennifer Chaffin, Application Technologist at SensientFlavors, spoke to The World of Food Ingredients on how this was a trend to watch. "Not only do these appeal to consumers due to their "good-for-you" association but also because exotic fruits such as dragon fruit and superfoods such as kale and spinach add vivid colours into the products, creating visually appealing products that are sure to excite consumers on different levels."

A flavour spectrum that differs from the norm can take a product from ordinary to special, especially for a consumer that is looking for a treat. In fact, Innova Market Insights data shows how "fantasy flavours," such as jackfruit and passionfruit, have become increasingly popular. They can take the consumer on a taste journey and really pack-a-punch as a decadent and indulgent, yet healthy break from reality. Overall, the healthy indulgence arena is set for growth: in ingredients, flavours and markets. Frozen desserts are only one small slice,

Image © iStock.com/ BhavnishKumar

and part two of this special report will be released next week, covering chocolate and confectionary.
By Laxmi Haigh

Antioxidant Beverages: Quenching Thirst & Free-Radicals

By Lisa Olivo, Associate Editor, Nutraceuticals World 03.01.18

Having an antioxidant claim on a product label conveys a naturally healthy message to consumers. According to Innova Market Insights, product launches with antioxidant claims showed an average annual growth of 16.2% (CAGR) from 2012 to 2016. Where there were just 100 global food and beverage launches with antioxidant claims in 2012, by 2016 that number increased to 183.

Beverage manufacturers, however, seemed particularly interested in staking their claim in the antioxidant marketplace. By 2017, of all product launches with antioxidant claims tracked by Innova, one in four (25%) were soft drinks. Hot drinks also represented a top category for antioxidant claims, making up 14.9% of product launches promoting antioxidant inclusion. Among subcategories, 11.8% of juice and juice drinks, 11.5% of teas, and 6.7% of iced teas claimed antioxidant content in product launches in 2017.

Functional Hydration

What's leading consumers to beverage formats? Tim Bauer, vice president of sales, Pharmachem, a division of Ashland, Kearny, NJ, suggested "capsule-tablet overload" could be the culprit. "People want to take a variety of supplements because of the abundance of physiological benefits they confer over time, but who wants to swallow tens of pills every day? Both major brands and boutique brands are infusing a wide variety of beverages—sodas, energy drinks, juices, teas—with antioxidants as well as other nutraceuticals."

Beverages are a logical format because the need to stay hydrated is universal, Mr Bauer suggested. "In one sense, beverages have a leg up over foods because humans need liquid (to satisfy thirst) more than solid foods. Consumers are recognizing the need to drink more water during the work day. They are also looking for an added benefit, and this is where products such as Bai have made inroads by delivering good tasting products with an antioxidant benefit."

A popular functional beverage company launched in 2009, Bai offers a range of nutritional, antioxidant-fortified drinks in exotic flavours such as Sumatra Dragonfruit, Ipanema Pomegranate, and Brasilia Blueberry. With about 1 gram of sugar and 5 calories, the original Bai Antioxidant Infusion beverages offer 35 mg of vitamin C, and 100 mg polyphenols and chlorogenic acid from coffee fruit extract and white tea extract.

Coffee fruit is a key active ingredient in Bai's product formulation, providing an essential source of antioxidants along with an energy boost from caffeine (35 mg per serving, similar to a cup of green tea). Reflective of the brand's broad success, Bai was acquired by Dr Pepper Snapple Group for $1.7 billion in January 2017.

"We are seeing the coffee fruit category explode," observed Andrew Wheeler, director of marketing for FutureCeuticals, Momence, IL, leading the company to develop its own Cascara line of ingredients. "Just look at the success of Bai, and their subsequent acquisition by Dr Pepper Snapple. They have demonstrated that a coffee fruit antioxidant-based beverage can work … and how!"


Image © iStock.com/demaerre

Cascara (which means "husk or skin" in Spanish) is made from the dried skin and mucilage of the coffee cherry, once a waste product of the traditional coffee production process. FutureCeuticals created a way "to preserve a low mycotoxin coffee fruit product along with its natural antioxidants that are found in coffee fruit." The ingredient also benefits from its sustainable harvesting model, which appeals to environmentally conscious consumers.

Herbal Elixirs

Tea with functional benefits—such as supporting energy, offering anti-inflammatory support, or providing antioxidants—was a top trend in 2017, according to Mintel's "Top Tea and Coffee Trends for 2017" report. Mintel said tea's "better-for-you" perception, coupled with its beneficial nutritional profile, is driving consumers to the category. Antioxidant-rich ingredients such as matcha, as well as turmeric (which Mintel called a breakout ingredient in 2016) are increasingly being featured in functional tea drinks.

While exotic berries and fruits have become mainstays in the functional drink landscape, certain antioxidant-rich herbs and spices are now being incorporated for their unique flavour profile and beneficial health offerings.

Brian Appell, marketing manager, OmniActive Health Technologies, Morristown, NJ, pointed to the rise in popularity of "'golden milk'—a traditional immune-boosting remedy that usually contains the powerful antioxidant compound turmeric, along with cinnamon, ginger, and pepper in a milk or broth base." The longstanding use of these ingredients in Ayurvedic and Eastern medicine for their antioxidant properties, in addition to other significant health benefits such as supporting digestive health and a healthy inflammatory response has piqued consumer interest, he said.

The brand REBBL offers a Turmeric Golden-Milk beverage in its line of 100% organic, herbal wellness beverages. While not explicitly developed or marketed as an "antioxidant beverage," the drink's key ingredient is turmeric, a well-known and potent antioxidant ingredient made up to 20 times more bioavailable with the addition of black pepper fruit extract.

"We believe that Turmeric Golden Milk is a wonderful expression of the union of super herb functionality, nourishment, satiety, and a delightful sensory experience (taste, aroma and appearance)," commented Palo Hawken, founder and chief innovation officer at REBBL. "It resonates with consumers because it is a traditional beverage with a long history of consumption in one of the oldest and most respected cultures on earth. It is a physical embodiment and expression of the Vedic philosophical approach to wellness, along with yoga, pranayama, and meditation, each of which is its own mega-trend shaping global culture. Golden Milk is a product phenomenon that both benefits and supports this global interest in products of substance from these respected wellness traditions."

The brand links turmeric to benefits for cognition, healthy inflammatory response, and physical recovery. REBBL also offers a Turmeric Lemon Tart beverage, as well as Macha Latte variety.

Through REBBL's website, the company also provides detail for where its key active ingredients are sourced. For example, with regard to its turmeric ingredients, "REBBL supports organically cultivated turmeric in India."

"Today's supply-chain-conscious consumers are demanding to know where their food and beverages are coming from—they're reading labels and demanding real, whole food that is minimally processed, safe, and eco-friendly," suggested Mr Wheeler. "This category has been bombarded by adulteration concerns and misguided claims, so by pulling back the curtain and sharing the product's journey with the consumer, the trust bond is strengthened. It's a win-win."

This call for transparency has led to an increased demand for clinically validated ingredients that "possess real antioxidant action delivering a moderate yet effective dose," Mr. Wheeler added. "Consumers are more educated, and realize that to maximize these benefits the dosage and source of the antioxidant is extremely important. As our science has told us, sometimes more is not better with respect to antioxidants."

With this in mind, he pointed to key market trends propelling development in the category, including "clean-label, healthy ingredients/functional beverages, and natural plant-based antioxidants leading the way."

Fortified Water

Research from Mintel suggests consumers are seeking out hybrid drinks (beverages that combine two or more drink categories), with functional benefits. Of hybrid drink consumers, 44% reported they have tried bottled water with added health benefits, such as protein, vitamins, or antioxidants.

Bai's newest launch targets the emerging category of functional water, which is expected to grow at an impressive CAGR of 11.5% from 2013-2019, earning $36.7 billion by the end of 2019, according to Persistence Market Research. Bai Antioxidant Water plays into consumers' obvious need for hydration, with an added antioxidant boost. Marketing for the product seems to focus on those looking to combat oxidative stress as a result of exercise, as well as consumers concerned about the general stress of a hectic lifestyle. The product is a purified water, with electrolytes for taste, and 10% of the daily serving of selenium for antioxidant enhancement.

"Consumers are looking toward antioxidants more as a normal part of their diet to help maintain overall good health," commented MrAppell. Water with functional benefits definitely falls into this category. "They're aware that they can get antioxidants from the foods they consume on a daily basis, but they are also aware that they may not be eating enough of those healthful foods and therefore need to supplement their diets."

For a growing consumer group, getting those missing nutrients through water (which they should probably be drinking more of anyway) seems like an easy and convenient delivery format for the antioxidants they crave.


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HKScan to launch Omega-3 Pork in China through joint venture

By Aidan Fortune 28-Feb-2018 Food Navigator Asia

HKScan has announced the launch of premium-category 100% Finnish pork products to the Chinese market.Operated through a joint venture with Zhejiang Qinglian Food, these new branded products, Finnish Rypsiporsas (Omega-3 Pork), are designed to commercialise Finnish food in the region.

HKScan signed the agreement earlier this month and said it planned to establish a new footprint on the Chinese market with premium-category, value-added products such as sirloin and tenderloin - products the company has previously offered largely only in the Nordic region. HKScan is the first Finnish company to establish a presence in a premium market niche in China.

Exports are scheduled to commence during the first half of the year 2018. The launch of exports to China marks a significant new inroad both for HKScan and Finnish primary production. HKScans targeted sales volume in China is roughly three million kilograms of pork within the first year, with plans to triple that volume by 2020. Relative to current pork production volumes, this would mean that at least 5 of Finnish-grown pigs would end up on Chinese dining tables through HKScans export chain.

"This joint venture opens up a completely new, one-of-a-kind market for Finnish pork," said JariLatvanen, CEO of HKScan. "By commercialising and offering products in the premium category, we are taking the world-class expertise of Finnish pork producers to a whole new level of added value. This creates new revenue opportunities throughout our entire production chain and builds confidence in the international competitiveness of Finnish food production. Competition is fierce all around the world, and China is no exception - only the most competitive products make the cut. Our key competitive advantage is our diligent control of the entire value chain from farm to fork, which has convinced our Chinese partners of our reliability."

Latvanen explained the joint venture with Zhejiang Qinglian Food.
"We were looking for a partner whose corporate values and business logic are well-aligned with KKScan's values and strategic aims. Qinglian Food embraces the principles of responsibility and transparency throughout the food chain, which is fully in line with the core of our From Farm to Fork strategy. Qinglian Food has an impressive track record of successfully developing new brands and concepts, which was a key condition for our collaboration. In addition, Qinglian Food's in-depth knowledge of the Chinese market offers significant potential for the future advancement of KScan's exports," said Latvanen. At the end of last year, HKScan announced that it had gained approval from the Chinese food authorities to launch exports from Finland to China. The launch of exports has been strongly supported by Chinese and Finnish authorities, decision-makers and cooperation parties.

Hojicha's hot: Japanese roasted green tea used in new products from ice cream to pasta

By Lester Wan 05-Mar-2018 Food Navigator Asia

The increasing popularity of Japanese roasted green tea, hojicha, is spurring a raft of new product development in the country, from ice cream to pasta.

Data from market research firm Intage Inc. indicates that there have been about 90 hojicha drinks and hojicha-flavoured food products launched in the past year alone.

According to Intage, Hojicha's share of the market for sugar-free tea products in Japan is 3.5%, much lower than 53% for sencha green tea, for example. However, sales have been steadily increasing, and the market share of hojicha drinks and flavoured food products is rapidly growing. Intage said sales of hojicha beverages in 2016 added up to about ¥14bn — around 30% growth from 2012.


Image © iStock.com/cluxum

Last year saw consistently high sales, worth about ¥10.1bbn just from January to September. The findings come ahead of the start of the FoodEx Japan show in Tokyo, where hundreds of Japanese firms will be showcasing their goods to domestic and international buyers.

Number of food products burgeoning

Mintel senior consultant Toshie Koshiga told us that hojicha's popularity was set to continue, especially in ready-to-drink beverages and desserts. Last year, Haagen-Dazs launched a hojicha latte mini-cup ice cream that cost ¥294 (about US$2.50). It was very quickly sold out but the company re-released it in October.

The Lawson Inc. chain of stores began selling hojicha latte in November, dispensed by machines next to their cash register. Asahi Shimbun reported that the hojicha latte exceeded expected sales by more than by 50%. More recently, Lawson's hojicha-flavoured range of products has begun to include staple food such as rice and pasta. Also in November, Seven-Eleven Japan Co. released a dessert with hojicha-flavoured mousse and brown sugar kanten jelly.

Just before Christmas, FamilyMart Co., in collaboration with Ito En Ltd., a tea and beverage manufacturer released a limited run of 500,000 cups of kobashihojicha latte. "Kobashi" means fragrant. Lawson and FamilyMart also released limited edition hojicha-flavoured sweets during autumn. Cafes have also been jumping on the bandwagon, releasing various hojicha tea drinks. Starbucks launched a limited edition hojicha frappucino in September. It was available until October 1.

Unique taste and health benefits

Hojicha is made by roasting sencha or other varieties of tea leaves at a very high temperature. This process not only gifts it with a unique taste and aroma but also reduces its caffeine content. Hojicha contains only 20mg caffeine per 100g, significantly lower than black tea or coffee, making it more suitable for the young and the elderly. Koshiga of Mintel said that the growing popularity of hojicha lies in its health benefits, especially in its key components of Theanine and Catechin. Theanine has a relaxing effect while catechin helps to lower cholesterol levels and burn body fat. It is also reported to have an antibacterial quality, which can help to prevent flu.

Coupled with a Japanese market whose consumers are constantly growing in health-consciousness, the conditions are ripe for the success of hojicha products. In fact, hojicha is so popular in Japan now that there is even hojicha-scented perfume.

Is protein about to take off in India? Recent biscuit launches suggest so

By Cheryl Tay 15-Mar-2018 Nutra Ingredients Asia

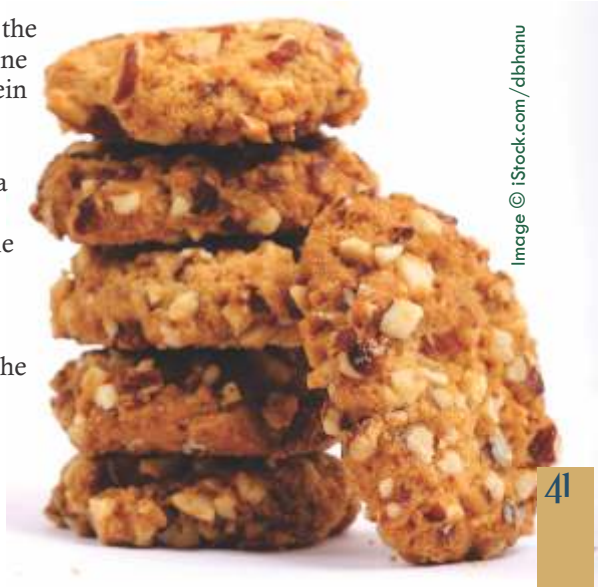
Two major food companies in India are attempting to address the country's issue of protein deficiency with new biscuit launches, with one market expert predicting other firms will soon follow suit.

Malnutrition is an ongoing challenge in India, and protein deficiency is a significant part of the problem. This led ITC and Danone to each launch its own high-protein biscuit products late last year, which, according to market intelligence agency Mintel's India food and drink analyst Ranjana Sundaresan, could "signal that the protein trend is set to take o in India".

One of India's largest players in the biscuit category, added to its range with Protein Biscuits. The biscuits, which come in 150g packets, are said to contain 2.7g of protein per 25g and to help support sustained energy. They are made from cardamom, as well as whole wheat our and roasted chanasattu (Bengal gram flour), the latter of which serves as their protein source. Another company launched multigrain biscuits meant for busy consumers needing nutritious snacks. According to them, these not only contain 8g of protein per 25g serving, but also 26 essential nutrients. The protein comes mainly from soy and casein, and the biscuits are said to help retain energy levels and meet daily nutritional needs.

Mainstream advantage

Such launches so far have come mainly from smaller brands that cater to specific demographics, such as athletes and other physically active individuals.Sundaresan said these launches from mainstream brands could "make the products widespread in terms of availability and increase awareness of their nutrients, opening up opportunities for high-protein snack foods in the country", and set the trend for other major firms to follow suit. This has encouraged the company to drive growth in the nutrition sector, especially with protein: from January to October 2017, it launched nine such products, including a high-protein Greek yogurt, a protein-rich health drink, and the biscuits.



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For consumers, this means protein-rich supplements are getting more accessible, and the more common such products become, the more affordable they will be. Sundaresan said: "Biscuits have a near-complete penetration in India and are a very popular snack. They also have high association with convenience and health. "This (high-protein) claim will see growth in the coming years and become mainstream in the long term — as it has across APAC — as consumer awareness grows in India about the different ways that protein is beneficial to health."

High deficiency, low awareness

Many in India remain unaware of the country's prevalence of protein deficiency. Sundaresan said, "While the current focus is on micronutrients, many consumers are also deficient in macronutrients like protein. A number of recent studies show that the majority of Indians are deficient in protein, and many do not even understand its importance in their diet. This is worsened by the large number of vegetarians and the skew towards carbohydrates in the standard Indian diet, driven by easy access to cereals through the public distribution system."

A study published in the Journal of Nutrition showed that despite the availability of high-quality protein food, its consumption remained low across all income groups. On the upside, the number of products launched with added protein or high-protein claims doubled from 2013 to 2017, indicating increasing consumer interest."Brands are starting to address this issue and launch products featuring a high-protein positioning. As awareness grows of the importance of protein, greater demand for convenient sources and formats of protein can be expected," added Sundaresan.

Meat-enriched ice cream? Scientists explore unexpected formats for older consumers

By Stephen Daniells 28-Feb-2018 - Food Navigator USA

Reconstructing meat and presenting it in unexpected formats like ice cream, chocolate, and yogurt may help older consumers consume adequate levels of protein and other nutrients, says a new study.

The global population is aging. According to the National Institute on Aging (NIA) at the U.S. National Institutes of Health, 8.5% of people in the world in 2015 were aged 65 or older, and that will grow to 17% by 2050. This demographic group, with its unique physiological and nutritional challenges, present opportunities for industry in terms of food development, explained scientists from New Zealand-based AgResearch Limited, the Auckland University of Technology, and Sport Waikato in the new paper published in the journal Food Research International.

The challenge is to create, revise and re-imagine products that elders could readily consume to meet nutrition requirements and address some of the common ailments associated with aging, such as loss of muscle mass and strength. The scientists experimented with incorporating meat-derived ingredients into a range of formats, including bread, spaghetti, ice cream, yoghurt and chocolate. Presenting meat in unexpected formats under new product categories will undoubtedly encounter technical, commercial and cultural barriers, but the opportunities are substantial, they said.

Formats and formulations

Meat-enriched prototypes were found to have significantly higher protein contents, versus the non-enriched versions. Unsurprisingly, the colour of the products was also darker. Sensory tests with consumers revealed that the overall liking or acceptability of the bread, spaghetti, and flavoured ice cream were unaffected by the incorporation of meat, but the non-flavoured ice cream and yoghurt were less successful.Good results were also obtained for the meat-enriched chocolates with 75% of the 40 panellists tested stating they either loved or slightly-liked them.

We have demonstrated simple ways by which meat can be incorporated into familiar foods, they wrote. The results are limited and preliminary in nature, but suggest the potential such products have to help elderly and other consumers meet their nutrition requirements. While many food ideas are possible in the laboratory, not all are practicable, and product development becomes increasingly expensive as it advances towards commercialisation. Therefore, future research should always start from a fundamental understanding of meat science, about how meat is structured and can be deconstructed, about how muscles, tissues and breeds of animals differ, and about how livestock farming and the meat industry can supply raw materials suited to these new, non-traditional, non-commodity applications.

REGULATORY NEWS

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FDA Releases Guidance on Dietary Fiber and Added Sugars

Nutraceuticals World 03.05.18

The U.S. Food and Drug Administration released several guidance documents related to the Nutrition Facts label final rule, including a final guidance explaining how the agency evaluates the scientific evidence supporting citizen petitions to add certain isolated or synthetic non-digestible carbohydrates to the regulatory definition of dietary fiber.

The FDA published the Nutrition and Supplement Facts Label Final Rule on May 27, 2016. In the rule, the agency established a definition for the term "dietary fiber" to ensure that only fibres with a beneficial physiological effect on human health could be declared as dietary fiber on the food label.

That definition includes naturally occurring fibres like those found in fruits, vegetables, and whole grains, and seven isolated (i.e., extracted from plant sources) or synthetic non-digestible carbohydrates (NDCs), each having a physiological health benefit.

A manufacturer may submit a citizen petition for FDA's consideration to add a given isolated or synthetic NDC to the FDA's regulatory definition of "dietary fiber." The citizen petition should provide scientific evidence that shows the NDC has a beneficial physiological effect on human health.

This final science review guidance will help petitioners understand the level and type of evidence needed to demonstrate whether an NDC has a physiological effect that is beneficial to human health. Such data should be submitted as part of any citizen petition seeking to add a NDC to the definition for dietary fiber.

Reducing the rise in blood sugar or glucose levels after people consume a food or beverage would be an example of a physiological effect that is beneficial to human health.

In the final guidance, the FDA clarifies that in order for a study to assess whether an NDC reduces blood glucose and/or insulin levels, the NDC should be added to a food or beverage containing sugar or starch and should not replace any sugars or starches since those refined carbohydrates cause the rise in blood glucose levels.

It is also important that the NDC is added to a food or beverage with the same amount of sugar or refined carbohydrate as in the food or beverage that is provided to the study's control group.

In a change from the draft science review guidance, the FDA intends to consider evidence from studies with subjects who have a disease that is associated with the beneficial physiological effect of interest (e.g., lowering blood sugar and/or insulin) in considering whether the research supports a finding that an NDC may have a beneficial effect in "healthy" individuals who do not have the disease.

The FDA is moving forward now to respond to citizen petitions requesting that the agency include additional NDCs in the regulatory definition of "dietary fiber," to finalize the rule regarding the compliance dates for the Nutrition Facts label rules, and to issue several additional technical guidance documents related to nutrition labelling.

In addition to the final science review guidance, the FDA issued a draft guidance about the declaration of added sugars on honey, maple syrup, and certain cranberry products; a final guidance about the labelling of honey and honey products; a final guidance about reference amounts customarily consumed (RACCs); and a small entity compliance guide for the Serving Size final rule.

New sports nutrition regulations released in India amid doping crackdown

By Cheryl Tay 26-Mar-2018 Nutra Ingredients Asia

Sports nutrition regulations are set to be tightened in India after the Food Safety and Standards Authority of India I issued anti-doping guidelines for sports.

Both online and offline manufacturers and retailers will be subject to regulation to ensure that over-the-counter sports nutrition products sold in India do not contain illegal performance-enhancing substances.

The FSSAI has published a document on the new guidelines, which details requirements for manufacturers and retailers when it comes to registration, licensing, labels, claims and traceability.It is mandatory for these companies to comply with the World Anti-Doping Agency's (WADA) methods, which are revised annually. Representatives from India's Narcotics Control Bureau (NCB), NADA, and the Sports Authority of India (SAI) worked with the FSSAI to help develop the final guidelines, which are now open to consultation.

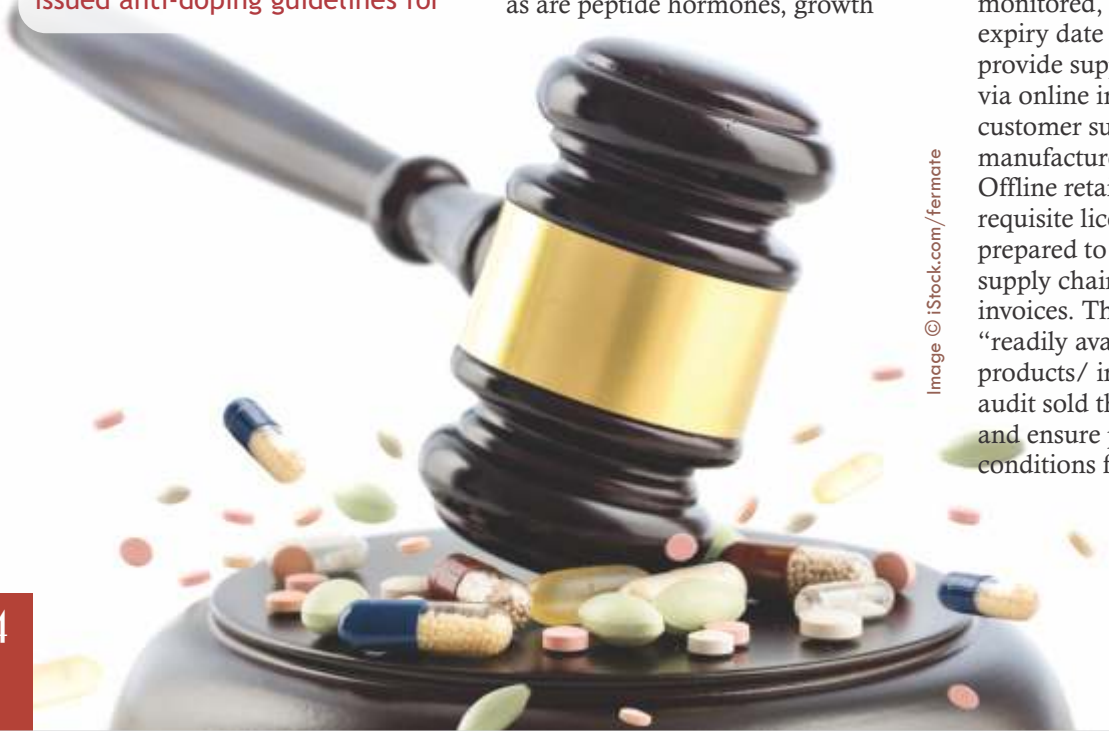
The document states that pharmacological ingredients not approved by "any governmental regulatory health authority for human therapeutic use", (such as discontinued drugs, drugs under pre-clinical or clinical development, and substances approved solely for veterinary use) are "prohibited at all times". Anabolic agents, such as androgenic steroids, are prohibited, as are peptide hormones, growth factors, gluco-corticoids, beta-blockers, and hormone and metabolic modulators.Most diuretics, as well as all cannabinoids except cannabidiol are also prohibited.

There are, however, what the document refers to as TUEs (Therapeutic Use Exemptions), whereby a supplement containing a prohibited substance (or its metabolites or markers), or its consumption, possession or administration, may not be considered a violation of anti-doing regulations.This applies if the supplement or its consumption, supplement or administration are in accordance with WADA's TUE provisions.

Labels and licences

In addition to registering with or obtaining a license from the FSSAI, sports supplement manufacturers are required to adhere to specific labelling rules.Their products must be labelled as "intended for sportspersons", and must carry the disclaimer that they are "not recommended for infants &children", as well as the declaration that they do not contain any prohibited substances as per WAA. The FSSAI will also audit manufacturing facilities periodically.

Online retailers will also be closely monitored, and must state the expiry date of their products, provide supply chain information via online invoices, offer "dedicated customer support", and display manufacturers' licences online. Offline retailers must have their requisite licences on hand, and be prepared to provide information on supply chain traceability via retail invoices. They must also have "readily available records of the products/ inventory for inventory audit sold through retail outlets", and ensure proper storage conditions for all products.



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A persistent problem

In 2015, a WADA report listed India as the world's third biggest doping violator (after Russia and Italy), after 117 of its athletes failed their drug tests.

In September that year, the FSSAI signed a five-year agreement with the National Anti-Doping Agency (NADA) to install facilities in its laboratories to test for the restricted or illegal substances in food and nutritional supplements. It was reported in 2017 that the Indian government was discussing a new legislation to make athletic doping a criminal offence, with the proposed law applicable to manufacturers, suppliers, and sports coaches.

Last August, the All India Council of Sports president Vijay Kumar Malhotra called attention to the prevalence of athletic doping in the country last August, and revealed he had also approached the FSSAI to discuss the issue.

In addition to stricter legislation against prohibited substances in sports nutrition products, as well as athletic doping, he proposed more widespread and improved education on doping, as many athletes tend to take over-the-counter supplements without knowing enough about their ingredients.

FDA issues guidance on added sugar, dietary fiber, serving sizes

By Elaine Watson 01-Mar-2018 – Food Navigator USA

The FDA has unveiled guidance on added sugars, serving sizes and dietary fibers to help manufacturers implement the new Nutrition Facts label, and says it's working on a plan to incentivize manufacturers to make healthier products and "provide consumers with helpful tools to make healthy food choices, including clarity on food label claims."

The agency will also unveil an education campaign to promote the new-look Nutrition Facts label - coming into effect for large companies In January 2020 and smaller ones in January 2021 - which will include "educational videos, social media campaigns and user-friendly websites," said FDA commissioner Dr Scott Gottlieb.

The campaign will be "timed to begin when the updated labels are fully implemented in the marketplace," added Dr Gottlieb, who plans to issue a final rule on the label in the spring.

Honey, maple syrup, cranberry products

In the added sugars draft guidance - the FDA clarified its position on honey, maple syrup and certain cranberry products following feedback from stakeholders, said Dr Gottlieb.

"While honey and maple syrup meet the definition of added sugars, we heard concerns from industry that declaring added sugars on their single ingredient products may lead consumers to think their pure products – such as a jar of honey or maple syrup – actually contain added table sugar because added sugars are listed on the Nutrition Facts label.

We also heard from cranberry juice manufacturers that their products need to be sweetened for palatability ... "

To address these concerns, FDA proposes that manufacturers use a '†' symbol immediately after the added sugars daily value, directing consumers to a statement* on pack "that provides truthful and not misleading contextual information about 'added sugars' and what it means for each of these specific products."

* Manufacturers could explain, for example, that no sugar was added to the pure honey or pure maple syrup or that the sugar added to dried cranberries or cranberry juice "is meant to increase the palatability of the naturally tart fruit and that the amount of total sugars per serving is at a level that does not exceed the amount of total sugars in a comparable product with no added sugars."

What a honey label might look like in future

Nutrition Facts

16 servings per container

Serving size **1 Tbsp. (21g)**

Amount per serving	
Calories	**60**
	% Daily Value*
Total Fat 0g	**0%**
Saturated Fat 0g	**0%**
Trans Fat 0g	
Cholesterol 0mg	**0%**
Sodium 0mg	**0%**
Total Carbohydrate 17g	**6%**
Dietary Fiber 0g	**0%**
Total Sugars 17g	
Includes 17g Added Sugars	**34%†**
Protein 0g	
Vitamin D 0mcg	0%
Calcium 0mg	0%
Iron 0mg	0%
Potassium 0mg	0%

* The % Daily Value (DV) tells you how much a nutrient in a serving of food contributes to a daily diet. 2,000 calories a day is used for general nutrition advice.

† All these sugars are naturally occurring in honey.

Dietary fibres

When it comes to dietary fibres, the FDA is still in the process of pinning down whether certain non-digestible carbohydrates the food industry has become accustomed to describing as dietary fibres should really be classified as such for regulatory purposes, said Dr Gottlieb.

Guidance issued this morning, however, guides industry on "how to meet the new standards before we make final decisions on these petitions [submitted by industry calling for the FDA to recognize multiple non-digestible carbs as dietary fibres]," he explained.

"We'll give petitioners who may want to add information to their petition the opportunity to revise those lings based on the more detailed guidance."

Among other things, when reviewing scientific data submitted by petitioners, the FDA "intends to evaluate whether the scientific evidence supports a beneficial physiological effect to the general U.S. population [as opposed to a small sub-group]."

As to whether it will consider studies on diseased populations as opposed to healthy populations, the FDA said it would "consider evidence from studies with subjects who have a disease that is associated with the beneficial physiological effect of interest when extrapolating to individuals who do not have the disease is scientifically appropriate."

It will also consider studies on 'at risk' populations, for example people at risk of developing heart disease or type 2 diabetes because they have elevated LDL cholesterol levels, metabolic syndrome, or abnormal glucose tolerance tests.

Serving sizes

In final guidance on serving sizes, meanwhile, the FDA listed appropriate reference amounts customarily consumed (RACC) for a variety of products to help manufacturers determine appropriate serving sizes to include on product labels.

Under the final rule, regardless of the size of the RACC, all products that are packaged and sold individually and contain less than 200% of the applicable reference amount for that product must be labelled as a single serving container.

For example, the serving size for beverages will be 12oz (instead of 8oz today), so if you have a beverage that is in a 23oz can, it counts as one serving.

'Clarity' on food label claims to come?

In a statement accompanying the documents issued this morning, Dr Gottlieb also hinted at other changes to come:

"In the weeks ahead, I'll provide more details on a nutrition strategy to reduce preventable death and disease through better nutrition.

"This effort will … provide consumers with helpful tools to make healthy food choices, including clarity on food label claims, and will create incentives for food producers to manufacture products that are healthier."

CSPI: Earlier compliance date is 'realistic and achievable'

The Center for Science in the Public Interest welcomed the publication of the guidance documents, which special projects director Jim O'Hara said were "largely reasonable and scientifically sound," but urged the agency to re-think its plan to delay compliance dates to 2020/2021.

He added: "The guidance should cause the agency to re-think its proposed delay of the upgraded Nutrition Facts label. With today's release of the guidance, a July 2019 compliance date for all companies for the updated Nutrition Facts label is both realistic and achievable."

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HEALTH BITES

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Nutrition trending: How social media is pushing the nutrition agenda

08 Mar 2018 Nutrition Insight by Lucy Gunn

As a means to stay in touch with friends, old and new, or to stay abreast of the latest developments in the world, social media is opening up new opportunities for people to interact with the (virtual) world around them.

Popular platforms such Instagram, Snapchat and Facebook are taking up an increasingly pervasive place in the average consumer's life. NutritionInsight looks at how social media is influencing consumers when it comes to nutrition, and how the industry can benefit.

According to a 2017 Innova Market Insights consumer study, novelty and variety are key drivers in the purchasing behaviour of one in ten European (Germany, UK, France, Italy and Spain) and North American (US and Canada) consumers. Social media is a key component of this. One in ten consumers from Mexico, US, Canada, Spain, Netherlands and Australia are influenced by social media in their food and beverage purchases. In China and India, that number rises to one in five.

"Instagrammable" food is becoming increasingly vital to Millennials, so the time for visually appealing foods has arrived, notes Lu Ann Williams, Director of Innovation at Innova Market Insights. "People do fantastic Pinterest pages, for example, all color-coded or highlighting really interesting things like this."But when it comes to food and beverages, social media's reach stretches beyond sharing attractive pictures of well curated meals. "Nutrition and healthy lifestyle influencers love to build a community and one way that they do this is by encouraging their followers to join them in various health or fitness challenges," says Erin Quinn, Manager Media & Social at Foodmix Marketing Communications.

"More than ever, diet trends have a reach that expands further than before. It used to be that a diet guru wrote a book, did a publicity tour and maybe friends and family would share the book/information," says Jenna A. Bell, PhD, RD, Senior Vice President of Pollock Communications and Director of Food & Wellness. "Now, you can access recommendations and information about diet trends from 'friends' through social channels. And it gives people the opportunity to promote their own diet plan and share their success stories. It has taken the art of testimonials to another level with frequent photos, journal-type posts, recipes and meal plans."

So, how can the food and beverage industry best benefit from social media?

Social media offers an unprecedented amount of interaction with consumers, both Bell and Quinn note. Applications such as Instagram are a great platform for reaching potential health-conscious fans, especially if a brand is able to capitalize on trending diets and ingredients. "A quick search on Instagram shows just how popular diet hashtags are on the platform: #Whole30 (>3.4 million), #Paleo (>11.9 million), #Vegan (>55 million), and #Protein (>19 million) all have significant usage. If you have a brand that's relevant to these and other trending diet and health hashtags, it's definitely something to keep in mind when developing content," Quinn notes.

"At Foodmix Marketing and Communications, we often work with chefs to develop recipes for our clients to use on their websites, sales materials, social media, etc., and we have sometimes specifically asked the chefs for recipes that we believe will be 'social media friendly,' like one-pot meals or Whole30 because we know that people will be searching for these types of recipes," Quinn adds. But using the right hashtags isn't enough alone, you also need strong content (visually appealing, informative, etc.), Quinn adds.

Influencers

Another frequently seen strategy of using social media to appeal to certain audiences revolves around partnering with established health and nutrition influencers, such as athletes or popular bloggers, and creating on-trend content, Quinn notes. "If you are marketing, say a protein bar, your influencer team might include people like a nutritionist, a marathoner, a Pilates instructor and a busy mom who can each speak to how the protein bar fits into their active lifestyles," Quinn notes.

"We recently worked with an influencer who does a Whole30 challenge every January and ties that into her content for the month. Our client, a coffee and tea company, was located in this influencer's hometown and we had worked with her previously, so it was a natural fit to partner with her to communicate our client's healthy lifestyle messaging to an audience that was looking for that type of content," Quinn adds.

A great example of a success story amid this new social media era is Halo Top Ice Cream. In the five years since the introduction of the low calorie ice cream in the US, Halo Top Creamery has spent almost nothing on advertising. Instead the company has relied on a social media strategy that has attracted over one million followers.

An important part of that strategy is Instagram, where the company had 557,000 followers as of the end of August 2017, up from 325,000 in March. Halo Top's Instagram account features image after image of its carton pints swimming in melted swirls of vibrant oranges, purples and browns.

"On a daily basis, brands have access to their own focus group. They can answer questions, respond to feedback and create relationships that fuel brand loyalty. On the flipside, their critics have a voice and platform as well. Thus, the industry needs to be prepared to respond to negativity in a way that won't cause more harm than good," notes Bell.

This is where social media shows its potential to become a double-edged sword: while these platforms can rapidly spread opinions and news – be it positive or negative – about certain ingredients, products or diets, they are also a razor-sharp tool for companies to directly communicate with consumers. In fact, according to Sproutsocial, an impressive 71 % of US businesses use Instagram, while 81 % of Instagram users "follow" a business on the social media platform.

Drawbacks?

Although social media platforms can function as a convenient way for businesses to establish direct contact with consumers, it is important that those consumers, in turn, do their due diligence with the health/nutrition advice they read online, Quinn notes.

"Is this person a registered dietitian/nutritionist or just someone with a pretty Instagram account who happened to read a book on healthy eating? Not to say that there's anything wrong with the latter, as they can offer the point of view of a 'regular' person trying to live a healthy lifestyle and some of the associated challenges with that, but it is important for consumers to be aware of an influencer's qualifications so that they can make informed decisions," she says.

Back in 2014, Janet Helm, MS, RD, Chief Food and Nutritionist, Weber Shandwick, wrote an article for WebMD on how social media could be a tremendous help to achieve a healthier lifestyle. However, with the increased popularity of popular platforms, Helm notes the link between nutrition and social media has become more complicated. "Now I feel like it's harder to sort through the hype and the misinformation," notes Helm, who is also a blogger at Nutrition Unplugged and co-founder of Nutrition Blog Network and Healthy Aperture. "There's been a new crop of 'healthy eating gurus' that take the approach of 'eat like me, look like me.' They don't have any nutrition credentials, but they encourage their readers to simply do what they do – which isn't always good advice."Still, it is not all negative, Helm notes, as social media trends also push forward healthy eating patterns.

"One of the most positive trends in social media is the plant-forward movement. Food and nutrition bloggers are inspiring the public with craveable, innovative recipes that make vegetables, whole grains, legumes and nuts as the centre of plate star," she notes. With consumers becoming more mindful about their lifestyle choices and finding new avenues to learn about food and diets via the Internet, social media is sure to function as a vital tool for businesses and industry to inform and educate consumers on all things new in the world of nutrition.

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