JUN 2019

PFNDAI Bulletin

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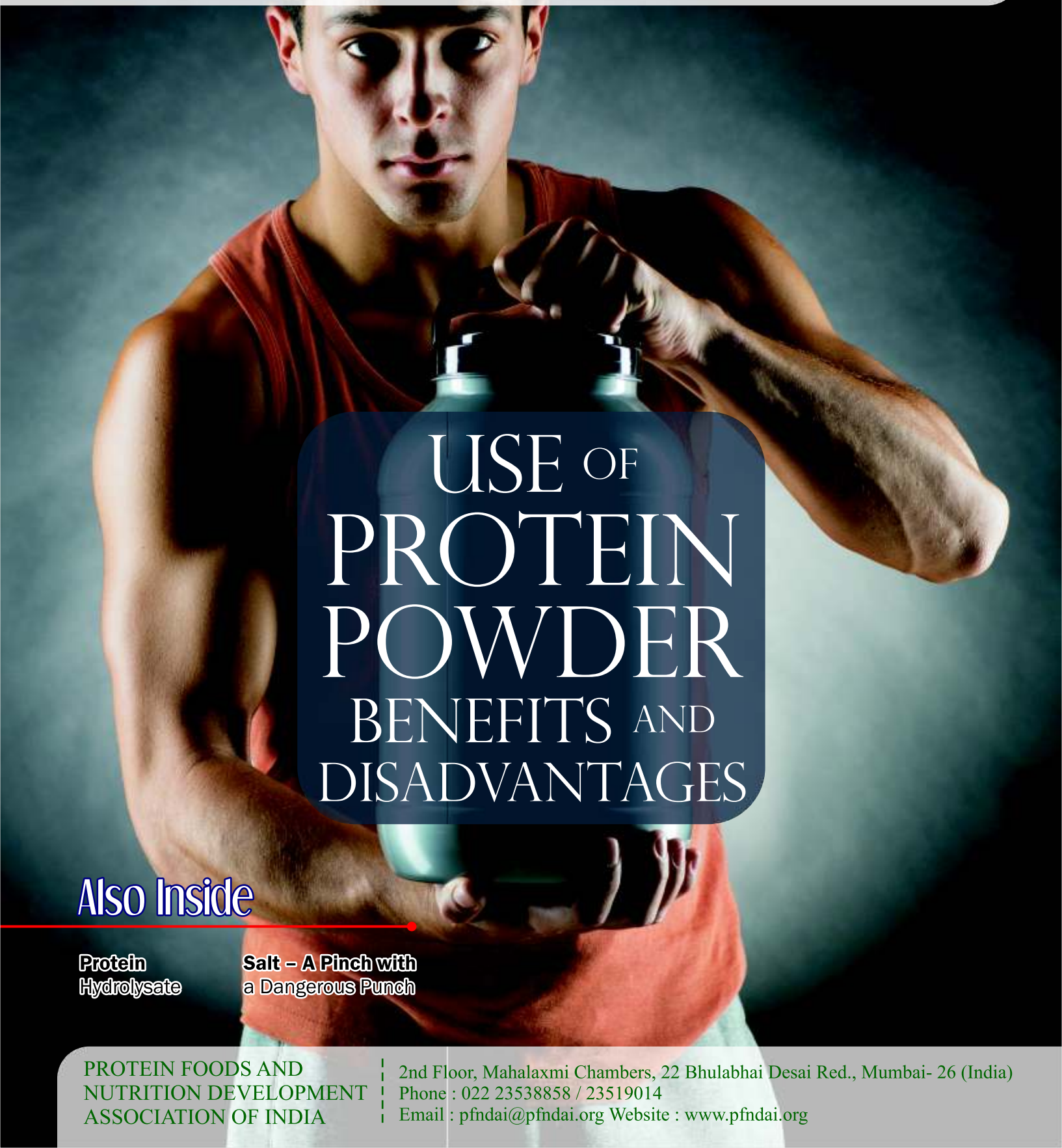
FOOD, NUTRITION & SAFETY MAGAZINE



USE OF PROTEIN POWDER
BENEFITS AND DISADVANTAGES

Also Inside

Protein Hydrolysate

Salt – A Pinch with a Dangerous Punch

PROTEIN FOODS AND NUTRITION DEVELOPMENT ASSOCIATION OF INDIA

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EDITORIAL

At one time regulators were mulling of making 10,000 or more standards of food products. Later on they realised it was futile and was resisted by all. However, they probably did not want industry to just make some proprietary foods and start marketing it. Thus there was product approval. When this was struck down, there is Non-Specified food and ingredients. In short, there is some reluctance to let foods and ingredients with no standards alone.

The regulators should realise that standards are to be made only when there is a need for it.

If we consider say chutneys, as one of the knowledgeable regulatory expert has been saying for years, there are no standards for it except for fruit chutney. In India, we have literally thousands of chutneys made from all kinds of ingredients including coconut, pulses, coriander, and many other spices and herbs but there has been no safety problem. We may just leave it as it is unless some safety or quality problem appears on a large scale.

Ice creams have standards based on fat content. Products with less than 10% milk fat could not be called ice cream. Also when some products started appearing in market with similar characteristics and with vegetable fat, there was another standard notified namely frozen dessert. These standards are prepared as there was a need for it.

Similarly certain additives were permitted as others were unsafe. Even the once permitted have maximum limits of usage as higher levels were unsafe. Microbiological standards are notified because certain microbes were either unsafe at any or certain levels. These are safety standards.

Similarly certain ingredients such as salt, sugar and fat at excess consumption levels would be undesirable in the long run and would cause non-communicable diseases so there were some norms of labelling notified because there is now need for this.

It is not possible to list all the permitted additives and ingredients in any regulation. There will always be some such ingredients that would be used in a food product which has been used locally for a long time but may not appear in any standard. Asking manufacturers to take approval for that would amount to the same urge as mentioned above namely trying to control everything.

Making standards is just one of many functions of a regulator. There are many other things that need to be monitored. Extent of enforcement needs to be monitored and analysed especially in the area where safety is the issue. There are vague statements being made about how much of adulteration exists.

There must be systematic approach to monitoring and making the data public so not only the industry is alert but also safety officers know where monitoring is necessary. This would go a long way especially when newer categories of products are permitted and ingredients are botanicals which have such great natural variation that standardisation would be extremely difficult.

However, it still needs monitoring both from quality point of view as consumers will not be able to tell whether genuine ingredients have been used. Also when some botanicals may be unsafe if there are contaminants or if the active ingredient is present at excessive levels. As many such new products would be entering original approval should be accompanied by monitoring of such products from safety point of view. This would go a long way not only ensuring high quality products entering the market but also will keep unsafe or fake producs away.

Prof Jagadish Pai,
Executive Director,
PFNDAI

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USE OF PROTEIN POWDER BENEFITS AND DISADVANTAGES

By
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Healthy diet with foods meeting our requirement on daily basis are needed for good health and disease prevention.

Proteins : Need of our body

Protein is a structural molecule assembled out of amino acids, many of which your body can't produce on its own. Animal foods are usually high in protein, providing all essential amino acids . Proteins are a part of every cell, tissue and organs in our bodies. These body proteins are constantly being broken down and replaced. Body does not store protein for later use. Therefore consuming adequate high quality of protein is important. Daily requirement of protein is 0.8 – 1.2 gm / kg body weight. If there is inadequate protein in diet, body will break down lean body mass to compensate for poor oral intake.

You need protein for your muscles, bones, and the rest of your body. Exactly how much you need changes with age:

- Babies need about 10 grams a day.
- School-age kids need 19-34 grams a day.
- Teenage boys need up to 52 grams a day.
- Teenage girls need 46 grams a day.
- Adult men need about 56 grams a day.
- Adult women need about 46 grams a day (71 grams, if pregnant or breastfeeding)

You should get at least 10% of your daily calories, but not more than 35%, from protein, according to the RDA (ICMR) Recommended Dietary Allowance.

Need of Supplement ?
Healthy diet has no substitute. In healthy diet protein has a great significance.
Dietary proteins to achieve the recommended goals are difficult to achieve at least in a Grain eating diet like India where milk , curd, paneer, pulses and legumes are eaten with cereals and grains for vegetarians. Non- Vegetarians need to include home cooked non- veg at least 400 gm / week. And eggitarians 1 whole egg /daily (whole egg can be had three times a week. Still vegetarians manage to reach 40 gm /daily (by good amount of protiens inclsuions) and non – veg 60 gm (with maximization of home cooked non-veg / egg) . Many times it is not possible to have adequate proteins in diet hence the supplements. The goal of supplement is to manage the protein deficiency which cannot be achieved through only diet.

In weight management the goal is to loose fat and hence the proteins needs to be adequately planned to avoid muscle mass. Dietary goals need support of proteins hence the supplement are prescribed. Various supplements available in the market are all PDCASS 1 proteins which means they have complete amino acid profile.


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They are expensive as the processing, filtration and creating complete amino acid profiling are involved. Essential amino acids needs to be supplied in diet. Ingested proteins when absorbed and converts in to amino acid pool which gets transported and absorbed as per body's requirement.

Proteins in diet needs to be calculated and assessed before going for supplements. Deficient protein than should be made up with supplements. Depending on exercise, weight loss, age, sex, daily dietary goals proteins needs to be calculated as 0.8-1.2 gm / kg body weight. Only high protein and poor carbohdyrates will not allow the dietary goals of proteins to be fulfilled. Proteins will be used for energy than body building. We need complex carbohdyrates like fruits, whole grains, millets etc for good source of energy.

Advantages of Protein Supplement:

Many times due to indigestion, bloating, gases, inconvenience and non compliance to protein intake it is advised to have protein supplement intake. While the benefits of protein supplements don't measure up to those you'll get from real foods, they are a close second place. In combination with balanced eating and a fitness plan, protein supplements can help you lose weight, put on lean muscle and satisfy your daily nutritional requirements.

Weight Loss

According to research published in "The American Journal of Clinical Nutrition" in 2008, protein is more satiating than either fat or carbohydrates. That means protein supplements may be effective at making you feel full with fewer total calories than foods rich in carbohydrates or fats..

Muscle Gain

Protein supplements can also help when you're trying to gain lean muscle. A study published in 2001 from St. Francis Xavier University's Department of Human Kinetics found that participants who used whey protein supplements showed greater improvement in strength performance and muscle mass gain after six weeks than subjects who received a placebo.

Nutrition:

If your diet lacks high-quality sources of protein, taking supplements will allow you to get the nutrients you need. The Centers for Disease Control and Prevention recommend that adult women get at least 46 grams of protein daily and adult men get at least 56 grams. By eating meat, fish, eggs, dairy products, whole grains, beans, legumes, nuts and seeds, most Americans have no trouble meeting those requirements. Vegans and athletes building muscle may need extra protein, which they can find in supplements.

Considerations/ Limitation of Protein Supplement:

Using protein supplements presents risks as well as benefits. If you regularly exceed your daily protein requirements on a long-term basis, for example, you may experience an elevated risk of diverticulitis, nutrient deficiencies and heart or kidney problems. Taking supplements in addition to following your regular diet also adds calories, which may lead to weight gain that will not necessarily be in the form of muscle. Before you begin using supplements, get approval from your doctor or a registered dietitian.

Most common types of Protein shakes in market are Whey, Caesin and Vegetables proteins like Pea, Soy etc.

a. Whey Proteins are made from separating milk protein ie. Casein. Water remaining after making curd/ paneer / cheese has whey and the protein is processed in the same. Whey proteins are broken down in three categories concentrate, isolate and hydrosylate. Concentrates is a high heat drying process and acid extraction to lessen the whole food source into concentrated protein powder. It is reasonably priced. They are 60-70% protein by weight. It has 5% carbs, 3 gm fat / serving and also lactose. Isolate: It is filtered through different process to concentrate and carbs and fats are removed. Protein is 90% . It has negligible fat, carbs and zero amount of lactose. It is expensive than concentrate. Hydrolysate: It is filtered through again. It is 95% protein and is fast absorbing. It contains digestive enzymes which can help these proteins to digest. It is most expensive.


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52% DHAAKAD PROTEIN

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

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

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*Source: The Times of India, July 2017

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b. We also get whey protein supplement in the market with 40% protein. These also give us protein which are mostly concentrates. They can be used to supplement with adequate amount of proteins as per requirement. 30 gm of these protein supplement give 12 gm of protein . Where as 80-95% of Whey protein supplement gives 22-25 gm of protein. How much protein in a day depends upon your existing diet and exercise level.

Diet proteins can be topped up with supplements to match requirements but it should healthy target which suits your weight and exercise levels.

c. Vegetables Protein Supplements are also a great source of proteins. It has its own advantages of being lactose free and antioxidant rich. Depending on the type of processing they come in concentrate and isolate form. It can be had regularly. They don't blend very well with milk/ water and not very great on taste. They can give good support to the dietary protein to make up for deficiency of protein intake. Studies support plant protein can build muscles just as any form of proteins.

When to take supplements?

You can replace one or two meals during the day with healthy proteins supplement. Take supplement after exercise. Balanced low calorie meal with healthy snacks options and adequate proteins in diet will help in good weight loss with fat loss and lean body mass preservance. If looking for increased protein intake with mass gain and fat loss, 2 shakes a day is enough for making up protein requirement one after exercise and one before bed time.

Protein bars have increased amount of sugar which should be carefully checked as it may not help in weight loss.

Selection of protein formula can be based on individuals digestion capacity and protein goals. Every supplement which has PDCASS 1 (protein digestibility Complete Amino Acid Score) is a good protein and high biological value protein. Plan diet and protein goals with the help of expert who understand food science, dietary goals and bodys requirement. Registered Dieticians help you to understand and help you to choose good supplements. Increased protein intake is a matter of concern of extra load of protein digestion on our body. Protein requirement is to be individualized, calculated and implemented through diet and if need arises supplement.

References:

1. Kathleen M. Zelman, MPH, RD, LD on November 12, 2018
2. J Diet Suppl. 2018 May 4;15(3):365-371. doi: 10.1080/19390211.2017.1353567. Epub 2017 Sep 22. Protein Supplements: Pros and Cons.
3. J Exerc Rehabil. 2017 Aug; 13(4): 436–440.Published online 2017 Aug 29. doi: 10.12965/jer.1735034.517 PMCID: PMC5667622 PMID: 29114510. Effect of timing of whey protein supplement on muscle damage markers after eccentric exercise
4. Int J Sport Nutr Exerc Metab. 2010 Oct;20(5):409-17. The influence of 8 weeks of whey-protein and leucine supplementation on physical and cognitive performance. Walker TB1, Smith J, Herrera M, Lebegue B, Pinchak A, Fischer J.
5. http://ninindia.org/DietaryGuidelinesforNINwebsite.pdf


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PROTEIN HYDROLYSATE

By

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Proteins are building blocks of the body. A protein molecule unlike other macromolecules consists of carbon, hydrogen, oxygen, nitrogen. It may also contain sulphur and phosphorous. It is formed by amino acid chains, which are major structural component of the human body. Proteins are used to produce an array of hormones, enzymes. Dietary proteins are raw material for numerous anabolic (body building) processes. Therefore, proteins form integral part of the diet.

They are considered as one of the popular and effective ergogenic aids. High protein diets not only play a key role in the athletic population but also are an essential part of general population, especially with respect to weight loss programmes and certain clinical conditions. Dietary sources of proteins are animal sources; meat, fish, poultry, milk and milk products, Vegetarian sources; cereals, pulses, nuts. The other non- traditional sources of proteins in today's diets come from nutritional supplements. There are many varieties of nutritional supplements which provide different quality and quantity of proteins.

Types of protein supplements

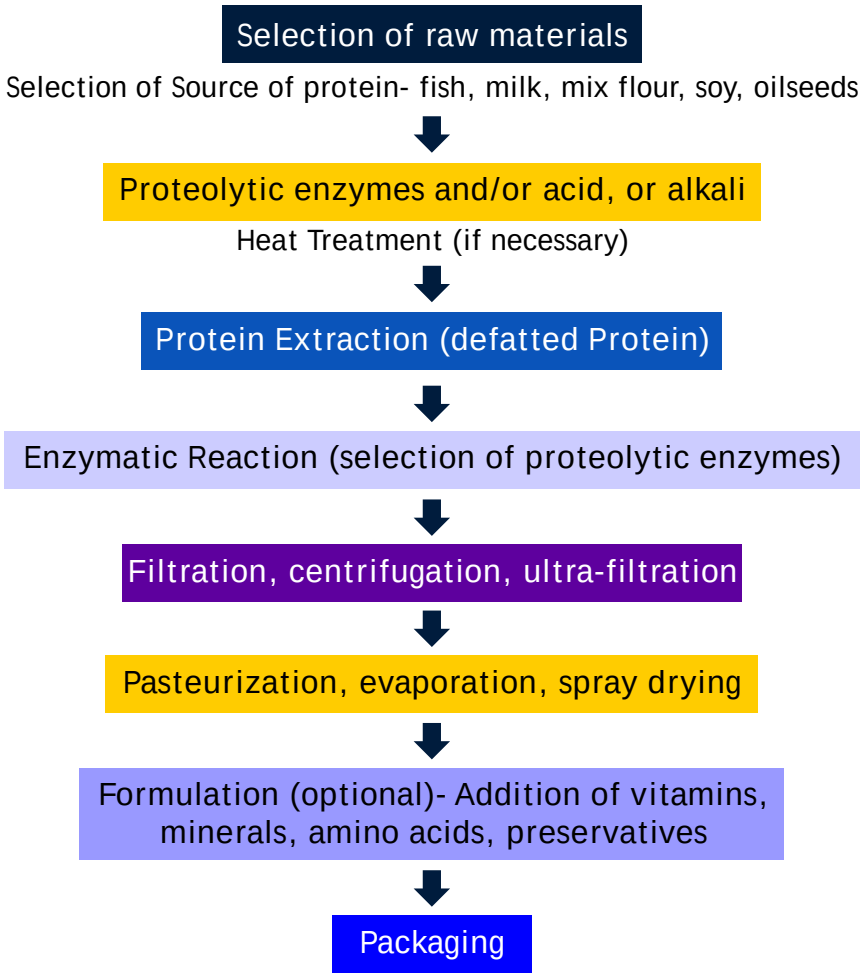
Protein isolate, protein concentrate and protein hydrolysate are one of those types of supplements, which are the most preferred ones due to its quantity and quality of proteins. Determination of the quality of protein is assessed by source of protein (dietary), digestibility, amino acids composition, availability and absorbability of amino acids(1). In the protein isolate and contrate form of supplements, proteins are present in the intact form. In these, non - protein components like carbohydrates and fats are removed at various degrees using different processes.

Protein Hydrolysate Protein can be hydrolysed, to small chains of amino acids called peptides. Protein components are subjected to the process of hydrolysis either by exposing it to heat, acids or enzymes. This process of hydrolysis mimics the digestive actions of gastrointestinal tract. Thus, making it an ideal way to metabolise proteins (3). They are more absorbable than free form of amino acids and more rapidly than intact proteins(2). Protein hydrolysates form of supplements contain mostly dipeptides and tripeptides. They have better digestibility as compared to protein isolate or concentrate form of supplement. Hence, protein hydrolysate supplements are found to be more expensive in the global market.The fundamentalrole of protein hydrolysates in the wide spectrum of biotechnology and food scienceis to provide a source of nitrogenfor laboratory, industrial and commercial purposes (4)

Raw material for protein hydrolysis

The most commonly used animal protein hydrolysates in the food industryare whey, casein and meat obtained from different animals. Plantproteinsources are from soy and wheat. However, recently rice, pea, cottonseed and oilseeds have been introduced in the food industry as raw materials to manufacture protein hydrolysate formulas(5).

Manufacturing Process of protein hydrolysate(4),(7)



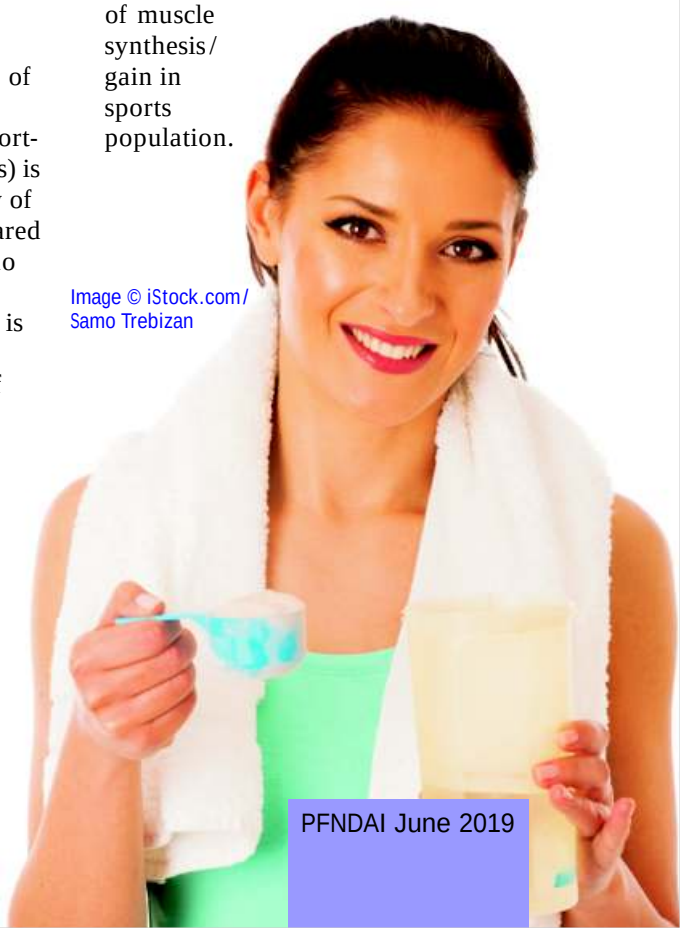
Health implication of Protein hydrolysate in clinical Nutrition

In certain illness or injuries, there is an extensive muscle wasting. This leads to an increased loss of nitrogen of varying degrees, which can be debilitating. In such circumstances an adequate supply of proteins in the form of regular foods by normal feeding route is often not feasible or contraindicated. Therefore, to manufacture different amino acid formulas in the form of protein hydrolysates could be potentially effective as a source of proteins (6)Clinical diets are designed to provide complete, partial or supplemental nutritional support to individuals who have compromised digestibility or absorbability. This puts limitations on patients to consume adequate intake of food in its conventional form. Protein absorption can occur in the form of peptides as well as amino acids. Absorption of amino acids as short-chain peptides(di- and tripeptides) is considered to be an effective way of absorbing amino acids, as compared to the same amount of free amino acids. Development of such commercial protein hydrolysates is a multifactorial phenomenon. Amongst those factors; choice of suitable source of protein, proteolyticenzyme/s and selection of proper hydrolysis process are salient ones (7).Proteinhydrolysates formulas show commercial advantages such as increased shelf life,improved solubility, stability at high temperature and resistance to precipitating agents such as pH, metal ions (8)

Health implication of Protein hydrolysate in Sports Nutrition

Any sports/physical activity with moderate to high intensity increases protein requirements. Sports supplements/ergogenic aids are opted to bridge the gap between intake through diet and requirement. It has been observed that protein hydrolysate (mainly di- and tripeptides) is superior to intact (whole) proteins and free amino acids in terms of skeletal muscle protein anabolism (9). There has been an extensive research conducted on Whey proteins (hydrolysates and isolates) supplementation and its pre/post exercise benefits, due to their higher EAA and leucine content (10)

One of the studies investigated that, 12.5g hydrolyzed soy and whey proteins produced greater responses in terms of plasma levels of the EAAs, BCAAs, and insulin in plasmathan their non-hydrolyzedform(11). Hence, hydrolysed proteins could have a better absorbability than non-hydrolyzed proteins. Thereby, it has positive health implication in terms of muscle synthesis/ gain in sports population.



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Conclusion

It is a common observation that protein intake is insufficient in South-east Asian diet. Hydrolysate protein supplements are beneficial for muscle gain, convalescence and in certain medical conditions, where intact or other forms of proteins are less effective or contraindicated. Protein Hydrolysate has positive health implications. These formulas can be further fortified with vitamins, minerals and other bioactive components, making it more nutritious. Therefore, it has a huge scope in the field of medical nutrition therapy and sports.

References:

(1)Jay R. Hoffmanand Michael J. Falvo,International Society of Sports Nutrition Symposium, June 18-19, 2005, Las Vegas NV, USA - Symposium - Macronutrient Utilization During Exercise: Implications For Performance And Supplementation,J Sports Sci Med. 2004 Sep; 3(3): 118–130.

(2) Anssi H. Manninen, Protein Hydrolysates in Sports and Exercise: A Brief Review, J Sports Sci Med. 2004 Jun; 3(2): 60–63.

(3) Bucci L.R., Unlu L. (2000) Protein and amino acid supplements in exercise and sport:Energy-yielding macronutrients and energy metabolism in sports nutrition. Wolinsky I., Driskell J.A., editors. Boca Raton, FL: CRC Press; 191-212

(4) Vijai K. Pasupuleti and Steven Braun, chapter 2 State of the Art Manufacturingof Protein Hydrolysates, Protein Hydrolysates in Biotechnology, 11DOI 10.1007/978-1-4020-6674-0_2,

(5) Sheffield Product Manual, http://www.sheffieldproducts.com/index

(6)The American Journal of MedicineVolume 3, Issue 4, October 1947, Pages472-485 The use of protein hydrolysates,

(7) Alfonso Clemente, Enzymatic protein hydrolysates in human nutrition, Trends in Food Science & Technology 11 (2000) 254 262

(8) Fox, P.F., Morrisey, P.A. and Mulvihill, D.M. (1982) 'Chemicaland Enzymatic Modification of Food Proteins' in Developmentsin Food Proteins 1 (Hudson, B.J., ed.), pp. 1 60, Appl. Sci. Pub.Inc, New Jersey

(9) Anssi H Manninen, Protein hydrolysates in sports nutrition, Nutrition & Metabolism 2009, 6:38 doi:10.1186/1743-7075-6-38

(10)Jäger et al. Journal of the International Society of Sports Nutrition (2017) 14:20DOI 10.1186/s12970-017-0177-8

(11)Morifuji M, Ishizaka M, Baba S, Fukuda K, Matsumoto H, Koga J, et al.Comparison of different sources and degrees of hydrolysis of dietaryprotein: effect on plasma amino acids, dipeptides, and insulin responses inhuman subjects. J Agric Food Chem. 2010; 58:8788–97

SALT – A PINCH WITH A DANGEROUS PUNCH

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Situation

Salt is ubiquitous in almost every food. A pinch of salt is added to even a sweet dish to enhance the flavor. Study after study has highlighted the importance of lowering salt intake in order to lower health risk but the sad state is that Indians are consuming ~10g of salt per day versus a 5g of salt per day recommendation by WHO. Lowering salt consumption seems to be an insurmountable task despite efforts.

Call to action

Challenges to salt reduction - Is it taste? Is it policy? Is it cost? Is it awareness? Is behavioral change? Looks like every element is at work and efforts needs to be in-coherence.Who's responsible and accountable? All of us and we need to make sustained efforts in our sphere of influence at both individual and professional level to eliminate dangerous punch from a pinch of salt.

Salt

Edible (common) salt is nothing but a crystalline material with > 98% sodium chloride (NaCl) and available in white granular or powder form. There are many variants of salts such as sea salt, rock salt, vacuum evaporated salt, Himalayan salt, pink salt, black salt, Persian salt, dead sea salt, kosher salt, and so on. Compositionally, the primary component in all these salts is NaCl with varying degree of other minerals. A 100g of common edible salt will have ~38.7g of sodium and 60g of chloride, with remaining being anticaking agents and others. Tabel-1 below provides the mineral content declared on the nutrition panel of the package. As one can see, depending on the source and how it is processed, a salt has varying amount of sodium, potassium, and other components.

Table 1: Elemental information declared on the nutrition panel of some of the salts sold in a retail

	Tata		Future Consumer Ltd			Golden Harvest	Saffola
	Salt	Salt Lite	Black Salt	Pink Rock Salt	White Rock Salt	White Rock Salt	Salt plus
Sodium (g/100g)	38.7	33.2	38	38	33.84	33.84	35.3
Potassium (g/100g)		7.8	0.3	0.3	0.72	0.72	4.6
Calcium (g/100g)			0.7	0.7	0.65	0.65	0.4
Magnesium (g/100g)			0.6	0.6	0.41	0.41	

Store in Mumbai (surveyed on April 19, 2019)

Salt, Sodium, and Food

Salt that is added to food during preparations (home or restaurant) or processing (food manufacturing) is silently loading us with the sodium. The main foods that we Indians consume such as pickles, chutneys, sauces, papads, chips, salted biscuits, salted butter, bakery products, powder mixes, dried salted fish, and so on have substantial amount of salt (sodium). On average an Indian consume ~10g of salt per day, which means 3870 mg of sodium per day.Probably we all will agree that India as a nation is in transition state with lifestyle changes and processed foods are becoming a norm to many occasions. High salt in food also makes it more wanting and leads to increase in food intake.

Excess sodium (salt) and health

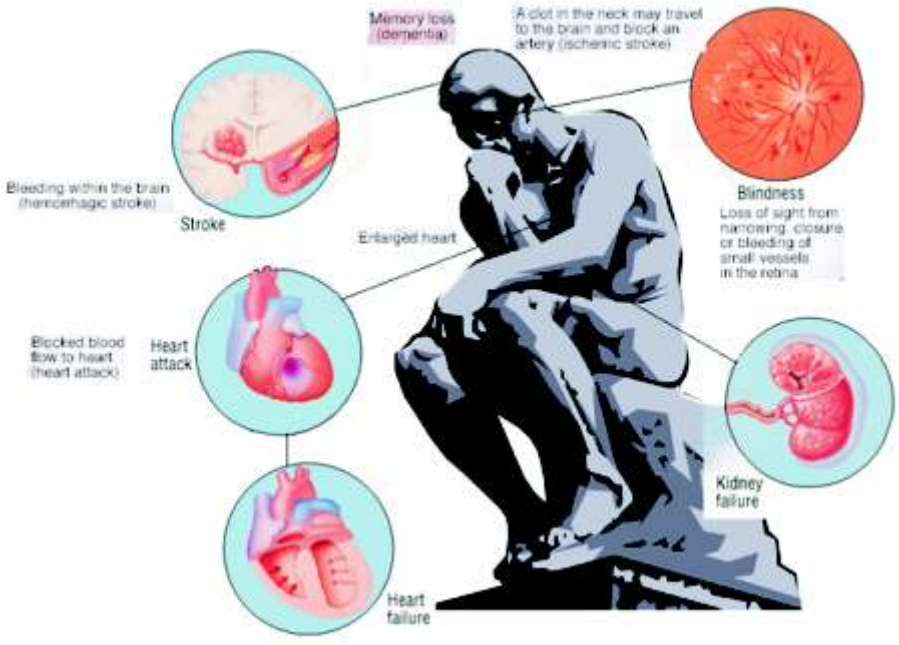
High consumption of salt in-turn sodium leads to increase in blood pressure and high blood pressure (HBP) is the leading risk for mortality particularly resulting from cardiovascular diseases (WHO, 2016).Salt and sodium are synonymous when it comes to their effect on the health. The mechanism underlying sodium-induced HBP isn't well understood yet numerous researches has found a strong correlation between sodium intake and HBP. It is believed that only elderly population at risk and younger people don't need to worry about sodium. A recent study of two different communities - one with exposure to high salt (western diet) and other with no such exposure, reported that the blood pressure was high for the exposed group irrespective of the age (Mueller, Noya-Alarcon, & Contreras, 2018). Though this study is limited by sample size, it highlights the importance of lower salt intake by everyone from kids to adults to elderly.

Subsequent effects of HBP goes beyond heart and causes damage to our body subtly over years and if left untreated may lead to poor quality of life and disability. The consequences of HBP includes damage to arteries, heart, brain, kidneys, eyes, sexual dysfunction, bone loss, troubled sleep, hearing, and so on. Many people with HBP die of heart issues and stroke arising from poor blood flow and Fig1 highlights some of the consequences of HBP.

Time course of Sodium (Salt) and health

The negative effect of high sodium intake on health is numerous and in 2008 Van Vliet and Montani reported that there is a possibility for two distinct phases i.e. rapid (acute) and slow (progressive) effect of high sodium on the body (Van Vliet & Montani, 2008).This means a kid consuming high salt today will have irreversible salt-induced progressive changes in the body that will become obvious in later stages of life.

Figure 1: High blood pressure induced damages to the body



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[1]Research shows that diets high in fibre help in weight management. Oats are a high fibre wholegrain breakfast and hence a smarter option than refined cereals. Saffola encourages you to exercise regularly, follow a healthy lifestyle and consume a diet low in saturated fat, cholesterol and sodium to keep your body fit.


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Beyond HBP, salt also causes other health problems and many studies (clinical and pre-clinical) have shown that high dietary sodium impacts the organs of the body through other mechanismssuch as increased arterial stiffness, increased protein excretion in kidney, sensitization of neurons in brain and so on(Farquhar, Edwards, Jurkovitz, & Weintraub, 2015).

Wake-up call by WHO

Realizing the dangerous of excess sodium, the World Health Organization (WHO) has set a global goal to reduce salt intake to less than 5g (2000 mg sodium) per day and Member States have agreed on a voluntary global target for a 30% relative reduction in mean population intake of salt, with the aim of achieving salt intake target by 2025. In many countries, the salt reduction initiative is either led by government or non-governmental organizations. Lowering sodium has also become an economic imperative to manage healthcare costs.

What are the best ways to reduce salt intake? WHO have identified set of best practices from different approaches taken by various countries and created "SHAKE" package for the benefit of others (WHO, 2016). SHAKE is an acronym and stands for

• S – Surveillance: Measure and monitor salt use
• H – Harness industry: Promote reformulation of foods to contain less salt
• A – Adopt standards for labelling and marketing: Implement standards for effective and accurate labelling and marketing of foods
• K – Knowledge: Educate and communicate to empower individuals to eat less salt
• E – Environment: Support settings to promote healthy eating

Sodium (salt) reduction in India

Indians consume the double the amount of WHO recommended salt intake per day. So FSSAI (Food Safety and Standards Authority of India) has taken the lead with a proposed guideline to lower not only salt but also fat and sugar based on the recommendation by expert group report made of FSSAI and Indian Council of Medical Research (ICMR). The expert report has called for lowering salt intake by 30% over next 10 years in both processed and home-food along with improved food labeling, reformulation of processed foods, and ban on advertisement for foods with high salt, fat and sugar. (FSSAI, 2017).The proposed strategies are in-line with best practices recommended by WHO. Also, FSSAI has sponsored Eat Right Movement to improve the health and well being of Indians. It is commendable that many companies and trade associations have endorsed Eat Right Movement and have committed to lowering salt, fat and sugar in their products (http://eatrightindia.gov.in/EatRightIndia/foodbusinesses.jsp).

Implementing a nationwide salt reduction strategy calls for involvement of many stakeholders including central and local government bodies, public health institutions, academia, NGO's, companies, consumers, consumer interest groups, care providers, and so on. In analyzing the perspectives of these multiple stakeholders, Gupta et. al (2018) have identified barriers to salt reduction i.e. illiteracy and socio-cultural beliefs, unorganized food retail sector, lack of implementation of food policies, and decrease in sale of low salt food to salt reduction. The authors have recommended raising awareness, friendly food labeling, incentives, encouraging voluntary actions, and enabling with information on salt consumption, sources, food reformulations, and salt substitutes.

Figure 2: Nutrition information of some products in a retail store in Mumbai (pictured on April 19, 2019)

Figure 3: Image of salt shelf in a large retail store, Mumbai (April 19, 2019)

Taking the example of food labeling, Johnson C. , et al., (2017) concluded after analyzing 5686 packaged foods sold in the large retail stores in Delhi and Hyderabad in comparison to situation in 2010 that "Compliance with nutrient labelling in India is improving but remains low. Many packaged food products have high levels of Na and there is no evidence that Indian packaged foods are becoming less salty"

When 68% of analyzed products didn't label sodium, one can't expect people to make informed choices. This is the case even today for packaged foods and Fig 2 depicts images of nutrition panel of some products in a large retail store in Mumbai on April 19, 2019.

Not only food products, among dozen salt brands on the shelf some didn't have nutrition panel while some had nutrition info without declaring sodium content, which one can observe next time you buy salt (Fig 3).

The situation is gloom when it comes to foods eaten at restaurants and fast food chains, where nutrition information isn't available or accessible at the point of consumption.

Closing thoughts

Everyone thinks they are adding only a pinch of salt without fully recognizing the underlying dangerous punch. Civil society, governments, academia,and health organizations all have a part to play and denial of such responsibility and accountability will be costly!

References

Farquhar, W. B., Edwards, D. G., Jurkovitz, C. T., & Weintraub, W. S. (2015). Dietary Sodium and Health: More than just blood pressure. Journal of the American College of Cardiology, 65(10), 1042-1050.

FSSAI. (2017). Report of expert group on consumption of fat, sugar & Salt & its health effects on Indian population. Retrieved April 2019, from http://admin.indiaenvironmentportal.org.in/files/file/consumption%20of%20fat%20sugar%20salt%20FSSAI.pdf

Gupta, P., Mohan, S., Johnson, C., Garg, V., Thout, S. R., Shivasahankar, R., . . . Prabhakaran, D. (2018). Stakeholders' perceptions regarding a salt reduction strategy for India: Findings from qualitative research. PLOS One, 1-16.

Johnson, C., Thout, S. R., Mohan, S., Dunford, E., Wu, J. H., He, F. J., . . . Bruce, N. (2017). Labelling completeness and sodium content of packaged foods in India. Public Health Nutrition, 1-8.

Mueller, N. T., Noya-Alarcon, O., & Contreras, M. (2018). Association of age with blood pressure across the lifespan in isolated Yanomami and Yekwana villages. JAMA Cardiology, 3(12), 1247-1249.

Van Vliet, B. N., & Montani, J.-P. (2008, December 15). The time course of salt-induced hypertension, and why it matters. Intenrational Journal of Obesity, 32, S35-S47.

WHO. (2016). SHAKE the salt habit. Retrieved April 2019, from WHO: https://www.who.int/dietphysicalactivity/reducingsalt/en/index1.html

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REGULATORY ROUND UP

By
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Dear Readers,

Release of new regulation has come down to a trickle. Major regulations barring Labelling and Processing Aid are out. Grapevine says that the next few years, FSSAI will focus on the effective implementation of the rules and regulation. In line with this, FSSAI is recruiting technical officers and others. In my opinion, the focus shall be on safety and claims. This is likely to keep the Food Business Operators on their toes. Please find below the new regulations, orders, directives, etc since the last round up.

Draft notification of new standards on Foods for Infant Nutrition. Standards for Infant Milk Food, Infant Formula, Follow Up Formula and different complementary foods. A special category called " Infant Formula for Special Medical Purposes" like low birth weight, lactose free, hypoallergenic formulations and also for infants with inborn error of metabolism, has been carved out. More additives have been permitted as compared to the existing standards. The draft regulation lists permitted salts of minerals, forms of vitamins and amino acids along with purity standards.

In response to the instruction issued by Honourable High Court of Bombay at Goa, FSSAI has specified an ad hoc limit for naturally occurring formaldehyde in fresh fish including molluscs, Crustaceans and Echinoderms. This limit shall be applicable till the final standards are laid down. Values above the limit will indicate the unauthorized addition of formaldehyde for preservation.

Another directive regarding the disposal of used cooking oil

Latest list of FSSAI approved laboratories along with the validity. FBOs are strongly advised to go through the list before sending the sample.

FSSAI has issued a notice regarding unattended applications for registration and licensing. In case of licensing, License to be issued automatically if any application remains unattended for 60 days and also 75 days in the desk of Designated officer.

FSSAI notice regarding hygiene rating and inspection of food service establishments

RESEARCH IN HEALTH & NUTRITION

Skipping breakfast, eating dinner late may increase risk of death in heart attack survivors

IFT Weekly April 24, 2019

People who skip breakfast and eat dinner near bedtime have worse outcomes after a heart attack, according to research published in the European Journal of Preventive Cardiology.

The study found that people with the two eating habits had a four to five times higher likelihood of death, another heart attack, or angina (chest pain) within 30 days after hospital discharge for heart attack.

The study enrolled patients with a particularly serious form of heart attack called ST-segment elevation myocardial infarction (STEMI). It included 113 patients with a mean age of 60, and 73% were men. Patients were asked about eating behaviors on admission to a coronary intensive care unit. Skipping breakfast was defined as nothing before lunch, excluding beverages, such as coffee and water, at least three times per week. Late-night dinner eating was defined as a meal within two hours before bedtime at least three times per week. The researchers noted that late-night dinner eating was defined by the two-hour interval between dinner and bedtime, rather than eating late at night. But nearly all participants with this habit were late-eaters.

The researchers found that 58% of the participants reported skipping breakfasts, 51% reported late-night dinner eating, and 41% reported both behaviors. Previous studies have found that people who miss breakfast and have a late dinner are more likely to have other unhealthy habits such as smoking and low levels of physical activity.

"Our research shows that the two eating behaviors are independently linked with poorer outcomes after a heart attack but having a cluster of bad habits will only make things worse," said study author Marcos Minicucci of Sao Paolo State University. "We also think that the inflammatory response, oxidative stress, and endothelial function could be involved in the association between unhealthy eating behaviors and cardiovascular outcomes."

Pumpkin seed extract found to alleviate prostate enlargement symptoms, says research

29 Apr 2019 Nutrition Insight

An oil-free hydroethanolic pumpkin seed extract by Frutarom Health, EFLA 940, used in the product Go-Less Men, was found to alleviate symptoms associated with Benign Prostatic Hyperplasia (BPH) in a monocentric study at the Institute of Pharmaceutical Sciences at the University of Graz, Austria.

Positive effects of EFLA 940 are said to begin after four weeks of intake. This response was shown to be further augmented over the remaining study period.


Image © iStock.com/Professor25

EFLA 940 is a plant extract originating from defatted pumpkin seeds of Cucurbitapepo L. ssp. pepo var. styriaca. It is manufactured using a water-ethanolic extraction solvent and a proprietary decontamination procedure ("EFLA Hyperpure"), resulting in an oil-free pumpkin seed extract with ensured stability, purity and solubility, and devoid of any rancidity. The extract is found to contain a unique combination of cucurbitin and polyphenolic compounds that can offer positive effects.

BPH is an age-related condition in which the prostate gland is enlarged, but not cancerous. According to the Urology Care Foundation, BPH is very common, affecting half of men between 51 and 60 years of age and up to 90 percent of men aged 80 and above. The condition causes a substantial disease burden that can bear a significant impact on quality of life.

"As the prostate grows, the urethra can become narrow, causing blockage of the bladder. This may eventually induce taxing lower urinary tract symptoms, including voiding difficulties, which can adversely affect the quality of life," says Moran Werner Saido, Product Manager for Frutarom Health.

She further notes, "in most cases of men presenting with mild to moderate symptoms, BPH is not actively treated but monitored via annual checkups. During this phase, the use of phytotherapeutics, such as pumpkin seeds extract to support bladder function, may be opportune."

Published in the Journal of Medicinal Food, the study analyzed the effects of the drug in sixty men with a mean age of sixty-two years suffering from moderate or severe symptomatic BPH for a minimum of six months. Participants were prescribed one pill containing 500 mg of EFLA 940 daily for three months. After four, eight and twelve weeks participants were monitored using the International Prostate Symptom Score (IPSS) to track the symptoms of the BPH.

The results showed that with this prescribed daily dose, male subjects expressed significant symptom reduction for the total IPSS, and in all BPH related symptoms, in as soon as four weeks.
An improvement of symptoms from "moderate/severe" to "mild" were reported by 35.7 percent of men. Nocturia (nighttime urination) and residual fluid volume in the bladder after urination was found to have been significantly reduced by the end of clinical trial.

Monographs of the German Commission E of the Federal Institute for Drugs and Medical Devices, The Texas Medicaid & Healthcare Partnership (TMHP) and European Scientific Cooperative on Phytotherapy (ESCOP) have endorsed the suitability of pumpkin seeds for the treatment of BPH-related voiding difficulties and irritable bladder.

This new research follows previous studies demonstrating the clinical efficacy of EFLA 940 in populations that suffer from frequent night time urination. In 2014, a clinical study of 120 women with overactive bladder-related voiding dysfunction found a 30 percent decrease in the average frequency of subjects' nocturia during a 12-week period.
By Benjamin Ferrer

Curcumin helps prevent and fight stomach cancer, research suggests

24 Apr 2019 Nutrition Insight


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Curcumin, the yellow powder derivative of the turmeric plant (Curcuma longa) that is widely used as a food colorant and flavoring, may also have therapeutic properties in helping prevent and combat stomach cancer.

This is according to study of gastric cancer supported by the Federal University of São Paulo (UNIFESP) and the Federal University of Pará (UFPA). The findings of the research were published in the journal Epigenomics. "Curcumin influences enzymes that modulate the acetylation of histone, which are small proteins that package DNA. Histone acetylation alters accessibility of chromatin and allows DNA binding proteins to interact with exposed sites to activate gene expression.

In gastric cancer cell lines, curcumin suppressed cell proliferation and induced death of cells [a healthy biological process] by activating genes responsible to those processes," Dr. Danielle Queiroz Calcagno, a professor at UFPA and first author of the study, tells NutritionInsight.

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For centuries, turmeric has been ubiquitously known for its healing properties. In India, traditional Ayurvedic healing practices incorporate the root's anti-inflammatory and antioxidant effects. Previous studies of the curcumin extract found the compound to be potent in preventing and fighting Parkinson's disease, heart failure, kidney disease and obesity – among more prevalent ailments like stomach problems, body aches and various skin conditions.
"Interestingly, curcumin has potential therapeutic value against Helicobacter pylori infection, a common stomach bacteria linked to gastritis, stomach ulcers and even cancer," Dr. Calcagno further highlights.

But more research is needed before curcumin finds its place in clinical practice. "Our present study showed some limitations, mainly the fact that the anticancer potential of dietetic compounds is only proven by preclinical studies, so we can't establish an adequate dose to prevent or help the treatment of gastric cancer," says Dr. Calcagno.

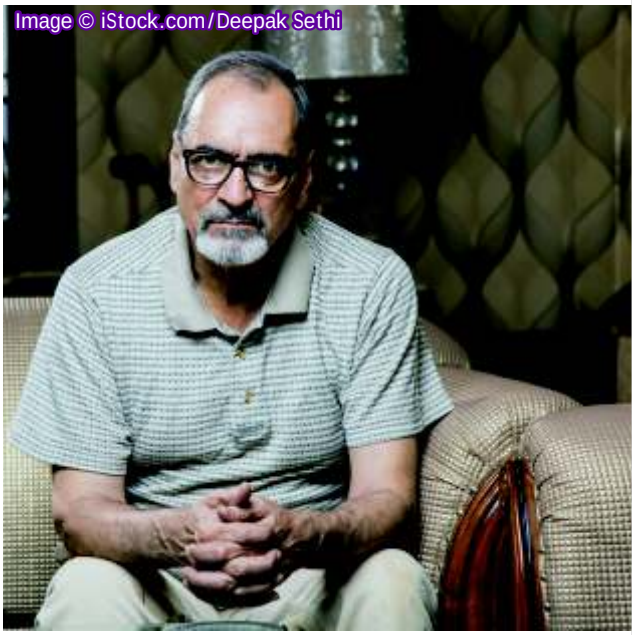
Curcumin is a natural regulator of histone activity
The researchers undertook a vast review of the scientific literature on all nutrients and bioactive compounds with the potential to prevent or treat stomach cancer and found that curcumin is one of them.

In their study of gastric cancer, scientists at UNIFESP and UFPA analyzed histone acetylation patterns in stomach cell samples from healthy individuals and patients diagnosed with stomach cancer.
The researchers found that the cells from stomach cancer patients displayed alterations in the pattern of expression of histone acetyltransferases (HATs) and histone deacetylases (HDACs). These alterations are classified as epigenetic and affect the structure and integrity of the genome in many tumors, including stomach cancer.

The study revealed that the bioactive properties of curcumin regulate the activity of HATs and HDACs, which spurred the research team to identify other substances that might influence histone acetylation and hence help prevent or treat stomach cancer.
In addition to curcumin, other bioactive compounds found to play a key role in modulating histone activity were cholecalciferol, resveratrol (present mainly in grape seeds and red wine), quercetin (abundant in apples, broccoli and onions), garcinol (isolated from the bark of the kokum tree, Garciniaindica) and sodium butyrate (produced by gut bacteria via fermentation of dietary fiber).
"We now plan to clarify the anticancer and epigenetic effects of bioactive compounds derived from plants in the Amazon, such as açaí [Euterpeoleracea] and nanche or hogberry [Byrsonimacrassifolia], with a view to their future use in the prevention and treatment of stomach cancer," Calcagno says.

Applications in the nutrition and beauty spaces
Innova Market Insights notes that turmeric is already the fastest growing flavor in the food ingredients sector with over 44 percent growth in global soft drink launches (CAGR 2014-2018). And where knowledge of curcumin's range of health properties is beginning to broaden, industries are thusly adapting with new product launches. In February 2019, the extract was listed as a nootropic ingredient in California-based Nilo Brands' Hangover Recovery, marketed as a product that accelerates the breakdown of toxins released in the liver when drinking alcohol.

Overlaps of curcumin into personal care are beginning to emerge in the beauty market, Natalie Martinez, Head of Sales (Cosmetics) at pharmaceutical company Sabinsa, tells NutritionInsight. "Sabinsa has two curcumin ingredients that are both highlighted in cosmeceutical grades. We have done a lot of work testing to make sure that we can formulate interesting products, for both nutrition and cosmetics."
By Benjamin Ferrer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Senior protein deficiency: Multiple personalized strategies needed to motivate "difficult-to-reach category"

16 Apr 2019 Nutrition Insight

Dietary strategies to boost protein intake among elderly people should better take into account sensory properties, familiarity, affordability, accessibility and convenience.

This is according to novel research by the "Prevention of Malnutrition In Senior Subjects in the EU" (PROMISS) consortium. Christine Yung Hung, PROMISS researcher, tells NutritionInsight that there are many untapped areas for food innovation targeting protein malnutrition in the elderly, and industry should focus on producing high-quality and sustainable protein, with products that are appealing to consumers.

Most importantly, the products should be effective in increasing muscle protein synthesis, without compromising on taste, she explains.

"Food fussiness plays an important role in older adults' acceptance towards food innovation and the resulting new food products. Older consumer preferences and behavior have yet to be investigated extensively, which should be a priority, to identify and optimize ways to motivate this 'difficult-to-reach' consumer group to adopt a healthier and more sustainable diet," Yung Hung notes.

The study aimed to profile older adults in the EU according to their appetite and protein intake levels and to identify dietary and physical activity behaviors. The researchers conducted a survey, including 1,825 older adults – aged 65 years or above – in the Netherlands, UK, Finland, Spain and Poland.
The goal was to create a holistic approach that covered the following parameters:
• Socioeconomic and demographic background.
• Health characteristics.
• Presence of health problems.
• Knowledge and attitude related to protein.
• Food and diet.
• Attitude towards physical activity.
• Habitual behaviors.

"Older adults with different appetite and protein intake profiles have different nutritional needs and dietary intake patterns, they should be taken into account as different subgroups to cater for their specific needs," Yung Hung says.

The researchers discovered that older adults ought to become more aware of the importance of protein consumption, precisely the amount of protein needed. Moreover, they should be educated on the concrete actions to take to reach recommended protein intake levels, such as more frequent consumption of specific protein-rich food products.

"Several common misconceptions might have become a hurdle for older adults when it comes to having sufficient protein intake. Among elderly people, the vast majority believe that one meal per day with a good protein source is sufficient, especially in the subgroup who had a lower protein intake and poor appetite," she says.

Yung Hung explains that food and beverage offerings or any dietary strategies to increase protein intake in older adults should pay attention to:
• Sensory properties to combat poor appetite.
• Familiarity to cope with food fussiness.
• Affordability to match with lower expenditure on foods.
• Accessibility to overcome the challenge of low mobility.
• Convenience that fits older adults' ability for meal preparation and ingestion.

The findings showed that the consumption of certain foods at a certain moment of the day and physical activity level or pattern were associated with a lower risk of having low protein intake. Low levels of physical activity emerged as a risk factor for a lower protein intake in older adults with poor appetite, while vigorous physical activities between meals were associated with a lower risk in older adults with a good appetite.

The researchers concluded that increasing older adults' confidence in their ability to engage in physical activities in more difficult situations could be a potentially effective strategy to increase physical activity level and thereby increase protein intake. Dietary and physical activity strategies to increase protein intake should be tailored according to older adults' appetite profiles.
"These findings shed light on possible key messages in communication strategies, in which not only the awareness about the importance of protein consumption should be increased, but the messages should also be specific in relation to the amount of protein needed and concrete actions on how recommended levels could be achieved," Yung Hung says.

Next in research

Going forward, the researchers will incorporate more sustainability elements in their research and further take into account ethnic differences. "For example, we will investigate older consumers' readiness to accept more sustainable protein sources, implications for new food product development to overcome protein malnutrition in older adults, etc.," Yung Hung says.

At the moment, the team is running a long term prevention trial within the PROMISS consortium that seeks to examine the cost-effectiveness of increasing the consumption of dietary protein above 1.2 g/kg adjusted for body weight per day on physical functioning after six months in older adults, aged 65 years and over, with low habitual protein intake. The study is expected to be published at the beginning of 2021, she says.


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Introduce complementary feeding between 3-4 and 6 months, suggests EFSA opinion

18 Apr 2019 Nutrition Insight

The European Food Safety Authority (EFSA) has suggested that the complementary feeding of infants should begin between 3-4 and 6 months.

The panel on Nutrition, Novel Foods and Food Allergens (NDA) reviewed around 300 studies to form its scientific opinion on this topic and is now calling on stakeholders and other interested parties to provide feedback. When breast milk is no longer enough to meet the nutritional needs of an infant, complementary foods should be added to the diet. The transition from exclusive breastfeeding to family foods, referred to as complementary feeding, is a very vulnerable period. According to the World Health Organization (WHO), it is the time when malnutrition starts in many infants, contributing significantly to the high prevalence of malnutrition in children under five years of age worldwide.

EFSA concluded that the appropriate age to introduce complementary foods depends on the infant's characteristics and development, even more so in preterm infants. In most infants, this age is between about 3-4 and 6 months. It also concluded that most infants do not need complementary foods for nutritional reasons until around 6 months, except for some exclusively breastfed infants at risk of iron depletion. There is also insufficient data to determine the precise age at which complementary foods should be introduced to all infants in Europe.
When breast milk is no longer enough to meet the nutritional needs of an infant, complementary foods should be added to the diet.Moreover, there is no evidence that early introduction of potentially allergenic foods – such as egg, cereals, fish and peanuts – increases the risk of children developing allergies. Lastly, there is no evidence for either beneficial or adverse effects of introducing foods containing gluten earlier than six months of age.

The first 1,000 days

The infant nutrition space can be a complicated one to navigate. The first 1,000 days – from conception to the second birthday – have been highlighted as a crucial time, as growth during this period is faster and more critical than the rest of life.
Also, there are not only emotive ties linked to nourishing infants, but also regulatory and legal restrictions. The level of food safety for the industry, as well as regulatory standards and quality requirements, continue to increase. This has not come as a detriment, however, to the growing infant formula market. According to Innova Market Insights, growing demand from emerging economies such as Asia owing to rapid urbanization, large population bases and higher purchasing power, preference for organic formula, fortified formulas for higher nutrition and a need for portable solutions are fuelling growth of the baby formula and milk category.

According to the market researcher, the relative development of baby formula/milk launches versus the Baby and Toddlers category had a CAGR (2013 TO 2018) of 22 percent, compared to 16 percent, demonstrating the higher NPD growth in the baby space. The CAGR value for global baby formula/milk sales was also estimated to be roughly 9 percent between 2015 and 2017. Consumer trust could be one facet driving strict safety regulations, in light of some very high-profile scandals, such as the 2008 Chinese infant formula safety scandal, where melamine contamination was found in a range of products.

Moreover, once infant formula has passed strict food safety procedures, marketing recommendations around BMS are also stringent. To encourage as many women as possible to breastfeed until an infant is at least 6 months old, the WHO regulates the promotion of BMS, instead advocating that mothers can make the best feeding choices through access to impartial, adequate information that is free from commercial influences. The inappropriate marketing of Breast Milk Substitute (BMS) may negatively affect choice and ability of a mother to breastfeed her infant.

Earlier this month, infant nutrition market leader Nestlé faced some severe criticism from Changing Markets Foundation (CMF), which criticized the conglomerate for using science as "merely a marketing tool to boost sales of its infant nutrition portfolio." The environmental and social NGO is calling on Nestlé to step up in the breast milk substitute space following the publication of a report which alleges that so far Nestlé has failed to fulfill its previous commitments to making changes to its infant formula ranges. These include removing sucrose and vanilla compounds from all its products for babies aged under 12 months and removing contradictory nutritional advice on sucrose and vanilla flavorings.

However, Nestlé responded saying that its promotional activities and products are in line with local regulations and standards, while insisting, in a statement sent to our sister website FoodIngredientsFirst, that "breast milk is the best nutritional choice for an infant and that breastfeeding plays a fundamental role in a baby's growth and development during the first 1,000 days."
By Laxmi Haigh

Do obesity and mental ill-health go "hand in hand"? Research suggests so

29 Apr 2019 Nutrition Insight

Obesity may increase the risk of developing anxiety and depression in children and adolescents. This is according to separate research from Sweden and the UK – both to be presented at this year's European Congress on Obesity (ECO) in Glasgow, UK, on the 28 April to 1 May.

The Swedish study has noted that obesity is an independent risk factor for anxiety and depression in young people, while British researchers identified that obesity and emotional problems seem to develop concurrently as children grow up. Obesity rates are rising worldwide. According to the World Health Organization (WHO), global obesity numbers have nearly doubled since 1980 and more than 40 million children under the age of five were overweight in 2011. Apart from its negative impacts on mental health and development, obesity can cause serious metabolic implications. Excess body weight was responsible for roughly 4 percent of cancers worldwide in 2012, and that number is likely to rise, an American Cancer Society peer-reviewed study found last year.

The Swedish study found that girls with obesity were 43 percent more likely to develop anxiety or depression compared to their peers in the general population. Similarly, boys with obesity faced a 33 percent increased risk for anxiety and depression compared to their counterparts. The study compared over 12,000 Swedish children who had undergone obesity treatment with more than 60,000 matched controls.

Meanwhile, researchers from the University of Liverpool and University College London found that obesity and emotional problems tended to occur together in mid-childhood and adolescence, from ages seven to 14, but not in early childhood, at ages three and five. Girls had, on average, higher BMI and emotional symptoms than boys from ages seven to 14, but co-occurrence and development of obesity and mental ill-health were similar for both. The study analyzed data on more than 17,000 children born across the UK in 2000-2001, taking part in the Millennium Cohort Study. Anxiety and depression are reported to be more common in children with obesity than in children of healthy weight.

Anxiety and depression appear to be more common in obese teens Anxiety and depression are reported to be more common in children with obesity than in children of healthy weight, note the Swedish researchers, but it is unclear whether the association is independent of other known risk factors. Previous studies are hampered by methodological limitations including self-reported assessment of anxiety, depression and weight. "We see a clear increased risk of anxiety and depressive disorders in children and adolescents with obesity compared with a population-based comparison group that cannot be explained by other known risk factors such as socioeconomic status and neuropsychiatric disorders," says Louise Lindberg from the Karolinska Institutet, Stockholm, Sweden, who led the research. "These results suggest that children and adolescents with obesity also have an increased risk of anxiety and depression, something that healthcare professionals need to be vigilant about."

To provide more evidence, the Swedish researchers conducted a further nationwide population-based study to investigate whether obesity is an independent risk factor for anxiety or depression. The study examined 12,507 cases of children aged six to 17 years from the Swedish Childhood Obesity Treatment Register, between 2005 and 2015. The subject group was compared to 60,063 controls from the general population, matched for sex, year of birth and living area.

The research team adjusted for a range of factors known to affect anxiety and depression including migration background, neuropsychiatric disorders, parental psychiatric illness and socioeconomic status. A total of 4,230 children and adolescents developed anxiety or depression over an average of 4.5 years. Obesity was clearly linked to a higher risk of anxiety and depression in childhood and adolescence. Girls (11.6 percent versus 6 percent) and boys (8 percent versus 4.1 percent) with obesity were more likely to be diagnosed with anxiety and depression than those in the general population over the study period. Negative thinking, low self-esteem and impaired stress is more common in girls than in boys, which may be one of the reasons we see higher rates in girls compared to boys, Lindberg tells NutritionInsight.

In further analyses, excluding children with neuropsychiatric disorders or a family history of anxiety or depression, the risks were found to be even higher. In particular, boys with obesity were twice as likely to experience anxiety or depression as their normal-weight peers, while girls with obesity were 1.5 times more likely.


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Is socioeconomic disadvantage a partial factor?

The British study found that socioeconomic disadvantage may explain part of the link between children's obesity and mental ill-health. After taking social background into account, the association between BMI and emotional problems was reduced slightly. However, the association between BMI and emotional problems remained, with obesity at age seven a risk factor for emotional distress at age 11, and in turn, mental health problems predicting high BMI at age 14. Both studies note that in light of the increasing association between such health conditions and obesity, early interventions from health officials that target both weight and mental health are crucial.

This study, published in JAMA Psychiatry, found that rates of obesity and emotional problems among children increased gradually throughout childhood and adolescence. Almost 8 percent of young people were obese by age 14, and around double that number were reported to have had feelings of low mood and anxiety. By adolescence, around a fifth of those who were obese also had high levels of emotional distress. "Although our study does not shed light on the reasons obesity and mental ill-health develop together during childhood, we can hypothesize that children with higher BMI may experience weight-related discrimination, which over time leads to increased depressive symptoms, as has been shown in adults," says Dr. Charlotte Hardman, co-author of the study, from University of Liverpool.

Early intervention is crucial to all cases of obesity

Both studies note that in light of the increasing association between such health conditions and obesity, early interventions from health officials that target both weight and mental health are crucial. "As both rates of obesity and emotional problems in childhood are increasing, understanding their co-occurrence is an important public health concern, as both are linked with poor health in adulthood. The next steps are to understand the implications of their co-occurrence and how to best intervene to promote good health," says Dr. Praveetha Patalay, co-author, University College London.

Linderg, of the Swedish study, suggests that children be screened for anxiety and depression when they first come in contact with healthcare professionals for their obesity problems, as a way to identify problems from early on. However, further studies are needed to explain the mechanisms behind the association between obesity and anxiety and depression, Lindberg concludes.

By Laxmi Haigh

New guidelines to athletes on protein intake

Science Daily April 12, 2019

A review led by a sports scientist at the University of Stirling has set out new international guidelines for protein intake in track and field athletes.

The findings of the paper form part of the updated International Association of Athletics Federations' (IAAF) consensus statement on Sports Nutrition for Track and Field Athletes. Dr Oliver Witard, from Stirling's Faculty of Health Sciences and Sport, led the protein theme of the statement alongside experts at the Norwegian Olympic and Paralympic Committee and Confederation of Sport, and McMaster University in Hamilton, Canada.

Explaining the findings, Dr Witard, of the Physiology, Exercise and Nutrition Research Group at Stirling, said: "Track and field athletes engage in vigorous training that place stress on physiological systems requiring nutritional support for optimal recovery. In this paper, we highlight the benefits of dietary protein intake for training adaptation, manipulating body composition and optimising performance in track and field athletes.

"We recommend that, to facilitate the remodelling of our muscle proteins -- which are turning over rapidly due to their high training volumes -- track and field athletes should aim for protein intakes of around 1.6 grams per kilogram of body mass each day if their goal is to increase muscle mass."

The paper also offers guidance to those track and field athletes aiming to optimise their ratio of strength, power or endurance to body weight for a performance advantage. "Track and field athletes who are restricting energy intake -- and have the goal of minimising the loss of lean body mass -- should target protein intakes of between 1.6 and 2.4 grams per kilogram of body mass a day," Dr Witard continued.

The previous IAAF consensus statement was published in 2007 and, in the time since, evidence underpinning nutrition strategies for adaptation and physique manipulation in athletes has evolved considerably.


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- Sodium
- Stearoyl - 2 - Lactylate
- Distilled Monoglycerides
- Sorbitan Esters
- Propylene Glycol Esters
- PGPR and other
- Speciality Emulsifiers
- Cold water dispersible
- Emulsifier system
- Datems (Powder & Liquid)
- Ammonium Phosphatide
- (Soyalecithin Substitute)
- M.C.T. Oils

Anti-Fungal/ Anti Mold agents

Calcium Propionate/
Sodium Propionate

Beverage Clouding Agent

Speciality Additives

- Bread Improver
- Cake Improver
- Biscuit Improver
- Whipped Topping
- Concentrate for Cakes and Frozen Desserts
- Eggless Cake Concentrate
- Lecithin Replacer (Biscuit)
- Fondant
- Egg wash substitute
- Mousse Mixes
- Glazing Gel
- Marzipan
- Vital wheat Gluten
- Enzymes
- American Brownie
- Bread Mixes

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The updated statement was led by Professor Louise M Burke, of the Australian Institute of Sport and Australian Catholic University. Dr Witard added: "High-performance athletes now have access to an up-to-date consensus statement that informs best practice protein nutrition for optimising body composition."

Eggs for breakfast benefits those with diabetes Low-carb breakfast improves control of blood glucose levels

Science Daily April 11, 2019

While some cereals may be the breakfast of champions, a UBC professor suggests people with Type 2 Diabetes (T2D) should be reaching for something else.

Associate Professor Jonathan Little, who teaches in UBC Okanagan's School of Health and Exercise Sciences, published a study this week demonstrating that a high-fat, low-carb breakfast (LCBF) can help those with T2D control blood sugar levels throughout the day.

"The large blood sugar spike that follows breakfast is due to the combination of pronounced insulin resistance in the morning in people with T2D and because typical Western breakfast foods -- cereal, oatmeal, toast and fruit -- are high in carbohydrates," says Little. Breakfast, he says, is consistently the "problem" meal that leads to the largest blood sugar spikes for people with T2D. His research shows that by eating a low-carb and high-fat meal first thing in the morning is a simple way to prevent this large spike, improve glycemic control throughout the day, and perhaps also reduce other diabetes complications.

Study participants, with well-controlled T2D, completed two experimental feeding days. On one day, they ate an omelette for breakfast and on another day, they ate oatmeal and some fruit. An identical lunch and dinner were provided on both days. A continuous glucose monitor -- a small device that attaches to your abdomen and measures glucose every five minutes -- was used to measure blood sugar spikes across the entire day. Participants also reported ratings of hunger, fullness and a desire to eat something sweet or savory.


Image © iStock.com/mediaphotos

Little's study determined that consuming a very low-carbohydrate high-fat breakfast completely prevented the blood sugar spike after breakfast and this had enough of an effect to lower overall glucose exposure and improve the stability of glucose readings for the next 24 hours. "We expected that limiting carbohydrates to less than 10 per cent at breakfast would help prevent the spike after this meal," he says. "But we were a bit surprised that this had enough of an effect and that the overall glucose control and stability were improved. We know that large swings in blood sugar are damaging to our blood vessels, eyes, and kidneys. The inclusion of a very low-carbohydrate high-fat breakfast meal in T2D patients may be a practical and easy way to target the large morning glucose spike and reduce associated complications."

He does note that there was no difference in blood sugar levels in both groups later in the day, suggesting that the effect for reducing overall post-meal glucose spikes can be attributed to the breakfast responses with no evidence that a low-carb breakfast worsened glucose responses to lunch or dinner. "The results of our study suggest potential benefits of altering macronutrient distribution throughout the day so that carbohydrates are restricted at breakfast with a balanced lunch and dinner rather than consuming an even distribution and moderate amount of carbohydrates throughout the day."

As another interesting aspect of the research, participants noted that pre-meal hunger and their cravings for sweet foods later in the day tended to be lower if they ate the low-carb breakfast. Little suggests this change in diet maybe a healthy step for anybody, even those who are not living with diabetes.
Little's study was published this week in the American Journal of Clinical Nutrition. His research is funded by the Canadian Institutes of Health Research and a Michael Smith Foundation for Health Research Scholar Award.

New insights on liver injury in men taking body building supplements

Science Daily April 3, 2019

In a study reported in Alimentary Pharmacology & Therapeutics, 44 men with liver injury, attributed to over-the-counter bodybuilding supplements, experienced a uniform and distinctive pattern of signs and symptoms that were often prolonged, difficult to treat, and accompanied by disability and weight loss.


Image © iStock.com/magicmine


Image © iStock.com/ Maksym Azovtsev

All participants in the study, who were enrolled in the National Institute of Health-supported Drug-Induced Liver Injury Network, had jaundice (a yellowing of the eyes and skin) and most had generalized itching leading to hospitalization in 71 percent of patients, although none died or needed a liver transplant. Investigators commonly found that the ingested products often contained illicit anabolic steroids not accurately listed on the label.

"Anabolic steroids should only be used under the strict supervision of a physician," said lead author Dr. Andrew Stolz, of the University of Southern California, Los Angeles. "Patients need to inform their care providers if they are taking any form of nutritional supplement and should be especially leery of bodybuilding supplements, which may contain illicit or USA Drug Enforcement Administration controlled anabolic steroids."

Chocolate Consumption May Protect Against Hearing Loss

04.17.19 Nutraceuticals World

The antioxidant and anti-inflammatory effects of cocoa are well researched, and scientists have begun studying if chocolate consumption could help ameliorate neurodegenerative diseases.


Image © iStock.com/ esemelwe

With this in mind, a study recently published in Nutrients examined if chocolate consumption would protect against hearing loss and tinnitus.

Researchers evaluated the hearing and tinnitus data, as well as the chocolate consumption, of middle-aged participants (40–64 years of age) of the 2012–2013 Korean National Health and Nutrition Examination Survey. All of the subjects underwent a medical interview, physical examination, audiological evaluation, tinnitus questionnaire, and nutrition examination. A total of 3,575 subjects 40-64 years of age were enrolled.

The rate of any hearing loss (unilateral or bilateral) in the subjects who consumed chocolate was significantly lower than that in those who did not. Chocolate consumption was independently associated with low odds of any hearing loss. Moreover, the severity of hearing loss was inversely correlated with the frequency of chocolate consumption. In contrast to chocolate, there was no association between hearing loss and the consumption of sweet products without cocoa. Chocolate consumption was also not associated with tinnitus or tinnitus-related annoyance.

The researchers concluded the addition of chocolate to the diet may help protect middle-aged people from hearing loss.

NicotinamideRiboside Linked to Cardiovascular Benefits

04.17.19 Nutraceuticals World

A preclinical study showed that supplementation with vitamin B3 nicotinamideriboside may help maintain heart function. In a model using mice, it was found that NR stimulated a conserved cellular response called the "mitochondrial unfolded protein response" (UPRmt) that helps maintain mitochondrial function. The study also presents preliminary human data to support future testing of NR in humans.

Conducted by Principal Investigators Prof. Ajay M. Shah and Dr. IoannisSmyrnias, Kings College London, the independent study results were published in the Journal of the American College of Cardiology (JACC). This study follows clinical results from last year highlighting the potential for NR supplementation to improve cardiovascular health.

"NR supplementation is a new and exciting intervention that merits testing in the human treatment of heart failure and other cardiac conditions," said Shah. "These study findings showing the potential of NR to activate UPRmt are extremely encouraging and merit further research into the potential for NR to impact human cardiac health."

In several complementary experiments, the authors found that increasing NAD levels with NR stimulated the UPRmt in cells and mice. Additionally, NR helped improve mitochondrial function and maintained the heart's ability to pump blood. To begin to investigate whether these findings might translate to humans, the study authors collected heart tissue samples from people and found positive correlations between increased UPRmt activation and markers of healthy heart function. Human studies were performed under institutional ethical approval and with informed consent.

NR is clinically proven to boost NAD, a critical coenzyme for cellular energy production and mitochondrial function. Previous research has demonstrated that NR can improve mitochondrial and cardiac function in mice, and multiple clinical studies are currently registered to investigate the possible effects of NR in heart failure patients. This preclinical study provides new insight into the relationship between NR, mitochondrial function, and cardiac stress.

"There is a significant and fast-growing body of data supporting the health benefits of Niagen and our consumer product TruNiagen," said ChromaDex CEO Rob Fried. "This important study underscores the role that Niagen may play in human heart health and we look forward to further research."

Soluble Guar Fiber May Help Autistic Children Suffering from Constipation & Irritability

04.29.19
Nutraceuticals World

About 1 in 59 children in the U.S. has been identified with autism spectrum disorder (ASD), according to the Centers for Disease Control and Prevention (CDC).


Image © iStock.com/ePhotocorp

Most of these children also have chronic digestive issues —including constipation and leaky gut—because their good gut bacteria (probiotics) are out of balance. Frustratingly, these gut disorders often contribute to a child's irritability.

In a new pilot study, scientists found soluble guar fiber (Sunfiber) may improve both constipation and irritability in children with ASD. This opens many new potential opportunities for companies interested in developing formulations for the ASD market. Sunfiber is appropriate for all ages. In a pilot study published in the Journal of Clinical Biochemical Nutrition, researchers at the Kyoto Prefectural University of Medicine supplemented the diets of 13 children diagnosed with ASD with 6 grams/day of Sunfiber guar fiber.

The children—12 boys and one girl—ranged from four to nine years old. By the end of the first week, all the children experienced some constipation relief. They went from defecating once or twice a week to being able to go two to four times a week. Their irritability—measured on a standardized scale— also improved significantly. "These researchers found that a modest dose of Sunfiber produced results on four levels: tangible (less constipation); prebiotic (modulation of the gut microbiome); biomarker (fewer inflammatory cytokines), and behavioral (less irritability)," said Derek Timm, PhD, RDN.

Explaining the Results

The gut's good bacteria (probiotics) create most of the dopamine, serotonin and other neurotransmitters responsible for mood. When gut bacteria are imbalanced, they send improper signals to the brain. Soluble, prebiotic fiber feeds the gut's good bacteria and helps to establish a healthier probiotic balance in the gut. Soluble fiber is also known to help manage occasional constipation. The theory is that by using soluble fiber to support gut health can make you feel better and may result in behavioral improvements.

Sunfiber is a popular soluble fiber ingredient because it is an all-natural, versatile, soluble powder that can easily be added to a wide variety of foods, beverage, and supplements without impacting the flavor, color, texture or aroma. It is also a premium choice for formulators because it is certified Kosher, 100% gluten-free, vegetarian, Non-GMO Project Verified, Monash University Low FODMAP Certified. Sunfiber is certified organic by Ecocert, the certification body for sustainable development in the U.S.

Is it better to get nutrients from food or supplements?

Medical News Today 12 April 2019 By Chiara Townley

Researchers have found that nutrients from food may be linked to lower risks of death, while excess intake of certain supplements may have the opposite effect.


Image © iStock/woraput

Taking supplements leads to an increased level of total nutrient intake. Dietary supplements include

vitamins, minerals, herbs, amino acids, and enzymes. Suppliers sell them in different forms, including tablets, capsules, powders, and liquids. Common dietary supplements include calcium, fish oil, and vitamin D. Dietary supplements should not replace complete meals, which are essential to nurturing the body. Talking to healthcare providers before making the decision about whether to take supplements is a good practice. Doctors can help people achieve a balance between nutrients from food and supplements.

Many supplements also contain active ingredients that may have strong biological effects. Any of the following actions could be harmful or even life-threatening: combining supplements, mixing supplements with medicines, or taking too much of some supplements, especially vitamin A, vitamin D, and iron. When buying supplements in the United States, it is important to read labels and get information about the manufacturer. The Food and Drug Administration (FDA) are responsible for taking action against any adulterated or misbranded supplements — but not before the products are available on the market.

Supplement consumption in the US
According to the 2018 consumer survey conducted by the Council for Responsible Nutrition (CRN), consumer confidence in products and trust in the dietary supplement industry is strong among people in the U.S. The survey found that 75 percent of U.S. individuals take dietary supplements, as opposed to just 65 percent in 2009. "This year's data provide further evidence that dietary supplements are mainstays in modern-day health and wellness regimens," explains Brian Wommack, the senior vice president of communications at the CRN. Vitamin and mineral supplements such as vitamin D and calcium remain the most popular types. However, the use of herbals and botanicals — especially turmeric — has significantly increased during the past 5 years. The main reason that U.S. individuals take dietary supplements is overall health and wellness, according to the survey.

Nutrients from food vs. supplements

Although many people use dietary supplements, a recent study found that multivitamins, vitamin D, calcium, and vitamin C showed no advantage or added risk in the prevention of cardiovascular disease or premature death. However, folic acid alone and B vitamins with folic acid may reduce the risk of heart disease. The team, from the Friedman School of Nutrition Science and Policy at Tufts University in Medford, MA, conducted a study to evaluate the association between dietary supplement use and all-cause mortality. The researchers have published their results in the journal Annals of Internal Medicine. "As potential benefits and harms of supplement use continue to be studied," points out senior study author Fang Fang Zhang, Ph.D., an associate professor at the Friedman School of Nutrition Science and Policy, "some studies have found associations between excess nutrient intake and adverse outcomes, including increased risk of certain cancers."

The study used data from more than 27,000 U.S. adults and assessed whether adequate or excess nutrient intake was linked to all-cause mortality, and whether results changed if the nutrients came from supplements instead of food. For each nutrient, the scientists calculated the daily supplement dose by "combining the frequency with the product information for ingredient, the amount of ingredient per serving, and ingredient unit."

They assessed the participants' dietary intake of nutrients from foods using 24-hour dietary recalls and mortality outcomes through the National Death Index through December 31, 2011.
There were several key findings:
Adequate intakes of vitamin A, K, zinc, and magnesium — from food, not supplements — were linked to a lower risk of death.
Adequate intakes of vitamin A, vitamin K, and zinc — from foods, not supplements — were associated with a lower risk of death from cardiovascular disease.
Excess intake of calcium was associated with a higher risk of dying from cancer.
Excess intake of calcium from supplements (at least 1,000 milligrams per day) was associated with an increased risk of death from cancer.

High intake of some supplements is harmful

In addition to the harmful effects of excess calcium intake from supplements, the researchers found that people with no sign of vitamin D deficiency who use vitamin D supplements may have an increased risk of all-cause mortality. Further research on this potential connection is necessary. "Our results support the idea that, while supplement use contributes to an increased level of total nutrient intake, there are beneficial associations with nutrients from foods that aren't seen with supplements." Fang Fang Zhang, Ph.D. Zhang adds that it is important to understand the effect that the nutrient and source might play on health and mortality outcomes — especially if not beneficial. She also notes some limitations in the study, including the duration of dietary supplement use studied and the fact that dietary supplement use was subject to recall bias.

Are beans good for diabetes?

Medical News Today 17 April 2019 By Jenna Fletcher

Beans are a diabetes superfood, meaning they are an excellent choice for people with diabetes and provide many health and nutritional benefits.

The American Diabetes Association (ADA) created a list of beneficial foods for diabetes, or diabetic superfoods, that are "rich in vitamins, minerals, antioxidants, and fiber" and may help prevent disease. Beans are at the top of this list. This article discusses the benefits of beans, their nutrition, and the best types of beans to consume.

Benefits of beans

Beans are an excellent, affordable source of protein, fiber, and minerals. Adding beans to a meal can help people keep their blood sugar levels stable and help keep the body healthy. The following sections discuss the benefits of beans for diabetes.

Carbohydrates

Although beans contain carbohydrates, they are low on the glycemic index (GI) scale and do not cause significant spikes in a person's blood sugar levels. Beans are a complex carbohydrate. The body digests this form more slowly than other carbohydrates, helping to keep blood sugar levels stable for longer.

According to the University of California, a ½ cup serving of the following beans contains 125 calories, 15 grams (g) of carbohydrates, 7 g of protein, and 0–3 grams of fat when cooked:

- kidney beans
- black beans
- navy beans
- white beans
- garbanzo beans or chickpeas
- lima beans
- pinto beans

Baked beans may contain more carbohydrate. Cans of baked beans can also contain lots of added sugar, so check the label before buying.

The latest ADA guidelines, published in 2019, state that "there is not an ideal percentage of calories from carbohydrate, protein, and fat for all people with diabetes." Instead, they recommend that people follow a diet based on their individual needs. People can work out their personal diet plan with a dietitian or healthcare provider.

Fiber

High-fiber foods, including beans, can reduce the impact of high-GI foods on blood sugar levels. This is because fiber slows down the digestive process, which helps keep blood sugar levels stable for longer. Eating beans will supply a person with a steady supply of glucose instead of the sudden energy rush associated with simple carbohydrates. Fiber offers additional benefits for heart health. The American Heart Association (AHA) state that dietary fiber improves blood cholesterol levels and lowers the risk of heart disease, stroke, and obesity, which are all potential complications of diabetes.

Image © iStock.com/ CasarsaGuru

Protein

Beans are an excellent source of plant-based protein. Protein is essential for body tissue growth and repair. The body can break down protein into glucose to use for energy. However, this takes longer than breaking down carbohydrates, slowing down the digestive process. High-protein foods can help people feel fuller for longer, reducing the risk of overeating and obesity. According to the ADA, a ½ cup of beans can offer the protein equivalent of 1 ounce of meat, but without the saturated fat. They provide a low-calorie, cost-effective way to add protein to the diet.

Vitamins and minerals

Beans are nutrient-rich, containing vitamins and minerals with little or no trans-fat, salt, and cholesterol. This is one of the reasons why beans are so good at lowering a person's risk of disease. Beans contain many essential vitamins and minerals, including:

- folate
- iron
- potassium
- magnesium
- calcium

Negative effects

Most people can include beans as part of a healthful diet. However, if a person does not consume much dietary fiber, they should increase their bean intake slowly. This is because the digestive system can take some time to get used to high-fiber foods, which can cause some bloating and gas.

The body's natural intestinal enzymes cannot digest fibers and starches found in beans. Instead, a process that scientists refer to as bacterial fermentation breaks these starches and fibers down. It is this fermentation process that causes the extra gas. While some people may find this uncomfortable, it is not harmful. Beans from a can are a good shortcut to cooking raw beans. However, canned beans often contain a lot of salt. Rinse the beans thoroughly to reduce the salt before eating them. Bean dip and refried beans often contain added fats, salt, and other ingredients that can

reduce the beneficial effect of beans, so it is important to read nutrition labels carefully.

How to add beans to the diet

Beans are a very versatile addition to the diet. People can add them to salads or chilis, use them as a side or main dish, or make them into bean burgers. Similar to most vegetables, raw varieties are the most healthful. Buying raw beans means a person has complete control over how they cook them and what they add to them. Soak raw beans in water for 8-12 hours before using them, and then rinse them thoroughly. This helps reduce side effects, such as bloating and gas. Canned beans can be a good alternative to raw beans and offer a shortcut on the cooking process. When using canned beans, choose a product with no added salt or rinse the beans well before use to reduce any added salt.

When buying baked beans, look for brands that have a lower total carbohydrate and sugar content. People can also make baked beans at home to fully control the sugar and carbohydrate count.

To include more beans in the diet, try the following ideas:

- cooking bean chili, using only beans or replacing some meat with beans
- eating hummus, which contains garbanzo beans (chickpeas)
- adding garbanzo beans or kidney beans to a healthful salad
- making bean burritos
- adding black or red beans to taco meat
- including navy beans in soups
- crushing black beans as part of a base for a vegetable burger

Search for more recipes online or consult a dietitian for more ideas on how to include beans into the diet.

Summary

Beans offer many health benefits for people with diabetes. They are a versatile, high-nutrient superfood that can help control blood sugar levels and fight disease. Benefits for people living with diabetes include high protein and fiber, low fat, and low GI rating. If working with a dietitian, speak to them about adding more beans into the diet plan.

What to know about vitamin K-2

Medical News Today 29 April 2019 By Jamie Eske

Vitamin K is an essential vitamin that supports blood clotting and healthy bones. It occurs in two forms, K-1 and K-2.

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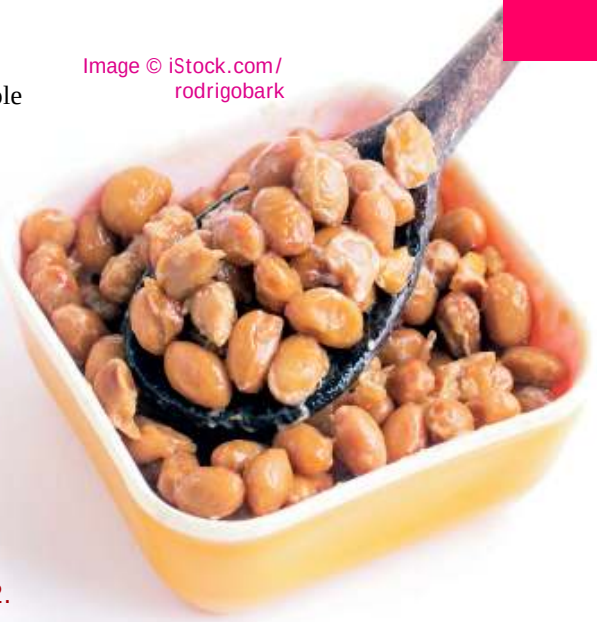


Vitamin K-1 is the primary form, and it mainly comes from leafy green vegetables. Vitamin K-2 occurs in animal proteins and fermented foods. The bacteria in the human gut also produce small quantities of K-2.

In this article, we discuss vitamin K-2, its functions, and how it differs from K-1. We also describe dietary sources, health benefits, the recommended daily intake, deficiency symptoms, and supplements.

What is it?

Vitamin K refers to a family of fat-soluble vitamins that the body needs to produce a protein called prothrombin, which promotes blood clotting and regulates bone metabolism. The vitamin comes in two main forms:

- Vitamin K-1, or phylloquinone, occurs naturally in dark leafy green vegetables and is the main dietary source of vitamin K.
- Vitamin K-2, or menaquinone, is present in small quantities in organ meats and fermented foods. Gut bacteria also produce vitamin K-2.

Functions

The body needs both types of vitamin K to produce prothrombin, a protein that plays crucial roles in blood clotting, bone metabolism, and heart health. Vitamin K also helps facilitate energy production in the mitochondria of cells.

Vitamin K-1 is primarily involved in blood coagulation. K-2 may have a more diverse range of functions in the body.

In a long-term study involving 36,629 participants, researchers observed an association between high intakes of vitamin K-2 and a reduced risk of developing peripheral arterial disease (PAD), particularly in people with high blood pressure. However, the authors concluded that K-1 had no effect on PAD risk.

Vitamin K has antioxidant properties. It protects cellular membranes from damage due to excess free radicals, in a process known as peroxidation. Blood thinning medication, such as warfarin, can lower the antioxidative potential of vitamin K.

K-1 vs. K-2

Vitamins K-1 and K-2 have different chemical structures. Both types have a phytyl side chain, but K-2 also has isoprenoid side chains. K-2 has several subtypes, called menaquinones (MKs), which scientists have numbered MK-4 through MK-13, based on the length of their side chains. K-1 is the primary form of the vitamin, and it is mainly present in leafy green vegetables. However, the body has difficulty absorbing vitamin K-1 from plants.

According to a 2019 review, research suggests that the body absorbs 10 times more vitamin K-2, in the form of MK-7, than vitamin K-1. Vitamin K is fat-soluble, so eating dietary fats, such as butter or plant oils, may enhance the body's absorption of vitamin K-1 from plants. Bacteria in the gut can synthesize vitamin K-1 into vitamin K-2. Also, fermented foods, meat, and dairy products contain modest amounts of vitamin K-2. The body stores vitamins K-1 and K-2 differently. K-1 accumulates in the liver, heart, and pancreas. K-2 occurs in high concentrations in the brain and kidneys.

Best dietary sources

Several foods are rich in vitamin K-1, and vitamin K-2 is much less common. Bacteria in the gut can convert some K-1 into K-2. Fermented foods are a good source of vitamin K-2. Also, because it is fat-soluble, organ meats and high-fat dairy products contain fairly substantial quantities of vitamin K-2. Conversely, lean meats, such as poultry, are not good sources of K-2.

Dietary sources of vitamin K-1 include:

- dark leafy green vegetables, such as spinach, kale, and collards
- lettuce
- turnips
- broccoli
- carrots
- vegetable oils
- blueberries
- grapes

Dietary sources of vitamin K-2 include:

- natto, a traditional Japanese dish of fermented soybeans
- sauerkraut
- dairy products, especially hard cheeses
- liver and other organ meats
- beef
- pork
- egg yolks
- chicken
- fatty fish, such as salmon

Health benefits of vitamin K-2

In addition to its crucial role in blood clotting and wound healing, vitamin K-2 has a number of other health benefits. We discuss some of these below.

Heart health

Vitamin K-2 may lower the risk of cardiovascular damage and improve overall heart health. According to a 2015 review article, K-2 activates a protein that prevents calcium deposits from forming in the walls of blood vessels. The author cited findings suggesting that a diet high in natural vitamin K2 may decrease the risk of coronary heart disease.

Bone health

Vitamin K-2 promotes healthy bone mineral density by carboxylatingosteocalcin, a protein that binds calcium to bones. A 2019 study investigated the effects of taking MK-4 supplements in 29 postmenopausal females who had experienced hip or vertebral compression fractures. The researchers concluded that taking 5 milligrams of an MK-4 supplement daily reduced the levels of undercarboxylatedosteocalcin to that "typical of healthy, premenopausal women." A 2017 study from Japan examined whether vitamin K-2 enhances the effects of standard medication for osteoporosis in adult females aged 65 or older. According to the results, vitamin K-2 did not appear to enhance the effects of the osteoporosis medication.

Anxiety and depression

High blood glucose levels may increase a person's risk of developing depression, anxiety, and cognitive impairment. A 2016 study investigated the effects of vitamin K-2 in rats with metabolic syndrome, high blood glucose levels and symptoms of anxiety, depression, and memory deficit. After 10 weeks, treatment with vitamin K had normalized blood glucose and reduced symptoms of anxiety and depression. However, it did not improve memory deficit in the rats.

Cancer

Vitamin K-2 has antioxidant properties that may help protect against cancer. In addition, findings suggest that K-2 may suppress genetic processes that lead to tumor growth. According to a 2018 study, vitamin K-2 that scientists had modified with a sialic acid-cholesterol conjugate significantly suppressed tumor growth in mouse cells. A 2019 study suggests that K-2 significantly reduces the activity of hypoxia-inducible factor 1-alpha (HIF-1A) in hepatocellular carcinoma cells. HIF-1A is an important target for cancer drug therapy.

Recommend daily intake

The Office of Dietary Supplements (ODS) recommend a daily intake of 120 micrograms (mcg) of vitamin K for adult males and 90 mcg for adult females. There is no specific recommendation for vitamin K-2.

Deficiency symptoms

According to the ODS, vitamin K deficiency affects very few adults in the United States. Newborns and people with certain gastrointestinal disorders, such as celiac disease

Image © iStock.com/ Yaroslav_Melnik

and ulcerative colitis, have a higher risk of vitamin K deficiency. A severe deficiency increases the time it takes for the blood to clot, making a person more prone to bruising and bleeding and increasing the risk of hemorrhage. A deficiency of the vitamin can also reduce bone mineralization, which can lead to osteoporosis. Certain medications can affect vitamin K levels in the body. For example, long courses of antibiotics can kill the gut bacteria that produce vitamin K. Some cholesterol-lowering medications can also interfere with the body's ability to absorb vitamin K. Blood thinners, such as warfarin, can interact dangerously with the vitamin. It is important for people taking these medications to consume the same amount of dietary vitamin K each day and to speak to a doctor before taking supplements or making dietary changes.

Supplements

While the ODS report that vitamin K deficiency is very rare and that most people are getting enough of the vitamin from their diet, anyone at risk of a deficiency may wish to consider dietary supplements. Many multivitamins contain both forms of vitamin K. A person can also purchase vitamin K as a standalone supplement or in combination with specific nutrients, such as vitamin D, calcium, or magnesium. The types of vitamin K commonly available in dietary supplements include: vitamin K-1, as either phylloquinone or a synthetic form called phytonadione vitamin K-2, as either MK-4 or MK-7. The concentrations of K-1 and K-2 vary, depending on the supplement. Always check the nutrition label before purchasing supplements. Vitamin K can interact with some drugs, especially blood thinners, so it is important for people taking prescription medications to speak to their doctor before using a dietary supplement. A variety of vitamin K supplements are available to purchase online.

Mexican study suggests potential prebiotic activity of mango peel

By Stephen Daniells 22-Apr-2019 – NutraIngredients Asia

Mango peel may selectively boost the growth of beneficial bacteria, and open up opportunities to use the waste material as a prebiotic ingredient, suggests a new study from Mexico.

The indigestible fraction of mango peel may favor the growth of Bifidobacterium and Lactobacillus, and may result in the production of beneficial short chain fatty acids (SCFAs), according to findings published in Food Research International. “The production of SCFA are not always related to the growth of a particular genus but can also influence the abundance of other bacterial species with specific health properties through crossfeeding or other mechanisms,” wrote researchers from Tecnologico Nacional de México/Instituto Tecnologico de Tepic, working with scientists from Maastricht University in the Netherlands. “The indigestible fraction of MP can potentially be used as a prebiotic ingredient.”

Prebiotics are defined as: “A substrate that is selectively utilized by host microorganisms conferring a health benefit” (ISAPP, published in Nature Reviews Gastroenterology & Hepatology , 2017, Vol. 14, pp. 491-502). The researchers obtained waste mango peel from MexiFrutas, a fruit processing company in Mexico, and found that the indigestible fraction was about 60% in the mango peels, and this included dietary soluble and insoluble fiber, polyphenols, and resistant protein. The dietary fiber content was 40% of the peel.

Using a lab model of the intestines (TIM-2) containing human fecal microbiota, the researchers found

Image © iStock.com/bdspn

that, after 72 hours of fermentation in the system, the relative abundance was mainly distributed over the genera Bifidobacterium, Lactobacillus, Dorea, and Lactococcus . Short chain fatty acids (SCFA) were produced with a molar ratio of 56:19:24 for acetic, propionic and butyric acids, respectively. “Mango peel has a high indigestible fraction that can be fermented, it showed a production of SCFA similar to SIEM standard ileal effluent medium Control and other dietary fiber material such as cassava by-product,” wrote the researchers.

Nutritional skincare solution? Scientists hope novel vitamin delivery system could improve public health in India

By Cheryl Tay 18-Feb-2019 – NutraIngredients Asia

Scientists believe novel delivery format via the skin could result in improved compliance in nutritional intake, and a lower incidence of nutrient deficiencies in India.

Researchers at the Indian Institute of Technology-Bombay (IIT-B)

Image © iStock.com/GODS_AND_KINGS


Image © iStock.com/ Foremniakowski

have developed a first-of its-kind technology that is said to facilitate the systematic delivery of multivitamins and other nutrients (including vitamins B12 and D, folate and iron) into the bloodstream through application to the skin.

Speaking to NutraIngredients-Asia , head of IIT-B's department of biosciences and bioengineering, Dr Rinti Banerjee, said: "Micronutrient deficiencies are prevalent in India, so one of the approaches we thought of (to combat this) was to deliver nutrients through the skin, using a medium which was already commonly used in daily life. With this technology, we looked at different types of cosmetic products that could be used to deliver these nutrients, including body lotion, face masks and lip salves. We then used a technology that was an offshoot of the first one to develop a massage oil containing multivitamins and iron, whereby the massaging action would enhance the delivery of the nutrients in the oil."

She added that the research team's priority was to address nutrient deficiencies among expectant mothers — who tend to need more folic acid and iron — and women of child-bearing age, especially since low overall compliance meant that multivitamin pills and iron supplements were insufficient in eliminating hidden deficiencies. As such, she believes this format will increase compliance in nutrient intake, as opposed to oral supplementation. "The technology we used takes care of interaction with the outermost layer of skin — the stratum corneum — which acts as a barrier that prevents substances from entering the body through the skin. The nutrients are encapsulated in a way that allows them to pass through this layer."

The technology in question uses tiny liposomes — vesicles containing a lipid typically found in soybean and a naturally occurring unsaturated fatty acid — with which the research team developed a formulation consisting of flexible, biodegradable nutrient-rich soft materials which were then stabilised into different types of commonly used cosmetic products These materials allow the nutrients in these products to interact with barrier lipids in the uppermost layer of skin, creating temporary gaps that then allow them to pass through the rest of the skin layers. The liposomes then break down within the body, dispersing the nutrients throughout the body via the bloodstream. Banerjee added: "Oral supplements tend to get broken down in the stomach and liver, whereas this innovation will allow nutrients to bypass this process." So far, technology has received US and Indian patents, with a second Indian patent already filed.

Trials and technology
The massage oil has been tested in a number of studies, including laboratory experiments, animal studies, a preliminary clinical nonirritation test, independent skin-irritant tests and pre-clinical trials. Currently, a large-scale clinical trial is being conducted in Pune, and is expected to conclude sometime this year. Banerjee said the formulation was within the recommended dietary allowance (RDA) and could therefore be used by any demographic.
Furthermore, it was found to be skin-safe, and efficient in nutrient delivery. "Our pre-clinical data showed there was sufficient absorption of nutrients from the massage oil through the skin. The oil has also been shown not to cause any irritation to skin, and is suitable for any demographic: male, female, pregnant women and older people."

With regards to whether or not the oil is suitable for those with skin conditions, she said: "Theoretically, it should also be safe for people with skin conditions like eczema or psoriasis to use, but we have not done any tests on that yet."

Commercial considerations
Successful commercialisation of the massage oil (and other related cosmetic products) could very well lead to major improvements in public health, especially in India, where suboptimal nutritional status has caused children, pregnant women and lactating mothers in particular to suffer from iron and folic acid deficiencies. These deficiencies in turn lead to poor absorption of other vital macro- and micronutrients, compromised immune health, and predisposition to chronic diseases such as heart problems, diabetes and hypertension. Banerjee said, "We have a contract partner who has done manufacturing for some of our clinical trials, and we are presently in discussions with them to commercialise this oil. Nothing has been finalised yet, but process to license the technology has started."

The process of developing the nutrient-rich cosmetic products was funded by the Gates Foundation, and the development of the body massage oil for babies was funded by Grand Challenges Canada. The research team has said they are able to come up with similar formulations containing higher doses of multivitamins and iron, but Banerjee has also clarified that the current formulation is not a treatment for any disease but rather, a preventive product that contributes to overall well-being. "There are nutritional deficiencies faced even in the developed world because of lifestyle patterns and eating the wrong food, leading to malnutrition. So our innovation can be fine-tuned to also meet those market needs."

Image © iStock.com/VogelSP

Enjoyable delivery forms remain top demand in children's supplements

25 Apr 2019 Nutrition Insight

Balanced nutrition is essential for children's healthy growth and development. Although a perfectly balanced diet should theoretically cover all needs, it may prove challenging for an average adult, let alone a child, to achieve it.

Targeting the nutritional needs of their children is a priority for parents globally and supplements manufacturers are catering to these specific nutritional needs by formulating supplementation accordingly. Enjoyable delivery methods, alongside clean label and sustainability claims, continue to be top drivers in this space.

"The early stage of a child's life is incredibly important for physical growth, cognitive development and the prevention of future diseases. The transition from infant nutrition to table food can be challenging. Children may be picky eaters or have food intolerances, while busy family lifestyles and inappropriate food choices can all influence the quality of nutrition a child receives," Lay Kwan Goh, Head of Global Marketing BASF Human Nutrition tells NutritionInsight.

According to the American Academy of Pediatrics, most children do not get enough iron and calcium from their diets. Other vitamins of concern are vitamin D, A and K, and the B vitamins. Supplementation may, therefore, a viable option to support children's nutrition.

"The declining nutrient content of food and increasing consumption of processed foods are contributing to deficiencies and certain children are prone to them genetically. The cases where supplementation is necessary for healthy development are many and rising. Simultaneously rises the need for quality products that actually resolve issues," Blaž Gorjup, Chairman and Founder of PharmaLinea, tells NutritionInsight. "While nutraceutical supplements should never be considered a replacement for a balanced diet, they do offer parents the reassurance of providing their children with the extra nutrients to ensure they are always maintaining their recommended daily guidelines," Rui Yang, Chief Strategy Officer, Sirio Pharma, tells NutritionInsight.

"Enjoyable" delivery

Children can be very particular about the foods they consume, which is why the need for enjoyable delivery methods is emphasized in this space. From flavor to shape and color, delivery forms can "make or break" a supplement's popularity. Innova Market Insights reports that the average annual growth in functional fruit gums from 2014-2018, was up by 12 percent CAGR over this period. For chewable tablets, an average annual growth of 7 percent was reported over this period, while for gummies it was up 15 percent. A lot of inspiration to create supplements with an appealing format for younger generations can be taken from the children's sector.


Image © iStock.com/peliustok

"Generally, supplements with 'fun' factors are more enjoyable for children and entice picky eaters to consume supplements beneficial for their development. For example, supplements in powder form, which can be sprinkled into their meals and tasty supplements, such as gummies, are well received," notes Goh.

Delivery method is crucial to children, according to Yang. Essentially, the dosage form and flavor of supplements must be appealing to children. Chewable products are more suitable for children, such as gummy and chewable tablets. "This is evidenced by the increase in demand of gummy formulations across US, Europe and Asia – creating new nutraceutical dosage forms and flavor combinations will help us expand the growth potential across the market," Yang notes. While softgels offer an easy route to consuming supplementary vitamins, minerals and omega 3, chewable products offer an attractive alternative by providing the same benefits while masking the advantages under a blend of textures and flavors that is more desirable.

"Although preferences vary to some extent with geography, we are seeing with our partners on markets globally that demand for liquids and gummies is rising," notes Gorjup. Gummies, however, may confuse children as they are associated with candy, says Gorjup who advocates for syrup forms that are just as tasty, but are a non-food formulation. "Keeping a certain barrier between food and food supplement forms can be beneficial in case of children. Also popular are liquid drops that can be easily masked into other food or drinks and convenient sachets for on-the-go use," he adds. "When we do focus groups with younger consumers, they are all over stick packs and powder delivery and other forms that they can just consume with a food item during the day," Jeff Hilton, Partner and Co-Founder of US-based brand consultancy BrandHive told NutritionInsight in an interview discussing the Millennial demographic's supplementation demands.

Innovation in supplementation and challenges

When factoring in the tastes of young consumers, the supplements space allows for much experimentation and innovation in flavors, and most importantly, in delivery. Prolonged shelf life, stability in formulation and clean label claims are other industry-wide goals that influence the children's supplements space as well. According to Gorjup, an interesting area of PharmaLinea's innovation is preservative-free liquid products. Achieving stability in liquid form is challenging as it is, but removing preservatives takes it a step further. We have developed several preservative-free liquid drops and demand for them is substantial, especially for the youngest, most sensitive users," he notes.

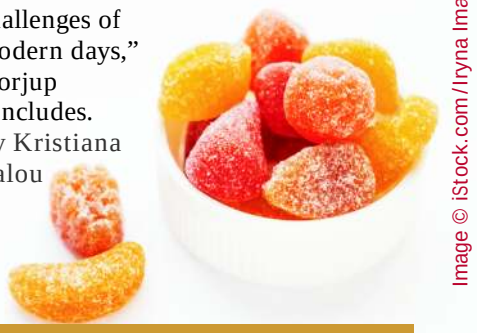
To accelerate innovation, BASF has four global application labs that are constantly experimenting with new formulations, formats and combinations relevant to young consumers. At Sirio, the company pays great attention to the stability and quality of its products, from the selection of raw materials and formula development to dosage form production.

Regulatory and/or registration requirements, especially for supplements aimed at young children, can be very strict and this may prove a challenge for developers. Other challenges, according to Yang, include post-manufacturing difficulties related to the quality of products, such as aspects of stability and shelf-life over the course of the expected consumer availability. "Stability testing enables us to predict an appropriate shelf-life for the product; ensuring consumers' expectations of quality are met throughout the products shelf-life."

The next big thing in children's supplementation. Continuous innovation means predicting trends and consumer needs and acting accordingly. The supplementation space is vivid with nutritional and health trends that are bound to influence future NPD. Prevention is taking the lead in supplement purchasing drivers, according to Gorjup.

Another area of pressing concern is exposure to screens. Existing eye health products are mostly targeted to seniors, excluding the population that is actually regularly using tablets and smartphones at an alarming rate, early in life. "Supporting children's vision with prevention in mind is another opportunity and future trend that will soon be impossible to overlook. Developing clinically substantiated solutions in child-friendly form is the newest challenge," Gorjup says. While it is easy to get hooked on trendy buzzwords within the industry, the main reason that supplementation exists should not be slighted. Solving existing or rising children's needs is the key focus and driver. "The next big trends we see are in preventive solutions for challenges of modern days," Gorjup concludes.

By Kristiana Lalou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Softgel innovation: Ayanda encapsulation method combines probiotic with omega 3

26 Apr 2019 Nutrition Insight

Ayanda, the European branch of global nutraceutical company Sirio Group, has created an innovative softgel capsule that can contain both active probiotic bacteria and omega 3.

Softgel capsules are usually made at high temperatures, a factor that can inhibit high probiotic concentration. Ayanda has secured European patent accreditation for the novel dosage solution, which adds to the company's existing probiotic capabilities in hard capsules, tablets and powder sticks.

"This softgel is the first ever that is able to combine the benefits of probiotics, coupled with omega 3 within a single capsule and has secured a patent through the European Patent Office," Dr. Dominique Baum, Managing Director at Ayanda, tells NutritionInsight. "It opens up many unique combinations for brands in softgel forms with viable probiotic bacteria. Ayanda found a delicate balance to ensure the survival of probiotic bacteria and an intact soft gel capsule," she notes.

Ayanda spent ten years developing a gentle approach in encapsulation that raises the survival rate of probiotics. The innovation enables the manufacture of softgel capsules comprising uncoated probiotic bacteria alongside at least one oil – e.g., fish oil with DHA and EPA and vitamins in one single softgel. "Lactobacillus and Bifidobacterium probiotics are some of the more well-documented strains that can be used in this softgel, but it works with many different types. Additionally, this can be combined with omega 3 to contribute to an array of health benefits, such as supporting brain function, eye health, cardiovascular health, gastrointestinal well-being as well as strengthening the immune system," Baum explains. "We are starting with the unborn child and the mother as a potential consumer group, but this product is also suited to all adults thoughtful of preserving vitality, vision and vascular health," she notes.

The creation of the patented process was achieved by adjusting to the specific characteristics of probiotics, which uniquely minimizes the loss of viable cells during production. Ayanda designed process parameters that dramatically improve survival rates and defined packaging and storage conditions accordingly.
"With this new technology, we expect to see a large interest from nutraceutical brand owners, as it opens up many possibilities for truly novel products," Baums says.

Ayanda's core business is the development and manufacture of complex softgels containing up to ten or more ingredients. This new technology forms part of a wider innovation strategy and corporate culture at Ayanda and Sirio – following the announcement of the company's enhanced global R&D group in early April – with both European and China teams currently undertaking proactive research on a number of projects. These include the creation of new nutraceutical dosage forms and formulations to help customers advance products to market faster. "We started this particular project with the simple goal of trying to combine the advantages of omega 3 fatty acids and probiotics in one single softgel capsule. For consumers, there is a clear gap in the market, as at present they need two different dosages," Baum says.

The innovative softgel will be unveiled to the wider market for the first time at Vitafoods Europe in Geneva, Switzerland, May 7-9.
In January, Sirio Pharma Co Ltd (CDiMO) pegged consumer friendly, "enjoyable dosage forms" as expected to see major contract services growth in 2019. "Pill fatigue" has boosted the popularity of consumer-friendly dosage forms such as sprays, gummies, liquids and even powder formats, in alignment with consumer needs for fast, safe and efficient supplement delivery systems.
Baum says that "enjoyable dosage forms" have been on the rise over the last couple of years and the company has seen that gummy formulations and softgel formulations are popular among both adults and children. This is because they enable a preferential dosage form for a multitude of customers and are easier and more consumer-friendly to ingest than traditional powders or liquids, according to Baum.

Last week, Sirio announced a global collaboration with specialists located in Asia, Europe and the US. Combining the R&D efforts of the company's scientists and global industry experts, the move aims to help customers bring innovative, safe and effective products to the market.

By Kristiana Lalou

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The number of people affected by food crises remains at alarming levels

Science Daily April 2, 2019

More than 113 million people across 53 countries experienced acute hunger requiring urgent food, nutrition and livelihoods assistance in 2018, according to a new report published today in Brussels.

The 2019 Global Report on Food Crises, a product of the Global Network against Food Crises, was presented jointly by the European Union, the Food and Agriculture Organization of the United Nations (FAO), and the UN World Food Programme (WFP) at a high level event dedicated to food & agriculture in times of crisis.

The conference, taking place on 2-3 April 2019 in Brussels, will look at innovative approaches and solutions for preventing and addressing food crises, plus a roadmap for joint future action.

Countries in Africa remained disproportionally affected by food insecurity

According to the report, the worst food crises in 2018, in order of severity, were in: Yemen, the Democratic Republic of the Congo (DRC), Afghanistan, Ethiopia, the Syrian Arab Republic, Sudan, South Sudan and northern Nigeria. These eight countries accounted for two thirds of the total number of people facing acute food insecurity -- amounting to nearly 72 million people.

Over 100 million people annually faced periods of acute hunger in the last three years

The figure of 113 million people represents a slight improvement over the number for 2017 presented in last year's report, in which an estimated 124 million people in 51 countries faced acute hunger.

The modest decrease is largely attributed to changes in climate shocks. A number of highly exposed countries did not experience the intensity of climate-related shocks and stressors that they had experienced in 2017 when they variously faced severe drought, flooding, erratic rains and temperature rises brought on by the El Niño of 2015-16.

These include countries in southern and eastern Africa, the Horn of Africa, Latin America and the Caribbean, and the Asia-Pacific region. An additional 142 million people in a subset of 42 countries were found to be living in Stressed conditions on the cusp of severe hunger (IPC/CH Phase 2). They risked slipping into Crisis or worse (IPC/CH Phase 3 or above) if faced with a shock or stressor.

Acute and chronic malnutrition in children persists

High levels of acute and chronic malnutrition in children living in emergency conditions remained of grave concern. The immediate drivers of undernutrition include poor dietary intake and disease.

Mothers and caregivers often face challenges in providing children with the nutrients they need at critical growth periods in food crises. This is reflected in the dismally low number of children consuming a minimum acceptable diet in most of the countries profiled in this report. Disease outbreaks were also widespread in many of these contexts as a result of poor sanitation and hygiene and the limited capacity response of trained healthy systems.

Primary drivers -- conflict and insecurity, followed by climate and natural disasters

Conflict and insecurity remained the key driver of food crises in 2018. Some 74 million people, over the half of those facing acute hunger were located in 21 countries affected by conflict or insecurity. Around 33 million of these people were in 10 countries in Africa; over 27 million were in seven countries in Western Asia and Middle East; 13 million were in three countries in South and South-east Asia and 1.1 million in Eastern Europe.

Climate and natural disasters pushed another 28 million people into situations of acute food insecurity in 2018. As in previous years, most of these individuals were in Africa, where nearly 23 million people in 20 countries were acutely food insecure due to climate shocks. Economic shocks were the primary driver of acute food insecurity for 10.2 million people, mainly in Sudan, Burundi and Zimbabwe.

Food insecurity: short-term outlook for 2019

Yemen, the Democratic Republic of the Congo, Afghanistan, Ethiopia, the Syrian Arab Republic, Sudan, South Sudan and northern Nigeria are expected to remain among the world's most severe food crises in 2019. Large segments of populations in most of these countries risk falling into Emergency (IPC/CH Phase 4) levels of acute food insecurity if no action is taken.

Climate shocks and conflict will continue driving food insecurity and are expected to severely affect several regions. The flooding due to cyclone Idai that followed a rather dry weather in parts of Southern Africa is compounding the already fragile food security in the region.


Image © iStock.com/ hadynyah

The drought in Central America's Dry Corridor has dampened prospects for agricultural output and probable El Niño conditions are likely to have an impact on agricultural production and food prices in Central America and the Caribbean.
The needs of refugees and migrants in host countries are expected to remain significant, namely in Bangladesh and in countries hosting Syrian refugees as well as for displaced populations in South Sudan, DRC, Central African Republic and Somalia.
The number of people who are displaced, refugees and migrants are expected to increase if the political and economic crisis persists in Venezuela.

The way forward -- tackling the root causes
The authors of the report put ending conflicts, empowering women, nourishing and educating children, improving rural infrastructure and reinforcing social safety-nets as essential for a resilient, stable and hunger-free world.

In the last ten years, humanitarian assistance and spending needs have grown by almost 130 percent, with only approximately 40 percent covering needs in the food and agriculture subsectors.
The surge in humanitarian needs, as well as the potential for agricultural development and rural resilience-building to provide a buffer against crises -- highlights the need for a new way of responding to the food security challenges.


Image © iStock.com/VikramRaghuvanshi

The authors of the report point to the need for simultaneous action across the humanitarian-development nexus, such as investments in conflict prevention and sustaining peace, which will result in saving lives and livelihoods, reducing structural vulnerabilities and addressing the root causes of hunger.

Background information
The Global Report on Food Crises focuses specifically on the most severe manifestations of acute food insecurity in the world's most pressing food crises, complementing the evidence reported by The State of Food Security and Nutrition in the World 2018, which identifies 821million undernourished people.
The Global Report on Food Crises coordinated by the Food Security Information Network and compiled in cooperation with the JRC, the United Nations Food and Agriculture Organization (FAO), the United Nations Children's Fund (UNICEF), the World Food Programme (WFP), and several other organisations, identifies crucial countries and regions where assistance should be prioritised to bridge the gap between emergency and development operations.

It's based on the methodology developed and tested by JRC in the first global report in 2016. In the last six years, the EU has been assisting around 26 million food-insecure people through social transfers or livelihood support from long-term development assistance. Selected results show that in that period almost 18 million women of reproductive age, adolescent girls and children under 5 have been reached; in 40 partner countries, the prevalence of stunting has decreased over 5 years.

Since 2014 more than 3 million smallholder farmers have received support for more sustainable production and better access to markets and land; between 2013 and 2017, 800,000 women and men achieved secure land tenure. Over the same period, 3.8 million smallholder farmers benefited from rural advisory services; sustainable land management practices were implemented across more than 4 million hectares of land.


Image © iStock.com/Dishant_S

Nutrition is Top Priority for About Half of Mothers Globally

04.22.19 Nutraceuticals World

Providing nutritious meals to children is a top priority for mothers across the world, despite regional differences in diets, according to a new study from Royal DSM.

For nearly half (47%) of women questioned as part of the new DSM Global Kids Usage and Attitude Study, making sure their child receives enough nutrients is the most important motivation at mealtimes.

When asked about mealtime priorities for their children, 38% of respondents agreed that boosting the amount of fruit and vegetables consumed was important, whereas 25% of parents would like to introduce a variety of different foods into their child's diet.

The online study surveyed more than 7,400 mothers of children aged 4-12 across 12 countries; the U.S., China, Indonesia, Brazil, Mexico, Germany, Australia, India, Thailand, Vietnam, Saudi Arabia/UAE, and Russia. As well as gaining an understanding of qualitative behaviors, attitudes, usage patterns and drivers of consumption for nutritionally fortified products, the survey asked parents about key health interests for their children.

Results revealed the top three interests globally were a heathy immune system, diet, and sleep patterns (including quantity and quality of sleep). Specific health priorities varied across countries with Western markets prioritizing healthy teeth and bones, while cognitive development was identified as a higher priority in Asian countries like Vietnam and Thailand.

This latest DSM report offers an opportunity for food, beverage, and dietary supplement brand owners to develop optimal, science-backed nutritional solutions that are tailored to meet specific consumer preferences, increasing the appeal to both children and their parents. For example, the study discovered that picky eating is a challenge for parents worldwide, with 39% of kids globally considered to be selective about what they eat. As such, parents must find innovative ways to ensure their child is receiving the nutrients they need for optimal growth and development.

The survey also found that moms are already trying to complement their child's meals by purchasing fortified food and beverages that support optimal nutrition or opting for dietary supplements to boost vitamins missing from the diet. It discovered that mothers are more likely to purchase fortified foods or beverages if they make the following claims: "Has essential vitamins and minerals," "Supports overall health," and "Provides complete nutrition."

When asked about dietary supplements, boosting or supporting immune health was a top priority globally and a recommendation by a healthcare professional is the biggest influencer of purchase.

"The findings from this particular report not only highlight the vast range of health priorities worldwide, but also provide significant insight into how the nutritional preferences of kids vary from country to country, emphasizing the importance of targeted solutions tailored to specific nutritional demands and desires," said Laura King, global early life nutrition segment manager, DSM Human Nutrition and Health. "Backed by DSM's expertise in the market, the essential insights gained from this study will help to facilitate innovation and drive growth within the early life nutrition sector, improving nutrition for kids worldwide."

Plant-Powered Proteins Thrive in the Sports Nutrition Sector

04.22.19 Nutraceuticals World

The value of the sports nutrition market is set to grow by around 8% per year to reach over $17 billion globally in 2021, according to Innova Market Insights' forecasts.

The mainstreaming of the market has led to a surge in interest in plant-based alternatives with the traditional dominance of whey and other dairy proteins now being challenged. In fact, over 40% growth has been reported in new sports nutrition launches with a plant-based claim (Global, 2014-2018).

Vegan-friendly positionings were used for 6% of global food and beverage launches recorded by Innova Market Insights in 2018, however, this rises to 14% for sports nutrition. RTD sports drinks have an even higher level of prevalence for these positionings at 18%.

Some of the fastest-growing plant-based proteins include soy protein isolate, pea protein, and rice protein. Moving beyond the protein arena there is also increasing use of other plant-based ingredients in sports nutrition NPD.

This is led by nuts and seeds, many of which already carry an inherently healthy and nutritious image. In Europe, for example, sports nutrition launches with nuts and seeds had a CAGR of 23% over the 2014 to 2018 period, with 2018 activity led by almonds, peanuts, and sunflower seeds.

More specialist vegan sports nutrition ranges are starting to appear, while more mainstream companies and brands are greening up their portfolios to attract those increasingly wanting to add more plant-based options to their diets.


Image © iStock.com/smirart

As demand for sports nutrition products continues to soar globally, the market has become increasingly mainstream. The concept of active nutrition is developing more widely as interest spreads beyond the traditional core base of bodybuilders, endurance athletes and high- level sportsmen. The focus is increasingly shifting towards everyday health and fitness as a lifestyle choice.

Image © iStock.com/JGalione

Innova Market Insights data also indicates that global launch activity in sports nutrition has risen particularly strongly over the past three years, reflecting this broadening out of appeal.

Sports nutrition has always had a strong focus on protein content and this has probably grown even stronger as interest has spread into the mainstream food and beverage market. "One of the most interesting developments in protein use in recent years," according to Lu Ann Williams, director of innovation at Innova Market Insights, "has been the move to alternative protein sources, with the traditional dominance of whey and other dairy proteins now being challenged by plant-based products."

In general, the sports nutrition sector continues to develop and diversify, particularly in terms of target market, with an increasingly wide range of consumers now in its sights, including those interested in different sports, exercise regimes and levels of activity. Growing consumer interest in health, sustainability, and ethics have made plant-derived ingredients and products more popular in sports nutrition in line with the food and drinks market as a whole.

10-minute meals: NPD in Japan increasingly dominated by convenience

By Tingmin Koe 07-Mar-2019 – Food Navigator Asia

From retort packs to freeze-dried products, Japanese food manufacturers are scrambling to produce ever greater rangers of convenience foods to the fast-paced modern lifestyles.

Since February 11, House Foods has launched four new retort items, namely curry chicken and pork, ginger and chili flavoured tofu. Similarly, Ajinomoto's latest list of new launches also showcased retort food, including chicken breast meat that could be cooked within five minutes. Others such as Asahi had announced the plan to ramp up its production of freeze-dried food.

In response to queries from FoodNavigator-Asia, a spokesman from House Foods said that the amount of cooking time, ease of preparation, and product packaging were key in attracting Japanese consumers. For instance, the cooking time required should not exceed 10 minutes, while the product packaging would need to illustrate the preparation steps.

The spokesman said that housewives formed the majority of the consumers, while the younger generation would " buy lunch boxes and deli, or eat at a restaurant" if they were looking for convenient options.

While convenience was an attractive selling point, he stressed that consumers also expected the product to be tasty, as individuals who do not have much cooking experience "are still expected to be able to cook well".

"It is thus important to incorporate spice and seasoning blending techniques (in the making of convenience food) …(Cooking convenience food) also makes sure that the taste quality is constant regardless of who the cook is."

As for Asahi Group Foods, it announced last month its plan to increase its production of freeze-dried food – one of its key focus since acquiring Amano Jitsugyo, Japan's largest maker of freeze-dried products in 2008.

In the next three years, it will inject JPY$12.8bn (US$115m) into its food business, and JPY$2.7bn (US$24m) would be dedicated to the production of freeze dried food. With the investment, the production volume is expected to be 1.3 times higher than that of last year, according to a spokesman.

At present, more than 200 Japanese foods are available in the freeze-dried form, including miso soup, curry and readily-made pasta. Similar to the concept of instant cup noodles, freeze dried food could be consumed by mixing the ingredients with hot water. A concept that took shape during the World War II, freeze dried food is gaining greater popularly as more consumers seek for convenient options.

Profits

Convenience food is an engine of growth for most food companies, and sales had grown as much as 25% for some of the firms. For Asahi, freeze-dried products contributed about JPY$13.2bn (US$119m) of sales last year, which was about 25% higher than that of 2017. In the case of freeze dried miso soup, new product launches and active product promotion had led to a 12% increase in sales to reach JPY$5.1bn (US$45.6m) last year.

This year, it is aiming for another 12% growth for the sales of freeze dried miso soup. "The big driving factor in this year is that we are planning to relaunch reduced salt miso soup and we will also enhance the promotion regarding freeze-dried miso soup, which is our key product," the spokesman said.

Overall, Asahi produced 270 million packets of convenience food last year and it hopes to hit a production rate of 360 million packets by 2021. As for House Foods, the spokesman said that the sales of retort curry products rose from JPY$13.8bn (US$124m) to JPY$15.2bn (US$137m) between FY2016/2017 to FY2017/2018.

Motivated by health, Americans turn to plant-based meat alternatives, yet gaps in taste and texture still persist

02-Apr-2019 Food Navigator USA

Mainstream interest in plant-based eating is on the rise—more than half (52%) of consumers claim to be eating more plant-based foods, while 63 percent say they are increasing their use of plant-based foods, according to a HealthFocus International study.

So, it's not surprising then that demand for plant-based meats is also trending upward. In fact, meat alternatives represent one of the fastest growing subcategories in the plant-based segment evidenced by scores of new product activity from both startups and established food companies. In 2018, sales of plant-based meats grew 24 percent compared to an increase of just six percent in 2017, according to Nielsen data from the Plant Based Foods Association.

Flexitarian eating among the general population, rather than an increase in people adopting a vegetarian or vegan dietary pattern, is responsible for the burgeoning market for plant-based food and beverages. Today's plant-based consumers come from across all demographic groups yet are bound by a common influence. The interest in plant-based eating among Americans is being driven by a desire for overall wellness or healthfulness.

People understand they are what they eat. Fifty-four percent of respondents to a 2017 HealthFocus International survey of more than a 1,000 Americans stated, "including more plant in my diet makes me feel healthier." And 42 percent said if options are available, they prefer to include more plant-based foods in their diet. The main health benefits people cited were heart health (63%), illness prevention (60%,) longevity (59%) and strong bones (54%).

Looking specifically at motivations for consuming meat alternatives, health again is the primary motivator. In a 2018 MarketsandMarkets Meat Alternative survey, 96 percent of respondents chose health as their primary reason for eating meat alternatives. Cost, animal welfare, a sustainable environment and a desire for variety were the other strongest motivators for eating meat alternatives.

Market opportunities

While more and more Americans may be interested in plant-based meat alternatives and product development is heating up, certain challenges still remain. Flexitarian consumers are unwilling to compromise on eating quality. People see taste, texture and lack of variety in meat alternatives as barriers to adoption. A 2019 MotiveQuest analysis of three million internet conversations focused on plant-based eating found taste and texture concerns discussed as hurdles to eating meat alternatives. People often commented that textures were too dry and crumbly instead of juicy and chewy. The researchers also found that consumers didn't expect meat alternative products to completely look, feel and taste exactly like meat—being delicious and satisfying were the key motivators. Another recurring theme was consumers seeking more variety or options in the meat alternative space. Interestingly, protein content was expected, but different types of protein were rarely discussed in these online conversations.

Image © iStock.com/vaaseenaa

Furthermore, some consumers are willing to pay five to 10 percent more for plant-based meat alternative products. So, food manufacturers who can successfully address taste and texture gaps while introducing more varieties of meat alternatives will find receptive buyers. There's definitely a market opportunity for superior tasting burritos, tacos, fajitas, hamburgers, sausage, chicken nuggets and more.

Protein, structure, binding, food protection and shelf stability are all key components in creating crave-able meat alternatives. DuPont Nutrition & Health is uniquely qualified to help food manufacturers, because of its expansive ingredient portfolio and decades of development experience and research in plant-based proteins, specifically related to meat alternatives. DuPont experts can help brands achieve real meat-like taste and texture and create innovative formats. For a great many plant-based meat alternative formats, the DuPont ingredients can supply all the components needed to develop a product from plant proteins to hydrocolloids and antimicrobials to antioxidants and colors.

Fortified flour distribution programme hits snag amid speculation on suspected 'siphoning'

By Cheryl Tay 01-Apr-2019 – NutraIngredients Asia

India's Food and Civil Supplies Department (DFCS) is investigating 90 depot holders for failing to distribute fortified flour to designated beneficiaries.

To compound matters, the depot holders allegedly scanned and recorded the biometric thumb impressions of all the recipients, even those who had not received their allotment of flour. The department was alerted to the issue by one of the beneficiaries and has organised a task force of four inspectors to investigate the matter.

Suspected siphoning

Anonymous insider sources have said this was the result of an attempt to siphon off flour, which was to be supplied by flour mills to the tune of 1,237,700kg of fortified flour. However, only 561,700kg ended up going to the beneficiaries, as the depot holders allegedly did not receive the allocated amount of flour.

The distribution had previously been set at 5kg of fortified flour per family member, and 35kg for each family that had the Antyodaya ration card. Despite this glaring discrepancy, the 90 depot holders went ahead to obtain the biometric thumb impressions of the beneficiaries. The DFCS' Kushal Boora said, "Our team is investigating the matter and action will be initiated against those found guilty."

Supply woes?

He added that the remaining undistributed supply of fortified flour for the month of February would be distributed together with the supply for March, and the depot holders involved would be required to announce this in their respective districts prior to distribution. The Public Distribution System (PDS), which oversees the distribution programme, has also claimed there was lack of supply that resulted in insufficient wheat provided to the flour mills. The PDS also sent letters to the DFCS in the districts of Ambala, Kaithal, Karnal, Kurukshetra, Panipat and Sonepat to ensure its cooperation in keeping the distribution programme running as planned. Furthermore, the PDS instructed the DFCS to make sure there is sufficient fortified flour for distribution to the depot holders, setting the deadline on March 25.

In the letter, the PDS wrote: "It has been observed that some districts have not supplied wheat till March 17 to flour mills for making fortified flour, which is in violation of the National Food Security Act. All will ensure supply of wheat to flour mills at the earliest."


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Gulf threats could put the mockers on India's grand new agri-export policy

By RJ Whitehead 12-Feb-2019 – Food Navigator Asia

Fears are mounting that a big chunk of India's food exports would be hit after suggestions emerged that Saudi Arabia and the United Arab Emirates would halt billions of dollars of imports because of issues surrounding quality.

The government's landmark programme was revealed last

December as a means to double agricultural exports to US$60bn by 2022. Then, the cabinet approved a policy that will lift all restrictions on organic and processed food, to help the government's efforts to double farmers' income by the same year. Under the terms of the Agriculture Export Policy 2018, the government will invest around US$200m to set up specialised clusters in different states focused on specific produce, such as mangoes, pomegranate, bananas, grapes, tea, and drive exports. The intention of its architect, commerce and industry minister Suresh Prabhu, is to integrate Indian farmers and their products with global value chains. "The policy will promote organic, ethnic and indigenous products ," he said at the time. It will "harness export potential of Indian agriculture through suitable policy instruments to make India global power in agriculture and raise farmers' income ", the government said in a statement.

Industry groups welcomed the move. "The new policy will provide huge impetus to agri-exports from India ," said Ganesh Kumar Gupta, president of the Federation of Indian Export Organisations. "The cornerstone of the policy is stability, which is very much needed for exports as it takes a long time to develop a market and switch on-off policy does not make us a reliable supplier ."

To back the policy, Prabhu called on state governments to formulate state- and product-specific export strategies while improving logistics and infrastructure in their regions. But while the minister was conducting the first awareness sessions with politicians and civil servants late last month, news was emerging from the Middle East that might put the policy under pressure.

According to reports, there is a threat that Saudi and the UAE's combined US$2.6bn of agriculture imports from India—or about 9% of Indian shipments— will be affected after Gulf officials warned their counterparts on the subcontinent that traders need to monitor quality better. The governments of both Arab countries have informed the New Delhi about the interception of higher than permissible levels of pesticide residues in agri-commodities, particularly in vegetables such as okra and green chillies.

The Saudi and the UAE's threats to halt imports, if enacted, might have a regional and international knock-on effect, especially as India exports a huge quantity of agricultural products to other countries in the Middle East, which is the country's biggest export destination. Cancellation of imports by Middle East countries might even prompt, say, the quality-conscious European Union to follow suit, putting a real dampener on the government's plans to increase exports.

"Lots of products imported from India contravened the provisions of the food standards and safety of the Dubai Municipality… and Saudi Arabia has reported instances of interception of higher-than-permissible levels of pesticides residues in vegetables ," said UK Vats, general manager or the Agricultural and Produce Exports Development Authority, a government-backed standards organisation. "We have issued several advisories to exporters seeking compliance of the quality norms as prescribed. Indian exporters, however, have not taken serious cognisance of these advisories. It has been intimated that if this situation continues, they are going to take strong action in the near future ," Vats added.

Apeda has warned that violating such advisories would be viewed seriously and defaulting exporters would be made to pay for financial losses they may cause. It is too early to know which direction this dispute will take but it has been clear for a long time that India must find better ways to ensure the quality and safety of its produce. Only once standards are applied by all players can the country successfully take advantage of grand and worthy export policies like the one recently announced.

Indian innovations in probiotics and functional food shine as incubator drives production and commercialisation

By Cheryl Tay 24-Apr-2019 – NutraIngredients Asia

Indian entrepreneur incubation hub Biovalley Incubation Council has announced the five start-up products it will fund in the nutrition and biotechnology sectors, among them a high-protein chilli and a novel probiotic technology that speeds up fermentation.

After a hackathon at a medical fair in Delhi on February 23, Biovalley shortlisted 10 candidates for further assessment. At a March 25 event organised by Biovalley's parent company, AMTZ, this list was narrowed down to five final candidates. They will receive funding, laboratories, machinery, and assistance with

Image © iStock.com/Stas_V

commercialisation to launch their products both in India and overseas. AMTZ will handle the funding required from the production through to the commercialisation stages.

Increased speed, decreased costs
Among the _ve selected start-ups is Sadhgama Biosciences, founded by J. Venkateshwar Rao, who has experience in medicinal chemistry R&D at companies like Novartis and GVK Pharma. He is in the midst of developing a technology involving metabolite agnostics that trigger messenger RNA (mRNA), molecules that transmit genetic information from DNA to the ribosome.

This in turn leads to the accelerated growth of probiotic strains, reducing the time needed to produce probiotics and increasing yield outcome. Rao had observed that the cost of commercial production made many probiotic products expensive for consumers, mainly due to the lengthy fermentation period, high quantity needed per product, and isolation process. Speaking to NutraIngredients-Asia , he said: "The technology works to trigger mRNA, which leads to a higher rate of cellular growth in bacteria. In conventional fermentation, it would take about 10 days to grow one million bacteria. With this technology, we can grow one million to the power of 16 in 2.5 days.

"By speeding up the fermentation process, we can produce three batches of probiotics in the time it takes other companies to produce one. At the same time, the yield per batch is higher than that in conventional probiotic production; these factors will help to lower overall costs and therefore, commercial prices."

He is currently editing the technology to make it applicable to medicinal plants by increasing each plant's speci_c phytoactive ingredient. "This updated technology can also be applied to curcumin, ginseng and yeast, therefore increasing our commercial opportunities," said Rao. Biovalley will aid in the standardisation of the technology, trials to test its stability, patent support, commercial production outsourcing.

Hot and healthy
Also among the five finalists is Kongara Functional Nutrition Food, a start-up founded by Harita Kongara, who has a strong agro-engineering background and experience in developing medicinal phytoactive yield enhancements. Kongara is developing a technology that will produce hybridised seeds that yield high-xanthophyll, capsaicin-free chillies, as well as enrich them with protein for functional food purposes. The company has already produced an initial specimen using this technology.

The process involves multiple cross-forms of breeding followed by varietal stabilisation, and has so far produced the world's first orange chilli with no pungency, and which is touted as the "highest standardised xanthophyll functional food" . In addition to xanthophyll and protein, the chilli also contains lutein and zeaxanthin. Kongara told NutraIngredients-Asia : "We have standardised the process and increased the bioavailability of the phytonutrients in the chilli. This chilli also has zero pungency and no acrid taste. It is the world's first high-protein, high-lutein chilli with zero pungency. Our micro-injection technology also allows us to introduce flavour variety, whether it's very spicy, or something sweeter.

"At the same time, cross-breeding helps to stabilise the formulation in some cases, and is thus useful for the development of nutraceuticals and other functional foods."

Biovalley will assist the start-up with product prototyping, patent support, commercial production, product development and market access. Commercial consideration Biovalley CEO Amit Srivastava told NutraIngredients-Asia that the commercial advantage of Sadhgama's novel probiotic production technology was its promising potential in terms of economy of scale: higher productivity and lower production costs.

He added: "We do plan to tie up with big companies like DSM, DuPont or Chr. Hansen, because they are involved in the production of their own strains, so we can benefit them by helping them speed up the process and increase their yield. "However, this will come later as the technology is still in the early stages, and Venkatesh has to fine-tune it before it is ready for commercial use."

Referring to Kongara's innovation, Srivastava said he selected it as he saw three 'big opportunities' for her product in India. "Functional food is a fast-growing market, and this product will set a higher standard for consumers who, instead of consuming capsules and tablets, would rather consume more nutritious versions of their favourite foods, which feels more natural than taking capsules. Secondly, we've also had a company reach out to us to use the oleoresins in the chilli as an ingredient, because they were able to obtain a higher amount of oleoresins from this chilli than from other varieties.


Image © iStock.com/pong-photo9

He added that with protein deficiency a prevalent issue in India and the population in general not being used to taking protein shakes or bars, such a product could help to _ll the gaps in this area. "Indians love chilli, and this is an easy way to get more protein to consumers without them feeling like they have to go out of the way to take supplements." He further said there was opportunity for overseas expansion — in fact, Biovalley is looking to launch the product with grocery partners such as FairPrice in Singapore, Walmart in the US, and other major supermarket chains.

New supplier bets on micelle delivery mode to boost curcumin ingredient

By Hank Schultz 22-Mar-2019 – NutraIngredients USA

A curcumin ingredient offered by a new supplier is banking on a proprietary nanotechnology delivery system to boost its bioavailability and to set it apart from other similar ingredients on the market. The ingredient, called CoreCumin, is being offered by Nurish.Me, a nascent ingredient supplier based in Miami, FL.

The company, and the technology, is the brainchild of Michal Heger, PhD, who is the company's chief formulation officer as well as cofounder. Heger is a principal investigator at Utrecht University in the Netherlands as well as being a professor of nano medicine at Jiaxing University Medical College in China.

Heger's nanotechnology approach is among the drug and ingredient delivery technologies he says he has been researching since 2004. The CoreCumin delivery system uses micelles to encapsulate nano sized curcumin particles to make them water soluble.

Boosting the solubility profile

It's well known that curcumin powders don't disperse well in water, preferring to clump together in tiny crystal formations. Ultra fine grinding of these powdered ingredients can ameliorate this effect to some degree, but can't eliminate it altogether. Using various formulation techniques using liposomes or micelles has been one approach to dealing with this issue. Making curcumin more soluble, so that it is distributed more evenly in the fluid within the gut, measurably improves its uptake. There are a number of examples of these kind of curcumin ingredients on the market, and in that sense Heger agrees that there is nothing new under the sun. But he says there is an important distinction between liposomes and micelles, when to the layman both seem to imply surrounding a hydrophobic particle with a hydrophilic carrier.

Natural components as differentiator

"Micelles and liposomes are certainly not novel. Technically speaking, liposomes are always spherical structures with an aqueous core enveloped by a phospholipid bilayer. Consequently, the amount of permutations is very limited. For micelles, there is no clearly defined structure or composition, and the compositional possibilities are endless. The novelty therefore lies in the structure and properties of the macromolecular complex itself," Heger told NutraIngredients-USA.

One potential skeleton in the closet for many of these technologies is the precise nature of the constituents of these carriers. Some of them contain constituents that would be a liability if they had to be disclosed on labels. "For CoreCumin, the composition of the micelle is such that multiple molecules are chemically bound together in a certain fashion," he said. "The greatest novelty of CoreCumin is that the complexation is performed with only natural ingredients. Many micelles use synthetic polymers such as polyethylene glycol."

Nanotechnology misconceptions

Heger said there a many misconceptions around nanotechnology as applied to nutritional formulations. Being exposed to tiny particles of pollutants is a big concern, but he said particles of this size abound in nature. "I do understand the 'urban legends' surrounding nanoparticles inhaled or ingested. Although these fears are real in our daily lives, such as the air pollution in many Chinese cities with airborne PM 2.5 particles, the scares do not apply to ingested nanoparticles composed of natural ingredients. Let's not forget that when you ingest plant material, you are de facto ingesting cell fragments and sub cellular organelles that are nanoparticles (basically, liposomes are empty cells). Our body makes nanoparticles called chylomicrons to digest fats. So the public scare is not necessary," he said.

Unintended consequences

But he emphasized the importance of using natural materials to assemble the micelles. Many molecules, including those that might be used as constituents in these technologies, might be presented in chiral forms, in left- or right-handed molecules, in other words. These can have different properties, some that might even be toxic, the said.


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"As long as formulators and chemists understand what they are doing and the nano formulations are properly tested (at least in vitro and in vivo), the safety concerns should be chiefly curtailed. This is particularly important for formulations that deviate from natural states, so for liposomes there are no concerns as to the potential toxicity of the nanoparticle, while for a micelle comprised of a non-natural matrix or chemically altered molecules the safety concerns MUST be eliminated prior to market introduction," he said.

CoreCumin has been available on the US market since the end of 2018, Heger said. The company is planning a battery of clinical trials to measure its performance against those of commercially available curcumin formulations. This far Heger said Nurish.Me has had interest from companies who want to add the ingredient to RTD beverages or in caps for point of consumption delivery. He said there has been interest, too, in adding the ingredient into CBD formulations.

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

By Pearly Neo 29-Apr-2019 – Food Navigator Asia

A recent report on global protein consumption has predicted that by 2025 China and India will lead global protein demand with some 50% of total consumption worldwide. The report was commissioned by Food Innovation Australia Limited (FIAL), and comprised an in-depth analysis of 50 protein types classified into six protein categories across 11 regional markets, with a granular focus on Australia and Asia.

The six protein categories were: Plant-based, Meat, Eggs & dairy, Wild catch fisheries, Aquaculture and Non-traditional (Insects, Micro-algae and Lab-grown meat). The researchers conducted analyses on protein supply, demand and future implications. "Global protein consumption has risen 40% since 2000, with more than half of the increase being driven by Asia," said the researchers.

This growth is expected to continue into 2025, by when China's protein consumption is anticipated to grow to 70m tonnes up from 57m tonnes in 2018. As a whole, the country will contribute 31% of the total global increase during this period. Protein consumption in India is expected to reach 38m tonnes in 2025, up from 30m tonnes in 2018, and will contribute 16% as a whole to the global increase.

Together, both countries will likely take up some 47% of the increase in global protein consumption demand by 2025. "China is a key protein market to focus on: it ranks first globally on both volume and value and [on its own is predicted to] account for 35% of global protein market value in 2025," said the report authors. "[It is also] projected to be the largest market across all protein categories, except plant-based proteins." China also ranks third in terms of value per tonne of protein, which the authors said is due to the high prices of pork and beef in the country. As a whole, global protein demand is predicted to grow by some 20% from 2018 to 2025.

Japan and Australia trail in numbers, lead in value

Conversely, Japan and Australia ranked last in terms of protein consumption demand amongst all 11 markets, but emerged as the first and second respectively in terms of value per tonne of protein. In terms of global protein consumption growth, Japan is expected to contribute no more than 0.1% and Australia 0.4%. In Japan, this could be attributed to a decline in fish consumption , as predicted by an Asia Research and Engagement (ARE) report published last year.

"Fish consumption in Japan has steadily declined […] from nearly 70% of total animal protein consumption (including animal-derived products such as dairy and eggs) in the early 1960s to about 38% in 2014," said the report.

Key drivers

The researchers stated population growth to be the key driver of protein demand worldwide since 2000, attributing some 80% of global demand to this. That said, moving forward a growing consumer middle class, technology and urbanisation rates are expected to replace this. "The rising affluence of the rapidly expanding consuming class is likely to drive another surge in protein demand," said the authors.


Image © iStock.com/nehopelon

"The advent of technological breakthroughs is also likely to facilitate major shifts in protein production that were previously unfeasible due to production constraints."

Smoking to kill salmonella? Australian company's unique technique could be industry 'game-changer'

By Pearly Neo 23-Apr-2019 – Food Navigator Asia

Australia's The Smoked Egg Company has invented a unique, world-first smoking technique that produces healthier, bacteria-free eggs in addition to infusing them with a smoky flavour. The process was initially invented to infuse the egg with a smoky flavour profile, but it was later discovered that it carried two more important effects: bacterial elimination, and halting of the ageing process.

"We use a very precise, five-part equation to smoke the eggs, " The Smoked Egg Company Director Julie Kor told FoodNavigator-Asia. "The eggs are put into our special smoker, and we then control five parts of the smoking equation: Time, Temperature, Humidity, Volume of smoke vs Volume of product. All of these must be aligned to successfully smoke an egg the way we do."

"We did not realise that all bacterial growth in the egg was being killed. At 18 weeks of age, a normal egg usually has 250 million bacteria, but our smoked egg had none whatsoever," said Kos. "We believe that this process kills salmonella too, and we are also testing this currently."

If proven to have actual effect on salmonella, the company's technique will have widespread effects, especially after eggs from multiple brands in Australia were recalled by Food Safety Australia New Zealand earlier in March this year and in September last year for potential salmonella infections.

According to the FSANZ website, the recall was due to a 'potential microbial (Salmonella Enteritidis) contamination' . The affected companies this year included Ash and Sons and Bridgewater Poultry, whereas Glendenning Farms was affected last year. "We are unsure just yet whether it kills it or has any e_ect, but any sort of effect it has on salmonella, whether slowing it down or others, will be an added advantage and a game-changer," added Kos.

The company's smoking process can be utilised on chicken eggs, duck eggs and quail eggs, although so far their packaged products concentrate on chicken eggs. All eggs used are free-range. Packaged products include as a concentrated natural smoke flavouring as well as whole shelled eggs, liquid egg whites, liquid egg yolks and liquid whole eggs, which all impart a natural smoke flavour after being cooked. The whole shelled eggs retail at A$6.50 (US$4.63) for six eggs in supermarkets, and all liquids at A$8.00 (US$5.70) per kg wholesale.

Patents and innovations

The Smoked Egg Company was only just launched earlier this year in Australia, but already holds the patent worldwide for the smoking process. Within the Asia Pacific region, Kos has her eye on the markets in more developed markets such a Singapore, Hong Kong, Japan and China. "People in the region are willing to buy Australian milk as it's safe to consume, and our eggs are safer than any other egg, so it would be good especially for young children, pregnant women, elderly folk and sick patients to reduce their exposure to bacteria," she said.

For the region, the company also intends to introduce options that are more focused on convenience, for example an egg omelette in a disc. "We're thinking of sending this over to China or Japan, where consumers can just pop it into the microwave straight out of the freezer, and then get an instant egg slider," said Kos.

An additional advantage that the smoking process can confer, especially in Asian countries, is that it stops the natural ageing process of the egg. "Especially in Asian countries where it becomes hot and humid, a lot of eggs do not poach well because it gets watery, [and this can prevent that]," she added.

That said, education and changing consumer mindsets has been the company's single biggest challenge in terms of product promotion. "One of the biggest challenges we face is that whenever 'smoked' is mentioned, people always automatically think that this means cooked, and this is not so – it's a raw egg [and can be used for any application you want]," said Kos. "The smoking process does not change the structure of the egg, and it will still do everything a normal egg does, from whipping to baking, [so the options are not as limited as people may mistakenly assume]."


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REGULATORY NEWS

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Parents across the globe are highly receptive to food health claims despite regional differences, DSM study reveals

25 Apr 2019 Nutrition Insight

Royal DSM has published the results of its latest Global Kids Usage and Attitude Study, which confirms that majority of mothers across the globe prioritize feeding their children nutritious meals, and are highly receptive to health claims presented by a product, despite regional differences in diets.

Findings of this report reflect a rising demand across the industry for personalized, fortified nutrition.

The extensive online study surveyed over 7,400 mothers of children aged four to 12 across 12 countries: US, China, Indonesia, Brazil, Mexico, Germany, Australia, India, Thailand, Vietnam, Saudi Arabia/UAE and Russia. The respondents were asked via a questionnaire about their primary health interests for their children, which researchers studied to determine culture-specific qualitative behaviors, attitudes, usage patterns and drivers of consumption for nutritionally fortified products.

The survey found that mothers often make a conscious effort to boost the nutritional value of their child's meals by purchasing fortified food and beverages or opting for dietary supplements to boost vitamins missing from the diet.

According to the study's findings, mothers are more likely to purchase fortified foods or beverages if they make the following claims: "Has essential vitamins and minerals," "Supports overall health" and "Provides complete nutrition."

When asked about dietary supplements, those with claims of boosting or supporting immune health was a top priority globally. Recommendations by a healthcare professional were also said to be the biggest influencer of purchase.

Specific nutritional priorities vary across countries.

"The findings from this particular report not only highlight the vast range of health priorities worldwide, but also provide significant insight into how the nutritional preferences of kids vary from country to country, emphasizing the importance of targeted solutions tailored to specific nutritional demands and desires," explains Laura King, Global Early Life Nutrition Segment Manager, DSM Human Nutrition and Health.

Furthermore, the results revealed that the top three specific interests of mothers globally were promoting their child's healthy immune system, diet and sleep patterns (quantity and quality of sleep) through a nutritious diet.

Other priorities varied between country to country. Western markets were found to prioritize healthy teeth and bones, while cognitive development was identified as a higher priority in Asian countries such as Vietnam and Thailand.

Almost half (47 percent) of women who participated in the survey said that making sure their child receives enough nutrients is the most important motivation when it comes to food choices.

When further asked about this, 38 percent of respondents agree that boosting the amount of fruit and vegetables consumed was important, whereas 25 percent say they would like to introduce a variety of different foods into their child's diet.

A rising demand for science-backed nutrition

This latest DSM report emphasizes an "exciting opportunity" for food, beverage and dietary supplement brand owners to develop optimal, science-backed nutritional solutions. Moreover, Innova Market Insights notes that a growing range of market segments this year are focused on the rising trend of personalized, fortified foods and supplements.

NPD in the space of child nutrition must be tailored to meet specific consumer preferences. Underscoring this point, the DSM study confirmed that picky or fussy eating is a challenge for parents worldwide, with 39 percent of kids globally considered to be selective about what they eat. With calls for reduced salt and sugar content proliferating across the food industry, innovation around this area remains in key focus, most especially in products marketed as nutritious for children.

'Injurious and dangerous': Alcohol warning labels entered into force in India from April 1

By Pearly Neo 08-Apr-2019 Food Navigator Asia


Image © iStock.com/Savushkin

The Food Safety and Standards Authority of India (FSSAI) implemented the mandatory attachment of warning labels to all alcoholic beverages on April 1, but has further extended the transition period for beverages manufactured before this date. The Food Safety and Standards Authority of India (FSSAI) has implemented the mandatory attachment of warning labels to all alcoholic beverages from April 1.

The alcohol warning labels were announced last year on March 19, and all manufacturers were initially allowed a year's grace period to make the required transitions. Two compulsory warning messages must be included on the labels, which are 'Consumption Of Alcohol Is Injurious To Health' and 'Be Safe – Don't Drink and Drive'.

Initially, the font size of the warning was fixed at 3mm for all alcoholic beverages, but this has been changed to 1.5mm for alcoholic beverages up to 200ml, and remained at 3mm for those above 200ml. "During the one-year transition period, various stakeholders brought up challenges in complying with the original font requirements," said Parveen Jargar, FSSAI Joint Director (Regulatory Compliance).

"The issue was discussed in the 13 meeting of Scientific Panel on Water and Beverages, which after detailed deliberations recommended the new font sizes."

FSSAI added that the displayed warning could be printed in either English or the local/regional language. Where the latter is used, it is 'not required to also print the warning in English'.

These warning labels fall under the jurisdiction of the country's Food Safety and Standards (Alcoholic Beverages Standards) Regulations 2018. FSSAI also stated that the use of old unused labels and printed cans will be allowed for a further six months after April 1 2019, whereas alcoholic beverages manufactured prior to this date can still be sold in the market up to March 31 2020.


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Other alcohol warning labelling regulations in the region

India is not the first country in the Asia Pacific region to implement such labelling regulations with regard to alcohol.

In November last year, Australia passed a mandatory labelling standard for alcohol that targeted pregnant women, tasking FSANZ to develop what will effectively be a pregnancy warning label for alcohol. The Australia and New Zealand Ministerial Forum on Food Regulation stated that: “Based on the evidence, a mandatory labelling standard for pregnancy warning labels on packaged alcoholic beverages should be developed and should include a pictogram and relevant warning statement.

“The Forum has requested that FSANZ develop this mandatory labelling standard as a priority and that the work be completed expeditiously.”

Thailand also has strict alcohol advertising and labelling rules in place, and all alcoholic products are also required to include one of five permitted warning messages which relate to alcohol causing either physical health issues or socioeconomic damage.

According to Thailand’s Alcoholic Beverage Control Act: ‘No person shall advertise or display, directly or indirectly, name or trademark of alcoholic beverage in a manner that showing properties thereof or inducing other person to drink’ .

Taiwan also has such regulations, which require alcoholic beverage manufacturers to attach warnings such as ‘ Excessive consumption of alcohol is harmful to health’ to alcoholic products.

According to the country’s Tobacco and Alcohol Management Division, these labels must be at least 2.65mm in font size, placed ‘conspicuously on the container’s largest external surface’ , and be on a contrasting background for ‘ready legibility’ .

Despite the implementation of the Food Safety and Standards (Alcoholic Beverages Standards) Regulations 2018 on April 1 regulating yeast content in alcohol-brewing, FSSAI has made a provision for craft breweries, allowing these to continue making beers with a higher yeast content.

Previously, the yeast content in regular beer or lager was set at zero, whereas draught beers were to have at most 40 CFU (colony-forming units). Craft beers could contain as many as three million CFU, but were not separated from these previously, causing a stir in the industry.

Ayurvedic standards in India: Regulator considers separate classification within food supplements regime

By Cheryl Tay 27-Mar-2019 – NutraIngredients Asia

The Food Safety and Standards Association of India (FSSAI) has announced its collaboration with the Ministry of Ayush on possible standards for ayurvedic ahaar, or traditional ayurvedic foods, as a separate category.

At a recent event organised by the Chamber of Indian Industry (CII), CEO Pawan Kumar Agarwal said, "We are in discussions with the Ministry of Ayush to explore various possibilities, and are looking at whether there can be standards for ayurvedic ahaar as a separate category in the food supplements regulatory framework. These standards could either be part of food supplements and nutraceutical regulations or we could look at having a separate set of regulations for ayurvedic ahaar.”

At the time, Agarwal was vague about when the ministry and the regulatory body would make a decision on whether or not ayurvedic foods would be categorised separately. "The decision of making it a separate category or keeping it in the existing food supplement regulations will be taken up at appropriate time," he said.

However, he also stated that a separate category for ayurvedic foods would aid in further developing the sector not just domestically but also globally, thereby raising overseas acceptance of ayurvedic products.

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Colour coding for sugar reduction: Sri Lanka next to implement traffic light labelling system for packaged foods

By Pearly Neo 01-Apr-2019 – Food Navigator Asia

Sri Lanka will implement a traffic light coding system for packaged foods in the country, targeting specified levels of sugar, salt and fat content following success of the system's application to soft drinks in the country.

According to documents on the Sri Lankan Ministry of Health website, these new regulations will come into force on June 1 this year. Food products that contain more than 22g of sugar per 100g will be given a red label, 8g to 22g sugar per 100g an amber label, and less than 8g a green label. Salt content of more than 1.25g per 100g will be labelled red, 0.25g to 1.25g marked amber and less than 0.25g marked green. As for fat content, foods containing more than 17.5g per 100g will be given a red label, 3g to 17.3g an amber label and less than 3g a green label.

A previous draft of the regulations published last year had also included the terms 'High Sugar', 'High Salt' or 'High Fat' to be included on the label. This appears to have been removed in the final regulations. "There are a large number of biscuit and sweets manufacturers in Sri Lanka and they sell over 80,000 tons in the country. We need to reduce the use of sugar in these products," said Sri Lankan Health Minister Rajitha Senaratne to NewsInAsia .

"Since a number of biscuit manufacturers export their products to around 55 countries, they agreed to introduce a colour coding scheme that is internationally accepted." He added that discussions on the system had been in progress since April 2018.

The traffic light labelling system had previously been introduced in the country on soft drinks back in 2016, where beverages with over 11g of sugar per 100ml were marked red, 2g to 11g were marked amber, and below 2g marked green. "After introduction of the labelling system, soft drink companies reduced sugar in their products by 10% and we think we can replicate that success here as well," added Senaratne.

Exceptions to the rule

However, the Ministry has listed out a number of food products that are exceptions to this rule. These include any primary agricultural products (including cereals, vegetables, fruits, oil, salt, sugar, meat, fish and milk), spices and flavourings sold in separate packaging and single ingredient products such as packaged/bottled drinking water, tea and coffee.

Medically prescribed or recommended foods will also be exempted, as well as infant milk formulae and foods packaged in bulk (as long as retail packs inside the bulk packaging comply).

Swift progress

In terms of progress for this labelling, Sri Lanka appears to be ahead of neighbouring India, where the draft regulations for this are just about to be released for public consultation 'soon' . An expert panel was set up last August to review these proposed new food labelling rules, including plans for red labels to be added to products high in fat, sugar and salt (HFSS).

Ministry initiative

According to insider sources, the proposal was reportedly initiated by the Ministry of Ayush, possibly as a compliment to the FSSAI's existing regulatory standards recommended in 2018 for food, nutraceuticals, health supplements, foods for special dietary uses, foods for special medical purposes (FSMPs), functional foods, and novel foods.

Currently, a group is drafting guidelines on standards for botanical ingredients in food supplements and nutraceutical products, to be published under the FSSAI Nutraceuticals Regulation January 2018. Considering India's historical ayurvedic tradition, the FSSAI has also said that if ayurvedic foods in India were to be categorised separately, it should oversee the category to ensure the manufacturers of such foods do not make therapeutic health claims.

‘Complacency' hindering regulation? FSSAI questioned as 'illegal' keto diet pills pop up online

By Cheryl Tay 26-Apr-2019 – NutraIngredients Asia

Allegedly 'illegal' keto diet pills being sold online in India has seen regulator FSSAI's authority and competence called into question, with concerns that it is not doing enough to protect consumers.


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A Mumbai-based food technologist known only as Sharadha G had reportedly decided to find out more after a week of repeatedly seeing Facebook advertisements for a keto supplement sold on Amazon. Subsequently, she tweeted that the product was "flouting all possible rules" of the FSSAI, as it contained "unapproved ingredients" , had "no licence number" , and had an "undeclared shelf life" .

The product, made by a US-based firm called Simple Organics, carries claims of promoting weight loss, and even has a money-back guarantee should customers fail to see results. Apart from substances such as sodium beta-hydroxybutyrate, calcium beta-hydroxybutyrate and potassium beta-hydroxybutyrate, the product’s Amazon listing — which has since been removed — did not state any other ingredients.

Its main selling point is beta-hydroxybutyric (BHB), a ketone produced from body fat during fasting or periods of glucose deficiency that may act as an alternative energy source. This is in line with the increasingly popular ketogenic or keto diet, a low-carbohydrate, high-protein and high-fat diet said to result in weight loss.

However, according to the Nutraceutical Regulations implemented by India's Health Ministry in 2016, BHB is not among the ingredients permitted for use in health supplements. Despite the Amazon listing having been removed, Sharadha G later tweeted that she was still seeing "sponsored ads on Facebook and Instagram" . She also told Indian media that while she was able to spot the red flags due to her position as a food technologist, a layperson might not have the same advantage.

Amazon responded by saying all sellers on its marketplace were "solely responsible for all necessary product compliance and are required to sell products which are legally allowed to be sold in India". It added that it had contacted the seller when concerns were raised about the product, which eventually led to the listing being removed from the website.

Buyer beware

Founder and director of India's Expert Nutraceutical Advocacy Council (ENAC), Sandeep Gupta, told NutraIngredients-Asia that consumers should look out for essential information when purchasing dietary supplements: the FSSAI license number and logo, brown non-vegetarian or green vegetarian / vegan logo, a list of all the ingredients along with the excipients used, the recommended dosage, and usage directions.

The product packaging should also include precautionary statements such as "do not exceed daily recommended dose", as well as directions for use in relation to various health conditions, and advice to take the product under clinical supervision if needed.

Complacency complicating matters?

An FSSAI official said in a media statement that it was aware of unlicensed products being sold online, and expected the e-commerce platform in question to "take action, delist the product, and inform us so we can take action against them".

However, a former FSSAI consultant — who chose to remain anonymous — claimed the regulator had become 'complacent' in taking said action, saying that there was a "significant backlog" of products awaiting approval in an increasingly crowded health and wellness market.

Furthermore, the consultant said there was a "lack of appropriate updates to the general public on ingredient approval status" , and that some products already on the Indian market were not "licensed according to Indian norms, but are selling anyway" .

Gupta disagreed, saying the FSSAI had already tightened import regulations and stipulated guidelines that required the suspension or cancellation of the licence of any importer that sold unsafe or prohibited food or supplement products in India; this includes not just not just sales, but also rechannelling and repacking.


Image © iStock.com/jammyphotouk

He added that the FSSAI had already implemented regulations regarding approved ingredients and additives under various food and supplement categories that applied to all food business owners (FBOs) manufacturing, marketing, importing and / or distributing such products for consumption in India.

"I disagree that FSSAI is 'complacent', and caution FBOs to be proactive and comply with these regulations. The onus of self-regulation lies largely on FBOs, as well as e-commerce platforms. The FSSAI has directed 10 such e-commerce platforms to take action against unlicensed and unregistered food operators, and ensure compliance with food safety rules and regulations."

Gupta did, however, acknowledge that there was room for regulatory improvement, starting with the monitoring of the labelling of imported products purchased via e-commerce. He said the FSSAI should require official declaration from FBOs on e-commerce platforms, especially since more consumers were now using such platforms as their main buying channel. He added: "The FSSAI should carry out periodical supervision of e-commerce FBOs. On their part, FBOs should educate and create awareness of their products to help consumers make informed decisions. "FBOs should be careful when making health claims and ensure they are approved by the FSSAI. The safety of the consumer is a shared responsibility of both the regulator and FBOs."

EFSA deem protein isolates safe for extended use in infant formula and supplements

By Will Chu 16-Apr-2019 – Dairy Reporter

The European Food and Safety Authority's (EFSA) Panel on Nutrition, Novel Foods and Food Allergens (NDA) concludes that whey basic protein isolates are safe under new proposed conditions of use.

The decision refers to a request by the European Commission (EC), which asked for safety considerations of the ingredient's use in foods for special medical purposes (FSMP) and supplements for infants.

The EC considered the application by Armor Protéines to extend its use to infant formula (powdered 30 milligrams (mg) per 100 grams (g) and reconstituted 3.9 mg/100 millilitres (mL). The French-based dairy specialists also requested extended uses in follow on formula (powdered 30 mg/100 g and reconstituted 4.2 mg/100 mL) as well as in food supplements for infants (25 milligrams per day (mg/day)).

Does not exceed intake level

"The applicant intends to market the use of the Novel Foods (NF) in FSMP and food supplements as alternative sources to its use in infant and follow on formula," EFSA notes. "The Panel notes that a combined unintended intake of 5 milligrams/kilogram per body weight (mg/kg bw) per day from food supplements and 20 mg/kg bw per day from either infant and follow on formulae or from FSMP formulae would not exceed the intake level which were considered safe by the EFSA Opinion of 2018."

The decision's timeline stretches back to 10 October 2018, where Armor Protéines submitted a request to the EC to update the entry for bovine milk basic whey protein isolate in the Union list of authorised novel foods. On 27 June 2018, the EFSA NDA Panel concluded its assessment that specifically concluded whey basic protein isolates obtained by ion exchange chromatography of skimmed cow's milk was safe for human consumption.

In the same year, the EC went on to grant marketing authorisation of the NF for its uses in infant formula, follow-on formula and total diet replacement foods for weight control. The ingredient's use in two other categories, FSMP and food supplements, was restricted to children aged 1–3 years and children/adolescents from 3 - 18 years of age through to adults.


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Lack of clarity: Plant-based regulations failing to keep pace with industry progress

By Pearly Neo 28-Mar-2019 – Food Navigator Asia

The regulatory landscape is failing to keep up with the pace of change in the soaring plant-based food and beverage sector, according to two industry experts.

In Europe, research has shown that plant-based meats sales increased 451% between 2013 and 2017, whereas the plant-based dairy alternatives market is expected to grow a further 14.5% over the next five years. The United States topped the list for vegan food labelling worldwide at US$1.75bn, but Europe took both the second (Germany, US$614mn) and third (Britain, US$507mn) spots.

Meanwhile, a Euromonitor study revealed that the Australian vegan market is the third-fastest growing in the world, currently valued at some US$136mn and set to reach US$215mn by 2020, which would mean a growth of 58.1%. In spite of the rapid growth and popularity plant-based products have generated in both of these regions, progress has been slow on the regulatory front, leaving related terminology and labels open to interpretation and causing confusion.

Regulatory confusion

According to Verena Wiederkehr, food awareness organisation and plant-based food consumption advocate ProVeg International's International Head of Food Industry & Retail, even traditional terms describing non-consumption of meat such as 'vegan' and 'vegetarian' do not have legal definitions in Europe.

"This creates problems when producers or retailers print their own labels on products as people do not know which criteria underlie these labels," Wiederkehr told FoodNavigator-Asia. "Some countries, such as Germany and Poland, have national guidelines or laws for vegan and vegetarian labelling, but a European solution is needed for market harmonisation."

Within Europe, the plant-based dairy industry in particular faces an additional obstacle: The Common Market Organisation 1308/2013 regulation, which prohibits the use of dairy terms for products not obtained from animal secretion.

"The exact extent of this so-called 'dairy ban' is not clear either, as there are court rulings saying it is acceptable to write 'alternative to yoghurt' on products and others claiming the exact opposite," said Wiederkehr. "All in all, the political arena remains dominated by the meat and dairy industry, meaning that buy-in from these traditional sectors is essential for government support," she added.

Over in Australia, CEO of plant-based industry advocate and think tank Food Frontier Thomas King told us that so far labelling discussions were at the forefront of the country's regulatory discussions. "[This is because] some traditional agriculture representatives have challenged the notion of plant-based foods using familiar terms such as 'milk', 'sausage' or 'mince'," he said.

Food Frontier supports the use of familiar terms in labels, citing the importance of these to prevent consumer confusion. "Clear, familiar terms that enable product understanding are good for both consumers and business, and help ensure Australia's competitiveness in this fast-growing, multi-billion-dollar global sector," said King. "We are con_dent that regulators will see the benefit of plant-based food producers using these terms along with qualifiers, as terms like 'sausage' denote the utility of a product, not its ingredients, ultimately helping consumers navigate the marketplace more easily."

Trends driving plant-based market growth

Apart from the usual health and wellness and sustainability concerns, a shift in consumer's dietary patterns were cited as one of the main factors driving plant-based growth towards the mainstream in Europe. As an example, a 2018 IRI study revealed that 39% of consumers in Europe consume plant-based, meatfree foods despite their diet whereas other research estimated over half of the population in Germany, the Netherlands, the UK, Poland and Spain to be flexitarian, meaning their meals are primarily plant-based despite occasional animal-based product consumption.

"[Meat] and dairy alternatives have entered the mainstream in Europe and are no longer consumed by strict vegans and vegetarians alone," said Wiederkehr. "The increasing number of companies from the meat and dairy industries entering the space clearly signals the direction in which the food industry in Europe is heading." King said that in Australia, traditional motivation was another key driver of the local plant-based market.

Image © iStock/LauriPatterson

"Australia's close relationship with Asian cultures and cuisines has seen many decades of familiarity with traditional plant proteins such as tofu and seitan," he said. "The proliferation of plant-based products in Australia have included a greater availability of traditional meat alternatives in addition to those made from mycoprotein [and] more recently, 'next generation' plant-based meat products produced using more advanced technology.

He also voiced concerns about plant-based meat supply in the country, saying that it was 'still not meeting local demand'. Increasing supply would likely require the development of new technology, but this would likely lead to higher price points, said Wiederkehr. "That said], we expect the playing field to level out in the future as economies of scale and cellular agriculture come into play," she concluded.

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

By Pearly Neo 18-Apr-2019 – Food Navigator Asia

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

Tlabs is a laboratory chain operated by the Tea Research Association (TRA) in India, and was initially established under the 11 Plan Project of the Tea Board of India as a pesticides residue lab in 2010/2011.

"We now also have a quality control laboratory, so [Tlabs] basically operates on both ends to investigate tea quality according to pesticide parameters in one lab, and quality parameters in the other," TRA Secretary and Principal Officer Joydeep Phukan told FoodNavigator-Asia.

Parameters that Tlabs focuses on during its analyses are generally in accord with the ISO 3720 standards for tea, as well as according to FSSAI norms for the local tea market.

"The FSSAI recognition is a big boost for TLabs to do more in quality moving forward," said Phukan. "FSSAI has their own list of pesticide MRLs and quality parameters for tea, [and Tlabs] can test for overall everything (sic) within our labs."

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

However, he described compliance levels within the Indian tea industry as 'very good'.

"What I can say is that the Tea Board of India would pick random samples of teas meant for export and send them to us, which we would test and upload on their portal. This appears to have lead to improvement of quality and compliance levels. "For Indian tea, I think we have been able to help the export scenario in the country."

The Tea Board of India acts as the secretarial authority and regulatory body for the tea industry in the country, and the TRA acts as a research body for the board.

Worldwide recognition

Apart from local tea testing and analysis, Tlabs has collaborated with various industry organisations worldwide that deal with teas. Examples include Tea and Herbal Infusions Europe (THIE) in the United Kingdom and the Iran Tea Association, which both hail from countries that are big importers of Indian tea.

"We have tested a lot of tea for those markets, and worked with scientists too. I think in this way, we have managed to facilitate tea trade in a better way for both sides," said Phukan.

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