

## Yogurt: A Daily Partner For Health

### Yogurt: A potential aide for weight reduction?

When it comes to limiting weight gain and reducing the risk of obesity the beneficial potential of yogurt has to be considered, said Professor Frans Kok at the YINI Symposium, which was part of the III World Congress of Public Health Nutrition.

Putting on weight is often a stealthy process that remains unnoticed for quite a while. However, over an extended period of time weight gain turns into something that cannot be ignored any longer. Moreover it can become a serious health issue for many people, making overweight and obesity related diseases a global concern and one of the 21st century's major burdens affecting numerous consumers and their dietary habits. Drawing on a broad variety of observational studies from different countries Professor Kok from Wageningen University (Netherlands) presented the audience with the potential that yogurt consumption as part of the diet, might offer to prevent or diminish overweight and its harmful consequences.



Prof. Frans J Kok

tralia or East Asia monitored the eating habits of large numbers of individuals over longer periods of time, measuring at certain intervals their weight, waist circumference and other related indicators. Although the methodology of these investigations varied, they all show a similar positive trend: The frequent consumption of yogurt is associated with a decrease of symptoms and characteristics that constitute obesity. This does not only apply to lesser weight gain and smaller waist circumference as compared to non consumers but also to reduced blood pressure and lower levels of glucose and triglycerides which are a form of fat in the blood. In general, individuals who ate larger amounts of yogurt – three servings per week or more – showed the best results.

#### Reducing weight gain

That yogurt contributes to a healthy diet is guaranteed, among other things, by its protein richness, and its high amounts of B-vitamins and calcium. Yogurt's acidity – increases the bioavailability of the contained calcium, i.e. the extent to which it can be used by the body, yogurt has a high concentration of nutrients that significantly exceeds that of milk. "In addition to these qualities there is growing evidence that yogurt consumption on a regular basis is associated with lesser weight gain as well as with a lower risk of becoming obese," said Prof Kok. Over the past decade researchers in regions as diverse as Europe, North America, Aus-

#### Positive impact on appetite control

What might underlie the beneficial effects of yogurt? "A number of studies suggest that yogurt as a substitute for less healthy foods plays an important role through its impact on appetite control," said Prof. Kok. It could be shown that yogurt, when replacing snacks such as chocolate bars or crackers, induced a higher feeling of fullness, decreased the desire to eat, delayed subsequent eating such as lunch or dinner and reduced the calorie intake in the course of regular meals. According to one study the mean delay in the request of dinner after

continued on page 2 ►

### Editorial

How to decrease malnutrition and diet related conditions such as obesity and cardiovascular diseases under a public health perspective was the guiding topic of the III World Congress of Public Health Nutrition. It was held from November 9 to 12 2014 in Las Palmas de Gran Canaria/ Spain and brought together around 850 experts from 62 countries to exchange experiences, discuss recent developments and be updated on latest scientific findings.

The various lectures, workshops and symposia including the Yogurt in Nutrition Initiative for a Balanced Diet (YINI) symposium mirrored the complexity of the challenge that we are facing. Finding solutions that work on a permanent basis is an extremely complex task that demands the application of many different dietary approaches. Yogurt has the potential to be one of the required solutions. As it has been part of the daily diet in highly different geographical regions it can be regarded a truly intercultural food that has already proven to be beneficial over a long period in human history. However, in order to employ it as a means against nutritional conditions in a targeted manner, more detailed and evidence-based knowledge about its nutritional and health-potential is needed. YINI and its collaborators who have set out to fill these gaps are warmly welcomed by the nutritional scientific community. The congress organizers have been happy to host the YINI symposium and wish for future yogurt-related research to bear rich fruit.

Prof. Lluís Serra-Majem, MD, PhD.  
Congress President



Congress President  
Lluís Serra-Majem

## Reducing CVD risks in adolescents

The findings that Prof. Luis Moreno presented suggest that milk and yogurt have the potential to reduce CVD risk factors in adolescents.

"About 25-30 % of children and adolescents in developed countries are overweight or obese and complications connected with these conditions are already frequent at young ages. Among the most worrying are cardiovascular disease (CVD) risk factors such as hypertension, insulin resistance or high triglyceride concentration," said Prof. Moreno (University of Zaragoza, Spain). According to him, existing findings regarding the role of dairy products are rather inconclusive. A review he

pointed to included 35 observational and intervention studies, 34 of which reported null and/or inverse associations between dairy intake and BMI, body fat, or energy balance. Of five randomized controlled trials, four found no association between dairy intake and measures of adiposity, while one found an inverse association. Twenty-three of the reviewed studies were based on data collected in the United States which



Prof. Luis Moreno

points to the lack of European based studies.

### Milk and yogurt stick out

To no small extent this gap has been filled by the HELENA (Healthy Lifestyle in Europe by Nutrition in Adolescence) study, performed by Prof. Moreno and his colleagues in 10 cities of nine European countries (Greece, Germany, Belgium, France, Hungary, Italy, Sweden, Austria and Spain) between 2006 and 2007. HELENA was a cross-sectional multi-center study. It included around 3500 participants between 13 and 17 years whose dietary habits together with obesity and CVD relevant characteristics such as weight, skin-fold thickness or respiratory fitness were assessed. Part of this group underwent a number of additional blood tests. Statistical analysis of the HELENA data showed that, among all food groups, milk and yogurt together with beverages based on milk and yogurt was the one food group that best discriminated individuals at high or low CVD risk. The next step was to investigate the precise relationship between dairy consumption and CVD risk factors. For this purpose the data of 511 adolescents out of the HELENA-group, who had undergone the whole range of measurements necessary for an in-depth-analysis were selected to be included in the study. These 511 participants, nearly half of them males, came from eight European cities. There were no differences between them and the rest of the HELENA group in terms of mean age, height, weight and BMI. The CVD risk factors that had been assessed in these individuals included waist circumference, skin-fold

[continued on page 3 ►](#)



### continued from page 1

having consumed a yogurt snack with a high content of proteins was 178 minutes, compared to 158 minutes for individuals who had a yogurt with only a moderate amount of proteins and 124 minutes for those who had no snack at all.

### The role of probiotics

According to Prof Kok there is also reason to believe, that the micro-organisms contained

in yogurt have a beneficial effect, mediated through the gut microbiota, on weight control: "Some studies have reported a relationship between the microbiota and obesity through inflammatory and anti-inflammatory actions of the microbiota. Probiotics such as Lactobacillus and Bifidobacterium are suggested to positively modulate the gut microbiota and may help to prevent or treat some diseases. Researchers found that in obese sub-

jects, alterations in the microbiota are associated with local and systemic inflammation that is suggested to be mostly mediated by lipopolysaccharides (LPS) that originate from the microbiota. It is thus possible to speculate that the potential anti-inflammatory actions of probiotics contained in yogurt may contribute to reduce the risk of overweight and obesity, possibly as a result of their ability to reduce LPS production."

## Yogurt consumers could be less likely to develop Type 2 Diabetes and cardiovascular diseases

Can yogurt help to reduce the risk of Type 2 Diabetes and other cardiovascular disease risk factors? Prof. André Marette presented recent evidence to support this assumption.

Among the most illustrative research projects, presented by Prof. Marette (Laval University, Canada), was the European Prospective Investigation into Cancer (EPIC) Norfolk study, conducted at Cambridge University. Over a period of 11 years scientists monitored the health of 4000 people – including 892 cases of incident Type 2 Diabetes (T2D) – and surveyed their eating habits using food diaries. It turned out that those who ate 80 g of yogurt per day – which is even less than the standard size (125 g) pot – were 28% less likely to develop T2D than those who did not consume yogurt. “This study shows, that you don’t even need a particularly



**Prof. André Marette**

high consumption of yogurt to see clear and statistically significant effects on T2D risk, which is at the same time one of the main risk factors for cardiovascular diseases (CVD),” said Prof. Marette.

### Improving dietary patterns

He pointed to several other epidemiological studies and meta-analyses, which found

that regular intake of dairy products – and particularly of yogurt – is associated with a reduced risk to develop T2D. In accordance with the EPIC study some of these findings suggested that consuming up to 120 g of yogurt per day was linked to a decreased risk of T2D,

while exceeding this amount provided no additional risk reduction. In line with these findings is a recent study, carried out at Laval University, which showed that overweight and obese individuals who consumed yogurt had a better cardio-metabolic profile characterized by lower plasma triglyceride and insulin levels than non-consumers of yogurt, even when adjusted for body mass index.

Examining the eating habits of large cohorts also brought to light that regular yogurt consumers tended to have a generally healthier diet pattern than non-consumers, with higher amounts of fruit and vegetables on their plates. This raises the question how yogurt can be made a part of the daily diet for a larger number of people. According to Prof. Marette snacking habits appear to be a promising starting point: “Yogurt as a substitute for less healthy snacks seems to be a suitable way to help prevent obesity and T2D by consuming

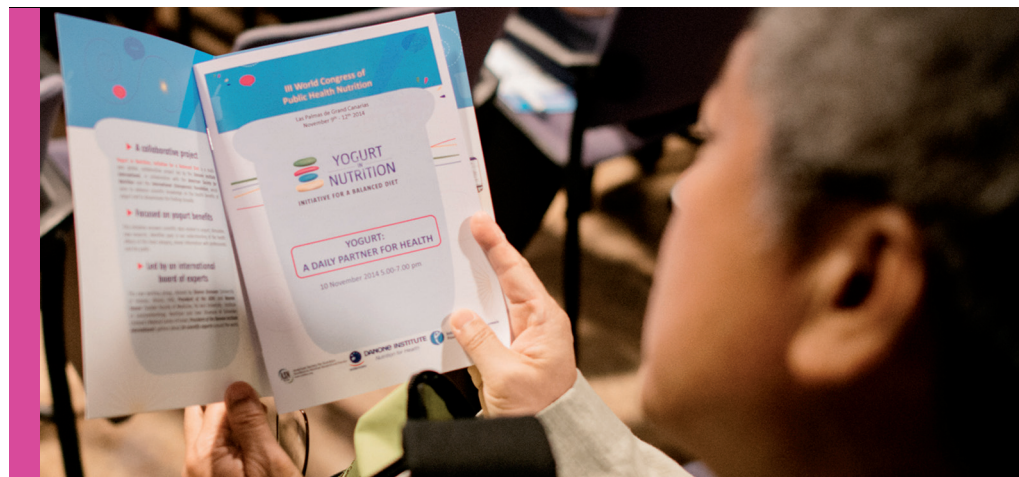
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### continued from page 2

thickness, blood pressure, insulin resistance, cholesterol levels and cardiorespiratory fitness.

### Lower CVD risk for young dairy consumers

In this study, in which girls consumed an average of 88.3 g/day of milk and 14 g/day of yogurt, milk- and yogurt-based drinks, it turned out that consumption of milk and yogurt was associated with a lower overall CVD risk (standardised -regression coefficient [ $\beta$ ] -0.23;  $P=0.001$ ). In boys, however, milk and yogurt consumption (boys consumed an average of 141 g/day of milk and 11 g/day of yogurt, milk- and yogurt-based drinks) was only associated with a smaller waist circumference ( $\beta$  -0.176;  $P=0.02$ ), less body fat ( $\beta$  -0.154;  $P=0.023$ ), and higher cardiorespiratory fitness ( $\beta$  -0.173;  $P=0.015$ ). However, there was no association found concerning levels of triglycerides and HDL-C. This means that, for boys, only some of the CVD risk factors were reduced by the consumption of



milk and yogurt, probably as a result of physiological differences between digestive processes in males and females.

“The statistically significant correlations emerging from our data show that milk and yogurt indeed have the potential to reduce CVD risk factors in adolescents” concluded Prof. More-

no. “What we need now are randomised controlled trials to support these findings and to help us understand the specific mechanisms. In addition to this we should move on to observational studies considering yogurt as an individual food category in order to establish its effects as compared to other dairy products.”

## What official guidelines say about Yogurt and Probiotics

Only a small fraction of yogurt's health benefits have been mentioned so far by European guidelines says a study presented by Prof. Seppo Salminen.

Yogurt contains a broad range of healthy components, among them probiotics which are defined by the World Health Organisation (WHO) as live microorganisms,



which when consumed in adequate amounts confer a health benefit on the host. Important yogurt probiotics are lactic acid bacteria that improve lactose digestion and reduce or eliminate symptoms of lactose intolerance as well. Over centuries in many regions of the world yogurt has proven to be a valuable part of the daily diet and evidence for its health effects has been gathered for quite a while. But in spite of all this, it is only to a small extent, that facts pointing to the health benefits of yogurt have entered dietary guidelines and recommendations. This applies also to the European Union and its member states as Prof Salminen (University of Turku, Finland) pointed out. He and his colleagues had reviewed the nutrition guidelines and recommendations of 13 European Union member states plus Switzerland, published either by the member states' governments themselves or by government-related organisations. The scientists' aim was to establish how many official bodies mention or recommend fermented milks and/or probiotics in their guidelines. The study included the EU countries Austria, Denmark, Estonia, Finland,



Prof. Seppo Salminen

France, Germany, Ireland, Italy, Poland, Spain, Sweden, the Netherlands and the United Kingdom.

### A mixed situation

Prof Salminen and his colleagues came up with rather mixed results: "All countries that we had searched inclu-

ded recommendations for consuming yogurt as part of a healthy diet, but only five out of these 14 national guidelines – namely those from Estonia, Germany, Italy, Poland and Spain – point out that people should consume yogurt because of its probiotic properties or the live bacteria it contains." With the exception of Germany these guidelines also present specific examples of probiotic genera or species, but without referring to specific strains. Most of the guidelines, however, neglected this aspect completely and contented themselves with recommending yogurt as a good source of protein, calcium and other minerals as well as vitamins and because of its nutritional similarity or superiority compared to other dairy products. In the guidelines of Finland, Austria and France yogurt is considered healthier than milk due to its lower amounts of fat. But there are also guidelines that give no reason at all for their recommendation of yogurt.

[continued on page 5 ►](#)

### continued from page 3

more proteins along with beneficial nutrients such as vitamins and calcium and at the same time reducing the energy content that other snacks provide. In one study it was observed that replacing a portion of crisps or other potato based snacks with a portion of yoghurt reduced the hazard of T2D by 47%."

### Yogurt's special benefits

Regarding the question what exactly makes yogurt a healthy food, Prof. Marette pointed out that its components – from essential nutrients over lactic acid bacteria to specific peptides –

exert their beneficial impact not by simply adding up their effects but through a synergistic interaction that is due to the specific yogurt matrix. In this context Prof Marette drew special attention to yogurt peptides as products of the fermentation process: "Recent Trials indicate that peptides derived from yogurt proteins can decrease blood pressure similar to ACE (Angiotensin Converting Enzyme) inhibiting drugs. Moreover, it is suggested that yogurt peptides could release specific gut hormones (glucagon-like peptides/GLPs) to augment insulin secretion from  $\beta$ -cells and thus slow the absorption of nutrients. Taken together with

probable anti-inflammatory effects of probiotics contained in yogurt, this shows that yogurt is very likely to be an efficient means for reducing metabolic and CVD risk factors." Promising as these findings are, Prof. Marette made it plain that a lot of work remains to be done: "The current state of research reflects a broad methodological variety which makes it sometimes hard to assess and compare the various findings. What we urgently need are more randomised controlled trials together with studies that shed light upon the physiological mechanisms underlying the impact of yogurt consumption on health."

## **Yogurt in Nutrition Initiative: Promoting nutritional health**

**Y**ogurt in Nutrition Initiative for a Balanced Diet (YINI) is a scientific collaboration between the American Society for Nutrition (ASN), the International Osteoporosis Foundation (IOF) and the Danone Institute International. YINI's board consists of 14 internationally renowned medical and nutritional experts. It is chaired by Sharon Donovan, ASN Past-President and by Raanan Shamir, Danone Institute International President.

YINI's goal is to advance scientific knowledge on the health benefits of yogurt and to disseminate the findings. Its mission is to uncover scientific data related to yogurt, to identify gaps in our understanding of its health effects, to stimulate new research and to share the gained information with

health care professionals, policy makers and the general public.

An annual top event is the Global Summit on the Health Effects of Yogurt. The first of these summits was held 2013 in Boston (USA), the second in 2014 in San Diego (USA). Summit proceedings appeared or are to appear in the distinguished journals "The American Journal of Clinical Nutrition" and "Nutrition Reviews" respectively. The YINI website [yogurtinnutrition.com](http://yogurtinnutrition.com) offers scientific news, information on upcoming events, expert interviews and presentations, infographics and practical sheets for health care professionals and patients. A media room helps to identify key scientific events and provides press releases and other kinds of information material.

continued from page 4

### EU acts cautiously

With regard to health claims on yogurt that may be used in commercial communications there is only one claim at present, that has been approved by "The EU Register of Nutrition and Health Claims". It refers to live yogurt cultures which can improve lactose digestion. "It is surprising that none of the fourteen national guidelines has mentioned this claim, while advising the consumption of yogurt," said Prof. Salminen. Furthermore several studies have shown that yogurt with live bacteria can exert a beneficial impact on a number of gastrointestinal diseases, particularly on acute diarrhoeal disorders. But with the exception of Poland whose guidelines address this point, these effects of yogurt and probiotics have not been covered by European guidelines so far.

"Our review shows that the EU member states act cautiously with respect to yogurt and probiotics. This might be due to the fact that evidence for efficacy is often restricted

to specific bacterial strains and is thus hard to generalize to fermented foods as a nutritional group. The present situation calls for further research including a review of generally accepted effects for fermented milks in order to emphasize the healthcare relevance of yogurt in the existing guidelines and to have it included in other guidelines and recommendations in Europe as well as worldwide," concluded Prof. Salminen.

## Increasing interest on Twitter

**T**he YINI symposium took place during the World Congress of Public Health Nutrition in Las Palmas (Gran Canaria) and was attended by approximately 100 delegates on site. But those attendees were not the only ones following the presentations given by the four experts. Apart from that a digital audience communicated more than 250 event-related messages (#YINI2014) via the YINI's Twitter account (@YogurtNutrition). The Twitter followers came not only from European countries such as Belgium, France, Greece, Netherlands, UK and Spain but also from the United States. The followers joined in a lively exchange: of the 250 messages over 160 were retweeted and 50 were selected as favourites. 45 new followers joined during the congress week. The followers came from different fields



of expertise such as medical science, nutrition science or dietetics. **Those wishing to get in touch with YINI have two options besides Twitter: [LinkedIn](#) the monthly newsletter on <http://yogurtinnutrition.com/>**

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