Dr. Julie Mennella - PhD Biopsychology

Monell Chemical Senses Center, Philadelphia, USA

*Dr. Julie A. Mennella obtained a **Ph.D. from the Department of Behavioral Sciences at The University of Chicago in Chicago**, IL. She joined the faculty at the Monell Chemical Senses Center in Philadelphia, PA in 1990 where she is now a Member. Her major research interests include investigating the **timing of sensitive periods in human flavor learning and growth**; uncovering how children are living in different taste worlds than adults and their **vulnerabilities to the current food environment** as well as medication adherence; and the development of psychophysical tools to study individual **variation in taste and flavor perception**.*

*In addition to her research, she founded a **program at Monell Center** that encourages under-represented minority high school and undergraduate students to **pursue careers in science and medicine**. Dr. Mennella has held a number of **leadership positions in professional scientific societies** and participated in working groups at the National Institutes of Health and other international scientific and health organizations.*

*She is the recipient of several **grants** from the National Institute of Deafness and Other Communication Disorders and the Eunice Kennedy Shriver National Institute of Child Health and Human Development; the author or co-author of **numerous peer-reviewed research** papers and an internationally recognized speaker on the ontogeny of flavor preferences and its implications for health and nutritional programming.*

SWEET AND SOUR TASTES: FROM INBORN RESPONSES TO CONTEXTUAL LEARNING IN FOODS

Charles Darwin (1877) keenly observed that **children** live in **different 'taste' worlds than adults,** as evidenced by their heightened **preference for sweet and sour tasting foods**. In this talk, I will review the international body of research that confirms and extends his observations on sweet and sour preferences more than a century later.

Using a variety of different experimental approaches, we now know that **preference for sweet taste is inborn**. Children prefer higher levels of nutritive sugars as well as some non-nutritive sweeteners than do adults, with the adult-like pattern emerging during mid-adolescence. Sweet tastes can blunt expressions of pain; can mask the bad tastes inherent to a food and beverage or which develop during manufacturing; and can condition preferences for flavors; highlighting the potency of sweets during childhood.

Although less studied, reactivity to high levels of sour taste is evident shortly after birth and **children** are more likely to **prefer higher levels of sourness in some contexts than do adults**. That these senses are plastic is evident from the findings that through experience, children develop a sense of the context in which sweetness or sourness should be experienced-one of mechanisms upon which cultural food preferences are established.

Research was supported by NIH Grants RO1HD37119 and RO1DC011287.

Self notes

Learn more about this event on
www.yogurtinnutrition.com

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YOGURT IN NUTRITION
INITIATIVE FOR A BALANCED DIET

YINI is a collaborative project between the **American Society for Nutrition**, the **Danone Institute International** and the **International Osteoporosis Foundation**

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YINI MISSION

To advance scientific knowledge on the health effects of yogurt:

- Identify and review existing science
- Promote scientific research
- Disseminate knowle dge broadly

BOARD MEMBERS

The Board of the Yogurt in Nutrition Initiative is composed by experts within medical and nutrition fields from all over the world. Find all information about YINI Board members in: www.yogurtinnutrition.com/yini-board-members

AN UPDATED & ACTIVE PLATFORM

Yogurtinnutrition.com, a website where you can find all about yogurt for a balanced diet and its health effects. You will find detailed information and advice, including scientific watch and unconventional how-tos, interviews, easy tips and even some classic recipe favorites, highlighted by bloggers and experts. Specific corners guide you to find practical tools such as infographics, Yogurt Nutrition Digests or to identify key scientific events. Every month the newsletter highlights the new content.

YINI INTO PRACTICE

An annual event

Since 2013, **Yogurt in Nutrition** organizes every year the Global Summit on the Health Effects of Yogurt, during the **Experimental Biology Congress**. In 2016, the **4th Global Summit on the Health Benefits of Yogurt** was organized on April 6th in San Diego, US: ***'Yogurt & Type 2 Diabetes, translating evidence into practice'***. In 2017, the 5th Global Summit will be held in Buenos Aires, Argentina, during the IUNS 21st ICN International Congress of Nutrition (Oct 15-20).

Scientific publications

The 1st and 2nd Global Summit on the Health Effects of Yogurt were published in the ***American Journal of Clinical Nutrition*** and in the ***Nutrition Reviews***. **The next proceedings will be published soon in the Journal of Nutrition**.

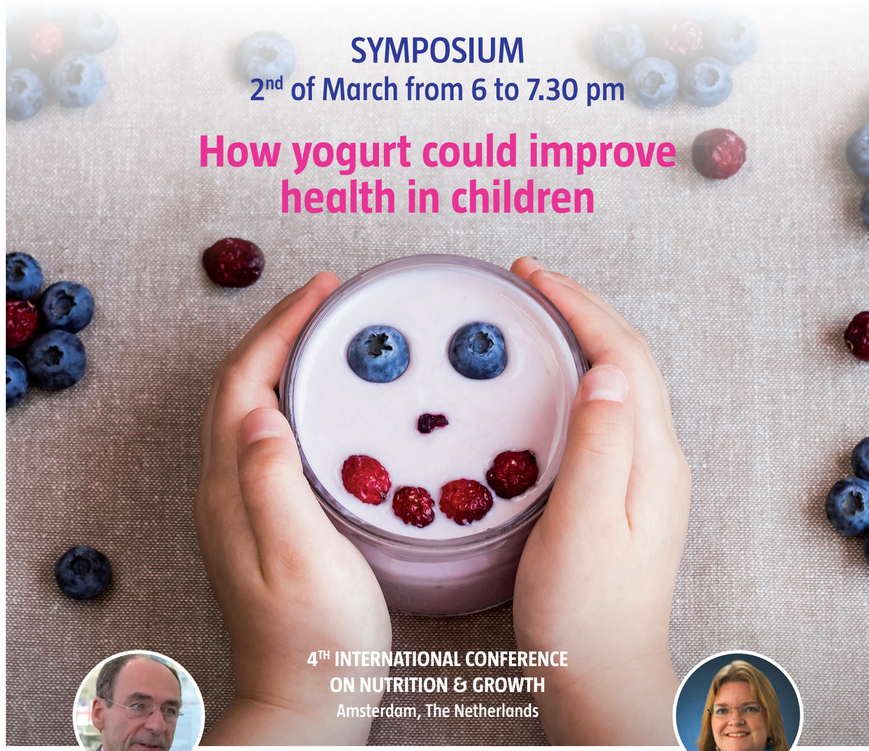
Research Grant

Each year, a grant ($30,000) is given to support the research on the role of yogurt in the prevention and management of non-communicable diseases. Each call for application is announced during the annual YINI Summit. Details to apply are available on the website: www.yogurtinnutrition.com/category/grant-application/

YOGURT IN NUTRITION
INITIATIVE FOR A BALANCED DIET

SYMPOSIUM
2nd of March from 6 to 7.30 pm

How yogurt could improve health in children



4TH INTERNATIONAL CONFERENCE ON NUTRITION & GROWTH
Amsterdam, The Netherlands

Chaired by Olivier Goulet
Hôpital Necker-Enfants Malades, Paris, France

Chaired by Sharon Donovan
University of Illinois Urbana-Champaign, IL, USA

Could Yogurt facilitate better eating habits in children?
▶ Prof. Luis Moreno - PhD Public Health - Zaragoza University

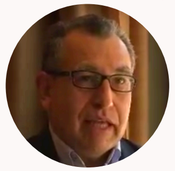
Is Yogurt associated with reduced cardio-metabolic risk factors in children?
▶ Prof. André Marette - PhD Physiology and Endocrinology - Laval University

The relationship between Yogurt consumption, body weight and metabolic profile in youth susceptible to obesity
▶ Dr. Vicly Drapeau - RD & PhD Kinesiology - Laval University

Sweet and Sour Tastes: From Inborn Responses to Contextual Learning in Foods
▶ Dr. Julie Mennella - PhD Biopsychology - Monell Chemical Senses Center

Prof. Luis Moreno - PhD Public Health

University of Zaragoza, Spain



Luis A. Moreno is Professor of Public Health at the University of Zaragoza (Spain). He is also Visiting Professor of Excellence at the University of Sao Paulo (Brazil). He did his training as ***Medical Doctor*** *and his PhD thesis at the University of Zaragoza. He studied* ***Human Nutrition and Public and Community Health*** *at the University of Nancy (France).*
He has participated in several research projects supported by the ***Spanish Ministry of Health****, and the* ***European commission*** *(HELENA, IDEFICS, EURRECCA, ENERGY, ToyBox and iFamily). He has published more than* ***250 papers in peer reviewed journals****. He is a former* ***member of the ESPGHAN*** *Committee of Nutrition.*

COULD YOGURT FACILITATE BETTER EATING HABITS IN CHILDREN?

In adults, **yogurt consumption** has been associated with **healthy dietary patterns and lifestyles, better diet quality and healthier metabolic profiles**. Frequent yogurt consumers have been also shown to be **more physically active** (2 h/week), **smoke less**, have **higher education** and **knowledge of nutrition**, compared with non-consumers. Thus, in adults, yogurt consumption may be considered as a **signature of a healthy diet and lifestyle**[1].

There is less, but similar information in children, on the association between yogurt consumption and dietary patterns. In US children aged 8 - 18 years, yogurt consumption was **associated with higher intakes of calcium, vitamin D and proteins** and lower total and saturated fat intakes[2]. Among children 2-18 ys, frequent yogurt consumers (>1 time/ week) had a **higher Healthy Eating Index** (HEI-2005) than infrequent consumers (50.6 vs 48.5, p=0.04). More specifically, children showed a **better compliance to the dietary guidelines regarding the consumption of fruits, whole grains and milk**[3]. In a UK study, the yogurt group made a useful **contribution to micronutrient intakes in children** aged 4 months to 10 years, particularly for **vitamin B12** (4–18 months: 7.6%; 1.5–3 years: 5.3%; 4–10 years: 3.8%), **riboflavin** (7.8%, 6.9%, and 5.7%, respectively), **calcium** (9.5%, 8.2%, and 5.9%, respectively), **iodine** (7.2%, 7.6%, and 7%, respectively) and **phosphorus** (8.1%, 6.3%, and 4.3%, respectively)[4].

Recent studies have provided concordant results on lifestyle factors. In children aged 2 to 9 years, from 8 European countries, **the highest the moderate and vigorous physical activity levels, the highest the yogurt consumption** was observed in boys, but not in girls. In adolescents aged 12.5 to 17.5, from 10 European cities, there was a combined effect of physical activity and sedentary behaviours (TV watching) on yogurt consumption. In male adolescents, those performing less than 60 minutes per day of moderate-vigorous physical activity and engaged in sedentary behaviours for more than 2 hours per day, their mean consumption of yogurt was 29.84 g/day; however, in those adolescents performing more than 60 minutes per day of moderate-vigorous physical activity and being engaged in sedentary activities for less than 2 hours per day, their mean yogurt intake was 58.75 g/day (P = 0.008). Similar figures were observed in females; 31.46 and 47.04 g/day, respectively (P = 0.04). This effect was not observed for milk or other dairy products. In conclusion, yogurt consumption seems to be associated with a **healthier dietary intake and also to other healthy lifestyles**, even in children.

References

1. Panahi et al., 2016 European Journal of Clinical Nutrition 2016; 1-7.
2. Keast et al., Nutrients 2015; 7(3): 1577-1593.
3. Zhu et al., European Journal of Nutrition 2015; 54(4): 543-50.
4. Williams et al., Nutrition Bulletin 2015; 40: 9–32.

Self notes

Prof. André Marette - PhD Psychology and Endocrinology

Laval University, Canada

Dr. Marette is Professor of Medicine at the Heart and Lung Institute, Laval Hospital, and ***Scientific Director of the Institute of Nutrition and Functional Foods at Laval University****. He also holds a research Chair on the pathogenesis of insulin resistance and cardiovascular diseases (CVD). Dr. Marette is an international renowned* ***expert on the pathogenesis of insulin resistance and cardiometabolic diseases*** *and his research has advanced the understanding of* ***the physiological and /molecular mechanisms of inflammation****, and opened new possibilities for prevention and treatment and type 2 diabetes and CVD. He is also studying* ***how nutrition and functional foods can modulate the gut microbiota to protect against obesity-linked intestinal inflammation, fatty liver disease and type 2 diabetes****. He holds grants from the Canadian Institutes for Health Research, the Canadian Diabetes Association, and the Heart and Stroke Foundation of Canada. Dr. Marette has long-standing experience in* ***leading international research programs****, which all have in common the multidisciplinary nature of the teams and the implication of various end-users (e.g. industry, government).*
Dr. Marette has received several ***awards*** *for his work including the prestigious Young Scientist Award of the Canadian Diabetes Association and the Charles Best Award from the University of Toronto for his overall contribution to the advancement of scientific knowledge in the field of diabetes. He has* ***published over 175 papers****, and been invited to write several reviews and book chapters. He has been invited to give more than a hundred lectures at various national & international conferences in the last 10 years. He currently serves as* ***Editor-in-Chief for the Am J Physiol: Endo & Metab****.*

IS YOGURT ASSOCIATED WITH REDUCED CARDIO-METABOLIC RISK FACTORS IN CHILDREN?

Melissa Anne Fernandez & André Marette

Dairy foods contribute to intakes of key nutrients and are important to help maintain the health of children and adolescents and **protect against diet-related diseases**. As a nutrient-rich, **yogurt** provides children with an excellent source of **key nutrients for growth and development**. Yogurt **contributes to daily recommendations** for dairy product intakes among children and adolescents, providing a combination of nutrients (**calcium, vitamin D, protein and phosphorus**) that promote peak bone mass density, which is important for **bone health** in later life. **Yogurt** is also a **viable alternative to milk for individuals with lactose intolerance** and can help those on lactose avoidance diets meet their recommended dietary allowance for calcium and vitamin D. Furthermore, yogurt, as a dairy product, provides the same nutrients as milk, but in addition contains live bacteria and the bioactive bi-products of fermentation that are thought to provide additional health benefits, such as favoring a **healthy gut microbiota**.

Among children and adolescents, dairy products are significantly associated with **reduced risk for overweight and obesity**. For every serving of dairy/day there was a 13% lower risk of childhood overweight and obesity (95% CI: 0.74-0.98) (1). Yogurt consumption has been **associated with significantly lower BMI-for-age, smaller waist circumference, and less body fat mass** ($p < 0.05$) in **children** (2). Among adults, there is high quality evidence indicating that yogurt consumption is associated with reduced incidence of type 2 diabetes (3). Little data is available on yogurt intake and type 2 diabetes or its risk factors in young populations. Nevertheless, **frequent yogurt consumption in children** 2-18 years old has been associated with a more **favorable fasting insulin level** ($P < 0.001$), a **lower homeostatic model assessment of insulin resistance** ($P < 0.001$) and a **higher quantitative insulin sensitivity check index** ($P = 0.03$) (4).

Despite few yogurt-specific data among children and adolescents, it is likely that positive health relationships between yogurt consumption and diet-related diseases in children and adolescents will mirror those for general dairy products as well as those among adult populations. Yogurt provides a promising **alternative to energy-dense nutrient-poor snacks for children**, while contributing to intakes of essential nutrients. Prospective cohort studies are needed to better understand how long-term yogurt intake at a young age can influence health later in life.

References

1. Lu et al., European Journal of Clinical Nutrition 2016; 70(4): 414-23.
2. Keast et al., Nutrients 2015; 7(3): 1577-1593.
3. Drouin-Chartier et al., Advances Nutrition 2016; 7: 1026–40.
4. Zhu et al., European Journal of Nutrition 2015; 54(4): 543-50.

Self notes

Dr. Vicky Drapeau - RD & PhD Kinesiology

Laval University, Canada

Dr. Vicky Drapeau is a ***nutritionist*** *and a professor in the Department of Physical Education at Université Laval in Québec City as well as a* ***clinical researcher*** *at the Cardiology and Pneumology University Research Institute of Québec. She is the* ***co-founder and coordinator of the Équilibre-Santé Clinic****, a nutritional and physical activity consultation clinic at Université Laval, where she practices as a clinical nutritionist in obesity treatment. Dr. Drapeau`s research interests focus on clinical interventions aimed at improving the* ***prevention and treatment of obesity*** *and examine behavioural aspects related to body weight control such as eating behaviours (e.g. Night Eating Syndrome), dieting or mental work. She is also interested in individuals who are resistant to weight loss or susceptible to weight gain. Additional research areas include the development of innovative strategies aimed to* ***promote healthy eating in children and youth****. She is the* ***2015 recipient of the Yogurt in Nutrition Initiative (YINI) Grant*** *where she will be examining the* ***relationship between yogurt consumption, body weight and metabolic profile in children/adolescents susceptible to obesity.*** *Her research work is reflected by over 70 papers published in highly reputable international refereed journals, 8 book chapters and over 100 scientific abstracts and presentations. Dr. Drapeau is the* ***co-section editor of the Psychological Issues section in Current Obesity Reports*** *and has been invited to present her research in many national and international congresses. She is also the vice-president of the Ethical committee board of Laval University.*

THE RELATIONSHIP BETWEEN YOGURT CONSUMPTION, BODY WEIGHT AND METABOLIC PROFILE IN YOUTH SUSCEPTIBLE TO OBESITY

Yogurt consumption has been associated with **better body composition and metabolic health and a healthier lifestyle** but few studies have been done in children/youth and no study has considered the role of genetic susceptibility to obesity in this relationship.

The objective of this presentation is to compare physiological and lifestyle markers of health between youth yogurt consumers and non-consumers as a function of their genetic predisposition to obesity.

Results indicate that **yogurt consumption** in youth is associated with **better metabolic profile particularly in those with a familial predisposition to obesity**. Even though intervention studies are needed to confirm these results, this study suggest that yogurt consumption could represent an **interesting intervention strategy in childhood obesity**.

Self notes