

4th Global Summit on The Health Effects of Yogurt

Yogurt & Type 2 Diabetes:
Translating evidence into practice

▶ **WEDNESDAY, 6th APRIL, 2016**
8:00am - 2:00pm
CONVENTION CENTER, SAN DIEGO

YOGURT AND TYPE 2 DIABETES: Translating Science into Practice

6th April 2016
8:00am - 2:00 pm

Welcome and Introduction (15 min)

▶ Raanan Shamir



YOGURT FACTS
AND POTENTIAL
MECHANISMS

Yogurt & Type 2 diabetes: overview of the recent epidemiological studies (30 min)

▶ Jordi Salas

Fermented dairy intake in relation to glycemia and insulinemia (30 min)

▶ Thomas Wolever

Microbiota, small intestine inflammation and Type 2 diabetes (30 min)

▶ Li Wen

Break



A PUBLIC
HEALTH
PERSPECTIVE

Healthy eating: an important part of Type 2 diabetes effective prevention (30 min)

▶ Constance Brown-Riggs

Yogurt as a signature of a healthy diet & lifestyle (30 min)

▶ Angelo Tremblay

Yogurt & Type 2 Diabetes: translating epidemiological evidence into public health impact (30 min)

▶ Andrew Prentice

Break



PRACTICAL
SESSION

Yogurt & Type 2 diabetes - putting it all into practice (60 min)

▶ Azmina Govindji

▶ Megrette Fletcher

Wrap up and conclusion (10 min)

▶ Sharon Donovan

Yogurt Tasting Session (60 min)

▶ Hubert Cormier & Cheryl Sternman Rule



RAANAN SHAMIR, MD

Sackler Faculty of Medicine,
Tel Aviv University, Israel

Raanan Shamir is Professor of Pediatrics at the Sackler Faculty of Medicine, Tel Aviv University, and the **Chairman of the Institute of Gastroenterology, Nutrition and Liver Diseases at Schneider Children's Medical Center of Israel.**

Raanan Shamir received his **MD degree in the Hebrew University in Jerusalem, Israel, and was trained in Pediatrics at the Beilinson Medical Center, in Petach-Tiqva, Israel.** In the early 90's, he was a fellow at the Division of Pediatric Gastroenterology and Nutrition at The Children's Hospital of Philadelphia, and came back to Israel to be the Head of the Department of Nutrition at the Israel Ministry of health, and then held the position of Head of the Gastroenterology and Nutrition Unit at Meyer Children's Hospital in Haifa.

Prof. Shamir published more than **250 original papers, reviews and comments, book chapters and guidelines.** His research has been supported by **prestigious funds** such as the European Community Framework funds and the Israel Science Foundation. His current research areas include exploring the effects of oral insulin supplementation on the intestine, pediatric nutrition, celiac disease, inflammatory bowel disease and childhood hyperlipidemia.

Prof. Shamir serves as an Editor for the pediatric section of Current Opinion in Clinical Nutrition and Metabolism, is the Senior Associate Editor of the Journal of Pediatric Gastroenterology and Nutrition (JPGN), and serves as a reviewer for journals in the field of Pediatrics, Nutrition, Gastroenterology and atherosclerosis.

Current committee appointments include being the, Chairman of the Governmental Supreme Committee on Food, Israel Ministries of Health, Agriculture, Commerce and Environment, Chairman of the Nutrition Committee of the Israel Pediatric Association, Member of the General Assembly, Upper Gastrointestinal Section, Scientific committee of the UEGF (United European Gastroenterology Federation), Member of the Scientific Committee, ESPEN (European Society for Clinical Nutrition and Metabolism) and President of the Israel Strauss Institute for Nutrition.



SHARON DONOVAN, PHD

University of Illinois
Urbana-Champaign, IL, USA

Co-Chair Sharon Donovan received her B.S. and Ph.D. in Nutrition from the University of California, Davis. After completing a post-doctoral fellowship in Pediatric Endocrinology at Stanford University School of Medicine, she accepted a faculty position at the University of Illinois, Urbana in 1991. She was promoted to Professor in 2001 and, in 2003, was named the first recipient of the Melissa M. Noel Endowed Chair in Nutrition and Health at the University of Illinois. She served as Director of the Division of Nutritional Sciences Interdisciplinary Graduate Program from 1999-2009. She is actively involved in her professional societies and currently serves as the Presidency of the American Society for Nutrition (2011-2012).

Her research focuses on pediatric nutrition, with an emphasis on optimization of neonatal intestinal development. She compares the biological effects of human milk and infant formulas on intestinal function in human infants, neonatal piglets and in various models of intestinal disease.

She has published over 100 peer-reviewed publications, review articles and conference proceedings. She has garnered ~ \$20M in research funding as principal investigator or co-Investigator and her research is funded by NIH, USDA and private industry and foundations. She the recipient of several awards in recognition of her research, including the Mead Johnson Award and the Norman A. Kretchmer Award from the American Society for Nutrition.



JORDI SALAS, MD, PHD

Human Nutrition Unit, Department of Biochemistry & Biotechnology, Sant Joan University - Hospital, Faculty of Medicine of Reus, Rovira i Virgili University, Spain

Jordi Salas is a Professor of Human Nutrition and Bromatology of the Faculty of Medicine and Health Sciences (Rovira i Virgili University). Head of Nutrition of the Internal Medicine Service, Sant Joan University Hospital of Reus. Vice-Dean / Head of Studies of the Degree in Human Nutrition and Dietetics of the Rovira i Virgili University. Distinguished Professor at the Universitat Rovira i Virgili. E-mail address: jordi.salas@urv.cat

He is also affiliated with Pere Virgili Institute of Health - Research; CIBER Physiopathology of Obesity and Nutrition, Institute of Health Carlos III in Spain.

In last years, expertise and research lines of Dr. Salas are focused in human clinical trials evaluating the **effect of diets and dietary compounds on obesity, type 2 diabetes mellitus, metabolic syndrome and cardiovascular disease**. Since 2005, he is one of the leaders of *PREDIMED STUDY*, considerate the best clinical trial evaluating the effect of the Mediterranean Diet on cardiovascular diseases. He is the coordinator and member of the Steering Committee of the *PREDIMED-PLUS STUDY*, a multi-centre, randomised, primary prevention trial on 6000 overweight or obese participants (55-75 years) with metabolic syndrome. The project is aimed to determine the effect on adiposity, cardiovascular disease and mortality and quality of life, of an intensive weight loss intervention based on a traditional hypocaloric Mediterranean Diet, physical activity promotion and behavioural therapy compared to a less intensive program using Mediterranean diet (without energy restriction or physical activity). The recruitment started in September 2013 and will finish in June 2016. Final results will be available in 2020.

Since 1983 Dr. Salas has directed **18 research projects** financed by public bodies and **23 projects** in conjunction with the **pharmaceutical or food industries**. He has published more than **290 original articles** in national and international journals, as well as numerous reviews and editorials. Editor of **6 books**, he has also co-authored more than 50 books.

YOGURT & TYPE 2 DIABETES: OVERVIEW OF THE RECENT EPIDEMIOLOGICAL STUDIES

The possible effects of dairy consumption on type 2 diabetes (T2D) prevention remain controversial. Largely owing to their saturated fat content, **dairy products** are conventionally perceived as having an adverse impact on health. However, they are **nutrient-dense food and contain high-quality protein, vitamins and minerals, which have been shown to have beneficial effects on T2D risk**. Yogurt has also some possible **probiotic effects modulating glucose metabolism**.

In this **review** we analyse the **epidemiologic studies evaluating the association between yogurt consumption, diabetes and insulin resistance**. Dairy intake, especially fermented dairy, was inversely associated with measures of glucose metabolism. In addition, most of the published studies have demonstrated an inverse association between the frequency of yogurt consumption and diabetes risk (-18% cf Chen et al, 2014).

In the frame of the **PREDIMED study**, a clinical trial aiming at assess the beneficial effect of the Mediterranean diet on the primary prevention of cardiovascular disease, total yogurt consumption was also associated with a lower T2D risk. In this study, an **increased consumption of total low-fat dairy and total yogurt during the follow-up was also inversely associated with T2D**. In addition, substituting one serving/day of a combination of biscuits and chocolate for one serving/day of yogurt was associated with a 40% lower risk of T2D. The beneficial effect observed in epidemiological studies between yogurt intake and T2D appears to be independent of the amount of fat or sugar content, and cannot be explained only by its possible effects on adiposity.

We conclude that **a healthy dietary pattern incorporating a high consumption yogurt may be protective against T2D in healthy subjects and older adults at high cardiovascular risk highly predisposed to develop this condition**. Clinical trials are warranted to definitively conclude that yogurt consumption has beneficial effects on insulin sensitivity and preventive effects on T2D.

Keywords: Yogurt, dairy consumption, diabetes, epidemiologic studies.



THOMAS WOLEVER

Professor, Department of Medicine,
University of Toronto, Canada

Thomas Wolever obtained a Bachelor of Medicine and Bachelor of Surgery from Oxford University, UK in 1980, a PhD in Nutritional Sciences from the University of Toronto in 1986 and a Doctorate in Medicine from Oxford University in 1993. His current position is Professor and Graduate Coordinator in the Department of Nutritional Sciences, University of Toronto.

He is also affiliated as a scientist at the Keenan Research Centre of the Li Ka Shing Knowledge Institute, St. Michael's Hospital, Toronto; Member, Active Medical Staff, Division of Endocrinology and Metabolism, St. Michael's Hospital, Toronto; and Member, Consulting Medical Staff, Centre for Addiction and Mental Health, University of Toronto in Canada.

His research interests are the **effects of dietary carbohydrates on human physiology and metabolism**. He is, perhaps, most **well known for his work on the glycaemic index**, which was first developed by Dr. David Jenkins and him, along with other collaborators, while he was a medical student.

He wrote or co-authored over 310 papers in peer-reviewed scientific journals, and also **authored a book entitled: The Glycaemic Index: A Physiological Classification of Dietary Carbohydrate published in 2006 by CABI (www.cabi.org)**. In 1997 he founded GI Testing, Inc. to provide confidential GI testing services to industry. To cope with the high demand for GI testing and to enable a wider range of clinical research services to be provided, Glycemic Index Laboratories, Inc. (www.gilabs.com) was formed in 2004; a corporation of which he is President. More important than anything else, he is married with 3 children aged 27, 25 and 18 years. He enjoys orienteering, cycling and recorder playing.

FERMENTED DAIRY INTAKE IN RELATION TO GLYCEMIC AND INSULINEMIA



A high intake of dairy products, and particularly yogurt, is associated with reduced risk for developing type 2 diabetes. Several mechanisms have been proposed to explain this association, including **beneficial effects on the regulation of body weight and insulin resistance by nutrients in dairy foods, such as calcium, vitamin D and conjugated linoleic acid**. Recently a **role for the gut microbiota** has been proposed. However, this talk will focus on the **effect of yogurt on postprandial glucose and insulin responses**. There is excellent evidence that diets with a low glycemic index (GI) or low glycemic load (GL) reduce risk for developing type 2 diabetes. **Dairy products such as milk, chocolate milk and yogurt have a low GI. Fermentation of milk creates organic acids**; and although these may reduce gastric emptying and delay the rise in blood glucose, the overall glycemic response is not reduced. There are 93 GI values for yogurt in the International GI tables with a mean \pm SD of 34 \pm 13 and range 11-67. The mean \pm SD of the 43 plain yogurts, 27 \pm 11, was significantly less than that of the 50 sweetened yogurts, 41 \pm 11 ($p < 0.0001$). Sweetened yogurts contain about 2.5 times more carbohydrate per 100g than plain yogurts. Since GI is measured using portions of food containing equal amounts of carbohydrate, the amount of plain yogurt containing 25g carbohydrate contains about twice as much protein as the amount of sweetened yogurt containing 25g carbohydrate. Adding dairy protein to carbohydrate reduces glycemic responses in a dose dependent fashion which almost exactly accounts for the difference in GI between plain and sweetened yogurts. The **negative relationship between GI and protein:carbohydrate ratio in yogurt is likely due to the increased insulin response elicited by dairy protein**. The latter is usually considered to be due to increased insulin secretion, but studies measuring both insulin and c-peptide suggest that reduced hepatic insulin extraction is a more likely explanation. High insulin responses are considered to be deleterious because hyperinsulinemia is associated with insulin resistance and increased risk for type 2 diabetes. Nevertheless, a high intake of dairy products does not increase risk for type 2 diabetes despite the fact that milk and yogurt elicit a disproportionately high insulin response relative to their glycemic impact. The latter is probably an artifact due to the higher protein:carbohydrate ratio in dairy foods relative to the carbohydrate foods to which they are compared. In addition, even though adding dairy protein to carbohydrate elicits a higher insulin response than most other proteins this effect is not large and the insulin response elicited by breakfast meals containing milk or yogurt is not disproportionately greater than that elicited by meals without dairy products. **Thus, choosing yogurt instead of other protein and carbohydrate sources as part of a healthy diet may assist in reducing the GI and GL of the diet, and is in line with recommended healthy dietary patterns which include whole grains, fruits, vegetables, nuts, legumes, fish, vegetable oils and yogurt.**



LI WEN, PHD

Yale university,
New Haven, USA

Li Wen holds currently the position of Research Professor in Immunology at the Yale University in New Haven, US. In 1983, she obtained the degree of MD in Clinical Immunology and Infectious Disease at the Capital University of Medicine in Beijing, China. She achieved the title of PhD in Immunology at the King's College in London, UK.

Li Wen has nearly **25 years of research experience, of which nearly 17 years in diabetes**. Some of her recent studies have provided **important evidence on the role of innate immunity and gut microbiota in the pathogenesis of diabetes**, using mouse model.

Her current research focuses on the following areas:

1. The role of innate immunity in diabetes
2. The role of gut microbiota in diabetes
3. The role of B lymphocytes in diabetes
4. The role of dendritic cells and innate immunity in diabetes
5. The role of the inflammasome in diabetes.

She has over 90 peer reviewed publications in high impact factor journals, including Nature.

MICROBIOTA, SMALL INTESTINE INFLAMMATION AND TYPE 2 DIABETES

Type 2 diabetes (T2D) is a chronic metabolic disease and 29.1million are diagnosed with T2D and 86 million are prediabetes in US alone (CDC 2016). T2D and pre-T2D also sharply increase in prevalence Worldwide. While obesity is one of the main risk factors, predisposing individuals to developing T2D, the **gut microbiota has been shown to influence metabolism and the development of obesity**. Therefore understanding microbial interactions with the host may provide potential options for therapy.

To date, bariatric surgery represents the most effective treatment leading to substantial weight loss. Several reports from humans and animal models have demonstrated that the **changes of gut microbiota contribute to weight loss and thus increase insulin sensitive**.

Here I will give an overview about the research progress in the field, specially in relation to **the diet induced alteration of gut microbiota and its effect on metabolism**. I will also present some of our studies in the gut microbiota composition in obese patients with or without T2D undergoing Roux-en-Y Gastric Bypass surgery and the assessment of immune populations in small intestine of the diabetic patients, in comparison with nondiabetic patients. Understanding environmental factors that contribute to the development of obesity is important to help prevent the development of T2D.



CONSTANCE BROWN-RIGGS, MSED, RD, CDE, CDN

New York, USA

Constance Brown-Riggs, MSED, RD, CDE, CDN - an award-winning registered dietitian, **certified diabetes educator**, is the author of *The African American Guide to Living Well With Diabetes* and the forthcoming book *Enjoying the Flavors of the World: A Diabetes Carbohydrate and Fat Gram Guide*, scheduled for release in 2016.

Over the course of her career, Constance has established herself as an **expert in nutrition, diabetes, and the cultural issues that impact the health and health care of people of color**. She is not only versed in the science of medical nutrition, but also has an active nutrition counseling practice through which she sees hundreds of patients. Her ability to translate her academic and clinical knowledge into clear, understandable terms has made her a nationally renowned, sought-after speaker, educator and author.

Her work has appeared in books and peer reviewed journals for health professionals and health care consumers; and she has been a featured expert in national magazines such as *Diabetic Living*, and *Diabetes Forecast*. She also is a regular contributor to *Today's Dietitian Magazine*-also serving on the magazine's advisory board.

Constance is a **member of the board of directors of the American Association of Diabetes Educators**. Her professional honors include the Award for Excellence in Consultation and Business Practice from the Academy of Nutrition and Dietetics, the Distinguished Dietitian Award from the New York State Dietetic Association, and the Diabetes Educator of the Year from the American Dietetic Association Diabetes Care and Education Practice Group.

Constance has been invited to appear as a **keynote speaker, presenter, or panelist at conferences and professional meetings nationally and internationally** for organizations such as the St. Vincent and the Grenadines Ministry of Health, Wellness, and the Environment; the American Association of Diabetes Educators; the Academy of Nutrition and Dietetics; and the Empire State Medical Association.



HEALTHY EATING: AN IMPORTANT PART OF TYPE 2 DIABETES EFFECTIVE PREVENTION

Prediabetes is one of the biggest health crises today-affecting 316 million people worldwide. Of those, 86 million live in the United States where nearly 90% of them don't even know they have prediabetes and aren't aware of the long-term risks to their health, including type 2 diabetes, heart attack and stroke. Moreover, the International Diabetes Federation (IDF) projects that **by 2035, the number of people with prediabetes will increase to 471 million, or 8.0% of the adult population worldwide**. Without intervention, 15% to 30% of people with prediabetes will develop type 2 diabetes within 5 years.

Both randomized clinical trials and real-world implementation studies provide strong **evidence that prediabetes can be reversed by almost 60% through weight loss, healthy eating and increased physical activity**. But there is also a growing body of evidence on the **genetic, epigenetic, environmental and biological factors contributing to diabetes, starting before conception**. This evidence suggest prevention strategies focus on the behavior, **nutrition** and health of mothers and young children as effective points of intervention.

This sessions discussion will include; the worldwide prevalence of prediabetes; the diabetes prevention program outcomes study; evidence on the **importance of healthy eating-including yogurt, for the prevention and management of type 2 diabetes**; the IDF's proposed life course approach to diabetes prevention; and strategies for the inclusion of yogurt in a healthy meal pattern.



ANGELO TREMBLAY, PHD

Laval University,
Quebec City, Canada

Professor Angelo Tremblay obtained his PhD in Physiology in Laval University, Quebec City, and is currently a professor in the Department of Kinesiology in this university. His investigations are mostly oriented towards the **study of factors influencing energy balance in humans with the intent to improve obesity management**. Recently, his research has been focused on the **study of non-traditional determinants of obesity such as short sleep duration, low calcium/dairy intake, insufficient vitamin intake, suboptimal feeding behaviors, demanding cognitive effort and persistent organic pollutants**. He has published over 625 scientific papers and was the recipient of awards, including the Distinguished Lecturer Award offered by the Canadian Obesity Network in 2011. He is holder of the Canada Research Chair in Environment and Energy Balance.



YOGURT AS A SIGNATURE OF A HEALTHY DIET & LIFESTYLE

The capacity of a single food such as **yogurt to influence diet quality and metabolic health depends on its composition** and its potential to modify the rest of food consumption, presumably via **effects on appetite control**. Indeed, recent data demonstrated that **diet quality is improved in yogurt consumers, compared to non-yogurt consumers**. The results of the Infogene Study also show that yogurt consumers are more prone to adhere to a Prudent dietary pattern, whereas non-consumers tend to exhibit a Western pattern.

Recent population studies have also raised the possibility that some foods might have a symbolic value according to which consumers of such foods display a more healthy lifestyle. This is maybe the case of **yogurt** which is a **nutrient-rich food** whose the content of some nutrients, e.g. **proteins and calcium, significantly contributes to diet quality**.

Yogurt was also recently shown to **favorably influence satiety and to decrease subsequent energy intake**. Its status as a **fermented food** confers properties that can be **beneficial for body weight management**.

Additionally, the propensity of **yogurt consumers** to exhibit some behaviors such as **reduced smoking and a more active lifestyle suggests** that yogurt consumption might represent a global **signature of a healthy diet and lifestyle**.



ANDREW PRENTICE, PHD

London School of Hygiene
& Tropical Medicine, London, UK

Andrew Prentice is Director of the MRC International Nutrition Group based at the London School of Hygiene & Tropical Medicine (LSHTM). He also directs the group's permanent field laboratory, MRC Keneba, in rural Gambia. The group is also active in Kenya, Tanzania and Bangladesh.

Born and raised in Uganda, he received a BSc in Biochemistry from Leeds and PhD in Nutrition from Cambridge University. Following 5 years of post-doctoral work in Keneba he returned to the UK to lead the Energy Regulation and Obesity Group at the MRC Dunn Clinical Nutrition Centre, Addenbrooke's Hospital. During this period he was involved in the development and exploitation of numerous novel technologies including stable isotope methods for assessing breastmilk intake and free-living energy expenditure (2H218O), and whole-body calorimetry.

In 1999 he left Cambridge to establish his current research team at LSHTM and refocus his attention exclusively on **studying diet-disease relationships in low-income countries**. The work of his research team is focused in 4 areas: **nutritional modulation of immunity and infectious diseases; combating micronutrient deficiencies in poor populations; calcium, vitamin D and bone health; and nutritional genetics**. The emphasis is on discovery science in response to a conviction that the development of more effective public health interventions is still greatly hampered by critical knowledge gaps.

Andrew has been a member of numerous **national and international advisory committees on nutrition** and is a former Vice-President of EASO and past Chair of the International Nutrition Council of the American Society for Nutrition (ASN). His work has been recognised by a number of awards, most recently the EV McCollum International Award 2010/11 from ASN. He has published over 300 peer-reviewed papers.

YOGURT & TYPE 2 DIABETES: TRANSLATING EPIDEMIOLOGICAL EVIDENCE INTO PUBLIC HEALTH IMPACT

Type 2 diabetes (T2DM) is a growing health problem worldwide. It puts a heavy burden on health care systems in a context of increasing pressure on resources. Several studies have independently reported that **higher yogurt consumption is associated with lower risk of T2DM with a meta-analysed hazard ratio of 0.82**. This outcome has been used to investigate the **reduction in T2DM health care expenditure** that might be achievable through modest increases in yogurt consumption across the UK adult population.

We modeled the possible reductions in prevalence of T2DM and its associated health costs achievable through increasing yogurt consumption in **UK adults** from the current mean of 20g/d to 125g/d (one small pot). National age-specific prevalence rates were used to estimate the likelihood of people entering the model and age-related incidence rates for comorbidities were used to generate individual patient histories. Costs were applied for T2DM management costs, and the hospital and outpatient costs of treating T2DM-related complications. The perspective was that of the UK National Health Service (NHS), the time horizon was the patient's lifetime. Health consequences of yogurt intake on quality-adjusted life years (QALY) were also calculated. Highly conservative assumptions were used throughout.

The model outcomes will be presented. They predict that both mean savings to the NHS from reducing T2DM and related complications, and their treatment, as well as a gain of QALYs would be considerable. Therefore the **potential public health impact of regular yogurt consumption through reducing T2DM and related health care expenditures could be substantial**. As there is additional evidence on **benefits of yogurt consumption for weight maintenance and other diseases**, education programs promoting a higher consumption could represent a highly cost-effective intervention.



AZMINA GOVINDJI, RD

London, UK

Azmina is **an award-winning dietitian, international speaker and best-selling author**. She is a media spokesperson for the British Dietetic Association (BDA), resident dietitian to www.patient.co.uk, and previous spokesperson and nutrition expert for UK's Change4life Campaign and NHS Choices.

She has served as a **member of several Boards and Committees on national health organisations** including the British Heart Foundation, Diabetes UK, Diabetes Research and Wellness Foundation, BDA Public Relations Committee and BDA Executive Council. Her television appearances include Sky, BBC and ITV news, and lifestyle programmes such as *This Morning* and *The One Show*. She is Co-Founder of the award-winning RDUK monthly professional twitter chats (www.rdukchat.com) that reach an average of 1.5 million people and involve between 60-85 expert nutrition participants.

Azmina has written over a dozen **books on weight management and diabetes**. She was Chief Dietitian to Diabetes UK for eight years and now runs her own nutrition consultancy. In her spare time, she is Global Director of the award-winning non-commercial online resource, The Ismaili Nutrition Centre (www.theismaili.org/nutrition).

She offers authoritative opinion on a range of diet-related topics and her lively personality and down-to-earth approach help her to simplify scientific dietary principles for the media and the general public.



MEGRETTE FLETCHER, MED, RD, CDE

Boston, MA, USA

Megrette Fletcher, MED, RD, CDE, is a **registered dietitian, diabetes educator and mindful eating expert**. She works as a diabetes educator in Dover, NH. 10-years ago, she co-founded The Center for Mindful Eating, www.tcme.org. **Since then, she has written a number of book on mindful eating including, Eat What You Love, Love What You Eat with Diabetes by Michelle May, MD (New Harbinger Publishing, April 1, 2012).**

Megrette speaks internationally about diabetes and mindful eating and has presented multiple times for the American Association of Diabetes Educators (AADE), the Academy of Nutrition and Dietetics National Conferences.

Six years ago her passion for diabetes has spread to her hobbies when she created the largest cycling team in the state of Maine's American Diabetes Association, Tour de Cure event. She is thrilled to be part of a 100+ person team that has raised over \$150,000 to find a cure for diabetes!

YOGURT & TYPE 2 DIABETES - PUTTING IT ALL INTO PRACTICE

Azmina Govindji¹ & Megrette Fletcher²

This interactive session will be a **combination of a practical talk based on anecdotal experience** from a Registered Dietitian working in the prevention and management of Type 2 diabetes (T2D), followed by a live interview with a Mindful Eating expert, **and culminating in a Mindful Eating activity.**

Prevention of T2D requires positive lifestyle and dietary changes to maintain a healthy weight and improve glycaemic control. The presentation will include examples of **how to reduce energy intakes and glycaemic impact by using food swaps such as substituting a yogurt smoothie for fruit juice, or enjoying frozen yogurt on a stick in place of an ice cream bar.**

Nutrient-dense food choices can help people to meet their nutritional requirements without consuming excess calories, and eating **yogurt appears to be a good marker of diet quality.** Examples of how yogurt can contribute to low glycaemic nutrient-dense choices for snacks and desserts will be highlighted. Better nutrient profiles can also promote normalisation of blood glucose; for example, **high protein foods like yogurt and nuts promote satiety, and protein and fat can help to slow down post-prandial blood glucose levels.**

The versatility of yogurt, as well as the texture and mode of eating, lends itself well to enjoyment of foods and mindful eating.

The live interview will explore the age-old question, why do we eat? Eating is not a single act, but a process that integrates external and internal processes. This multi-step process confused many people, which is why Michelle May, MD developed the Mindful Eating Cycle.

Attendees will have an opportunity to review the six decision points regarding food and eating, and see that mindful eating counseling is a fun and interactive way to connect with individuals with at risk for diabetes. Attendees will be directed towards the research supporting mindfulness and mindful eating as a way to promote behavioral change as it relates to diabetes care.

1. Azmina Nutrition www.azminanutrition.com
2. www.megrette.com and www.AmIHungry.com



A series of horizontal dotted lines for taking notes, spanning the right side of the page.







Handwriting practice lines on page 26, consisting of 20 horizontal dotted lines.

Handwriting practice lines on page 27, consisting of 20 horizontal dotted lines.



▶ Learn more about yogurt at
www.yogurtinnutrition.com

Stay tuned!



@YogurtNutrition
#yogurt2016

Subscribe to our newsletter

