

3<sup>rd</sup> International Conference on Food Science and Technology November 11-12, 2019 | London, UK

# Scientific Tracks & Abstracts





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## The role of cortisol excess and deficiency in Metabolic syndrome

#### Adrian Isaza

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A coording to the first global report of the World Health Organization, the number of adults with diabetes has increased to 422 million while causing 1.6 million deaths per year. This rise is largely due to type 2 diabetes mellitus. This study involved a literature search (PUBMED) which identified randomized controlled trials and systematic/literature reviews for interventions with an antidiabetic effect and risk factors that caused diabetes mellitus. Then studies were searched on the effect on cortisol for the interventions and risk factors. Thirty-five functional foods, 27 supplements, 19 pharmaceuticals, 9 non-communicable diseases, 8 psychological conditions, six environmental factors and the effect of physical activity were evaluated. The results revealed a positive correlation between cortisol and risk of insulin resistance. These findings suggest that the hypothesis of diabetes mellitus type 2 being caused by chronic cortisol overproduction is plausible.

### **Biography**

Adrian Isaza is a Doctor of Chiropractic Diplomate of the American Clinical Board of Nutrition Allied Health Instructor Certified in Conversational Spanish (University of Santiago de Compostela, Spain) 2005 and 2007Certified in French (Avec praxis/ Nice France).

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### Advanced glycation end products: A tumor promoting consequence of Nutrition

#### **David P Turner**

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ur research has demonstrated that advanced glycation end products (AGEs) derived from diet can directly impact both pubertal developmental programs and neoplastic growth to increase cancer risk and progression. Most people are unaware of what AGEs are or the damage they can cause, but we are exposed to them every day through the lives we lead and the foods that we eat. The Western diet together with more sedentary habits means that lifestyle-associated AGEs are accumulating in our bodies at a faster rate than ever before. Changes in the AGE equilibrium due to lifestyle cause protein dysfunction, reduced genetic fidelity, and aberrant cell signaling activation which we believe contribute to cancer outcomes. Disparity populations defined by AGE-associated risk factors such as diet, smoking, drinking and physical inactivity often bear a greater cancer burden when compared to the general population (reviewed by the PI, Cancer Research 2015). Lifestyle associated AGEs therefore may represent a unifying biological consequence of the social, demographic and environmental risk factors that contribute to increased cancer incidence and mortality. Early life exposures during mammary development influence the breast microenvironment to increase breast cancer risk. We show that due to an innate ability to influence the cellular matrix, dietary AGEs disrupt mammary development during puberty and accelerate tumor growth and progression. Critically, dietary-AGE mediated effects on pubertal development and tumor growth were dependent upon the stromal activation of the receptor for AGE (RAGE). Our studies show that dietary-AGE activation of RAGE alters cytokine profiles and increases immune cell recruitment to produce an activated stroma. An activated stroma was characterized by the increased recruitment and activation of fibroblasts and macrophages. stromal cells adopt distinct metabolic patterns which function to maintain the energy requirements needed for cell differentiation and functionality. Pathway analysis of expression data from excised tumors shows that AGE consumption significantly impacts energy metabolism through the aberrant expression of MYC regulated transcriptional targets. Our combined data show that AGEs contained in the foods we eat can impact cancer risk and progression. Due to their links with lifestyle, both pharmacological and/or interventional strategies aimed at reducing the AGE accumulation pool may be viewed as universal health care preventive and/or therapeutic initiatives. This may be an attractive option for populations where lifestyle change is not feasible due to poverty, inability, illness, treatment side effects, time, apathy and/or depression.

### Biography

David Turner has accumulated over 20 years of basic and translational cancer research experience in the UK, Europe and USA and has a track record of success. Through peer reviewed publications, multiple intercontinental collaborations, and numerous scientific meetings around the world his work is internationally recognized. His research program has been dedicated to defining the biological mechanisms involved in promoting cancer with a emphasis on the effects of lifestyle and diet. In order to be successful in his chosen field he has established working collaborations with a multidisciplinary team of investigators including clinicians, epidemiologists as well as behavioral and population scientists in order to fully comprehend the translational link between lifestyle, cancer and cancer disparity. He continues to show a strong commitment to community outreach and has developed bridges with numerous community leaders and has presented at many community events.

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# The Psychology of Food safety culture, including quick check tool

#### Erica Colson

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**F**ood safety management systems (FSMS) have developed to become more advanced over the last 20+ years, however food incidents and recalls are still prevalent, and we still see lapses in basic food safety and HACCP (hazard analysis and critical control points) failures. Modern thinking in the food and beverage production industry is that although we may have more advanced FSMS and monitoring equipment, human error and behaviour is having a negative impact on the safety of our consumables. Standards such as the BRCGS Global Standard for Food Safety have attempted to address this through 'add on audit modules' focused on food safety culture, but there is no agreed framework across industry that has a clear methodology proven to improve food safety culture. Presenting key behavioural science learnings combined with business leadership techniques, we will present an approach to food safety culture that focuses on positive reinforcement and top down leadership. We will explore how organizations can tailor their approach after identifying what type of organizational culture they currently work in, and how to best approach positive change in industry, playing into instinctual motivations and identifying 'mob leaders' to insight a snowball effect on improving food safety culture and reducing lapses in basic food safety culture assessment to benchmark their current status with recommendations for improvement.

### **Biography**

Erica Colson has featured on the agenda of many industry events including the International Food and Drink Exhibition (IFE), The Food and Drink Quality and Safety Summit and The Food and Drink IT Summit, The Farm Shop and Deli Show. After graduating the University of Birmingham with a BSc, (Hons) in psychology Erica led the implementation GMP (good manufacturing practice) program at a medical devices company, before moving into the food manufacturing assessment sector. Applying psychological principles to business problems and providing insight on and the psychology of food safety and quality culture, she will share a new assessment tool that food and beverage leaders and compliance teams can use to gain insight into their own business culture.

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# Pasta, snack crackers and bean tempeh hamburger: Food development with Nutritional and functional appeal

**Priscila Zaczuk Bassinello** Embrapa Rice and Beans, Brazil

The search for food products with nutritional and functional appeal coupled with curiosity about new types and **L** availability of food, as well as ready-made and / or ready-to-eat foods has increased in recent decades. In this scenario, the development of bean gluten free products is attractive due to its high protein content, dietary fiber, complex carbohydrates, and the presence of B vitamins, minerals as well as phenolic compounds, antioxidants and anthocyanins. Therefore, the development of quick cooking noodles and bean snacks at low cost is an option for improving the nutritional quality of these products. Following this trend, another alternative to consumers is the common bean tempeh, typically produced by the solid fermentation of soybean by the fungus Rhizopus oligosporus. The objective of this study was to develop pasta, biscuits and bean tempeh hamburger, and to evaluate their composition and sensorial acceptance. The pasta and biscuits were developed from precooked carioca and black bean flours, and the tempeh produced with 100% carioca or white bean grains as well as with the mixture of carioca beans and soybeans (1:1). The best tempeh composition was used to formulate the tempeh hamburger. Pasta and snack crackers made from carioca and black beans showed high protein and fiber content, low caloric value when compared to commercial products based on wheat flour. BT presented a remarkable reduction of the protein content in relation to the traditional soybean tempeh, but presented high fiber content, lower caloric value and antioxidant activity. Hamburgers had reasonable acceptability by consumers and resembled chicken hamburger. In general, the products developed showed good sensory acceptance, nutritional and functional appeal, that is, they raised the desires of consumers who search for practical foods without giving up the nutritional quality or healthy properties. In addition, they can be used as a good protein source for vegans and vegetarians.

### **Biography**

Priscila Zaczuk Bassinello, Food Science researcher at Embrapa Rice & Beans (since 2002) with focus on grain quality - technological, nutritional, functional, biofortification, and sensorial quality of dry beans, rice and their byproducts for food development. Coordinator of the AACC rice division (2011), Member of the International Network for Quality Rice led by IRRI (2011-2014), Head of the Embrapa Research Group of Special Rice and Bean grains (2015-2016), Executive Secretary and active member of Embrapa projects Portfolio on Food, Safety, Nutrition and Health since 2013. Collaborated with the Embrapa's Document "Vision 2030: the future of Brazilian agriculture" (2018). She was titled Ambassador of Beans by the Sectorial Chamber of the Bean and Pulses Productive Chain, at the Brazilian Ministry of Agriculture (2018). Professor who advises Master/Doctor's students on Food Science and Technology at the Goias Federal University and collaborates with other University programs. Authored/co-authored more than 70 research papers, 1 book and 6 book chapters in the last 10 years and has just published an international book on "Phaseolus vulgaris: Cultivars, Production and Uses", as editor. Contributed to the Organization for Economic Cooperation and Development consensus document on common bean constituents (Safety of Novel Foods and Feeds, No. 27). Co-inventoried a Brazilian patent 14224-6 (2012) on a Computer Program for automation of Mattson Bean Cooker, at INPI (National Institute of Industrial Property).

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### Novel processing of soybean to produce milk: An enzymatic approach

#### Jyoti Rani

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onventional method of soymilk extraction method vs Enzyme assisted soymilk (Hi-Media cellulase enzyme  $\sim$  from Trichoderma viride and pectinase enzyme from Rhizopus spp. were used at varied concentrations to temperature and time combinations) method were studied. This study was mainly focused on standardizing the time period for pre-soaking of soybean grains that was followed by boiling of those pre-soaked grains and to observe its effect on the sovmilk quantity and quality. The results have shown exactly double milk yield with enzyme assisted soymilk extraction method (cellulase enzyme was found substantial effective in milk extraction to pectinase enzyme) to the conventional soymilk extraction method. The observations for various quality parameters for soymilk obtained from cellulase and pectinase enzymes ranged were: pH (6.75-6.82), proteins (45- 56mg/ml), fat (12-13mg/ml), carbohydrates (5.9-6.2mg/ml), Solid not fat (SNF:2.1-3.1mg/ml), acidity (0.30-0.35percent), non-reducing sugars (07-20mg/ml), flavonoids (610-640mg/ml) and total soluble sugars (5.0-5.5percent). The quality parameters for the soymilk obtained from conventional method had a pH of 7.2, proteins 26mg/ml, fat 14.2mg/ml, carbohydrates 4.9mg/ml, Solid not fat SNF:5.2mg/ml, acidity 0.36percent, non-reducing sugars 10mg/ml, flavonoids 590mg/ ml and total soluble sugars 6percent. In terms of the soymilk quantity and quality, the enzyme assisted method of soymilk extraction can be considered as an alternative over conventional method of soymilk production for the soymilk production with higher percentage of proteins, flavonoids with decreased fat, carbohydrates, SNF, acidity, total solids and pH. Beside good nutrition, the enzyme assisted extracted soymilk showed higher sensory score in taste, colour, texture, and flavour on a 9-point hedonic scale. The sensory overall acceptance for soymilk obtained from conventional method was 5.80 while for pectinase-cellulase assisted soymilk ranged between 4.87-7.47. Thus, enzyme assisted extraction method can be considered as a novel processing method for soymilk extraction with enriched nutritional quality, double milk yield and less of by-product (OKARA). As a whole de-hulled soybean can be completely converted to milk.

### **Biography**

Jyoti Rani, Assistant Professor, Food Science and Technology, TIET, Patiala (India) has an expertise in dairy, cereals, soybean and fruits& vegetable processing. She has more than 6 years of teaching and five years of research experience in the food science and technology field. She is intending to develop novel processing methods with less of inputs and more of quality with quantity keeping in mind the growing population and their nutrition. Enzymatic approach towards soymilk production has been intervened with an approach to reduce the wastage during conventional soymilk production and as well improving the digestibility of the soy proteins.

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# Ethnobotanical and self- medication: Boon or Bane?

**Himanshi Upadhyaya** University of Derby, UK

**Statement of the Problem:** Ethnobotanical medicines have been a source of instant remedy since the ancient times. Every tribe has had their own source of therapeutic medicines solely prepared from the plants in their surroundings and therefore, majorly dependent on their geographic location. Although efforts are being made to bridge the gap between ethnobotanical therapies and clinical medications, we still have a long way to go. With the advent of technology, humans have moved further away from their natural environment and hence, clinical medications have become immensely popular. This has given rise to the use of over the counter medications all over the world. An effort has been made to list down the most commonly used over the counter medications and ethnobotanical remedies in the Kumaun Himalayas of Uttarakhand, India.

**Methodology & Theoretical Orientation:** 200 subjects residing in Almora district, an ancient hilly district located in the foothills of the Himalayas were interviewed and were asked to fill up a questionnaire pertaining to the frequent use of such medications. The objective was to ascertain the percentage of people who are dependent on either ethnobotanical or self-medications in their day to day lives. The purpose was to establish whether or not the participants or someone they knew had suffered from any side effects after the intake of such medications.

**Findings:** It was observed that people belonging to the age group of 50-75 and living in remote areas were more dependent on medicines of ethnobotanical origin while people belonging to 15-30 age group were heavily relying on over the counter and self- medications.

**Conclusion & Significance:** It is suggestive of the fact that capitalism about over the counter medications and change in the lifestyle may have resulted in lesser use of ethnobotanical remedies by younger generation. It was also observed that people from 30-75 believe that ethnobotanical remedies make for a better option when it comes to life threatening diseases such as cancer, jaundice and TB. Chronic toxicity is commonly reported after the intake of both self and ethnobotanical medications.

### **Biography**

Himanshi Upadhyaya has her expertise in forensic toxicology and is focused about working extensively in the field of toxicology and forensic chemistry. Her work is based on unmasking the truth behind the use of ethnobotanical as well as over the counter medications. Her work is an output of in- depth interviews and personal visits to remote parts of Kumaun Himalayas, Uttarakhand in India. Her aim is to bridge the gap between the belief and reality of ethnobotanical and over the counter medications and to showcase the merits and demerits of the same. Her attempt to shed light on this incredible topic of interest might bring changes in our casual attitude towards such medications.

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# **Food & Nutritional Proteomics**

#### Sudha Bansode

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**F** ood intake is essentially important for every life on earth to sustain the physical as well as mental functions In a classical sense, the functions of foods are to replenish the molecules that construct our body as well as to be consumed as energy source for our everyday activity. From a modern point of view, however, foods can do more than these conventional functions; foods could actively be involved in the healthy maintenance of our body, through controlling molecular and cellular signaling pathways. Therefore, investigating the molecular and cellular pathways on which food intake influences will open a fruitful area in functional food studies. Thereare at least two ways how to investigate the changes in molecular and cellular pathways cause by diets, one by the genomics method and the other by the protomics. Genomics measures mRNAs, whereas protomics measures proteins. These two sets of parameters do not always correlate each other by many unknown reasons. Moreover, proteins, but not mRNAs, are the physical entities that function in cellular events. Therefore, it is essentially important to obtain protein information to evaluate the effect of functional foods on the alteration of cellular and molecular signaling. In this report we will introduce a potential subarea in functional food studies; studies of protein expression and its change by diets. We designate the new discipline "nutritional protomics". In this report, we will use a class of essential fatty acids, omega-3 polyunsaturated and omega-6 PUFAs, as an example of nutritional protomics study.

### **Biography**

Sudha Bansode is a Associate Professor in Zoology at Shankarrao Mohite College, Akluj, Maharashtra State , India. Recently she has completed her Post Doctoral Studies at University of California, Riverside, USA. She is a active researcher & passionate teacher in India. Still she has been published above 25 research papers in International Journals & she is interested on Bone Research. Also she has honor of Distinguished Editorial Board Member of several International Journals. She is a own author of "Textbook Histological Techniques" & "Outlines of Physiology". And now she is working on another own reference book "Rhythms in Freshwater Crustaceans". She is a University recognized research guide for Ph.D. students in India. She was a invited Indian Speaker of "OXFORD SYMPOSIUM" on 27-29 August, 2014 at Balliol College, Oxford, United Kingdom & CELL SIGNALING & CANCER THERAPY – International Conference at Double Tree, Hilton Chicago on 27-28 September 2017. She was academic visitor of Bangkok- Thailand, Colombo-Sri Lanka, Daira-Dubai-UAE. Her recent intellectual Interaction is with many International Professional groups.

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# Investigation and measurement of some mineral and vitamins in eggplant fruit calyx, and the possibility of being used as Food supplements and alternative medicine

#### Khuloud Al Nachar

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Food supplements are Plenty present in medicinal markets and have taken a great importance as they compensate for many of the minerals and vitamins lacking in human body, but most of them rely on introducing a chemicals substances in there composition without making an attention to their representation or its harmful effects in the body ,this research has been interested in this regard and studied the components of eggplant calyx(cones) by confirming the existence of some minerals and vitamins with the identification of values and calibrated It, all these results has been compared with previous studies of these elements in edible part of the eggplant with mentioned of the daily recommended intake and the value of minerals and vitamins was greater than that in the edible part. So, this study shows the importance of these minerals and vitamins and links their presence with each other in influencing the health of the body and how it could protect it from certain diseases. Hence, we can say that this neglected and damaged eggplant calyx in our system Food is a natural and balanced food supplements, therefore this discovery will be important in the manufacture of dietary supplements.

#### **Biography**

Khuloud Al Nachar has completed master's degree in Damascus University. Currently she is working as Pharmacology Teacher at Laboratory of Kalamoon University.

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