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## Scientific Tracks & Abstracts

## **The effect of caffeine on carbohydrate and protein digestion**

**Irit Rutman-Halili**

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Caffeine is a natural compound found in coffee, tea and cocoa. It is a central nervous system stimulant and is probably the world's most widely consumed psychoactive drug. While the ingestion of caffeine was previously considered to have the potential for causing harmful effects, recent studies have provided evidence of several health benefits.

The effect of caffeine on the digestive system is still not clear. For example, recent studies suggest that caffeine alters salivary alpha amylase activity, but the results are contradictory. Other studies report that caffeine interacts with trypsin to form a caffeine-trypsin complex. However, the significance of this finding is unclear.

The aim of this study was to further investigate *in vitro* the effects of caffeine on the activity of alpha amylase, and of trypsin, using a spectrophotometric method. Starch and BSA (Bovine Serum Albumin) solutions were used as substrates to investigate alpha amylase and trypsin *in-vitro* degradation, respectively.

It was found that caffeine significantly inhibited both alpha amylase and trypsin activity in a dose-dependent manner.

We postulate that the inhibition of alpha amylase caused by caffeine may reduce the level of various sugars in the small intestine, thereby reducing the amount of glucose that is absorbed into the bloodstream. This may be beneficial in, for example, diabetic or obese individuals.

Our findings also suggest that caffeine administration may reduce amino absorption from the gastro-intestinal tract. The significance of this effect is unclear.

### **Biography**

Irit Rutman Halili completed her PhD at the age of 36 years at Bar-Ilan University, Israel. She is a senior lecturer at the Department of Science Education of the Hemdat Hadarom Academic College of Education, Israel and also a director of research cooperation between the Katif Research Centre and the college. She has published her research findings in publications in a variety of research disciplines.

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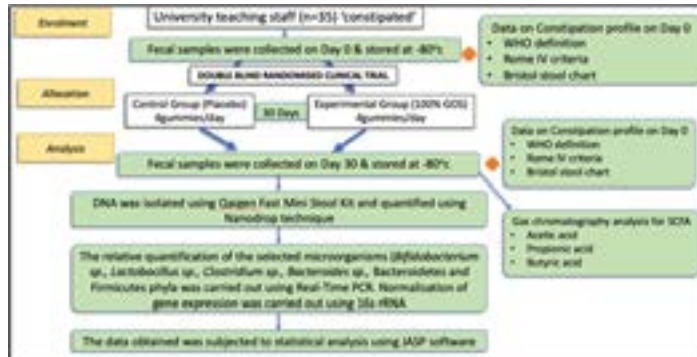
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## **GOS consumption optimizes gut health and Short Chain Fatty Acid (SCFA) profile of sedentary constipated adults: A double blind randomized placebo controlled clinical trial**

**Kankona Dey\*** and **Mini Sheth**

The Maharaja Sayajirao University of Baroda, India

Galactooligosaccharide are prebiotics that changes the composition of gastrointestinal microbiota conferring bifidogenic effect on the gut. The purpose of this study was to assess the impact of Galacto-Oligo-Saccharide (GOS) gummies' supplementation on gut health and constipation profile of sedentary adults. University teaching faculty who were constipated (n=35) were screened using validated pre-tested questionnaires. Eight parameters were studied including Rome IV criteria, WHO definition and Bristol Stool Chart. They were subjected to a double blind placebo controlled clinical trial (Figure 1). The participants were split into two groups; the experimental group (n=17) received 100% GOS gummies, while the placebo group (n=18) received sugar gummies for 30 days. Fecal samples were collected at baseline and Day 30. The relative abundance of genera including *Bifidobacterium*, *Lactobacillus*, *Clostridium*, *Bacteroides* and *phyla Bacteroidetes* and *Firmicutes* were examined using Real-Time PCR. Normalization of gene expression was done using 16s rRNA. SCFA profile was studied using gas chromatography technique with respect to Acetic acid, Butyric acid and Propionic acid as SCFA is linked with increased colonization of beneficial bacteria. The experimental group experienced a significant increase in stool frequency by 40% (p<0.01) and significant reduction of gastrointestinal symptoms. In contrast to the placebo group, the results showed a significant increase in the genera *Bifidobacterium* (p<0.001), *Lactobacillus* (p<0.001) in the GOS supplemented subjects. However, genus *Clostridium* (p<0.01), *phyla Firmicutes* (p<0.001) and *Bacteroidetes* (p<0.001) were found to be reduced significantly, particularly in the GOS supplemented group. In comparison to the placebo group (1.29), it was observed that the GOS supplemented group had a higher F/B ratio (2.57) which correlates to an improved gut health. Significant increase in Acetic acid (p<0.001) and butyric acid (0.01) was observed among the experimental group making it evident that short-term GOS consumption can relieve constipation status and result in improved gut health profile of constipated subjects.



**Figure 1.** Methodology for double blind randomized clinical trial.

## Biography

Kankona Dey is a PhD scholar in the Department of Foods and Nutrition, The Maharaja Sayajirao University of Baroda, India working in the area of prebiotics and gut health. She is an active member of recognized Indian membership bodies including Nutrition Society of India, Indian Dietetic Association and National Institute of Nutrition, Hyderabad, India is her Alma matter. She is a certified diabetes educator and a bariatric nutritionist with a work experience of over 6 years. Currently she has two book chapters and two published Scopus indexed research papers to her credit. She has a consistent academic record with zeal to learn new concepts quickly and apply innovative ideas for achieving best results. She is motivated, self-starter with a passion to succeed and desires to excel in the areas of food and nutrition.

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## **Innovative ready-to-eat healthy product: Chicken boost from A to zinc**

**Vasileios Pappas**

Condito S.A., Greece

As part of a research program, the research team of the Department of Food Science and Nutrition of the University of the Aegean studied the possibility of creating a product with a particularly high nutritional value and at the same time having a very tasty combination of ingredients. After a literature review and pilot productions they came up with the product: “Chicken Boost from A to Zinc”, that is a product with the main ingredient chicken breast fillet and stuffing of dried vegetables (kale, spinach, carrot, sun-dried tomato, red pepper and dill). All raw materials are of Greek origin making the product Greek. It is classified in the category of ready to eat meals. It is characterized by high nutritional value, as it contains significant amounts of many vitamins, minerals and trace elements, which cover a large percentage of the recommended daily intake. It is a product characterized by ease of consumption, as it is ready-baked-frozen and requires only heating by the consumer in an oven or microwave. Also, it will be available in a package of 2 portions (170 g each), fully recyclable. Chicken Boost from a to Zinc is an ideal meal proposal for all ages (over 2 years), especially for those who follow a balanced diet and need high amounts of nutrients but also for those who have a fast pace of life and want a fast but healthy meal.

### **Biography**

Vasileios Pappas is graduated from the department of Food and Nutrition Science of the University of the Aegean, where already had numerous of participants in conferences and research projects of Development and Innovation in the field of food products, attended and successfully completed a Master study program at the University of East London in the field of Business Administration (MBA). At the same time he worked at Pindos APCI (Poultry Industry) as Head of Research and Development Department, which undertook to organize from the beginning. Afterwards he started a PhD in the Food Chemistry Laboratory, in the Chemistry Department, at the University of Ioannina. At the same time he assumed the position of Research and Development Manager at Condito Foods (producing mustard, ketchup, mayonnaise, sauces, salads and traditional spreads) in Thessaloniki Greece.

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## Development and physio-chemical evaluation of fermented fruit pulp

Mayuri Rastogi\*, Saleem Siddiqui, Vandana Singh and Bushra Shaida  
Sharda University, India

**Introduction:** Nutrients especially water-soluble vitamins are vital for health and the requirements can be only met by oral or intramuscular route. Diet plays an essential role in fulfilling daily vitamin dose; however, lack of awareness, poor nutrient absorption and indigestibility leads to deficiency of water-soluble vitamins. The microbial production of vitamins provides a naturally and economically interesting approach to improve the nutrient content in fermented foods. The benefit of fermented foods for consumer is not only limited to enhance B12 vitamins but also a good source of antioxidants and improved antimicrobial, probiotic and organoleptic qualities.

**Materials and methods:** Pineapple pulp was fermented with *Lactobacillus plantarum* and produce nutrient rich fruit probiotic. Different sucrose concentration was checked for different parameters such as duration, acidity and viable cell count. After 48 hrs of incubation at 37°C, the viable cell count was measured. Physico-chemical analysis was done for analysis of Protein, sugars and Titable acidity using standard protocols.

**Results:** Fermentation was done for 48 hrs and the CFU was observed  $6.0 \pm 0.1$  to  $8.10 \pm 0.38$  log CFU/mL, at the same, pH decreased to acidic (3.4-3.5). Phytochemical analysis showed that, the protein content 2.84 gm per 100 gm, reducing sugar 17.5%, Nonreducing sugar 5.83%, Total Sugar 23.5%, titrable acidity 0.373%.

**Conclusion:** It is possible to ferment pineapple pulp with *Lactobacillus plantarum* and create a delightful jelly. The entire product is formed by microbial fermentation, using Generally Recognized as Safe (GRAS) bacterium.

**Keywords:** Bio absorption, Microbial fermentation, Nutritional quality, *Lactobacilli*.

### Biography

Mayuri Rastogi, BSc, MSc (Food and Nutrition, 2007) and pursuing PhD. She is working as assistant Professor in Sharda University from last 5 years. Prior to this she worked for 7 years in multispecialty hospitals as clinical Dietician. Her area of interest is micronutrients role and intervention studies.

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## **Coventry University student perceptions of factors influencing them to make healthy or unhealthy dietary choices**

**Mayanja Shafique**

Coventry University, Uganda

**Aim:** The study aimed at exploring Coventry University students' perceptions of factors that influenced them to make healthy or unhealthy dietary choices. A qualitative approach was used to explore perceptions of factors that influenced their dietary choices.

**Methods and analysis:** Five participants all Coventry University students were recruited for this study using the purposive sampling method. One-to-one semi-structured interviews were conducted to explore students' perceptions of factors influencing their dietary choices. Students were interviewed using open-ended questions to capture a broader perspective of the phenomena of interest.

Interviews were manually transcribed and an inductive thematic analytical method was used to analyze data which led to the identification of three major themes.

**Results:** The results indicated that three major themes emerged which included concepts and perspectives of health and unhealthy dietary choices, perceptions of factors influencing students' perceptions of their dietary choices and solutions to healthier choices.

Concepts and perspectives indicated that students understood the meaning of healthy and unhealthy dietary choices as well as expressed how they understood the concepts. The students also expressed their perceptions of factors that influenced them to make dietary choices which included socio-economic, lifestyle factors, social and community networks and environmental factors. These include cost, time, knowledge, health, availability, location and weather changes. However, the most influential factors were cost, time, family and health.

Possible recommendations were suggested to promote healthier choices including proper planning, advertisement of healthier foods, eating when necessary and personal responsibility.

### **Biography**

Mayanja Shafique has expertise in the field of Human Nutrition especially in Public health Nutrition as a lecturer and mentor. He started to develop his career in research especially in Public health and specifically in the line of Nutrition.

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## Therapeutic potential of *Ficus palmata*

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Herbs are being use as a medicine science the oldest time to care of human health in all cultures throughout the traditional times. *Ficus palmata* is herbaceous perennial plant belonging to the *Moraceae* family however the fruits are also used as a dry vegetable. The nutritional, phytochemical and antioxidant properties of *Ficus palmata* was analyzed. Moisture, ash, fat, fiber, protein and carbohydrate were analyzed in this study. Minerals like calcium, iron, phosphorus and zinc were also analyzed. The results of macronutrients were moisture ( $48.20 \pm 0.10$ ), ash ( $4.06 \pm 0.15$ ), fat ( $4.71 \pm 0.20$ ), fiber ( $17.65 \pm 0.14$ ), protein ( $4.06 \pm 0.08$ ) and carbohydrate ( $20.78 \pm 0.10$ ) g/100 gm respectively. Calcium ( $1.54 \pm 0.13$ ), iron ( $0.018 \pm 0.02$ ), phosphorus ( $1.88 \pm 0.02$ ), magnesium ( $0.92 \pm 0.15$ ) and potassium ( $1.58 \pm 0.20$ ) mg/100 gm were also found in the *Ficus palmata*. On the basis of the present study, it was found that the ficus fruit richly contains different macro as well as micro nutrients. Phytoconstituents like alkaloids, steroids, fats & fixed oil, flavonoids, tannins, proteins and carbohydrates are present in the fruit of *Ficus palmata*. The study showed that being a wild plant of Uttarakhand *Ficus palmata* can be used I the daily life as a fruit and a dry fruit and can be helpful in various diseases. *Ficus palmata* plant is useful in various diseases like gastrointestinal, hypoglycemic, insulin levels and antifungal activities. The fruit also can be used as anti-tumour, anti-ulcer and anti-diabetic, lipid lowering fruit for people with less buying capacity.

**Keywords:** Flavonoids, Anti-tumour, Anti-ulcer, Anti-diabetic, Tannin.

### Biography

Aditi Rikhari has her experience in the field of clinical and community research she holds an experience of research and teaching of more than 5 years. She has completed her Graduation and Post-graduation from Banasthali University Rajasthan. She has been recently she is working as an Assistant professor in Sharda University. Her interest lies in both clinical and community based research.

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## **Bioelectric impedance: Non-invasive method for assessing cell integrity**

**Bushra Shaida**

Sharda University, India

**Introduction:** Cellular integrity and health have been assessed using bioelectrical markers the tool Bioelectrical Impedance Analysis (BIA). Researchers have looked at the phase angle, which is expressed through bioelectrical impedance, as a predictive sign in a number of medical disorders. The question of whether bioelectrical impedance corresponds with cell integrity in the widest range of clinical circumstances still exists because this issue is still contentious. Therefore, this review aimed to understand the relationship between bioelectric impedance values and cell integrity.

**Results:** The bioelectrical measures Extra-Cellular Water (ECW), Phase Angle (PA), BIA Vector Analysis (BIVA), crude reactance data (Xc), Resistance (R) and ECW/BCM ratio that are directly related to cellular health and integrity. These parameters had a direct correlation with gender, age, level of athletic performance, modality and position in the game.

**Conclusion:** Bioelectric impedance can be a helpful tool for assessing cellular health and integrity.

**Keywords:** Bioelectrical Impedance Analysis (BIA), Phase angle, Cell integrity, Reactance data (Xc).

### **Biography**

Bushra Shaida have done her B.Sc. from AMU and Masters from Lucknow University and completed her PhD from Amity University. Her research area is Nutrition, Food Science and Public Health. She is working as Assistant Professor in Sharda University, Greater Noida from last 10 years.

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