

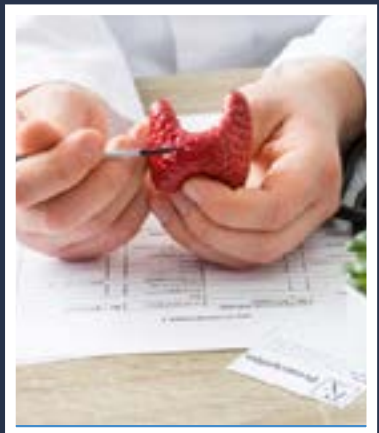
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World Congress on Diabetes and Endocrinology

Scientific Tracks

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Diabetes & Endocrinology 2022

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New GLP1A and Diabetes Controlle

Hazem Rayyan

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The glucagon-like peptide-1 receptor agonist (GLP-1RA) Semaglutide is the most recently approved agent of this drug class, and the only GLP-1RA currently available as both subcutaneous and oral formulation.

While GLP-1RAs effectively improve glycemic control and cause weight loss, potential safety concerns have arisen over the years.

For Semaglutide, such concerns have been addressed in the extensive phase 3 registration trials including cardiovascular outcome trials for both subcutaneous (SUSTAIN: Semaglutide Unabated Sustainability in Treatment of Type 2 Diabetes) and oral (PIONEER: Peptide Innovation for the Early diabetes Treatment) Semaglutide and are being studied in further trials and registries, including real world data studies.

In SUSTAIN programme, Semaglutide was associated with consistent reductions in HbA1c and higher proportions of subjects

achieving glycaemic targets of $<7.0\%$ and $\leq 6.5\%$, vs comparators.

In SUSTAIN 6, Semaglutide treated patients experienced a significant 26% risk reduction in the primary composite outcome.

Given the beneficial metabolic and cardiovascular actions of Semaglutide, and the low risk for severe adverse events, Semaglutide has an overall favorable risk/benefit profile for patient with type 2 diabetes.

Biography

[Hazem Rayyan](#) is the Director of training program in Internal medicine in NWAFFH. Previously, he worked as a consultant Endocrinologist in King Salman Military Hospital, Tabuk-KSA. Currently, he is working as a [Endocrinologist](#) in(JCDE) in Jordan Hospital. His main research

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Therapeutic ketosis and the broad field of applications for the ketogenic diet: Ketone ester applications & clinical updates

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It has been recently shown that nutritional ketosis is effective against seizure disorders and various acute/chronic neurological disorders. Physiologically, glucose is the primary metabolic fuel for cells. However, many neurodegenerative disorders have been associated with impaired glucose transport/metabolism and with mitochondrial dysfunction, such as Alzheimer's/Parkinson's disease, general seizure disorders, and traumatic brain injury. Ketone bodies and tricarboxylic acid cycle intermediates represent alternative fuels for the brain and can bypass the rate-limiting steps associated with impaired neuronal glucose metabolism. Therefore, therapeutic ketosis can be considered as a metabolic therapy by providing alternative energy substrates. It has been estimated that the brain derives over 60% of its total energy from ketones when glucose availability is limited. In fact, after prolonged periods of fasting or ketogenic diet (KD), the body utilizes energy obtained from free fatty acids (FFAs) released from adipose tissue. Because the brain is unable to derive significant energy from FFAs, hepatic ketogenesis converts FFAs into ketone bodies-hydroxybutyrate (BHB) and acetoacetate (AcAc)-while a percentage of AcAc spontaneously decarboxylates to acetone. Large quantities of ketone bodies accumulate in the blood through this mechanism. This represents a state of normal physiological ketosis and can be therapeutic. Ketone bodies are transported across the blood-brain barrier by monocarboxylic acid transporters to fuel brain function. Starvation or nutritional ketosis is an essential survival mechanism that ensures metabolic flexibility during prolonged fasting or lack of carbohydrate ingestion. Therapeutic ketosis leads to metabolic adaptations that may improve brain metabolism, restore mitochondrial ATP production, decrease reactive oxygen species production, reduce inflammation, and increase neurotrophic factors' function. It has been shown that KD mimics the effects of fasting and the lack of glucose/insulin signaling, promoting a metabolic shift towards fatty acid utilization. In this work, the author reports a number of successful case reports treated through metabolic ketosis.

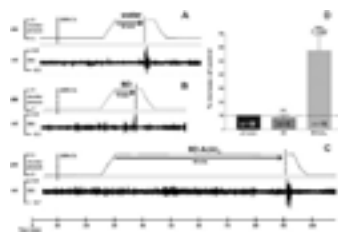


Figure 1: Ketone Ester significantly increased resistance against Central Nervous System Oxygen Toxicity seizures (D'Agostino D.P. et al., 2013 *Am J Physiol Regul Integr Comp Physiol.* 304(10):R829-36).

Recent Publications

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5. Pilla R., Landon C.S. and Dean J.B. A potential early physiological marker for CNS oxygen toxicity: hyperoxic hyperpnea precedes seizure in unanesthetized rats breathing hyperbaric oxygen J. Appl. Physiol.: 114(8), 1009-20Interventions.Proc. Natl. Acad. Sci., India, Sect. B Biol. Sci.DOI 10.1007/s40011-017-0885-5. (2013)

Biography

Raffaele Pilla, Pharm.D., Ph.D., Doctor Europaeus, received his Master's degree in Pharmacy at G. d'Annunzio University in Chieti-Pescara, Italy in 2005, where he also served internships at the Cell Physiology Laboratory and Molecular Biology Laboratory. Prior, he was an Erasmus Student at Faculté de Pharmacie de Reims in

Reims, France. He received his Doctor Europaeus in 2010 from Pitié-Salpêtrière Institute in Paris, France. Also in 2010, he received his Ph.D. in Biochemistry, Physiology, and Pathology of Muscle at G. d'Annunzio University in Chieti-Pescara, Italy. He was hired as a Postdoctoral Scholar in the Department of Pharmacology and Physiology at the University of South Florida in Tampa, on two research grants funded by the Office of Naval Research (US Navy) and Divers' Alert Network. He has written and lectured widely worldwide. He has been involved in ongoing research at the University of South Florida with the use of ketone esters.

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Obesity as a Risk for Diabetes Mellitus Type 2

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Obesity has long been considered a product of the modern life style in developed countries. Its increasing frequency in developing countries, however, points to a global paradox: a double burden of a still unsolved problem of malnutrition and of the epidemic of obesity and its comorbidities such as diabetes, hypertension, cancer and cardiovascular disease. The current epidemic of obesity has been reported in several but not all regions globally. The “nutrition transition” is a rather benign-sounding name for a striking and fast-moving phenomenon: a global epidemic of obesity. Over the past decades advanced work technology, sedentary leisure-time behavior, and greater availability, lower cost and enhanced flavor of food have led to an energy imbalance. Evidently major weight gain can occur with a very small imbalance between intake and expenditure. Obesity is very commonly linked with chronic diseases by increasing the risk of their onset, and also affecting their course and determining their treatment and prognosis. The Center for Disease Control and Prevention (CDC) state that women with a BMI of 30 kg/m² have a 28 times greater risk of developing diabetes than do women of normal weight. Diabetes is a chronic disease closely associated with obesity and with the advancements in society and changes in lifestyles of developed and developing countries, there is a growing prevalence and parallel between these two diseases. Obesity is the leading risk factor for T2DM. Obesity is affected by a complex interaction between the environment, genetic predisposition, and human behavior. It is well known that excess bodyweight induces or aggravates insulin resistance, which is a characteristic feature of T2DM, although the exact mechanisms are not clear. T2DM patients who have lost weight have significantly better diabetes control and even their intention to lose weight is associated with a reduced risk of all-cause mortality, independent of whether they actually lose weight or not even their intention to lose weight is

associated with a reduced risk of all-cause mortality, independent of whether they actually lose weight or not.

Biography:

Mr. Nkwetta Forbang Philip is a certified nurse [anesthetist and reanimation](#). He was born in kumba south west region Cameroon and studies general nursing in catholic school of health personnel shisong where he obtained a diploma in general [nursing](#). After his undergraduate he worked as a nurse in the apostolic hospital south west region Cameroon. Due to his passion for anesthesia and reanimation he further his studies and obtained his diploma in anesthesia and reanimation in the specialized school of nursing university of Yaoundé 1 Cameroon and presently working in hospital catholic logpom Douala Cameroon. He did his research on [Benin prostate hypertrophy](#) and role of nurse anesthetist in loco regional anesthesia in [pregnant women](#).

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