

**HYBRID EVENT**



**VENUE**

Las Vegas Hilton at Resorts World  
999 Resorts World Avenue, Las Vegas  
Strip, Las Vegas, NV 89109,  
United States

**OCTOBER**  
**16-17, 2024**

**GLOBAL SUMMIT ON**  
**HEART AND CARDIOVASCULAR**  
**CARE**  
**&**  
**INTERNATIONAL CONFERENCE ON**  
**OBESITY AND WEIGHT MANAGEMENT**

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# Table of Contents

**Keynote Speakers 04**

**Welcome Messages 05**

## **Day 1 In-Person**

**Keynote Presentations 06**

**Oral Presentations 08**

**Keynote Presentations 19**

## **Day 2 Virtual**

**Keynote Presentations 26**

**Oral Presentations 30**

**Poster Presentations 41**

**Accepted Abstracts 44**

**Supporting Journals 56**

## Our Keynote Speakers



**Lloyd L. Tran,**  
**Biomed Industries Inc,**  
**USA**



**Louis Samuels,**  
**Thomas Jefferson University,**  
**USA**



**Vivek Gupta,**  
**Mindful Wellness,**  
**USA**



**Thomas J Webster,**  
**Northeastern University,**  
**USA**



**Abhijit Ray,**  
**Fortis Escorts Heart**  
**Institute, India**



**Kareemah Eissa Alraesi,**  
**Emirates Health Services,**  
**UAE**

*Thank You All*

# WELCOME MESSAGE



**Thomas J Webster**  
**Northeastern University,**  
**USA**

Without a doubt, cardiovascular research over the past several decades has revolutionized medicine. With new drugs, biomaterials, stem cells, growth factors, and more, research in cardiovascular medicine has exploded. Gone are the days when we felt helpless after cardiovascular disease or a heart attack. Today, numerous research advances have saved millions of lives after cardiovascular disease. But, is this enough? Don't we still have too many cardiovascular deaths? Yes! Are we able to diagnose all cardiovascular problems early enough? No! Are we doing enough to translate such revolutionary cardiovascular research into real products? Are companies not paying enough attention to this wonderful research? Are Universities not doing enough to license academic research or start new companies? What about federal funding agencies? Are they supporting the commercialization of such new cardiovascular advances? And, more personally, are you in the right environment to commercialize your breakthroughs in cardiovascular research? Well, in my own experience, above all else, it takes a supportive positive environment to commercialize new cardiovascular research. It takes a proper mind set to translate lab research into real commercial products. It takes determination and fortitude to see it through. You need to surround yourself by the right people – and if you are currently not around a supportive optimistic environment, leave! Leave the University you are at – I did! Leave that company and start your own! Once I found a truly supportive environment (not just one concerned about funding), I was able to not only start a company based on my cardiovascular research, but commercialize my over 25 years of University research into medical devices now in over 30,000 patients with no implant failures. No infection. No chronic inflammation. No implant failures. My most successful product is a nanotextured biomaterial (originally developed through over 20 years of hard academic research) which has never failed in humans to date. An improvement to health. An improvement to life expectancy. And an improvement to cardiovascular health. So I encourage everyone to find that right environment. Life is too short and your cardiovascular research is too important not to. Attend the Heart Congress 2024! Meet the right people! Be energized by optimism! Surround yourself with positivity. At the Heart Congress 2024, we will not only discuss the next cardiovascular medical breakthrough, but more importantly, we will discuss how to commercialize it! Positively!

I look forward to seeing everyone to spread the positivity! Your heart needs it!

**Thomas J Webster**



**IN PERSON**

**KEYNOTE  
PRESENTATIONS**

**OCT  
BER  
2024** **16-17**

## Lloyd L. Tran

Biomed Industries Inc  
USA



### NA-931, a novel quadruple IGF-1, GLP-1 and GIP incretin receptor agonist reduces body weight without muscle loss

#### Abstract:

Biomed will present results of the Phase 1 clinical trial of an oral tablet formulation of NA-931, a quadruple agonist of the insulin-like growth hormone- (IGF-1), glucagon-like peptide 1 (GLP-1) and glucose-dependent insulintropic polypeptide (GIP) and glucagon receptors, in development for the potential treatment of metabolic disorders such as obesity.

**Body Weight Reductions:** In the 28-day study, subjects receiving NA-931 (n=42) demonstrated dose-dependent reductions in mean body weight from baseline, ranging up to 6.4%. For doses  $\geq 60$  mg, placebo-adjusted reductions in mean body weight were maintained or improved at Day 35, seven days after the last dose of NA-931 was administered, ranging up to 4.8% relative to placebo. An exploratory assessment of the proportion of subjects achieving at least 5% weight loss after 28 days demonstrated that up to 63% of NA-931-treated subjects achieved  $\geq 5\%$  weight loss, compared with 0% for placebo.

**Safety and Tolerability:** NA-931 demonstrated encouraging safety and tolerability following 28 days of once-daily dosing. Among subjects receiving NA-931, emergent adverse events (TEAEs) were reported to date have been insignificant or mild. All observed gastrointestinal (GI) adverse events have been reported as insignificant or mild, with the majority (84%) reported as insignificant. Mild nausea and vomiting were not reported among any NA-931-treated subjects. Diarrhea was reported in one subject (2.3%) receiving NA-931 compared with two subjects (10%) receiving placebo. Overall, no clinically meaningful differences were reported for GI-related adverse events among subjects treated with NA-931 compared with placebo. In addition, no serious adverse events (SAEs) have been reported to date.

**Conclusion:** Based on a preliminary evaluation of weight loss trajectory, Biomed believes the treatment beyond 28 days and may provide further reductions in body weight. The company has initiated a Phase 2 trial with the oral formulation of NA-931 in obesity in summer 2024.

#### Biography

Lloyd L. Tran is the Chief Executive Officer and of Biomed Industries, Inc. since May 2020. Previously, he served as Chief Scientific Officer at NeuroActiva, Inc, Director of Research & Development at Biomed Pharmaceutical, Inc. Lloyd began his career as a scientist at G.D. Searle, Monsanto (Bayer), and Pfizer. Dr. Tran earned a B.Sc (Honours) in Chemistry from the University of Otago and completed a Ph.D. in Medicinal Chemistry from the University of Wellington, New Zealand.



**IN PERSON**

**ORAL  
PRESENTATIONS**

**OCT  
BER  
2024** **16-17**



## Kareemah Eissa Alraesi

Emirates Health Services  
UAE



### Risk prediction of Cardio Renal Metabolic (CRM) disease in the primary care setting

#### Abstract:

**Background:** Cardio Renal Metabolic (CRM) disease encompasses a spectrum of interconnected conditions including cardiovascular disease, chronic kidney disease, and metabolic disorders such as diabetes. These conditions share common risk factors and pathophysiological mechanisms, leading to significant morbidity and mortality worldwide. Primary care providers are at the forefront of managing these diseases, offering a unique opportunity for early risk identification and intervention.

**Objective:** This presentation aims to underscore the importance of risk prediction for CRM disease in the primary care setting. By identifying patients at high risk for CRM diseases, primary care practitioners can implement proactive management strategies that may prevent or delay the onset of these conditions, thereby improving patient outcomes and reducing healthcare costs.

**Significance:** Early identification of individuals at risk for CRM diseases enables timely and targeted interventions, which are crucial for preventing disease progression and complications. Risk prediction models utilize a comprehensive array of patient data— including demographic, clinical, and lifestyle factors—to stratify risk and guide clinical decision-making. These models empower primary care providers to deliver personalized care and adopt a more preventive approach to managing CRM diseases.

**Conclusion:** Integrating risk prediction tools into primary care practice is essential for enhancing the early detection and management of CRM diseases. This proactive approach not only aligns with preventive healthcare principles but also supports the delivery of personalized and effective patient care. Continuous professional development and the adoption of evidence-based risk prediction models will enable primary care providers to better address the complex needs of patients with, or at risk for, CRM diseases.

## Biography

**Alraeesi**, a Family Medicine Consultant and Director of Primary Health Care, holds a PhD in Family Medicine. She pioneered the development of knowledge management via the Maharati platform. Her innovative approach enhanced e-clinic services through the initiation of the virtual digital care center, interested in empowering physicians in decision-making and upskilling through ambulatory care and GP capacity building. With a passionate dedication to managing non-communicable diseases, she continuously seeks initiatives to advance research accessibility and promotion.

## Gemma Arderiu

Sant Pau Research Institute  
Spain



### Reprogramming ASCs into endothelial cells to induce angiogenesis in ischemic tissue

#### Abstract:

Peripheral artery disease is growing in global prevalence. Its most severe form, critical limb ischemia (CLI), is associated with high rates of limb loss, morbidity, and mortality. Adequate angiogenesis, as a compensatory mechanism in response to ischemia, may increase oxygen and nutrient supplies to tissues and protect their function. Therapeutic angiogenesis has been the most promising therapy for treating ischemic diseases. In recent years, stem cell transplantation has been recognized as a new technique with therapeutic angiogenic effects on ischemic diseases. Adipose-derived stem cells (ASCs), characterized by their ease of acquisition, high yields, proliferative growth, and low immunogenicity, are an ideal cell source. ASCs could repair and regenerate damaged tissue by direct differentiation and by their secretome, whereas many other approaches rely only in cell-secreted paracrine factors. However, its clinical use has been hampered by the recognition of different factors such as aging, cardiovascular diseases risk factors and metabolic disorders, which negatively affect pluripotency and self-renewal capacities of ASCs, showing impaired angiogenic potential. Indeed, the spontaneous regenerative capacity for ASC self-renewal appears to be regulated by the anatomical white adipose tissue reservoir. Preconditioning ASCs by overexpression of endothelial transcription factors, will differentiate ASCs into ECs increasing their capacity to form new blood vessels. Reprogramming ASCs into ECs will be a novel therapeutic prospect for treating ischemic diseases.

#### Biography

**Gemma Arderiu** has been working in biomedical research for more than 25 years with a well-established career in the scientific, clinical, and academic aspects on cardiovascular diseases joining institutions like Hospital Clinic (Barcelona), Theodor Kocher Institute (Bern – CH), UCSF (San Francisco – US) and ICCG (Barcelona). Currently, she supervises the research line “Impact of neovascularization on ischemic processes and angiogenesis in cardiovascular disease” at the Institut de Recerca de Sant Pau-IIB Sant Pau (Barcelona). During all these years, her interest has been to improve the health and well-being of patients around the world focusing on the discovery of new therapeutic targets to treat bleeding disorders and ischemic diseases.

## Abhijit Ray

Fortis Escorts Heart Institute,  
India



### Electrocardiogram Storage and Digitizer

#### Abstract:

Since its invention in 1839, Electrocardiography (ECG) has become an integral part of clinical practice across the globe. Till today, multiple research work is being carried out where ECG holds immense significance. However, with the advent of newer technologies, the need has arisen for digital data from ECGs for research purposes (at times even more than the graphs themselves).

Today's world lacks 2 important aspects from this need :

- An international repository for ECGs. Though multiple libraries for ECGs exist, none are universal, very few have research value because of analogue data (picture of the graph).
- A user-friendly software to convert the analogue entries into digital data for use in today's technologies.
- The Electrocardiogram Storage and Digitizer (E-STAD) gives users across the world the options to
- Upload ECGs onto the repository in either analogue or digital formats. The repository shall contain ECGs from Standard 12-Lead ECG machines along with device-based ECGs (like portable handheld devices and digital stethoscopes)
- Interconversions between analogue and digital data of ECGs
- Stabilisation of existing ECG digital data (ensuring 0: baseline alignment)
- Modification of ECG amplitudes to suit the user

E-STAD, available as a website, an app, and as a plug-in ensures seamless integration into existing research platforms. With user-friendly interface, researchers alike can effortlessly navigate through the repository, accessing a vast array of ECG data from diverse sources. Moreover, E-STAD employs state-of-the-art algorithms ensuring accuracy and fidelity of the converted data, making it invaluable for research.

Additionally, E-STAD prioritises data security and privacy, implementing robust encryption protocols to safeguard sensitive patient information.

In an era where data-driven insights are revolutionising healthcare, E-STAD stands as a beacon of accessibility and universality, empowering researchers to unlock new discoveries and improve patient outcomes.

## Biography

**Abhijit Ray** is a distinguished Interventional Cardiologist and Heart Failure Specialist. Having finished his training in Cardiology at King's College London and Fellowship in Heart Failure Management from Harvard Medical School, he is currently working in New Delhi, India. An earnest researcher, especially in areas combining health-care and Artificial Intelligence. Many of Dr. Ray's articles have been published in international journals. He also has a patent awarded to his name from the USPTO and two patents pending with the Government of India. His most recent invention, the Heart Failure Predictor, has found a widespread audience across the globe.

## Miaofen G Hu

TUFTS University School of  
Medicine, USA



### CDK6 as a novel therapeutic target in obesity

#### Abstract:

Obesity is a risk factor for metabolic diseases, posing a substantial therapeutic challenge towards obesity-related diseases and a large economic burden on the health care. Despite the potentially huge market, a truly effective and safe therapy for obesity and associated maladies is elusive. Cyclin-dependent kinase 6 (CDK6) plays an important function in metabolism. Differing from its homolog Cyclin-dependent kinase 4 (CDK4), CDK6 is less universally expressed, which makes CDK6 as a unique potential therapeutic target for many diseases. By using our Cdk6 mouse models, we have found that CDK6 induces obesity by negatively regulating beige cell formation and de novo lipogenesis in adipose tissues but not in the liver, positively promoting differentiation of white adipocytes from stem cells, and accelerating insulin resistance and glucose intolerance. Therefore, inhibition of CDK6 kinase activity pharmacologically can protect individuals from obesity and obesity associated maladies.

#### Biography

**Miaofen g Hu** has completed her PhD from Boston University School of Medicine and postdoctoral studies from Harvard University School of Medicine. She has published more than 34 papers in reputed journals and has been serving as an editorial board member of different journals including Clinical Diabetes, Current Advances in Oncology Research, and Open Access Journal of Hematology.

## Anderson Bermon Angarita

CES University  
Colombia



### Time-Dependent risk and predictors for recurrence of cardiac arrest in survivors of out-of-hospital cardiac arrest with chronic coronary artery disease

#### Abstract:

The prevalence of the individuals with a history of occlusive cardiovascular event has been steadily increasing, indicating a higher risk of fatal recurrence among patients. This study aims to identify the variables associated with the time to recurrence of cardiovascular events over a two-year follow-up period. A cohort of patients with a history of occlusive cardiovascular events was prospectively followed, with main clinical outcome included Major Adverse Cardiovascular Events (MACEs) confirmed by medical history assessed by a general practitioner and cardiologist. Proportional hazard models and time-dependent hazard models were carried out. Among 727 patients, 12.38% (90/727) experienced recurrence. Of these, 215 (30%) had less than one year of evolution since the last event. The two-year recurrence risk was 3.9% (95% CI 2.7-5.6). In the multiple model, severe depression was associated with an HR of 8.25 (95% CI 2.98-22.86,  $p < 0.001$ ) and LDL  $\geq 120$  mg/dl with an HR of 2.12 (95% CI 1.2-3.9,  $p = 0.01$ ). Sustained LDL  $> 120$  mg/dl over time increased recurrence risk by 19% (HR 1.19, 95% CI 0.13-0.25,  $p = 0.03$ ). These findings highlight the importance of promptly interdisciplinary treatment for patients at risk of coronary events recurrence.

#### Biography

Medical doctor from the University of Antioquia (Colombia), Master's in Epidemiology, and candidate for a PhD in Epidemiology and Biostatistics, with over 10 years of experience in clinical research as an epidemiologist at the Cardiovascular Foundation of Colombia. Currently serving as the leader of the epidemiology unit at this institution, member of the research ethics committee, and Commissioner for Medical Devices and Reagents at INVIMA.

## Emily Tills

Nourished with Emily, LLC  
USA



### Creating better connections and understanding with clients for improved outcomes

#### Abstract:

Connection with clients and prospective clients can help to improve trust and then outcomes when working with them on goals in a 1:1 or a group setting. When clients know that you understand them, where they come from and their goals, progress can be made faster and more efficiently. This session will dive into how to connect with clients, learn more about them and their lives beyond nutrition, get more information on their past and goals, and how to better support them for success while working with you, along with creating connections with prospects for consistent leads.

#### Objectives:

- Participants will record 3 key questions to ask prospective clients and followers to gain connection and understanding.
- Participants will evaluate the current strategy of rapport building with clients to ensure better connection and relationship.
- Participants will write 3 questions to add to their nutrition assessment forms to better understand the client's expectations and goals.

#### Biography

**Emily Tills**, MS RDN CDN is an accomplished registered dietitian and virtual nutrition coach who serves women across the United States from upstate New York. Her expertise lies in building confidence in the kitchen and helping her clients feel comfortable in their skin through nutrition education, accountability, and tailored programs to help them achieve their goals. Her business, nourished with Emily, was started in 2018 and she is a passionate advocate for ending restrictive diets and promoting balanced nutrition and health with her clients as well as through public speaking engagements. She is a graduate of Marywood University's Nutrition and Dietetics program and Marywood's Coordinated Program in Nutrition. She earned her Master's degree from Concordia University of Chicago in 2019 in Applied Exercise Science with a Concentration in Sports Nutrition. She is a contributor to national media channels like TIME magazine, Sports Illustrated, and Health Line. Her work has earned her the 2021 Recognized Young Dietitian of the Year award and she currently volunteers on the state board of the New York Academy of Nutrition and Dietetics as well as serves as the Central New York Academy President.



## Mehrbod Vakhshoori

Loma Linda University  
USA



### The effect of shock index and its derivative indices on heart failure; A systematic review and meta-analysis

#### Abstract:

**Background:** Heart failure (HF) is still associated with significant mortality rates, and utilizing simple prognostic tools is crucial. This study aims to assess the impact of the shock index (SI) and its derivatives, including age SI (ASI), modified SI (MSI), and age MSI (AMSI), on clinical outcomes in patients with HF.

**Methods:** We systematically investigated PubMed/Medline, Scopus, and Web of Science databases with no restrictions on time or language up to February 2024. Any relevant records evaluating the association of SI, ASI, MSI, and MSI with clinical outcomes in HF subjects were included for downstream data synthesis.

**Results:** Eight records were selected (age:  $69.44 \pm 15.05$  years). Mean SI in those records reported mortality (either in-hospital or long-term death) was 0.67 (95% confidence interval (CI): 0.63-0.72). In-hospital and follow-up mortality rates in seven ( $n=12955$ ) and three ( $n=5253$ ) enrolled records were 6.18% and 10.14% with mean SI of 0.68 (95%CI: 0.63-0.73) and 0.72 (95%CI: 0.62-0.81), respectively. Deceased patients had higher SI values compared to those who survived (standard mean difference: 0.30, 95%CI: 0.06-0.53,  $P=0.012$ ). Increased SI was associated with higher chances of in-hospital mortality (odds ratio (OR): 1.93, 95%CI: 1.30-2.85,  $P=0.001$ ). The rate of in-hospital death based on ASI was 6.12% (mean ASI: 47.49, 95%CI: 44.73-50.25) and significant difference was found between death and alive subgroups (0.48, 95%CI: 0.39-0.57,  $P<0.001$ ). Also, this index was found as an independent in-hospital mortality predictor (OR: 2.54, 95%CI: 2.04-3.16,  $P<0.001$ ). We also found significant difference in terms of MSI (mean: 0.93, 95%CI: 0.88-0.98) between deceased and alive patients (0.34, 95%CI: 0.05- 0.63,  $P=0.021$ ) (Figure 1).

**Conclusions:** This study indicates SI, ASI, and MSI are simple and reliable tools and can be used at the bedside to assess prognosis and individualize therapy in high-risk patients with HF.

## Biography

**Mehrbod Vakhshoori** completed his MD at Isfahan University of Medical Sciences (IUMS), Isfahan, Iran. He was the postdoctoral research fellow at heart failure research center, affiliated to IUMS, for more than 5 years. He is currently a postdoctoral research fellow at Loma Linda University, California, USA. His research interest mainly focuses on cardiovascular diseases. Mehrbod has currently published more than 50 articles and has been invited by several medical journals to review more than 40 manuscripts. He is also the editorial board member of plos one journal, one of the well-known journals in medicine field



**IN PERSON**

**KEYNOTE  
PRESENTATIONS**

**OCT  
BER  
2024** **16-17**

## Louis Samuels

Thomas Jefferson University  
USA



### Beating-Heart Coronary Artery Bypass Grafting in patients with End-Stage Renal Disease: an inner-city hospital experience in a socioeconomically challenged urban center

#### Abstract:

**Background:** End-Stage Renal Disease (ESRD) is more prevalent in socioeconomically impaired areas compared to their affluent counterparts. This is a multi-factorial problem owing to poorly controlled hypertension, diabetes, access to healthcare disparities, education, and so forth. Nonetheless, ESRD is an independent risk factor in outcomes for traditional coronary artery bypass grafting (TRAD-CAB) utilizing aortic cross clamping and cardioplegic arrest. Beating-Heart techniques-- Off-pump CABG (OP-CAB) and Pump-Assist Direct CABG (PAD-CAB) -- have been shown to improve outcomes in certain high-risk CABG patients, such as those with low ejection fraction. In order to determine if these Beating-Heart techniques offer similar benefits in patients with ESRD, a retrospective review was performed at a single socio-economically challenged urban institution.

**Methods:** Between March 2017 - October 2023, all ESRD patients underwent CABG using either OP-CAB or PAD-CAB. The STS Risk Assessment calculator was used to predict the mortality and morbidity. The STS predicted risk was compared to the actual outcomes.

**Results:** There were 55 patients: 52 PAD-CAB and 3 OP-CAB. There were 37 men and 18 women with a mean age of 61.5 years (41 - 77 years). The timing of surgery was the following: 16 Elective, 35 Urgent, and 4 Emergent. Case presentation included: 24 NSTEMI, 4 STEMI, 6 Unstable Angina, 7 CHF, 1 Cardiac Arrest, and 13 with a positive exercise stress test (EST) for renal transplant screening. The mean EF was 47% (range: 15 - 75%). The mean number of grafts was 2.4 (1 - 4) and CPB time was 78 minutes (0- 128 minutes). Study Demographics and Outcomes were compared to the STS as shown in the tables below:

**Conclusions:** The national profile of the STS database patients undergoing CABG are significantly different than the study center patients. The beating-heart techniques (OP-CAB and PAD-CAB) appears to demonstrate superior outcomes compared to the STS predicted risk for ESRD patients undergoing CABG. This technique may offer advances over the traditional CABG, particularly in those patients from socioeconomically challenged urban centers.

## Biography

**Samuels** received his Undergraduate degree in Biology and Anthropology from the University of Rochester, NY. In 1983 received his Medical Degree from Hahnemann University in Philadelphia, PA. Dr. Samuels completed his General Surgery and Cardiothoracic Surgery Residencies at Hahnemann Hospital in 1995 and joined their faculty in the Department of Cardiothoracic Surgery. Dr. Samuels was appointed Director of Cardiac Transplantation and Mechanical Circulatory Support in 1999 and went on to perform the world's fifth totally implantable artificial heart in 2001. Dr. Samuels became Professor of Surgery at Thomas Jefferson University in 2012 and serves as the Chief of Cardiac Surgery at Jefferson-Einstein Medical Center in Philadelphia. He continues to contribute clinically and investigatively in ventricular assist device (VAD) technologies as well as beating heart coronary artery bypass grafting (CABG)

## Vivek Gupta

Mindful Wellness  
USA



### Empowering Sustainable Weight Management: A Mindful and Evidence- Based Approach

#### Abstract:

**Background:** Obesity and weight management are prevalent health issues that affect millions of people worldwide. The International Conference on Obesity and Weight Management, scheduled for October 2024, offers a platform to explore innovative solutions that can address these challenges on a global scale.

**Aim:** The aim of this presentation is to share the insights and experiences of Mindful Wellness, a medical wellness clinic that provides a comprehensive, biopsychosocial approach to weight management, integrating evidence-based medical interventions with holistic mindfulness practices.

**Methods:** Mindful Wellness is a pioneering clinic that combines pharmacological, nutritional, and behavioral health techniques to help patients achieve sustainable lifestyle changes and improve their health outcomes. The clinic's model is rooted in patient empowerment and continuous support, rather than quick fixes or rigid prescriptions. The presentation will showcase the clinic's successes and learning points, illustrated by patient outcomes and program analytics that demonstrate significant improvements in health markers and overall well-being.

**Results:** The presentation will highlight the positive impact of Mindful Wellness's model on patients' weight management, as well as their physical, mental, and emotional health. The presentation will also discuss the operational aspects of implementing such a model in various health settings, emphasizing the importance of compassionate healthcare delivery and patient engagement.

**Conclusion:** The presentation will conclude by emphasizing the need for a shift towards more empathetic and sustainable practices in managing obesity globally. By aligning medical expertise with holistic care, we can enhance patient engagement and achieve better health outcomes, paving the way for a healthier future.

#### Biography

**Vivek Gupta** is a dedicated wellness professional and advocate for holistic health, specializing in mindful practices that promote mental, emotional, and physical well-being. As a leader at Mindful Wellness, he is committed to empowering individuals and communities in the USA to achieve a balanced and mindful lifestyle. Vivek combines traditional wellness approaches with modern techniques to create personalized wellness programs, helping his clients to live healthier, more fulfilling lives.

## Thomas J Webster

Northeastern University  
USA



### Cardiovascular Nanomedicine: The Past, Present, and Future

#### Abstract:

Nanomedicine has already provided dozens of FDA approved products improving the lives of billions. Most notably, nanomaterials have been used to develop vaccines for COVID, improved spinal implants, anti-infection materials without using antibiotics, and numerous drug delivery vehicles. However, the use of nanomedicine in the cardiovascular system has remained largely uninvestigated and uncommercialized. This invited talk will provide a summary of in vitro and in vivo experiments in cardio nanomedicine which have demonstrated decreased thrombus formation on nanotextured vascular stents, improved cardiomyocyte function on heart patches composed of nanomaterials, and decreased paralysis from stroke using stem cell delivery with nanomaterials. Moreover, this presentation will provide how nanotechnology is driving cardiovascular medicine into the next century through the design of improved implantable sensors for the cardiovascular system. Throughout it will emphasize research which is now being commercialized into real products helping human health.

#### Biography

**Thomas J. Webster's** (H index: 122; Google Scholar) degrees are in chemical engineering from the University of Pittsburgh (B.S., 1995; USA) and in biomedical engineering from RPI (Ph.D., 2000; USA). He has served as a professor at Purdue (2000–2005), Brown (2005–2012), and Northeastern (2012–2021; serving as Chemical Engineering Department Chair from 2012 – 2019) Universities and has formed over a dozen companies who have numerous FDA approved medical products currently improving human health in over 20,000 patients. His technology is also being used in commercial products to improve sustainability and renewable energy. He is currently helping those companies and serves as a professor at Brown University, Saveetha University, Vellore Institute of Technology, UFPI, and others. Dr. Webster has numerous awards including: 2020, World Top 2% Scientist by Citations (PLOS); 2020, SCOPUS Highly Cited Research (Top 1% Materials Science and Mixed Fields); 2021, Clarivate Top 0.1% Most Influential Researchers (Pharmacology and Toxicology); 2022, Best Materials Science Scientist by Citations (Research.com); and is a fellow of over 8 societies. Prof. Webster is a former President of the U.S. Society For Biomaterials and has over 1,350 publications to his credit with over 55,000 citations. He was recently nominated for the Nobel Prize in Chemistry. Prof. Webster also recently formed a fund to support Nigerian student research opportunities in the U.S.







**VIRTUAL EVENT**

**KEYNOTE  
PRESENTATIONS**

**OCT  
BER  
2024** **16-17**

## Ana I. Faustino-Rocha

University of Evora  
Portugal



### The impact of a Western diet on body weight and Health: Data from a rat model of mammary carcinogenesis

#### Abstract:

Mammary cancer is one of the most prevalent types of cancer worldwide, affecting millions of individuals each year. Obesity, characterized by excessive accumulation of body fat, has been identified as a significant risk factor for the development and progression of mammary cancer. The impact of a high-calorie diet on mammary tumor development was investigated in Wistar rats induced with N-methyl-N-nitrosourea (MNU). Twenty-eight female rats were randomly assigned to four groups (n=7): WD (Western diet); WD+MNU; SD (standard diet); SD+MNU. The rats had unlimited access to water and food. The WD groups received a high-fat diet (60% of calories from fat), while the SD groups received a standard laboratory diet. Body weight, and humane endpoints were recorded weekly. Lee index, body mass index, and specific rate of body mass gain were calculated. The initial body weights were found to be lower than the final weights ( $p < 0.05$ ), without significant differences observed across the groups ( $p > 0.05$ ). The final body weights were found to be slightly higher in the WD groups ( $p > 0.05$ ). The Lee index and body mass index were similar across the groups ( $p > 0.05$ ). The specific rate of body mass gain was found to be slightly increased in WD groups ( $p > 0.05$ ). No statistically significant differences were observed in humane endpoints. These findings suggest that a high-calorie diet did not significantly influence body weight parameters or humane endpoints in MNU-induced mammary tumors in Wistar rats.

#### Biography

**Ana Faustino** is Professor at Department of Zootechnics of University of Evora and Researcher at CITAB/UTAD. She holds a Master in Veterinary Medicine and a European PhD in Veterinary Sciences.

## Mekhman N Mamedov

National Research Center for Therapy and Preventive  
Medicine, Russia



### Analysis of the main risk factors and cardiovascular risk in the adult population in the central region of the Russian Federation

#### Abstract:

**Aim of the study:** to determine the prevalence of the main risk factors and analyze the risk of developing cardiovascular complications in the adult population in the Vladimir region of the Russian Federation.

**Material and methods:** The cross-sectional population-based study included 1,350 men and women aged 30–69 years from 5 cities of the Vladimir region (Vladimir, Kovrov, Murom, Yuryev-Polsky and Vyazniki). The response to the study was 87%. The study was completed by 1174 people (424 men – 36.1% and 750 women – 63.9%). Using a survey, instrumental and biochemical studies, the following risk factors were determined taking into account gender indicators: smoking, hypertension, hypercholesterolemia, hyperglycemia and obesity. The risk of developing fatal cardiovascular complications was assessed using the classic European score scale. Depending on the total score, the risk was assessed as follows: low risk <1%, moderate risk – from 1% to 5%, high risk – from 5% to 9% and very high risk – 10–14%.

**Results:** In the surveyed unorganized population, every third man is obese, while among women this figure was significantly high (33.7% versus 42.1%,  $p < 0.001$ ). The incidence of hypertension among men and women was comparable (41.5% and 39.9%, respectively). The frequency of tobacco smoking among men was 38.4%, which is 4 times higher than in women ( $p < 0.0001$ ). Every second person had a total cholesterol level  $> 5$  mmol/l. Its frequency was comparable among men and women (53.2% and 51.5%, respectively). In 23.1% of women and in 18.5% of the unorganized population from 5 cities of the Vladimir region, fasting blood glucose above 6.1 mmol/l was detected. The high and very high risk of cardiovascular complications among men was 32%, among women the risk was 2 times lower (15.5%). Low and moderate risk predominated among women (66.3%), which is 1.5 times more common than men (43.6%). With comparable rates of hypertension and hypercholesterolemia, male gender and smoking status contributed to the total cardiovascular risk. The frequency of very high risk of cardiovascular complications among men in certain cities of the Vladimir region was 2.5–4 times higher compared to women.

**Conclusion:** In the central part of the Russian Federation, every third man of working age has a high and very high cardiovascular risk, which is due to the high prevalence of smoking, hypercholesterolemia and hypertension. Among women, high and very high cardiovascular risk was 2 times lower (15.5%), while a high incidence of hypercholesterolemia and hypertension was also observed among them. Along with this, a high prevalence of important metabolic risk factors was determined in the examined sample of men and women. This situation once again emphasizes the importance of effective primary prevention of CVD at the population

## Biography

**Mamedov** was born on January 10, 1970, in Sheki, Azerbaijan, and is a distinguished Azerbaijani cardiologist based in Moscow, Russia. He completed his medical education at the Moscow Medical Academy named after I.M. Sechenov, followed by postgraduate and doctoral studies in cardiology at the National Research Center for Preventive Medicine. Since 2002, Dr. Mamedov has led the Department of Secondary Prevention of Chronic Non-infectious Diseases at the National Research Center for Therapy and Preventive Medicine. His research focuses on cardiovascular disease epidemiology, risk factors, and pharmacotherapy. Dr. Mamedov has authored 468 articles, 13 monographs, and holds a Hirsch index of 40. He serves as the President of the Cardioprogress Foundation, is on the board of the Russian Society of Cardiology, and is Editor-in-Chief of the International Journal of Heart and Vascular Diseases.



**VIRTUAL EVENT**

**ORAL  
PRESENTATIONS**

**OCT  
BER  
2024** **16-17**

## David M. Selva

VHIR Vall d'Hebron Research Institute  
Spain



### Sex Hormone–Binding Globulin a New Therapeutic Target against Obesity: Regulation by Nutritional Factors and Role in Obesity Development and Progression

#### Abstract:

Human sex hormone-binding globulin (SHBG) is produced by the liver and secreted into the circulation where it binds androgens and estrogens with high affinity. Low plasma SHBG levels are associated with obesity, fatty liver disease, abdominal adiposity and metabolic syndrome, and predict the development of type 2 diabetes and cardiovascular disease. The SHBG gene has changed its tissue expression and therefore its function during the evolution. Rodents do not express the SHBG in the liver. The generation of different transgenic mice expressing the human SHBG gene has allowed us to study the SHBG expression and regulation in vivo. We have used these mice, HepG2 cells and human samples to describe the molecular mechanisms by which thyroid hormone, proinflammatory cytokines (TNF $\alpha$  and IL1 $\beta$ ), adiponectin, monosaccharides, olive oil, resveratrol (red wine), caffeine and TGF $\beta$ 1 regulate hepatic SHBG expression. These findings explain why diseases such as obesity, type 2 diabetes, hyperthyroidism, fatty liver disease and inflammatory disease (rheumatoid arthritis) have altered plasma SHBG levels. Moreover, the generation of these mouse models has allowed us to demonstrate that SHBG overexpression can protect against obesity development point-out SHBG modulation as a novel therapeutic strategy for the treatment of these prevalent diseases. Finally, we have recently demonstrated for the first time that increase in plasma SHBG levels within the first month after bariatric surgery is a good predictor of total weight loss and weight regain response after 2 years.

#### Biography

**David M. Selva** got Bachelor's Degree in Biology in 1996 at the UB, Spain. I obtained my PhD in Biochemistry and Molecular Biology at the UAB in 2001, Spain. After my PhD I accepted a postdoctoral position for 7 years in Prof. Hammond laboratory first at the LRCC in the UWO (Canada) and later on at the CFRI in the UBC (Canada) where I worked on the molecular mechanisms regulating hepatic SHBG production in several human SHBG transgenic mice. In 2009 I obtained a principal investigator position at the Diabetes and Metabolism Department at the Vall d'Hebron Research Institute in Barcelona, Spain. For the last ten years I have developed several projects of the Spanish Research Council and published the results in more than 20 papers as a corresponding author, filed several patents and created a spin-off company.

## Elham Bazshahi

Kurdistan University of Medical Sciences  
Iran



### Adherence to plant-based diet during pregnancy and risk of gestational diabetes: A prospective birth cohort study

#### Abstract:

Studies have shown that plant-based foods have a protective effect against gestational diabetes (GDM). We examined the association between plant-based dietary patterns and the risk of GDM in a sample of Iranian adults. We enrolled 635 pregnant women for the present study. Dietary intakes were evaluated by using a 90-item food frequency questionnaire during the first trimester of pregnancy. Three plant-based dietary indices including plant-based (PDI), unhealthy (uPDI) and healthy (hPDI) PDI dietary indexes were calculated. Cox proportional hazard model were fitted to estimate hazard ratio (HR) and 95% confidence interval (CI) of GDM across categories of the plant-based dietary indices, while controlling for age, educational level, physical activity, family income, prepregnancy body mass index, gestational weight gain, and total energy intake. A total of 635 mothers were included, of whom 79 participants were diagnosed with GDM. Those in the third tertile of the PDI (HR: 0.55, 95% CI: 0.30, 0.98) and hPDI (HR: 0.43, 95% CI: 0.24, 0.78) had a lower risk of developing GDM during their current pregnancy as compared to the first tertile. There was no association between uPDI and risk of GDM. We found that higher adherence to a plant-based diet during early pregnancy may be associated with a lower GDM risk among Iranian women. Confirmation of this finding is necessary in larger cohort studies, taking into account other pregnancy outcomes such as birth weight.

#### Biography

**Bazshahi Elham** received the B.Sc. in food science and technology, from the Bu-Ali Sina University, Bu Ali College of Food Industry Bahar Branch, Hamedan, Iran (2016) and the M.Sc. degree in nutritional sciences from the Teheran University of Medical Sciences, School of Nutritional Sciences and Dietetics, Tehran, Iran (2020). She is presently the dietitian of department of community nutrition, Kurdistan University of Medical Sciences, Sanandaj, Iran. She is the author or coauthor of more than 15 papers in reputed journals and has been involved in international conferences. She is the reviewer of research articles in international journals.

## Hammad Ullah

University of Naples Federico II  
Italy



### From waste to Wellness: Impact of Fiber-Rich Brewer's spent grain on glycemia and insulinemia

#### Abstract:

Dietary fibers improve human health by lowering the risk factors for metabolic disorders, including hyperglycemia, hyperinsulinemia, insulin resistance, and hypercholesterolemia. To this end, a monocentric, randomized, cross-over, double-blind, placebo-controlled clinical trial is designed to assess the hypoglycemic and hypoinsulinemic response of fibers-enriched food supplement based on brewer's spent grain (BSG) in subjects with slightly impaired glucose tolerance. The chemical analysis of BSG extract showed the presence of bioaccessible ferulic acid (91.3mg/100g), resistant starch (14.64g/100g), arabinoxylans (7.50g/100g),  $\beta$ -glucans (1.92g/100g), and other soluble fibers (6.43g/100g). In a cross-over clinical design, 40 normoglycemic patients were randomly assigned to one of two groups (n = 20, each), supplemented with food supplement or placebo. Postprandial blood glucose levels were significantly lower in food supplement group as compared to placebo, after 90 and 120 minutes of the treatment; nevertheless, the two glycemic curves overlapped substantially at baseline and in the first 60 minutes. The clinical outcome was supported by the considerable decrease in postprandial insulinemia in subjects supplemented with BSG extract. No adverse effects were reported with the food supplement by enrolled subjects. In conclusion, this study demonstrated improved glucose metabolism and insulinemic response with BSG extract supplementation in normoglycemic subjects with mild insulin resistance.

#### Biography

**Hammad Ullah** obtained his PhD degree in 2023 and is currently working as a Postdoctoral fellow, both at the University of Naples Federico II Italy. His research activity focuses mainly on the comprehensive investigation of natural products, with the final aim of the development of new food supplements and functional food ingredients. He has authored more than 60 articles, 1 book, and 7 book chapters. His work has been recognized for its significance by MEDWELL Award for Best PhD Thesis (2023), PSE Dra. Mariola Macías Award (2023), Young Research Award at MONASH INITIATE 2022, and Best Oral Presentation Award at 1-EuSPMF, Serbia (2022).



## Maria Borrell

Sant Pau Research Institute  
Spain



### Neuronal cholesterol homeostasis and lipoprotein receptor's regulation

#### Abstract:

Although the regulation of cholesterol homeostasis in the body has been extensively studied, there is little information on how this regulation takes place in the brain. Cholesterol does not cross the blood-brain barrier; therefore cholesterol metabolism in the brain is independent from that in peripheral tissues. Lipoprotein receptors from the LDL receptor family (LRPs) have key roles in lipid particle accumulation in the bloodstream. For example, activation of a specific LRP induces lipid uptake in several cells, tissues and organisms both in vitro and in vivo. However, whether LRPs are involved in the regulation of cholesterol levels in the brain is still not known. To determine the role of lipoprotein receptors in the brain we analyzed the expression of different LRPs and components and targets of their downstream signaling pathways in brains of Wt and *Lrp*<sup>-/-</sup> mice and in a neuroblastoma cell line. Although several LRPs expression are increased in a time dependent and dose dependent manner in lipid loaded neurons, specific LRPs do not participate in lipid uptake as neurons without lipoprotein receptors accumulate intracellular lipids in a similar way as control cells. Because the activation of the canonical WNT signaling pathway induces survival processes we tested whether lipoprotein receptors were involved in apoptotic and/or autophagic processes and found that LRP has both, anti- apoptotic and anti-autophagic functions indicating a role for this receptor in neuronal survival. Furthermore, we show that LRP is indispensable for life as brains of *Lrp*<sup>-/-</sup> mice show low but quantifiable LRP gene expression. Taken together, our results support a prosurvival role for LRP in brain.

#### Biography

**Borrell** is a senior investigator in the Cardiovascular Program at the Hospital de la Santa Creu i Sant Pau, Barcelona. Prior appointments include a postdoctoral position in the Neurology Department of the Curie Institut, Paris, France studying Huntington's disease. She leads a project based in the role of different lipoprotein receptors in cholesterol metabolism in the vascular system. The results have been published in different journals including EHJ, BRIC or CVR and lead to the concession of projects financed by both, the government and the industry.

## Arbind Kumar Choudhary

All India Institute of Medical Science  
India



### A pilot study to unveiling the link between physical fitness and cognitive health in early Vs. Late diagnosed diabetic patients

#### Abstract:

**Background:** Diabetes mellitus is a common chronic health condition that adversely affects various organ systems. However, its influence on physical fitness and cognitive health has yet to be thoroughly investigated, especially the timing of diagnosis.

**Objectives:** This pilot study seeks to explore the varying impacts of diabetes on physical fitness and cognitive functions, depending on the timing of diagnosis (early vs. late). It is suggested that by diagnosing and managing diabetes earlier, its detrimental effects on these health parameters can be reduced.

**Method:** For our analysis, we examined 40 diabetic patients and divided them into two groups based on how long they had been diagnosed: early ( $\leq 5$  years) and late ( $\geq 6$  years). Participants were subjected to a battery of physical fitness tests, including evaluations of upper and lower body strength, Coordination, and aerobic endurance. Additionally, cognitive assessments such as the Addenbrooke's Cognitive Examination, Mini-Mental State Examination, and Montreal Cognitive Assessment were administered. The data were analysed by conducting independent sample t-tests to compare the two groups.

**Findings:** The Study revealed notable disparities between the groups diagnosed early and those diagnosed late. Individuals who were diagnosed later experienced less favourable results in physical fitness evaluations, including handgrip strength, 6-minute walk distance, aerobic endurance and heart rate variability, as well as lower scores in all cognitive assessments. These findings suggest that a prolonged period of untreated diabetes can have detrimental effects on both physical and cognitive health outcomes.

In order to preserve both physical and cognitive functions, it is crucial to diagnose and manage diabetes early. This Study highlights the significance of prompt intervention and has the potential to shape future recommendations on the treatment and detection of diabetes to enhance health outcomes.

## Biography

**Arbind Kumar Choudhary** is a distinguished medical professional and researcher at the All India Institute of Medical Sciences (AIIMS), India. Dr. Choudhary has contributed significantly to advancing medical science through his research, clinical practice, and publications. His dedication to improving patient outcomes and advancing healthcare innovations has made him a respected figure in his field.

## Joao Rafael Rocha da Silva

Connect Life Rehabilitation and Performance  
Brazil



### Pain as a potential impact factor in cardiac rehabilitation: Literature Review

#### Abstract:

**Introduction:** Cardiovascular Diseases are responsible for substantial damage to the health system, being the main cause of mortality in the world, just as Pain is the main cause of disability in the world. It is common for individuals diagnosed with both pathologies as well as other comorbidities, to be associated with a high risk of mortality. The study of pain in this specific population can bring us greater clarity on the impact it has on cardiac rehabilitation.

**Objective:** To identify studies that researched the impact of Pain in patients with Cardiovascular Disease, and to analyze the impact of pain on the rehabilitation of these individuals.

**Methods:** We performed an integrative literature review in the PUBMED database based on clinical practice, selecting studies that evaluated pain, functional capacity, quality of life, and treatment adherence, the studies were analyzed according to criteria of practice based on scientific evidence.

**Results:** A total of 380 studies using the search strategy, where 55 studies were selected after reading the title and abstract, and after analysis 23 studies were included according to the inclusion criteria.

Despite the high relevance of the subject in the literature, there are still few studies with a high level of scientific evidence, which address the impact of Pain in individuals with Cardiovascular Disease, but primary studies have shown a direct correlation between the two pathologies, being associated with clinical worsening of these individuals, highlighting the importance of a better approach to Pain.

**Conclusion:** Pain is a common pathology among individuals with Cardiovascular Disease, decreasing functional capacity, and treatment adherence, and triggering changes in the autonomic nervous system, which can negatively impact cardiac rehabilitation.

#### Biography

Pt. **Joao Rafael Rocha da Silva** has been a clinical physiotherapist for over 15 years, with a postgraduate degree in rehabilitation applied to sport from the Department of Orthopedics and Traumatology at the Escola Paulista de Medicina CETE- UNIFESP, also having a postgraduate degree in Improvement in assessment and interdisciplinary treatment in Pain at the Hospital das Clínicas of the Faculty of Medicine of the University of São Paulo HC-FMUSP. He recently published five studies related to the treatment of Pain, which were presented at more than five international conferences and congresses. Scientific reviewer for international journals.

## Deepa Selvi Rani

CSIR-Centre for Cellular and Molecular Biology  
India



### Novel amino acid substitutions in $\beta$ -Myosin and their impact in disease phenotype

#### Abstract:

**Background:** Heart failure is a hallmark of severe hypertrophic (HCM) and dilated (DCM) cardiomyopathies. Mutations in the  $\beta$ -MYH7 gene are the known cause of cardiomyopathies (CM), yet the mechanism is not fully understood.

**Methods:** We sequenced the  $\beta$ -MYH7 gene in 101 HCM and 147 DCM patients and 207 ethnically matched healthy controls to detect the frequency of mutations and their association.

**Results:** Our study revealed 45 variations, of which 29 were novel, including three splice-sites variations [(IVS17+2T) T>G, (IVS7-1G) G>A, (IVS19-1G) G>A], and three frame-shifts mutations; [Asn602 (A-ins), Asn676 (T-del), Gln789 (A-del)]. In the present study, we observed nine missense mutations [p.His358Leu, p.Met362Leu, p.Ser384Tyr, p.Ala423Thr, p.Val431Met, p.Phe510Leu, p.Glu525Lys, p.Arg723His, p.Asp896Asn]. Except for the p.Ala423Thr, eight other amino acids in the head motor domain of  $\beta$ -MYH7 are evolutionarily conserved across many species. All eight variations were predicted pathogenic by Polymorphism phenotyping v2 (Polyphen-2) and Sorting Intolerant From Tolerant (SIFT) bioinformatics tools. In addition, these mutants; p.His358Leu, p.Met362Leu, p.Ser384Tyr, p.Ala423Thr, p.Val431Met, p.Phe510Leu, p.Glu525Lys, p.Arg723His, displayed rootmean-square deviation (RMSD) of  $\sim 2.55\text{\AA}$ ,  $\sim 1.85\text{\AA}$ ,  $\sim 1.24\text{\AA}$ ,  $\sim 1.17\text{\AA}$ ,  $\sim 3.90\text{\AA}$ ,  $\sim 3.36\text{\AA}$ ,  $\sim 0.77\text{\AA}$ , and  $\sim 3.86\text{\AA}$ , respectively.

**Conclusion:** In our study, we have identified numerous novel, unique, and rare mutations in the  $\beta$ MYH7 gene, a finding that is exclusive to Indian cardiomyopathy patients. We have shown how each mutant (missense) uniquely disrupts a critical network of non-bonding interactions at the mutation site (molecular level), potentially contributing to the cardiomyopathy (CM) disease phenotype. These findings not only deepen our understanding of the molecular bases of the disease but also hold promise for improved diagnosis and the development of novel therapeutic strategies (personalized medicine).

## Biography

**Deepa Selvi Rani** is from CCMB-CSIR, India. She is interested in understanding the Genetic basis of Cardiovascular Diseases, Male infertility, Mitochondrial disorders, and the Origin of Modern Humans. She has two master's degrees, M.Sc. in Biochemistry and M.Sc. in Biotechnology. Her Ph.D. work was on "Molecular Studies in Cardiomyopathies and Noonan Syndrome." She identified several mutations in sarcomere protein genes causing cardiomyopathies and sudden cardiac arrest. To understand the disease specifically, she studied their molecular mechanisms, which are relevant to pharmacogenomic studies and personalized medicine. Dr. Rani is an enthusiastic, dedicated, outstanding researcher and published 50 papers in peer-reviewed International Journals.

## Susy Kotit

Aswan Heart Centre  
Egypt



### Rheumatic heart disease in the 21st Century: Challenges and opportunities

#### Abstract:

The audience will gain a comprehensive understanding of the epidemiology and challenges associated with Rheumatic Heart Disease (RHD), including its alarming resurgence in Western countries where it had previously been eradicated. We will emphasize the need for heightened awareness and decisive action in response to the increasing diagnosis of RHD in regions where expertise and focus on the disease have diminished over time. A key focus of the presentation will center on equipping attendees with practical knowledge and insights applicable to their daily clinical practice. We will delve into the diagnosis, management, and disease outcomes of RHD, providing valuable information that can be immediately implemented in their professional settings. Additionally, we will emphasize the importance of establishing comprehensive databases that serve as essential resources for RHD, which will form the foundation for collecting and analyzing crucial data related to the disease, ultimately contributing to the development of effective prevention, treatment, and eradication strategies. The audience will have the opportunity to become acquainted with the Aswan Rheumatic Heart Disease Registry (ARGI) and actively participate in a multinational, multicenter research initiative. This initiative encompasses a wide range of studies, including epidemiological investigations as well as research into the pathogenesis of RHD, focusing on the associated humoral and cellular-mediated immune responses. Collaboration in this initiative plays a pivotal role in deepening our understanding of the disease. By joining forces, we can collectively contribute to the development of policies for the prevention, treatment, and ultimate eradication of RHD. In conclusion, this presentation seeks to raise awareness about RHD, highlight opportunities for improvement in its management and care, and inspire the audience to contribute to the establishment of comprehensive databases. Through these collective efforts, we can gather the necessary data to inform effective strategies and ultimately make a significant impact on the prevention, treatment, and eradication of Rheumatic Heart Disease.

#### Biography

**Susy Kotit** studied medicine at the University of Amsterdam, followed by a PhD at the Imperial College under the supervision of Prof Magdi Yacoub. (dissertation: Rheumatic Heart Disease in Egypt). Dr Kotit has established the Aswan Rheumatic Heart Disease Registry (ARGI) as well as the Aswan Disease Coding Registry (ADORE) and the cardio-obstetric care unit (CO-care) at the Aswan Heart Centre (AHC), Magdi Yacoub Foundation in Egypt. Dr Kotit is involved in a variety of initiatives aimed at improving the understanding and management of RHD, as well as broader issues related to global health and healthcare delivery.



**VIRTUAL EVENT**

**POSTER  
PRESENTATIONS**

**OCT  
BER  
2024** **16-17**



## Diane Lee

Tower Health at West Reading  
USA



### Rare incidental and asymptomatic fistula between the sinus of valsalva and the right ventricle

#### Abstract:

**Background:** Sinus of Valsalva fistulas are rare, with incidence ranging from 0.14% to 0.96%. The most common site of fistula is from the right coronary sinus into the right ventricle. (1) It usually occurs due to rupture of sinus of Valsalva aneurysm. These fistulas can be asymptomatic, but may lead to chest pain, dyspnea, and even heart failure. Thus, diagnosing, monitoring, and treatment is crucial in preventing adverse health outcomes. This case discusses one such incidentally found congenital abnormality, and documents imaging studies that led to the diagnosis.

**Case Presentation:** A 56-year old male with a past medical history of hypertension presented to his PCP with symptoms of sinusitis. On routine physical exam, he was noted to have a grade 4/6 crescendo systolic murmur best heard at the apex. The patient had no complaints of fatigue, chest pain, shortness of breath, or peripheral edema. Patient was referred to cardiology who obtained a transthoracic echocardiogram (TTE). TTE revealed a continuous left to right shunt in both systole and diastole, consistent with right coronary sinus of Valsalva to right ventricle fistula. The shunt had a peak velocity of 5.9 m/sec, and a QP/QS ratio of 1.3, indicating significant abnormal blood flow. Additionally left atrium was noted to be mildly dilated.

**Conclusion:** Valsalva aneurysms have been detected in a handful of patients, often times presenting as exertional dyspnea, and leading to a right to left shunt. Transcatheter closure has been implemented in a number of these cases with beneficial outcomes. This case highlights another incidence, and more importantly, underscores how a thorough routine physical exam is vital even in asymptomatic patients, since this patient's workup was only indicated due to the discovery of a heart murmur in a patient with an unrelated chief complaint. The study displays the complications that can occur with a sinus of valsalva aneurysm, such as formation of a fistula, requiring prompt medical attention.

## Biography

**Diane Lee** is a third-year medical student at Drexel College of Medicine in Philadelphia, Pennsylvania. As she embarks on her clinical rotations, she continues to discover her areas of passion within medicine. Lee is committed to contributing to the field through both research and clinical practice, with a particular focus on enhancing patient outcomes through preventative measures and evidence-based interventions. Although there are a variety of specialties that peaks her interest, she has enjoyed her time in child and adolescent psychiatry and vascular surgery. She is dedicated to exploring innovative approaches to patient care and treatment. Lee has actively participated in various research projects, including a study on risk factors associated with postpartum depression. She is enthusiastic about furthering her expertise and making a meaningful impact in the health-care field, aiming to bridge clinical practice with research advancements.

# SUPPORTING JOURNAL

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