What you will learn…….

Professor Glenn Matfin, Consultant Physician in Acute/General Medicine and Diabetes/Endocrinology at Derriford Hospital; and Honorary Professor of Medicine at Plymouth University Peninsula Schools of Medicine & Dentistry (PUPSMD), Plymouth, UK

**Diabetes medical management in the obese and insulin resistant patient**

Prof Matfin was previously Medical Director, International Diabetes Center (IDC), WHO Collaborating Center at IDC and Mayo Clinic; and Clinical Professor of Medicine, University of Minnesota, Minneapolis, USA. Prof Matfin was also previously a Senior Physician at the Joslin Diabetes Center, Harvard Medical School, Boston, USA.

Prof Matfin trained in Endocrinology in Newcastle (with Prof Sir George Alberti) and London in the UK, as well as at the NIH studying diabetes in the Pima American Indians, Phoenix, USA. He has been elected a Fellow of the American College of Physicians (F.A.C.P.); Fellow of the American College of Endocrinologists (F.A.C.E.); and Fellow of the Royal College of Physicians of London (F.R.C.P.). Prof Matfin also has a Master of Science (MSc) in Experimental Therapeutics from the University of Oxford, UK.

Prof Matfin has published extensively. He was a Clinical Editor (2008-2012) at the British Medical Journal (BMJ) Education Group. He was also Founding Editor-in-Chief of the PubMed-listed Therapeutic Advances in Endocrinology and Metabolism. He is currently on various Editorial Boards including the inaugural International Editorial Advisory Board to the Lancet Diabetes and Endocrinology. Prof Matfin is also the Editor of a new book (paper and electronic versions) published by the Endocrine Society titled Endocrine and Metabolic Medical Emergencies. Prof Matfin has taught, mentored, and examined many students, physicians, and other healthcare providers from UK, USA, and many other countries. Prof Matfin received a Harvard Medical School Teaching Award for Tutoring Excellence in 2011.

Prof Matfin has worked on the development of many new therapies for diabetes, obesity and related complications and personally led or designed more than 100 clinical trials involving more than 100,000 subjects.

Prof Matfin’s presentation will discuss management of diabetes related to obesity and insulin resistance with the major focus on new insulins such as U200; U300; and U500 formulations whilst also briefly covering the other novel agents e.g. SGLT-2 inhibitors; and GLP-1 agents especially the fixed combination of Lira + degludec. The focus will be on practical considerations about when and how to use these drugs especially how to transition from existing non-insulin and U100 insulin therapies

**Professor Jonathan Pinkney, Plymouth University and Plymouth Hospitals NHS Trust**

**New advances in the drug treatment of obesity**

Jonathan Pinkney is Professor of Endocrinology and Diabetes at PUPSMD and Honorary Consultant Physician in Endocrinology and Diabetes at Plymouth Hospitals NHS Trust. He undertook specialty training at University College London and the University of Bristol, and was Wellcome Travelling Fellow at Pennington Research Centre, Louisiana State University. He held Senior Lectureships at the University of Liverpool and PCMD before taking up his present post in 2010.

His clinical interests include all general adult endocrinology and diabetes, within which he has special interests in hypothalamic and pituitary endocrinology, obesity and bariatric surgery, reproductive and transgender endocrinology and transitional care of children, and inherited endocrine tumour syndromes such as MEN. His outreach activities have included work for the Pituitary Foundation, support of pituitary and endocrine patients, and of pituitary foundation and other patient organisation conferences. He has also been at the forefront of developing specialist services for weight management and raising the profile of obesity as an important clinical problem.

His research interests centre around both biomedical and health service aspects of obesity, its environmental and molecular origins, its metabolic and social complications, the impact of obesity on people with diabetes and other endocrine conditions, and developing new weight-based approaches to treatment. He writes and speaks widely on these subjects.

**Dr Joanne Hosking, Statistician, Peninsula School of Medicine & Dentistry**

**Metabolomics in the EarlyBird Study**

Metabolite signatures are emerging as biomarkers of insulin resistance and type 2 diabetes. In particular, branched chain (BCAA) and aromatic amino acids (AAA) have been shown to be associated with insulin resistance and type 2 diabetes in adults. However, there is less data in children in whom insulin resistance is much more volatile, being particularly dependent upon pubertal timing as well as both changing body composition and physical activity. The EarlyBird study is beginning to explore new technologies of epigenetics and metabolomics providing novel insights into childhood metabolic health.

**Professor Adrian Taylor, Clinical Trials and Population Studies (CTPS) research group, Plymouth University Peninsula Schools of Medicine & Dentistry**

**Why and how to focus on supporting multiple health behaviour changes for managing weight.**

Adrian, has been a Professor in Health Services Research, leading the CTPS research group within PUPSMD for over 2 years. He is a non-clinical Fellow of the Royal College of Physicians, and the British Association of Sport & Exercise Sciences, and is co-founding editor (since 2008) of the international journal, Mental Health and Physical Activity. Previously he was Prof of Exercise and Health Psychology at Exeter University for 11 years. He is currently chief investigator for over £2m of NIHR funding to examine the effectiveness and cost-effectiveness of behavioural support interventions for people with a range of physical and mental chronic conditions. He has lead a wide range of experimental and clinical trial research, publishing over 100 peer reviewed journal articles and book chapters. Experimental work has focused on understanding how single sessions of exercise impact on different dimensions of mood and affect, and other psychological constructs (eg, food cravings and attentional bias to food and cigarette cues), and functional MRI (to identify neurobiological responses to smoking cues). At the applied level, he has translated experimental and theoretical evidence into the design of interventions to promote physical and mental health among a variety of specific populations, including patients with depression, bi-polar disorder, coronary obstructive pulmonary disease, smokers, overweight and obese, hypertensives, diabetics, people with osteoarthritis, and the elderly (eg, Parkinson’s patients).
Those with mental health conditions and from socially disadvantaged groups are more likely to have multiple chronic health conditions as a result of clustering of unhealthy behaviours. The challenge is therefore how to support multiple health behaviour change in at risk groups. The talk will include reference to a range of laboratory based experimental studies on the acute effects of short bouts of moderate intensity physical activity (compared with sedentary behaviour) on food related outcomes (alongside other addictive substances). Given that snacking may reflect poor self-regulation and have similar characteristics to addictive behaviours, the talk will draw on a range of literature in which physical activity appears to interrupt addictive processes in substance use (in humans and animals), which are different from appetite suppressive processes. The talk will then turn to the design of interventions to support multiple behaviour change. The question of whether diet (and other behaviours such as smoking cessation) and physical activity change should be promoted sequentially or simultaneously has been explored in research over 10-15 years and this evidence will be presented. But multiple behaviour change research typically thinks about supporting change for each behaviour separately, and does not link behaviours in a more holistic way. Translating the evidence for the acute effects of exercise on snacking (and smoking, to prevent the 7kg in weight gain in the year after quitting) and affect is an example of a more synchronized approach to support multiple behaviour change. The talk will highlight some key ways to help encourage clients to think about how sedentary behaviour may contribute to not only lower energy expenditure but also dysregulated eating behaviour (snacking).

**What you will learn**

Brad Metcalf, Senior Lecturer, Doctorate in Physical Activity and Obesity-Related Health in Childhood, Peninsula College of Medicine and Dentistry - Universities of Exeter and Plymouth

**Should physical activity be a public health priority for tackling childhood obesity**

Brad joined the School of Sport and Health Science from the University’s Medical School in August 2013. He had spent the previous 14 years working on the ‘EarlyBird Diabetes Study’ as both senior statistician and physical activity research fellow, contributing to some 60 peer-reviewed publications. Broad research specialisms: Physical activity and obesity; Physical activity and cardiovascular/diabetes/metabolic risk; Determinants of physical activity; Statistical analysis