Diabetologia (2021) 64:2607–2608
https://doi.org/10.1007/s00125-021-05593-2

Up front

Competition for publication in Diabetologia continues to grow, and less than 20% of papers are accepted. Of all the high-quality papers that appear in this month's issue I want to draw your attention to five articles that I think stand out in some regard and are very interesting. The articles are summarised here. Our publisher, Springer, has kindly made the full text of each of these papers freely available.
I hope you enjoy reading them!

Hindrik Mulder, Editor

The management of type 1 diabetes in adults. A consensus report by the American Diabetes Association (ADA) and the European Association for the Study of Diabetes (EASD)

Richard I. G. Holt, J. Hans DeVries, Amy Hess-Fischl, Irl B. Hirsch, M. Sue Kirkman, Tomasz Klupa, Barbara Ludwig, Kirsten Nørgaard, Jeremy Pettus, Eric Renard, Jay S. Skyler, Frank J. Snoek, Ruth S. Weinstock, Anne L. Peters

This is the first ADA/EASD guideline devoted solely to the management of adults with type 1 diabetes. The 14 members of the committee, half from the USA and half from Europe, discuss aspects of the management of people with type 1 diabetes (https://doi.org/10.1007/s00125-021-05568-3). Of particular note are the recommendations for the diagnosis of adult-onset type 1 diabetes and the universal adoption of continuous glucose monitoring. Throughout, the need for psychosocial support and diabetes education is stressed, given the challenges associated with living with type 1 diabetes for the individual, their families and, in some cases, caregivers.

The importance of increasing population diversity in genetic studies of type 2 diabetes and related glycaemic traits

Inês Barroso

Genetic studies of type 2 diabetes and related traits (e.g. glucose, insulin or HbA_{1c} levels) have revealed hundreds of trait-associated loci and increased knowledge of related biological pathways. However, expanding genetic studies to reflect the diversity of individuals with type 2 diabetes has been much slower. In this issue, Inês Barroso (https://doi.org/10.1007/s00125-021-05575-4) summarises the key advances made by genome-wide association studies of type 2 diabetes and related glycaemic traits that have included populations of diverse ancestry. Four main areas that benefit from population diversity are discussed: trait-associated locus discovery, improved understanding of the genetic architecture of these traits across populations, refinement of association signals for causal variant identification, and genetic approaches for precision medicine. The author states that expansion of genetic and genomic studies to encompass more diverse populations promises to deliver more equitable precision medicine. However, she also highlights that it is essential that these studies are conducted in ways that build local research capacity and scientific leadership. The figures from this review are available as a downloadable slideset.

Type 2 diabetes burden among migrants in Europe: unravelling the causal pathways

Charles Agyemang, Eva L. van der Linden, Louise Bennet

Type 2 diabetes is a major global burden and some populations have been particularly affected. In this issue, Agyemang et al (https://doi.org/10.1007/s00125-021-05586-1) summarise the burden of type 2 diabetes and its related complications, and the potential explanatory mechanisms among migrants in Europe. Analysis of the current evidence suggests that type 2 diabetes and related microvascular and macrovascular complications remain a major burden among migrant populations in Europe. Evaluation of culturally adapted lifestyle modification diabetes interventions among migrants are limited and mainly focus on South Asian

populations. Migrants tend to be more aware of their diabetes status but their glycaemic control remains suboptimal compared to Europeans. These observations call for investment in prospective studies and basic scientific research as well as culturally adapted lifestyle modification intervention trials to gain insight into the causal pathways linking migration to the development of type 2 diabetes and to facilitate prevention and treatment efforts in Europe. The figures from this review are available as a downloadable slideset.

Characterisation of *Ppy*-lineage cells clarifies the functional heterogeneity of pancreatic beta cells in mice

Takahiro Fukaishi, Yuko Nakagawa, Ayako Fukunaka, Takashi Sato, Akemi Hara, Keiko Nakao, Michiko Saito, Kenji Kohno, Takeshi Miyatsuka, Motoyuki Tamaki, Munehide Matsuhisa, Taka-aki Matsuoka, Tetsuya Yamada, Hirotaka Watada, Yoshio Fujitani

The islets of Langerhans, which are composed of four main types of endocrine cells (alpha, beta, delta and pancreatic polypeptide [PP] cells), play an important role in maintaining blood glucose levels. In this issue, Fukaishi et al (https://doi.org/10.1007/s00125-021-05560-x) report that insulin-producing beta cells in mice are composed of several subpopulations with different gene expression profiles. Among them, they found a novel subpopulation of beta cells with a gene expression profile similar to that of PP cells and named them '*Ppy*-lineage beta cells'. *Ppy*-lineage beta cells showed a reduced glucose-stimulated calcium response compared with non-*Ppy*-lineage beta cells and were resistant to cellular injury. Consequently, the percentage of *Ppy*-lineage beta cells remaining in mouse models of diabetes was significantly higher than the other types of beta cells. The authors conclude that this study provides new insights into the functional heterogeneity of beta cells, helping to elucidate mechanisms underlying the onset and progression of diabetes, and may lead to the development of new therapies for diabetes.

Sitting less elicits metabolic responses similar to exercise and enhances insulin sensitivity in postmenopausal women

Carlijn M. E. Remie, Georges E. Janssens, Lena Bilet, Michel van Weeghel, Bernard M. F. M. Duvivier, Vera H. W. de Wit, Niels J. Connell, Johanna A. Jörgensen, Bauke V. Schomakers, Vera B. Schrauwen-Hinderling, Joris Hoeks, Matthijs K. C. Hesselink, Esther Phielix, Riekelt H. Houtkooper, Patrick Schrauwen

An effective strategy to improve health is to replace sitting time with standing and walking. However, how this compares to exercise, and the underlying molecular mechanism, remain unknown. In this issue, Remie and Janssens et al (https://doi.org/10.1007/s00125-021-05558-5) describe the results of a randomised crossover intervention study in which three 4-day activity regimens were evaluated. These included: (1) a sitting regimen; (2) an exercise regimen where 1 h of sitting was replaced by a 1 h bout of exercise; and (3) a sitting-less regimen that replaced several hours of sitting with standing and walking. The authors found an improvement in insulin sensitivity in the sitting-less (~13%) and the exercise (~20%) regimens. Evaluating over a hundred metabolites in muscle biopsies, the authors found that sitting less showed similar global molecular changes to exercise. The authors conclude that a sitting-less regimen can be a viable strategy for metabolic health.