

# Diabetologia

## 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 are particularly 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!

*Sally M. Marshall, Editor*

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### **Biomarkers of cardiovascular disease: contributions to risk prediction in individuals with diabetes**

*Katherine N. Bachmann, Thomas J. Wang*

In this issue (<https://doi.org/10.1007/s00125-017-4442-9>), Bachmann and Wang review the current and potential uses of biomarkers of cardiovascular disease in individuals with diabetes. At present, some individual biomarkers and combinations of biomarkers produce modest improvements in cardiovascular risk prediction in people with diabetes beyond traditional cardiovascular risk factors. New technological advances should facilitate the identification of novel biomarkers and biomarker panels that contribute to risk stratification. Ultimately, any new risk prediction models will need to be adopted into clinical practice and subsequently influence decision making and/or patients' behaviour if they are to improve clinical outcomes in diabetes.

📎 The figures from this review are available as a downloadable [slideset](#).

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### **Biomarkers of diabetic kidney disease**

*Helen M. Colhoun, M. Loredana Marcovecchio*

At present no novel biomarkers of diabetic kidney disease are in routine use clinically or in trials, despite large-scale research efforts in this area. In this issue (<https://doi.org/10.1007/s00125-018-4567-5>), Colhoun and Marcovecchio review the current status of prognostic biomarkers. They first consider the role of routine clinical data in predicting who will develop kidney disease and whose disease will rapidly progress. They go on to review reports of individual candidate biomarkers and panels of candidate biomarkers, and discuss the contribution of 'omic' discovery approaches to date. Finally, the authors consider some of the limitations of the currently adopted approaches and make recommendations on how the field might progress in the future.

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### **Diabetes in pregnancy: a new decade of challenges ahead**

*Ute Schaefer-Graf, Angela Napoli, Christopher J. Nolan, the Diabetic Pregnancy Study Group*

The Diabetic Pregnancy Study Group, a study group of the EASD, recently reviewed progress and set new directions for research and clinical practice improvements for women affected by diabetes in pregnancy. As summarised in this issue (<https://doi.org/10.1007/s00125-018-4545-y>), for women with pregestational type 1 and type 2 diabetes, national benchmarking, promoting and ensuring access to preconception care, and improved use of new technologies (such as continuous glucose monitoring, insulin analogues and

insulin pumps) are seen as priorities. For women with gestational diabetes, we need to close the gaps in evidence, such as the value of early diagnosis, optimal glycaemic targets for treatment, and the use of non-insulin therapies. It is always necessary to take into account other maternal morbidities, such as obesity, and the transgenerational impact and economic costs of diabetes. Basic and clinical research priorities, including the use of new ‘omics’ technologies, are discussed, as well as current and future uses of precision medicine approaches within the field.

### **Impact of age at diagnosis and duration of type 2 diabetes on mortality in Australia 1997–2011**

*Lili Huo, Dianna J. Magliano, Fanny Rancière, Jessica L. Harding, Natalie Nanayakkara, Jonathan E. Shaw, Bendix Carstensen*

There has been a progressive increase in the prevalence of early-onset type 2 diabetes mellitus, with some evidence suggesting that it may be a more aggressive form of diabetes. In this issue (<https://doi.org/10.1007/s00125-018-4544-z>), Huo et al seek to understand the impact of age at diagnosis on mortality. Using a cohort of 743,000 Australian adults with type 2 diabetes, the authors report that a younger age at diagnosis is associated with higher all-cause, cardiovascular disease, ischaemic heart disease and stroke mortality, but slightly lower cancer mortality, compared with those who are diagnosed at an older age. The authors suggest that this may be due to higher levels of risk factors in those with younger onset diabetes. Aggressive management of risk factors in those with early-onset type 2 diabetes, and stronger measures to delay the onset of type 2 diabetes, may be warranted.

### **Prospective evaluation of insulin and incretin dynamics in obese adults with and without diabetes for 2 years after Roux-en-Y gastric bypass**

*Jonathan Q. Purnell, Geoffrey S. Johnson, Abdus S. Wahed, Chiara Dalla Man, Francesca Piccinini, Claudio Cobelli, Ronald L. Prigeon, Bret H. Goodpaster, David E. Kelley, Myrlene A. Staten, Karen E. Foster-Schubert, David E. Cummings, David R. Flum, Anita P. Courcoulas, Peter J. Havel, Bruce M. Wolfe*

Rates of type 2 diabetes remission are high following gastric bypass. Mechanisms mediating this response include both post-surgical weight loss and procedure-specific metabolic changes (e.g. increases in glucagon-like peptide 1 levels) thought to improve insulin secretion response. In this issue (<https://doi.org/10.1007/s00125-018-4553-y>), Purnell et al studied the durability of changes in insulin sensitivity and islet cell insulin secretory response to both a mixed meal and intravenous glucose infusion after gastric bypass in those with and without diabetes. The authors found sustained improvements of multiple islet cell defects for up to 2 years in those with diabetes prior to surgery, including increased acute insulin response to intravenous glucose. While these improvements were enough to induce clinical remission of diabetes, insulin secretory responses remained well below population norms. As poor insulin secretion capacity is a key marker of diabetes recurrence following bariatric surgery, our data suggest that gastric bypass should be considered before diabetes onset, or as soon as possible thereafter.

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