**The James Lind Alliance Research Priorities for Diabetes**

Basic and clinical science research has immeasurably changed the lived experience of Type 1 and Type 2 diabetes. In the time since the systematic, structured work of Banting, Best, Macleod and Collip led to the discovery of insulin, the contribution of research to pharmacology, physiology, genetics, therapeutics and psychosocial research has fundamentally changed diabetes care.

More recently, one of the most powerful movements in clinical diabetes research has been the inclusion of people living with diabetes in the research process, from inception, through funding and delivery of research, to implementation and dissemination of research findings. This alignment of clinical research with target groups has enabled researchers to match their work more effectively with the desires and hopes of people with diabetes and has enabled people with diabetes, and their families and carers, to shape the future while better understanding research processes.

Involving people with diabetes in research is now a critical component of applying for funding for any clinical diabetes programme and active Patient and Public Involvement has been established in most research groups.

The James Lind Alliance, named after a Naval surgeon who undertook a comparative clinical study of remedies for scurvy, was established in 2003 to facilitate interaction between clinicians and patients to agree research priorities in priority setting partnerships [1]. In 2012, following a successful collaboration with Diabetes UK, the James Lind Alliance research priorities for Type 1 diabetes were published in Diabetic Medicine [2], highlighting the importance of technologies, education and hypoglycaemia to people living with Type 1 diabetes. In 2018, the research priorities for people with Type 2 diabetes were published [3], focussing on prevention, lifestyle and, psychosocial issues.

In this issue of Diabetic Medicine, we present the first of a series of invited reviews based on these James Lind Alliance diabetes priorities. For the Type 1 diabetes research priorities, the reviews focus on the progress since the priorities were established and will seek to examine the future progress we may expect to see. For the Type 2 diabetes priorities the reviews will establish a baseline on which the future research can develop.

In this issue, Pickup reviews the efficacy of insulin pump therapy for people with Type 1 diabetes, emphasising not only what benefits may be accrued from insulin pump therapy but most importantly for whom insulin pump might be most effective [4]. Everyone with Type 1 diabetes is different and clearly defining which individual characteristics may be most closely associated with effectiveness is critical for all interventions.

The logical development of the insulin pump is automated insulin delivery, supported by continuous glucose monitoring. Boughton and Hovorka address the effectiveness of artificial pancreas systems, which have moved from the clinical research facility to home use since the James Lind Alliance priorities were set [5]. While promising, the review emphasises the later challenges of implementation and adoption for complex and expensive technologies. In contrast to insulin pump therapy, with its mature evidence base for clinical and cost effectiveness, the artificial pancreas will need to demonstrate benefit in well-defined cohorts before entering routine clinical care.

The Type 1 diabetes research priorities comprised a top ten but, in contrast to the Type 2 diabetes work, also included an overarching research aspiration for a cellular cure. In this first collection of reviews, Senior and Pettus address this most challenging question, elucidating the approaches to stem cell therapies and the roadmap for future studies towards a cure for Type 1 diabetes [6].

The first three Type 2 diabetes reviews focus on lifestyle, prevention and risk. Prevention of Type 2 diabetes and dietary choices are frequently reported and discussed. Dyson *et al* review the impact of macronutrient content in Type 2 diabetes, an area keenly contested both in the scientific literature and on the shelves of all bookshops [7]. The absence of clear differences between macronutrient approaches underlines the importance of education to enable people to make the best choice for them.

Taylor and Barnes review the evidence for the reversal of Type 2 diabetes [8], an area that has already seen translation of the evidence base to widespread implementation with the recent news that meal replacement options will be made available by NHS England. Importantly, the post-diabetes state is defined and discussed. As this becomes a more common metabolic finding clearer guidance for ongoing screening and cardiovascular risk will be required.

Finally, Fagg and Valabhji focus on prevention in people at high risk for Type 2 diabetes [9]. The challenge remains to deliver impactful interventions at scale to the large populations at highest risk of diabetes; nevertheless evidence-based approaches can be implemented and have been established in the NHS England diabetes prevention programme.

The James Lind Alliance research priorities are important in defining the questions that are most important to people living with diabetes. The review series provides the opportunity to reflect on the questions, to review progress and, most importantly, to define where the gaps and challenges remain.

**Competing interests**

None declared.

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