

Study finds best use of insulin as diabetes progresses

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Professor Rury Holman of the Diabetes Trials Unit led the study.

(PhysOrg.com) -- A large-scale trial in diabetes patients has provided new evidence on how best to add insulin to standard drugs to control blood sugar levels as type 2 diabetes progresses.

The University of Oxford research was published in the [New England Journal of Medicine](#) to coincide with presentation of the final trial results at the World Diabetes Congress in Montreal, Canada.

Patients who added insulin, either through once-a-day (basal) insulin injections or three injections at mealtimes, to their oral anti-diabetes drugs showed better control of their [blood sugar](#) levels than those adding

twice daily insulin injections.

Those starting with a single insulin injection each day also had fewer hypoglycaemic episodes (when blood sugar levels are too low) and gained less weight.

‘Type 2 diabetes is a progressive condition with the majority of patients eventually requiring insulin therapy,’ says Professor Rury Holman, principal investigator of the study and director of the Diabetes Trials Unit at Oxford University. ‘This large-scale study strengthens guidelines recommending adding a basal insulin to oral agents when glycaemic targets are not met.’

Improved control of blood sugar levels is known to reduce the risk of complications in type 2 diabetes, such as [kidney failure](#) and loss of vision from eye disease. As type 2 diabetes progresses, the standard oral therapy will typically need to be escalated repeatedly over time.

Eventually, the majority of patients will require insulin but there remains uncertainty as to which regimen of insulin injections should be used when oral drugs become insufficient. There is no clear consensus about whether to start with insulin therapy three times a day with meals, injections twice a day, or a long-acting once-a-day insulin injection.

The researchers set out to find which pattern of treatment resulted in the best control of blood sugar levels. Their three-year, randomised controlled trial compared different insulin regimens in 708 patients with [type 2 diabetes](#) whose current doses of anti-diabetic drugs were not proving sufficient.

During the first year, the patients were randomised to one of the three insulin courses. During the second and third years, those who were still not achieving their glucose targets were moved to more complex insulin

regimens.

Dr Jonathan Levy, lead clinician at the Oxford Centre for Diabetes, Endocrinology and Metabolism and co-principal investigator said: ‘Starting with a basal insulin and adding a mealtime [insulin](#) if required provided the best combination of effectiveness, safety and treatment satisfaction’.

‘These results will help patients and healthcare professionals in routine clinical practice to decide which treatment is most suitable for the individual,’ added Dr Andrew Farmer, co-principal investigator at the Department of Primary Health Care.

Provided by Oxford University ([news](#) : [web](#))

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