Medical Xpress

New evidence to support the importance of psychosocial factors in determining type 2 diabetes risk

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The research findings 'Understanding the complexity of glycaemic health – Systematic bio-psychosocial modelling of fasting glucose in

middle-age adults; a DynaHEALTH study' have recently been published in the *International Journal of Obesity*.

They form a major output of the DynaHEALTH study, a large-scale European-funded research collaboration, providing evidence to support the importance of bio-psychosocial factors in adult glycaemic health and exemplifying an evidence-based approach to modelling bio-psychosocial relationships and the associated type 2 diabetes (T2D) risks.

Maintaining a healthy blood glucose in middle age and therefore preventing an individual's risk of T2D is complicated by multidimensional interplays between biological and psychosocial factors. The current research explored the bio-psychosocial predictors of blood glucose in mid-life. Analysis was focused on four factors: socioeconomic (basic and further education, occupation and household income), metabolic (adiposity, insulin resistance, hypertension, dyslipidaemia), psychosocial (marital status, home ownership, employment status, depression, sleep quality and life satisfaction), and blood pressure status. The importance of psychosocial factors, in addition to established and robust metabolic risk factors, was highlighted in this paper published by the DynaHEALTH consortium. The combination of metabolic and psychosocial factors at 31 years of age provided the best prediction of fasting glucose 15 years later, at the age of 46. Fasting glucose generally follows a relatively stable linear upward trajectory with age and has been observed only to steeply increase up to 3 years before the onset of diabetes. Preserving a stable and low fasting glucose is the key to substantially delay diabetes onset.

Lead author Estelle Lowry explains: "This study is the first step in developing a model, which may be used clinically to identify those with an increased risk of developing poor glycaemic health and T2D. Early identification of these individuals can provide an opportunity for healthy ageing by implementing targeted interventions and policy

recommendations for personalised prevention. This is also the first step towards providing evidence to support the novel concept on which the DynaHEALTH project is based."

By replicating this combined data-driven approach in other studies, the main aim and underpinning concept of DynaHEALTH is to create risk scores during the life course to reflect the dynamic trajectory of deteriorating glycaemic control. Ultimately, this will lead to the translation of a theoretical model into a practical framework that may be used to personalise preventative healthcare.

The article in the *International Journal of Obesity* (2018) is titled "Understanding the complexity of glycaemic health – Systematic bio-psychosocial modelling of fasting glucose in middle-age adults; a DynaHEALTH study."

More information: Estelle Lowry et al. Understanding the complexity of glycaemic health: systematic bio-psychosocial modelling of fasting glucose in middle-age adults; a DynaHEALTH study, *International Journal of Obesity* (2018). DOI: 10.1038/s41366-018-0175-1

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