shows that intrauterine environmental exposure can influence subsequent disease development. Species of Streptomyces infect potatoes and other root vegetables to cause common scab disease wherever root vegetables are grown. The toxins produced contaminate the vegetables and their products. Not only does the country have the highest incidence of type 1 diabetes, but in Finland 16% of infants also receive root vegetables exclusively as their first solid food, and a further 16% receive root vegetables with other food groups. Common potato scab is becoming more difficult to control because of increasing diversity of the causative organisms, thereby further increasing risk of population exposure to plecomacrolide toxins. The association of type 1 diabetes autoimmunity with root vegetables may reflect exposure of Finnish children to a higher burden of Streptomyces toxins, but this might not be restricted to Finland. These toxins could accumulate through the food chain and so contaminate milk, meat, and other products. Also, the industry practice of using vegetable peel and reject tubers to make vegetable by-products, such as starch and thickeners, increases the risk of exposure. Airborne microbial spores might also be a route of exposure. Causes of the increasing incidence other than Streptomyces are clearly possible.

The case for an environmental contribution to the cause of type 1 diabetes is compelling. However, identification of the probable agents is the ultimate challenge because they might be ubiquitous, and the hardest cause of a disease to identify is that which is universally present. There seems little doubt that we have underestimate the complexity of this form of diabetes—new ideas are clearly needed to stop the disconcerting acceleration of incidence.

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Lifestyle intervention, diabetes, and cardiovascular disease

Primary prevention of type 2 diabetes was first proposed in 1921 by Elliot Joslin who wrote: “There are entirely too many diabetic patients in the country...Therefore, it is proper at the present time to devote attention not alone to treatment, but still more, as in the campaign against the typhoid fever, to prevention. The results may not be quite so striking or as immediate, but they are sure to come and to be important.”

Almost 90 years later, we can still subscribe to Joslin’s view. Indeed, hard evidence from several trials unequivocally shows that lifestyle intervention can prevent or at least delay type 2 diabetes in individuals with impaired glucose tolerance. The effect is evident and of a similar magnitude in people from differing ethnic backgrounds and cultures.

In today’s Lancet, Guangwei Li and colleagues report 20-year follow-up results on incidence of type 2 diabetes and cardiovascular disease from the China Da Qing Diabetes Prevention Study. Originally, 33 clinics were randomly allocated to provide the participants (577 men and women with impaired glucose tolerance) with dietary, exercise, combined, or control interventions. After 6 years, diabetes incidence was 31%, 46%, or 42% lower than in the control group for dietary, exercise, and combined interventions, respectively. The researchers managed to follow-up
98% of the original population. The main finding is that the reduction in diabetes incidence persists in the combined intervention group; furthermore, the risk reduction remains the same during the post-intervention period. These results accord with our findings from the Finnish Diabetes Prevention Study, with 7 years of follow-up.8

So far, there is no trial evidence of the effects of lifestyle changes on cardiovascular disease morbidity or mortality in people with impaired glucose tolerance. Li and colleagues found no significant differences in cardiovascular events or mortality or total mortality between the control group and the combined intervention groups. Although the risk of death from cardiovascular disease in the combined intervention group was not significantly different from that in the control group, the observed 17% lower cumulative incidence suggests a benefit of lifestyle intervention; however, the wide CI does not allow any definite conclusions. The authors can be commended for not overinterpreting their findings on the risk of cardiovascular disease. As they emphasise, the lack of statistical significance could be caused by limited statistical power to detect differences. Another explanation might be that the lifestyle intervention was not intensive or effective enough or started too late. On the basis of an earlier publication, the lifestyle changes achieved in the present study were modest at best.9 The participants were at a relatively normal weight at baseline (mean body-mass index 26 kg/m²), and reported weight reduction during the intervention was actually larger in those participants who developed diabetes. Changes in diet and physical activity were negligible. Thus, we cannot put a finger on what was even the cause of the evident risk reduction for type 2 diabetes. In general, trials aimed at the prevention of cardiovascular disease have shown that lifestyle changes can reduce incidence in a strictly controlled setting, but results have been mixed among free-living individuals.10,11

If the effect on cardiovascular disease in the present study is true, it could be attributable to the observed reduction in glycaemia, because there were no differences between the groups in the reported traditional risk factors: total cholesterol and blood pressure. Unfortunately, no data for smoking habits were reported. The results accord with the findings of the STOP-NIDDM trial suggesting that the α-glucosidase inhibitor acarbose, which lowers the postprandial glucose peak, can reduce the risks of both diabetes and cardiovascular disease.12,13

The overall risk of diabetes was extremely high in Li and colleagues’ population: 93% of the control participants and 80% of the intervention participants became diabetic during the 20-year follow-up.7 Also, the incidence of first cardiovascular disease was high (44% and 41%), for people with a mean age at baseline of about 45 years. Stroke morbidity and mortality is much more common among Chinese people than among most populations of European descent. Different preventive approaches might, therefore, be needed since hypertension is the primary risk factor for stroke. Cultural adaptation of interventions is also important.

We propose that lifestyle intervention should start much earlier, when people are normoglycaemic, to achieve true primary prevention of type 2 diabetes and its main consequence, cardiovascular disease. In this regard, both population-based strategies and those targeted at high-risk groups should be applied.

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A European Council on Global Health

Recognition of the need for policy coherence and strategic direction of global health is only just beginning to emerge in Europe, both within countries and at the European Union (EU) level. As part of its new policies in health and development, the EU has declared its goal to increase the synergy between policy domains, a move that provides a new base for global-health action. Additionally, the new Health Strategy of the European Commission introduces “Strengthening the EU’s voice in global health” as one of the four basic principles of its approach. The 2005 communication includes a series of proposals to enhance funding for development work (including health goals). The specific aid targets to be reached by 2010 were accepted by the European Commission, in Geneva on Jan 28–29, 2008. The participants at this meeting agreed that Europe should exercise stronger leadership in global health, as it had done for environment, and mobilise the diversity of European members to contribute to global-health goals. They agreed to start a European Council on Global Health, which would work to influence policy and

To explore this recommendation further, the European Foundation Centre, the Global Forum on Health Research, and the Graduate Institute of International and Development Studies convened a meeting with 25 organisations, including WHO and the European Commission, in Geneva on Jan 28–29, 2008. The participants at this meeting agreed that Europe should exercise stronger leadership in global health, as it had done for environment, and mobilise the diversity of European members to contribute to global-health goals. They agreed to start a European Council on Global Health, which would work to influence policy and

International Conference Centre, Geneva, location of the Geneva Health Forum in May, 2008

1 Joslin E. The prevention of diabetes mellitus. JAMA 1921; 76: 79–84.