

Management of type 1 diabetes

The extra burden of coeliac disease



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The NICE guideline on the management of type 1 diabetes in children recommends screening for coeliac disease (CD) every 3 years. While it is clear that CD is more common in individuals with diabetes than in those without, the evidence that treatment for CD is required in all remains controversial.

The problem is that gluten-free foods are still pretty terrible and 'eating out' with your mates is more or less impossible. The double infliction of type 1 diabetes coupled with the demand to be gluten-free is too much to bear for many people – especially the young.

This paper by Kaspers et al adds to the evidence that CD may be associated with growth problems but it by no means gives the definitive

answer. This large study from Germany (illustrating the benefits of National diabetes registers) was not prospective and only about 10 % of those with CD-specific antibodies had biopsy-proven disease. The reasons for carrying out biopsies in some participants and not others were not given but the group with CD-positive biopsies were significantly younger at diabetes onset, were shorter and thinner than those without CD antibodies, or those positive for CD antibodies but not biopsy-proven. Catch-up growth was not complete.

The study suggests there may be two populations within those with CD and type 1 diabetes – the symptomatic and the asymptomatic. I think we should await further prospective studies on the role of a gluten-free diet in biopsy-proven asymptomatic individuals before wading in with 100 suggestions on what to do with a rice cracker.

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The influence of coeliac disease in type 1 diabetes

Readability	✓✓✓✓
Applicability to practice	✓✓✓✓
WOW! factor	✓✓✓✓

- 1 The co-occurrence of coeliac disease (CD) and type 1 diabetes may indicate a common genetic background.
- 2 This study aimed to assess the occurrence of CD and its effects on growth, glycaemic control and thyroid disease in children and adolescents with type 1 diabetes.
- 3 Data were collected from 150 paediatric centres across Germany and Austria; in total 19 796 young people with type 1 diabetes were studied.
- 4 CD-specific antibodies were found in 6.7 % (n=1326) of patients. The presence of CD was biopsy-proven in 9.6 % of these individuals (n=127).
- 5 The investigators found that patients with CD were significantly younger at the onset of diabetes (5.8 ± 4.0 years old versus 8.2 ± 4.0 ; $P < 0.001$). Furthermore, the CD-affected patients exhibited lower height-SDS (standard deviation score; -0.49 ± 1.1 versus -0.06 ± 1.0 ; $P < 0.05$) and lower BMI-SDS (0.22 versus 0.47 ; $P < 0.05$) compared to those without the condition.
- 6 In people with CD, HbA_{1c} values were lower than in those without the condition ($8.1 \% \pm 1.8$ versus $8.8 \% \pm 2.4$; $P < 0.001$).
- 7 Considering these effects on height, weight and HbA_{1c}, the investigators concluded that children with type 1 diabetes should be regularly screened for CD.

Kaspers S, Kordonouri O, Schober E et al (2004) Anthropometry, metabolic control, and thyroid autoimmunity in type 1 diabetes with celiac disease: A multicenter survey. *Journal of Pediatrics* **145**(6): 790–5

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Single-donor islet transplantation restores insulin independence

Readability	✓✓✓✓
Applicability to practice	✓✓✓✓✓
WOW! factor	✓✓✓✓

- 1 Type 1 diabetes (T1D) has been reversed with islet transplants from between two and four donors, but having multiple donors increases the costs and risks and decreases the availability of transplants.
- 2 This prospective, 1-year follow-up trial (n=8) was designed to test the safety and efficacy of single-donor, marginal-dose islet transplants with potent induction immunosuppression and less diabetogenic maintenance immunotherapy.

- 3 Safety was assessed by recording the duration and the severity of adverse events, while efficacy was determined by monitoring insulin requirements, HbA_{1c} levels, C-peptide levels, hypoglycaemic episodes, intravenous arginine stimulation responses and oral and intravenous glucose tolerance tests.
- 4 The trial protocol restored insulin independence in all eight patients, and there were no serious infections, procedural complications or serious, unexpected, protocol-related adverse events.
- 5 Five of the eight patients retained their insulin independence for at least 1 year.
- 6 The authors state that it seems likely that graft failure in three recipients was due to alloimmunity, recurrent autoimmunity or both.
- 7 These findings have implications for diabetes reversal using islet transplants becoming a widespread clinical reality.

Hering BJ, Kandaswamy R, Ansite JD et al (2005) Single-donor, marginal-dose islet transplantation in patients with type 1 diabetes. *Journal of the American Medical Association* **293**(7): 830–5