Alternatively, as Kari Stefansson suggested, the genetic test could identify people at high risk who would benefit from appropriate advice on diet and physical activity (although this advice is applicable to all). The risk of diabetes is increased from 33% to 63% in homozygous TCF7L2 carriers (7% of the population), but the risk is increased from 33% to only 38% in heterozygous carriers (38% of the population). Would these figures provide enough incentive for carriers to change their lifestyles?²⁵

Only a month before online publication of the discovery of TCF7L2, another study evaluated the simultaneous testing of PPARG (peroxisome proliferative activated receptor γ) and CAPN10 (calpain 10) SNP43/44 (single nuclear protein 43/44) genotypes and claimed that "genetic testing might become a future approach to identify people at risk of developing type 2 diabetes."²⁶ This conclusion was based on the finding that carriers of the PPARG PP and CAPN10 SNP43/44 GG/TT genotypes who were obese and had raised fasting plasma glucose values, had a 21.2-fold increased risk for type 2 diabetes compared with non-obese non-carriers with normal fasting plasma glucose. We showed that testing for these genetic variants would not improve the prediction of type 2 diabetes over body mass index and fasting plasma glucose concentration.⁷

Inferences about the public health applications of genetic testing are often based on single measures of association or indicators of test performance, such as the risk ratio or population attributable risk. Predictive genetic testing is useful when the value it adds to existing interventions outweighs the additional personal and social costs. This requires a complete evaluation of the test's performance characteristics, including sensitivity and specificity; its positive and negative predictive value in the population to be tested; the likelihood ratio of positive and negative test results; and the rates of false positive and false negative test results. These data are only part of the evidence base needed to recommend a test, which also includes information about effectiveness relative to existing alternatives, side effects, and costs.⁸ A risk ratio or population attributable risk alone cannot predict the potential usefulness of genetic testing.

News about genetic associations with type 2 diabetes and the potential for predictive testing was quickly picked up by patient organisations.⁹⁻¹² Ultimately, genetic discoveries may lead to better under-

standing of the disease process and to better therapeutic and preventive interventions. In the meantime, scientists and the media are responsible for accurately and carefully interpreting the implications of studies of genetic associations for the benefit of the general public. Raising unrealistic expectations—even inadvertently—could distract attention from what can be done by applying what we already know to prevent diabetes and its complications.¹³

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Tackling alcohol misuse at the front line

Training staff where patients usually present should improve detection and advice

The UK government announced at the end of last year that £3.2m (£4.8m; \$6m) was to be made available "for new initiatives which will help identify and intervene early with" people who may be damaging themselves with alcohol.¹ In 2004 in England 38% of men and 16% of women aged 16-64 had an alcohol use disorder (26% overall), equivalent to around 8.2 million people.²

About £217m is currently spent on specialist alcohol treatment, but compare that with the £20bn

estimated cost of alcohol misuse. We hope that some of the new money will be used to support those clinical settings in which alcohol misuse is common and detection and intervention are most likely to be rewarding—for example, in hospital emergency departments, general practices, and hospital wards.

Most conurbations in England have one or more specialist alcohol units, which are usually headed by psychiatrists and largely deal with complex problems such as dependence, psychiatric comorbidity, and

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accompanying physical illness. These are controlled by mental health trusts, which are separated administratively from acute hospital trusts, so services tend to be fragmented.

In many areas voluntary agencies provide a local service for people with alcohol problems, ranging from the heavy drinker who is beginning to have problems to the dependent street drinker. Staffed by professionals with backgrounds in health and social services and considerable expertise in managing alcohol problems, these often unappreciated assets are closely in touch with the local community and with resources such as those for housing, jobs, and legal advice. They receive funds from various sources such as the local authority, primary care trusts, and charitable foundations, while NHS services now rely solely on funds from primary care trusts. The national body Alcohol Concern coordinates the work of the voluntary sector as well as providing information and advice for the general public.

Emergency departments

Funding by primary care trusts for alcohol services could be well used in hospital emergency departments, where nearly a third of overall attendances are alcohol related and more than two thirds may be so after midnight. Over the past 12 years,^{3,4} a pragmatic randomised controlled trial carried out by the emergency department team at St Mary's Hospital London has shown that routine clinical staff can be trained to detect potential alcohol problems by using the evolving one minute Paddington alcohol test in patients with certain defined conditions,⁵ and that they can then offer brief advice. In addition, an alcohol health worker based in the hospital and funded by the local primary care trust is available for brief intervention and, where necessary, referral to community care or for specialist opinion. The important part played by the alcohol health worker in educating staff and in supporting them in a stressful environment is an essential part of the programme, and this approach is cost effective.⁶

General practice

Alcohol problems are underdetected in general practice and general practitioners are frequently reluctant to become involved.⁷ Yet the late Geoffrey Smerdon, as chairman and director of Cornwall Alcohol and Drugs Agency, was able to provide an alcohol worker for 23 training general practices in the county (G Smerdon, personal communication, 1990). He was analysing the impact of this approach at the time of his death, and hopefully the results will eventually be published. Such evidence then might underpin closer liaison between general practitioners and local voluntary alcohol agencies, wider availability of alcohol workers, and alcohol clinics in general practices, as already occurs in some parts of the country. One of the practice team might then take on alcohol misuse, if money were available for training.⁸

Numerous studies have highlighted the frequency of alcohol problems among patients in hospital wards,⁹ and suggestions have been made over the years that all general hospitals should have a senior consultant with

an interest in alcohol misuse.¹⁰ Given that alcohol misuse affects most systems in the body, the need for expert advice extends to every part of the hospital, and the opportunity to offer help should be grasped at a time when the patient is particularly susceptible to intervention.¹¹ Yet a recent review found that only 21 acute hospital trusts in England had an alcohol health worker, some of whom worked part time.¹² How many have a consultant with a special interest?

Patients encountered in the course of routine practice who are drinking too much do not usually require specialist treatment. If all frontline staff had basic knowledge about the social and physical ill effects of and the detection of alcohol misuse, and the benefits of brief advice and liaison with alcohol health workers, problems would be tackled far earlier—often preventing the development of dependence—and large amounts of money would be saved. The new two year foundation training for junior doctors offers an important opportunity to develop such knowledge.

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