Robert A. Nugent and me, prompted Dr. Allen R. Huang to write regarding "a simple technique to clinically confirm the placement" of nasogastric tubes (*ibid:* 1756). Huang suggests injecting 40 to 60 mL of air into the tube while auscultating the stomach region to listen for air bubbles.

Although this technique may be of value in patients with no head injury the main message of our case report should not be obscured: for patients who may have fractures of the skull base or anterior cranial fossa (including those with high-calibre gunshot wounds or with other skull fractures that on radiographs appear to be remote from the skull base) a nasogastric tube should not be inserted blindly.

Injecting air after blind insertion might compound the problem if the tube had been inadvertently placed in the intracranial region. Subsequent blind withdrawal of the tube because of negative results of the "auscultation test" could also be very hazardous.

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Clinical practice guidelines for treatment of diabetes mellitus

The special supplement by the Expert Committee of the Canadian Diabetes Advisory Board (*Can Med Assoc J* 1992; 147: 697–712) is a comprehensive report. However, we are concerned with the accuracy and potential implications of the statements made in the section on diagnosis.

The Expert Committee has quoted the recommendations of the National Diabetes Data Group (NDDG)[1] and suggested three criteria, two of which may result in overinvestigation and an incorrect diagnosis in elderly people.

The first criterion states that "in nonpregnant adults, the diagnosis of diabetes is made in patients who have symptoms and signs of diabetes (increased thirst, polydipsia, polyuria, polyphagia, weight loss, fatigue, blurred vision etc.) and a random venous plasma glucose concentration above 11.1 mmol/L." This is inconsistent with the NDDG recommendation, which states in its summary that in a random sample of adults there should simply be "unequivocal hyperglycemia" for a diagnosis of diabetes. The reference to a value above 11.1 mmol/L is specific to the diagnosis of diabetes mellitus in children. The finding of a glucose concentration exceeding 11.1 mmol/L in elderly patients 30 to 90 minutes after glucose tolerance testing is not uncommon.[2–5] Therefore, although the Expert Committee's statement is applicable to young people it would be inappropriate if applied across all age groups. It has been suggested that only a fasting glucose level greater than 7.8 mmol/L be used to diagnose diabetes in the elderly.[2]

Furthermore, this criterion fails to recognize that a substantial number of glucose assays are performed in the laboratory on serum and not on plasma. In hospital laboratories serum is routinely used in multichannel analysers for this test.

The second criterion concerns a "fasting venous plasma glucose concentration over 7.8 mmol/L on at least two occasions," which is in line with the NDDG recommendation and the World Health Organization (WHO) criteria.[6]

The third criterion is "a fasting venous plasma glucose concentration below 7.8 mmol/L, but above 11.1 mmol/L in a 2-hour sample and one other sample obtained 0 to 2 hours after 75 g oral glucose in two tolerance tests." We find this recommendation confusing. It could refer to a fasting venous glucose value below 7.8 mmol/L and a 2-hour sample after a meal, or to three glucose tolerance tests or to one positive and one negative result in two tolerance tests. The position statement of the American Diabetes Association[7] in its third diagnostic recommendation is non-cost-effective, debatable and also confusing. Its criterion is "FPG < 140 mg/dl (7–8 mmol/L) and two oral glucose tolerance tests (OGITs) with the 2 h PG > 200 mg/dl (11.1 mmol/L) and one intervening value > 200 mg/dl (11.1 mmol/L) after a 75-g OGTT." Is it cost-effective to perform routinely two oral glucose tolerance tests if the results of one are unequivocal, unless there is a valid reason (e.g., if a patient has recently suffered trauma or has had surgery, a recent infectious disease, shock or chronic gastrointestinal disease or has been inappropriately advised as to carbohydrate intake before the test)?

The NDDG does not recommend an oral glucose tolerance test if the second criterion is met. It would have been helpful if the Expert Committee had emphasized this fact, because it would have reduced inappropriate use of the test. However, the NDDG does state that factors other than diabetes mellitus that cause elevation of fasting plasma glucose levels should be excluded, as discussed in 1969 by the American Diabetes Association.[8]

In the NDDG criteria the usual level of fasting venous plasma glucose is noted as less than 6.4 mmol/L. The Expert Committee should have recommended that an oral glucose tolerance test is unnecessary if the fasting glucose level is less than that value.

This is important, because some of the symptoms and signs may occur in patients who do not have diabetes mellitus. To proceed with a glucose tolerance test when the patient has a normal fasting glucose level is neither appropriate nor cost-effective, except in very specific clinical circumstances. The value of the oral glucose tolerance test has been reviewed by several studies, and the consensus remains that the fasting glucose test is the best.[1,6,9] We believe that this was not emphasized by the Expert Committee.

It is interesting that the WHO criteria[6] are quite different from the NDDG criteria. The Canadian Diabetes Association has accepted the latter but not the former. The key difference between these two internationally recognized sets of criteria is that a larger number of patients are classified as having impaired glucose tolerance and diabetes mellitus by the WHO criteria.[5] There is concern in the laboratory about diagnostic tests or procedures that are associated with a high false-positive rate. The differences between the two sets of criteria have been subject to extensive review;[10] however, the differences have not necessarily meant that patients have suffered, although misclassifications do have positive and negative potential.

We suggest that the diagnostic recommendations should reflect more precisely the NDDG criteria and that serious consideration should be given to the accepted standard of laboratory practice that is consistent with a high quality of medical care and with cost-effectiveness. We also recommend that the expert panels communicate their recommendations in an easily comprehensible and unambiguous format, especially when the primary goal is to assist other specialty and nonspecialty physicians.

It is important that expert opinion and consensus guidelines be established in many areas of medical practice, since it is one of the best ways of evaluating clinical care and communicating the processes of optimum care to practising physicians. It is equally important that during development these practice guidelines be reviewed by appropriate experts, including national medical organizations and occasionally licensing and legislative organizations. More important, the reviewers selected by *CMAJ* should ensure that the relevant and important references are quoted accurately. Unless the recommendations are accurate the brunt of any consequences will be borne by patients. It is unfortunate that a laboratory physician was not included in the formulation of these practice guidelines, which are in need of clarification.

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[The authors respond:]

We thank Drs. Rasaiah, Garg and Hoag for bringing to our attention their concerns on the accuracy and potential implications of the statements made on the diagnosis of diabetes.

Rasaiah, Garg and Hoag are correct that no level of venous plasma glucose was given in the original publication of the NDDG.[1] We have confirmed this with Dr. Maureen Harris, co-chair of the NDDG. However, this original omission was subsequently corrected by Harris[2] and by many others.[3,4] We accept a venous plasma glucose level of 11.1 mmol/L or higher without glucose loading to be "unequivocal hyperglycemia" for diagnostic purposes and hence use it. We thought it important to cite the original reference in the guidelines. We agree that age affects the venous plasma glucose level. However, the NDDG felt that with its standards "adjustment in the criteria for age of the subject is not necessary." Rasaiah, Garg and Hoag feel that a random venous plasma glucose level of more than 11.1 mmol/L is too low. This is the same criterion as that adopted by the European Non-Insulin-Dependent Diabetes Mellitus Group.[5]

With regard to plasma versus serum glucose, we used venous plasma glucose in the guidelines because that was used and recommended in the original publication.[1] We know that if the glucose level can be measured shortly after the blood sample is obtained many laboratories use serum so