Position Statement

Royal College of Pathologists of Australasia (RCPA) and Australasian Association of Clinical Biochemists (AACB) Position Statement on Impaired Fasting Glucose

Royal College of Pathologists of Australasia (RCPA)
and Australasian Association of Clinical Biochemists (AACB)
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Summary
Impaired fasting glucose (IFG) is defined as a fasting venous plasma glucose from 6.1 to 6.9 mmol/L inclusive.

Background
A recent case from the Royal College of Pathologists of Australasia Quality Assurance Program (RCPA QAP) Chemical Pathology Case Comments program has highlighted uncertainty in the definition of IFG. This uncertainty reflects different definitions supported by different international expert bodies and the likelihood that different interpretations may be made for fasting glucose results in different pathology laboratories in Australia and New Zealand.

Information Sources
There are currently two definitions of IFG in use around the world. In 2000, the National Health and Medical Research Council (NHMRC) determined the range to be 6.1–6.9 mmol/L.[1] This value has been agreed to by the Word Health Organization and the International Diabetes Federation in a position paper[2] as well as recently by the Australian Diabetes Society and the Australian Diabetes Educators Association[3] and also separately in New Zealand,[4] Western Australia[5] and by the National Heart Foundation.[6] By contrast, the American Diabetes Association recommends a definition of 5.6–6.9 mmol/L.[7] The decision points for all references are based on glucose measured in venous plasma samples using laboratory-based methods.

Comment
The likelihood that a patient will develop the complications associated with diabetes increases across the range of fasting glucoses and therefore it is not unreasonable that different bodies might decide on different cut-offs.

The RCPA and AACB support the universal use of the NHMRC definition of IFG in Australia and New Zealand and recommends all laboratories to use this definition in comments related to fasting glucose results.

It should be recognised that although fasting glucoses in the range of 5.5–6.0 ('high fives') do not attract the label of IFG, results in this range indicate an increased risk for diabetes, especially for patients designated 'high risk' (Table) who should be followed up with an oral glucose tolerance test (OGTT)[1,4] and, if no diagnosis is made by the OGTT, then further surveillance with fasting glucose measurements should be made, with the frequency of the measurements dependent on other risk factors, but at least every three years in subjects at high risk for diabetes.[1,5] A fasting plasma glucose is part of a cardiovascular risk assessment and results in the 'high fives' may indicate an increased risk and may also be an indicator for lifestyle modification. The investigation and monitoring of patients with fasting plasma glucose in the 'high fives' and the definition of 'high risk' are the subject of ongoing research and further clarification in this area may be expected in the future.

Acknowledgement
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Table. Patients at high risk for undiagnosed Type 2 diabetes (modified from NHMRC guidelines).[1]

- People with impaired glucose tolerance or impaired fasting glucose.
- Aboriginal, Torres Strait Islanders and Maori people aged 35 and over.
- People from certain high risk populations aged 35 and over, specifically Pacific Island people and those from the Indian subcontinent or of Chinese descent.
- People aged 45 and over who have either or both of the following risk factors:
  - obesity (BMI ≥30);
  - hypertension.
- All people with clinical cardiovascular disease (myocardial infarction, angina or stroke).
- Women with polycystic ovary syndrome who are obese.
- Women with previous gestational diabetes.
- People aged 55 and over.
- People aged 45 and over who have a first degree relative with Type 2 diabetes.

Editor's Note

This position statement is being published in both *The Clinical Biochemist Reviews* and *Pathology* to reflect the joint ownership of the document and to disseminate the information to pathologists and clinical scientists.

References

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