

FREQUENTLY ASKED QUESTIONS (FAQs)

PREDIABETES

Is a confirmatory test for any of the prediabetes categories (Impaired Fasting Glucose [IFG] and Impaired Glucose Tolerance [IGT]) required?

There is great uncertainty in the screening and testing for prediabetes. Current recommendations are based on expert consensus and should guide clinical judgement. There is no clear statement on the utility of confirmatory testing.

The inherent variability of the tests for FPG and 2hPG can lead to misclassification. A comprehensive review¹ of the reproducibility of the tests used to determine glycemic status indicated that:

- An individual with **normoglycemia** determined by FPG or 2hPG will have approximately a **95%** probability of having normoglycemia on a second test.
- An individual with **diabetes** determined by FPG or 2hPG will have approximately a **75%** probability of having diabetes on a second test.
 - An individual with **IFG** determined by FPG will have an approximately
 - **55%** probability of having IFG on a second test
 - **35%** probability of having normoglycemia on a second test
 - **10%** probability of having diabetes on a second test
 - An individual with **IGT** determined by OGTT will have an approximately
 - **45%** probability of having IGT on a second test
 - **45%** probability of having normoglycemia on a second test
 - **10%** probability of having diabetes on a second test

Interpretation: You can be reasonably confident that an individual found to have normoglycemia actually has that condition. You can be less confident in making a diagnosis of diabetes, which emphasizes the importance of confirmatory testing. You can have much less confidence if a test indicates IFG or IGT.

This has important clinical implications if you are considering recommending drug therapy for an individual with IFG or IGT.¹ Despite this uncertainty, there is little that can be found about repeating a test for IFG or IGT. Some suggest only a single test for the diagnosis of IFG or IGT.^{2,3}

When is an OGTT required?

If concerned about the presence of IGT or diabetes in those with IFG, or when considering medication use, an OGTT should be ordered to confirm IGT or diabetes diagnosis.

It is strongly suggested that before pharmacotherapy is initiated, an OGTT should be conducted to confirm a diagnosis of IGT.

Is pharmacotherapy indicated in the management of prediabetes?

In Canada, no drug has an official indication for the treatment of prediabetes. However, if lifestyle intervention is ineffective, metformin is considered the first choice, especially for those who are < age 60 and obese.

- Medication should only be considered in those with IGT, with the presence of additional risk factors, following a minimum 6-12 month focus on lifestyle change and depending on the degree of dysglycemia. *Check renal and hepatic function prior to medication initiation.*

Are people with prediabetes at increased risk for developing type 2 diabetes?

People with prediabetes are at greater risk of developing type 2 diabetes.

- In the normoglycemic population, it is estimated that 1% of people over the age of 40 years progress to diabetes per year.⁴ This will vary depending on age, weight, ethnicity, and level of physical activity.
- In population studies lasting up to 9 years, those with a diagnosis of IGT or IFG were ~ 5 to 7 times that of those with normoglycemia at baseline to progress to diabetes.³
- In studies lasting up to 6 years, those with a diagnosis of IGT and IFG were 12 times that of those with normoglycemia to progress to diabetes.³

Are people with prediabetes at increased risk for cardiovascular disease?

For people with prediabetes, there is an independent, but weak risk of cardiovascular disease.^{3,5} The actual increased risk for CVD may be due to other cardiovascular risk factors, i.e., HTN, obesity, and dyslipidemia, or individuals progressing to diabetes during specific study follow-up.^{6,7}

Should children and adolescents be screened for prediabetes?

The decision to screen for prediabetes is based on the presence of risk factors such as obesity and family history. Screening should be reserved for children and adolescents 10 years and over. Initial screening consists of an FPG or an OGTT. If an FPG is done and is 6.1 to 6.9, an OGTT is recommended. If IFG and/or IGT is confirmed, referral to a Diabetes Centre for individualized lifestyle counseling is recommended. Referral to a pediatrician should be considered before starting pharmacotherapy in a patient <16 years old.

References:

1. Balion CM, Raina PS, Gerstein HC, Santaguida L, Morrison KM, Booker L et al. Reproducibility of impaired glucose tolerance (IGT) and impaired fasting glucose (IFG) classification: a systemic review. *Clin Chem Lab Med.* 2007; 45(9): 1180-1185.
2. Twigg SM, Kamp MC, Davis TM, Neylon EK, Flack JR. Prediabetes: a position statement from the Australian Diabetes Society and Australian Diabetes Educators Association. *Med J Aust.* 2007; 186(9):461-465.
3. Santaguida PL, Bailon C, Hunt D, Morrison K, Gerstein H, Raina P et al. Diagnosis, Prognosis, and Treatment of Impaired Glucose Tolerance and Impaired Fasting Glucose. Evidence Report/Technology Assessment No. 128 (Prepared by the McMaster University Evidence-based Practice Center under Contract No. 290-02-0020). AHRQ Pub.No.05-E026-2. Rockville, MD:Agency for Healthcare Research and Quality. Sept 2005.
4. Unwin N, Shaw J, Zimmet P, Alberti KG. Impaired glucose tolerance and impaired fasting glycaemia: the current status on definition and intervention. *Diabet Med.* 2002;19(9):708-723.
5. Nathan DM, Davidson MB, DeFronzo RA, Heine RJ, Henry RR, Pratley R et al. Impaired fasting glucose and impaired glucose tolerance: implications for care. *Diabetes Care.* 2007;30(3):753-759.
6. Levitan EB, Song Y, Ford ES, Liu S. Is nondiabetic hyperglycemia a risk factor for cardiovascular disease? A meta-analysis of prospective studies. *Arch Intern Med.* 2004;164(19):2147-2155.
7. Coutinho M, Gerstein HC, Wang Y, Yusuf S. The relationship between glucose and incident cardiovascular events. A metaregression analysis of published data from 20 studies of 95,783 individuals followed for 12.4 years. *Diabetes Care.* 1999;22(2):233-240.

Developed in collaboration:

Dalhousie University Academic Detailing Service and the Diabetes Care Program of Nova Scotia