

Impaired Glucose Tolerance

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Impaired Glucose Tolerance

Introduction

Prior to the release of the AusDiab Study¹ in 2001, impaired glucose tolerance has been somewhat ignored by health professionals specialising in diabetes management. Recommendations were minimal, advising a yearly fasting blood glucose check and possibly a referral to a dietitian. While it was regarded as a “warning” sign for developing type 2 diabetes at some stage, we are now aware that the consequences of this diagnosis includes other risks such as cardio-vascular disease.

The AusDiab Study has shown that 1 in 4 Australians over the age of 25 years have either diabetes (half of whom are undiagnosed), or some form of impaired glucose metabolism, either impaired fasting glucose (IFG) or impaired glucose tolerance (IGT). The prevalence of IFG and IGT in the community is 16.3%.

Why the concern?

IGT and IFG is associated with substantially increased immediate risk of cardiovascular disease as well as increased risk of diabetes in the future. In comparison to people with normal glucose tolerance, those with impaired glucose metabolism were more likely to have hypertension, abnormal lipids and to be obese.

<u>Associated condition</u>	IFG	IGT
Hypertension	30.1%	31.5%
LDL (> 3.5mmol/l)	59.6%	53.0%
HDL (< 1.0mmol/l)	16.8%	11.6%
Triglycerides (> 2.0mmol/l)	31.4%	31.1%
Obesity (BMI > 30kg/m ²)	30.1%	31.5%

Only half (49.8%) of the Australian adults aged 25 years and above were undertaking “sufficient” physical activity to maintain good health. Approximately 15.6% reported no participation in physical activity at all.

The evidence

The Finnish Diabetes Prevention Study² looked at lifestyle interventions in a group of 522 middle-aged, overweight patients with impaired glucose tolerance. They were randomly assigned to either the intervention group or the control group. The intervention group received individualised counselling aimed at reducing weight, reducing total intake of fat and increasing intake of fibre and physical activity. The mean duration of follow-up was 3.2 years. During the trial the risk of diabetes was reduced by 58% in the intervention group. The reduction in the incidence of diabetes was directly related with changes in lifestyle.

References:

1. International Diabetes Institute (2001), *Australian Diabetes, Obesity and Lifestyle Study (AusDiab)*, International Diabetes Institute, Melbourne
2. Finnish Diabetes Prevention Study (2001) *The Finnish Diabetes Prevention Study*, Helsinki, Finland.

Impaired Glucose Tolerance

Aim

To provide people with impaired glucose tolerance and their loved ones with information that will assist them in making informed decisions about lifestyle modifications and self care to improve their health status.

Process objectives

The impaired glucose tolerance group education session will be:

- easily accessible for people
- an opportunity for people to ask questions concerning their health
- presented in a manner that is clearly understood by people diagnosed with impaired glucose tolerance and their significant others.
- presented with realistic goal expectations that participants will know what is the next step

Outcome objectives

At the end of the session the participants will be able to:

- identify 3 modifiable risk factors
- name one risk factor they will modify within the next week in order to improve their health
- verbalise a reason why it is important for them to modify this risk factor
- indicate the need to visit their doctor regularly for review of their risk factor status.

Possible strategies for the session

This package is designed for a suitably qualified health professional to present to community groups. The presenter may be a diabetes educator, diabetes resource nurse or a dietitian/nutritionist or an Aboriginal health worker with diabetes management knowledge.

Advertising could be via GPs and their practice staff, the local paper, community health centres etc.

The package could be presented in a 2 hour session, however it is ideally designed to be divided into 2 one hour sessions presented in a lecture or workshop format, with a coffee/tea break separating the sessions.

Session outline

Part 1

Welcome and introduction by speaker

Group introductions

You may want to ask participants some questions to get them chatting and feeling comfortable. For example:

- ask how participants learnt about the session?
- how many have impaired glucose tolerance?
- how many have other risk factors?
- how long have they been diagnosed with their impaired glucose tolerance or other relevant risk factors?

Session content:

- impaired glucose tolerance
- what is the diagnostic criteria?
- risks associated with IGT – diabetes and cardiovascular disease
- ways of reducing the risks
- healthy activity guidelines
- long term follow-up and liaison with GP
- healthy eating guidelines (explained in detail in next session).

Session Break

Part 2

Reconvene the group. Ask if people are happy to move on to next section, answer any questions.

Session content:

- introduction to main food groups – carbohydrates, protein, fat
- what is healthy eating and why is it important?

Specific topics:

- carbohydrates – sources and types
- protein
- fats – sources and types
- alcohol
- making changes – sustainability and realistic goals.

Resources

- suitable venue
- consider transport needs for your particular area
- overhead projector/power point equipment
- IGT presentation package
- handouts eg glucose intolerance pamphlet (TQEH, Diabetes Education Series), and low fat cooking tips
- healthy refreshments (try to encourage sponsorship for this – maybe a drug company, local council, community centre or group)
- a demonstration model of a partially blocked blood vessel may be of use. This could be made by using an old piece of pipe with a lump of putty or blue tack, stuck to the inside edge of the pipe.

Evaluation

Explain at the beginning of the session that you have evaluation questionnaire. You can ask participant to complete at the end of the talk.

The reason for the evaluation should be explained to the participants ie: this evaluation will monitor whether the objectives of this session have been met and will be a guide for future sessions. It helps us do a better job.

The participants should be assured their evaluation is anonymous.

References

Children's Health Development Foundation (1998) *Australian Guide to Healthy Eating*, Commonwealth Department of Health & Family Services, Canberra.

Diabetes Outreach (2001) *Healthy Eating & Diabetes Kit*, 3rd Edition, Diabetes Centre, The Queen Elizabeth Hospital, Adelaide.

Dietitians Association of Australia (Victoria Branch), Dietitians in Rehabilitation and Aged Care Interest Group (2005) *Healthy Eating, Healthy Ageing, pamphlet*.

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National Heart Foundation Guidelines (2001). Lipid Management Guidelines, *The Medical Journal of Australia*, Vol 175, supp Nov 5, pp 557-588

National Heart Foundation (2002) Ambulatory blood pressure monitoring; Position Statement, *The Medical Journal of Australia*, Vol 176, 17th June, pp 588-592.

Noakes, M., Clifton, P. (2005) *The CSIRO total wellbeing diet*, Penguin books Australia.

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Impaired Glucose Tolerance Evaluation

Date: _____

Please give us your feedback on today's session.

This evaluation is anonymous and your comments will help to improve our education courses.

Please circle your answers

1. Did you find the information easy to understand?

All of it Most of it Some of it None of it

Comment:

2. Did you get your questions answered?

All of it Most of it Some of it None of it

Comment:

3. Was there any topic you think the presenter should have talked about?

Yes No

Comment:

4. Following this session, what changes do you think you will try to make to your:

food intake? _____

lifestyle? _____

5. How important do you think it is to have regular check ups with your doctor?

Extremely Very Slight Not at all

Comment:

6. Overall, how would you rate today's session?

Excellent Good Satisfactory Unsatisfactory

7. Do you have any other comments you would like to make?

Thankyou for joining us today for completing this evaluation.

DIAGNOSIS

People in high-risk groups should be screened for undiagnosed type 2 diabetes.

The diagnosis of diabetes is made in one of the following three ways but each must be confirmed on another day unless obvious signs of high blood glucose or obvious symptoms are present:

- Symptoms of diabetes and a casual plasma glucose > 11 mmol/L (casual means any time of day regardless of time of least meal)
- Fasting plasma glucose ≥ 7.0 mmol/L
- 2-hour plasma glucose > 11 mmol/L during an oral glucose tolerance test (OGTT).

The OGTT is unnecessary to diagnose diabetes in people with an obviously elevated fasting or random plasma glucose. An OGTT should be performed in a person with an uncertain result. (See Fig.1).

The test is carried out after overnight fast, following three days of adequate carbohydrate intake (at least 150g per day). A 75g load of oral glucose is given and the diagnosis of diabetes can be made if venous plasma glucose level fasting is ≥ 7.0 mmol/L or 2 hour post glucose load is ≥ 11.1 mmol/L.

Glucose levels – fasting venous plasma: mmol/L

