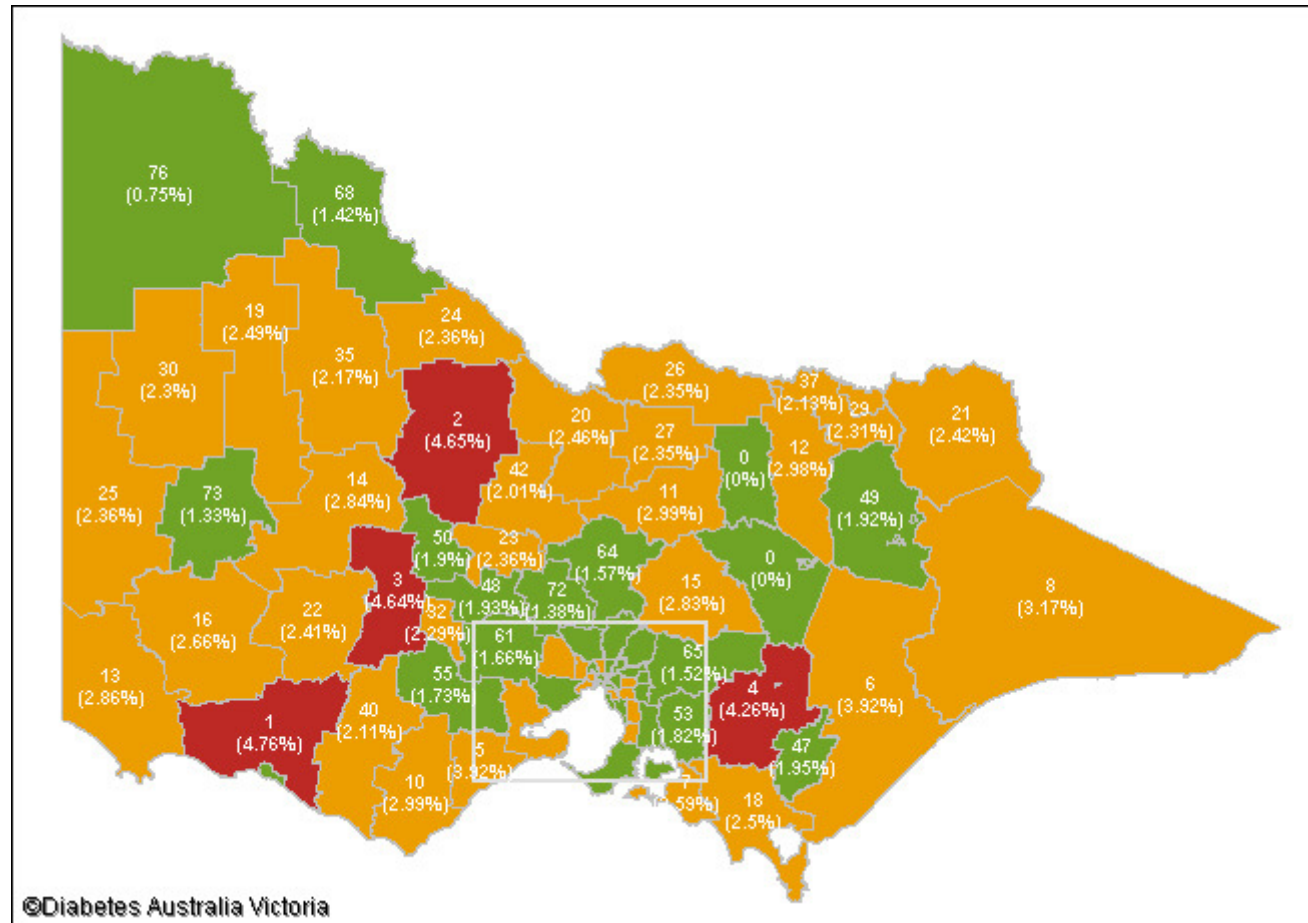




DIABETES PREVENTION AND GPS

Dr Ralph Audehm

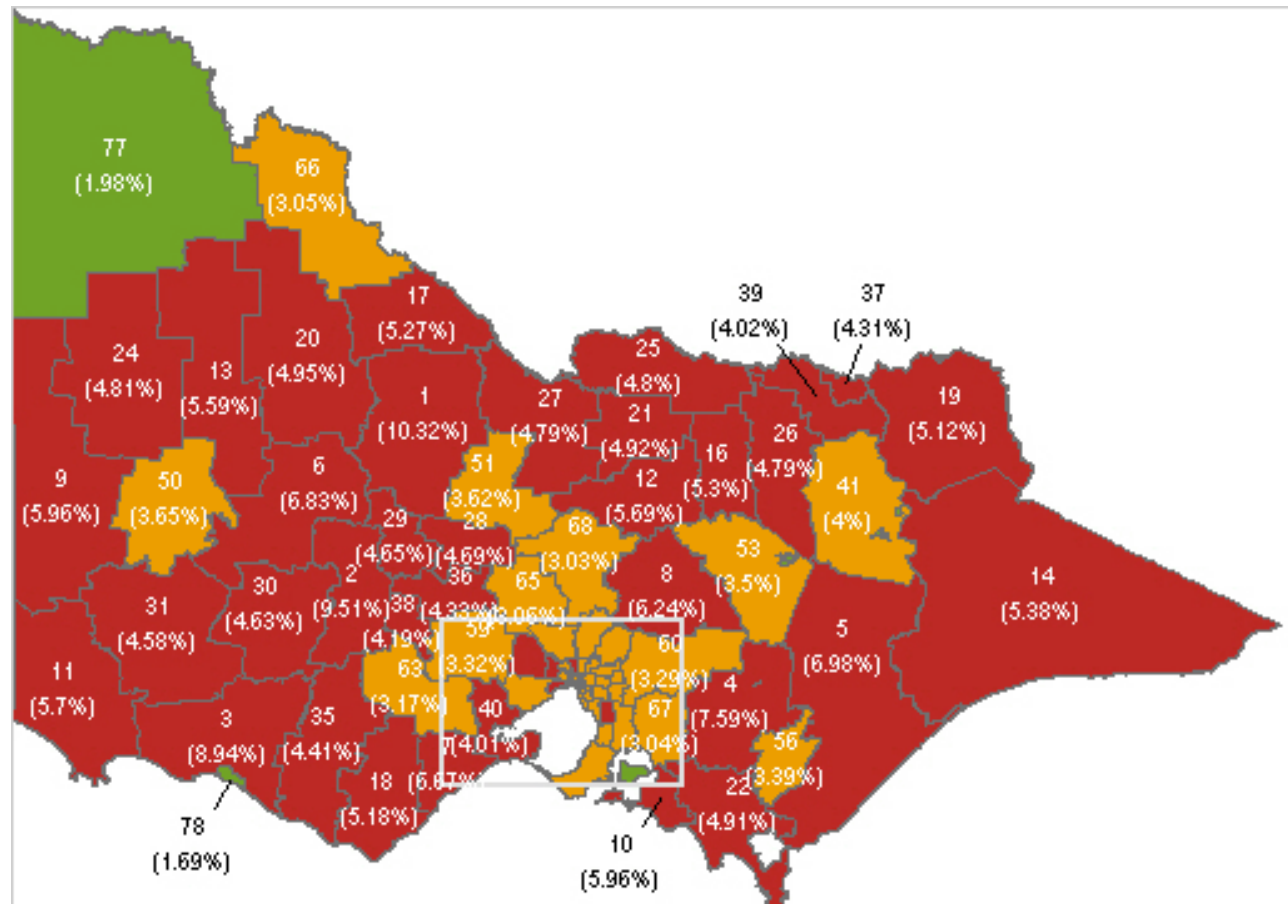
PREVALENCE OF DIABETES IN VICTORIA - 2001



4 Local
Council
s



PREVALENCE OF DIABETES IN VICTORIA - 2008



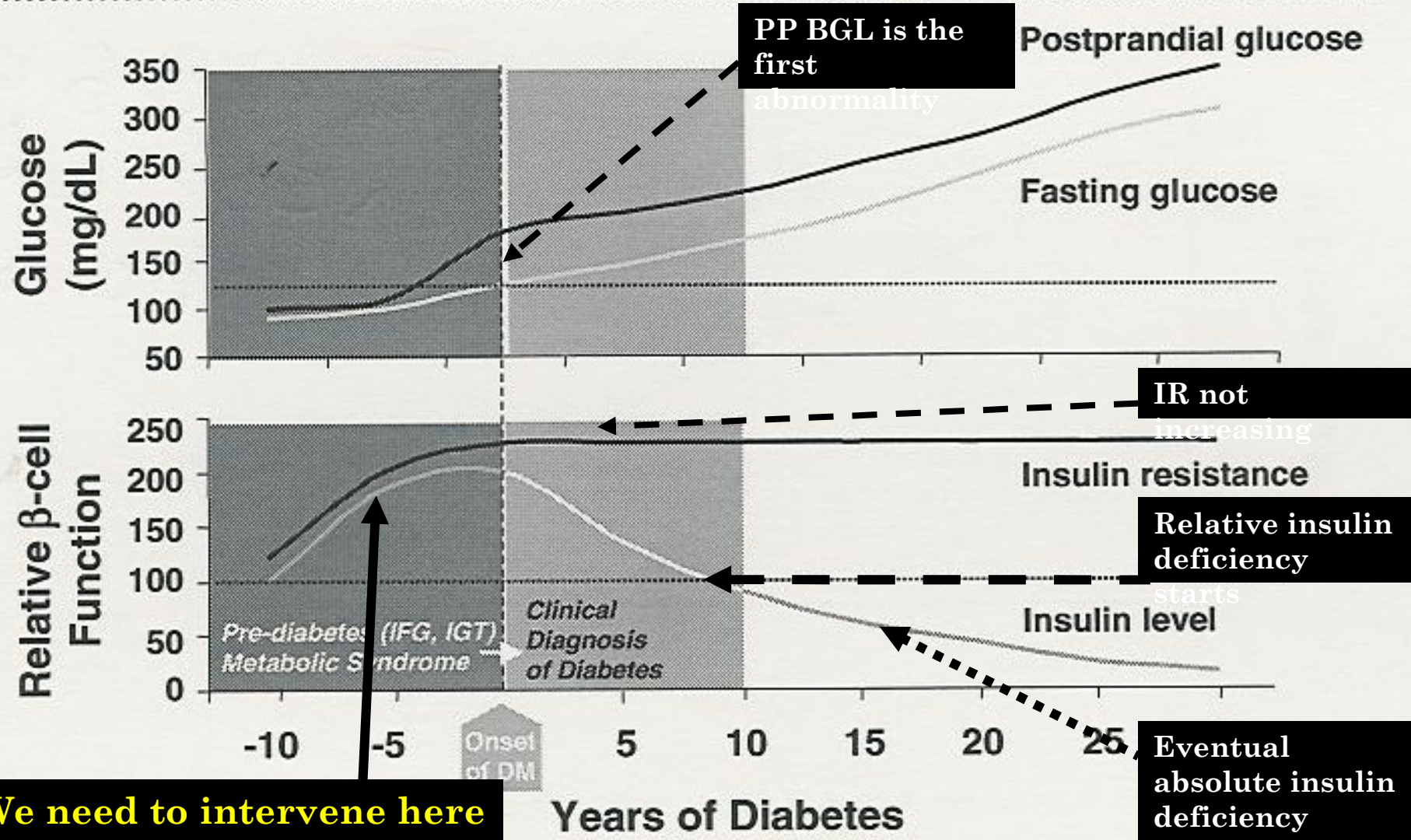
AGE BREAKDOWN

Group	No.	National Average
00-15	6,308	0.74%
16-20	5,830	0.68%
21-29	15,884	1.86%
30-39	41,832	4.90%
40-49	84,720	9.92%
50-59	152,987	17.91%
60-69	215,724	25.25%
70-79	192,786	22.57%
80-89	115,503	13.52%
90+	22,751	2.66%

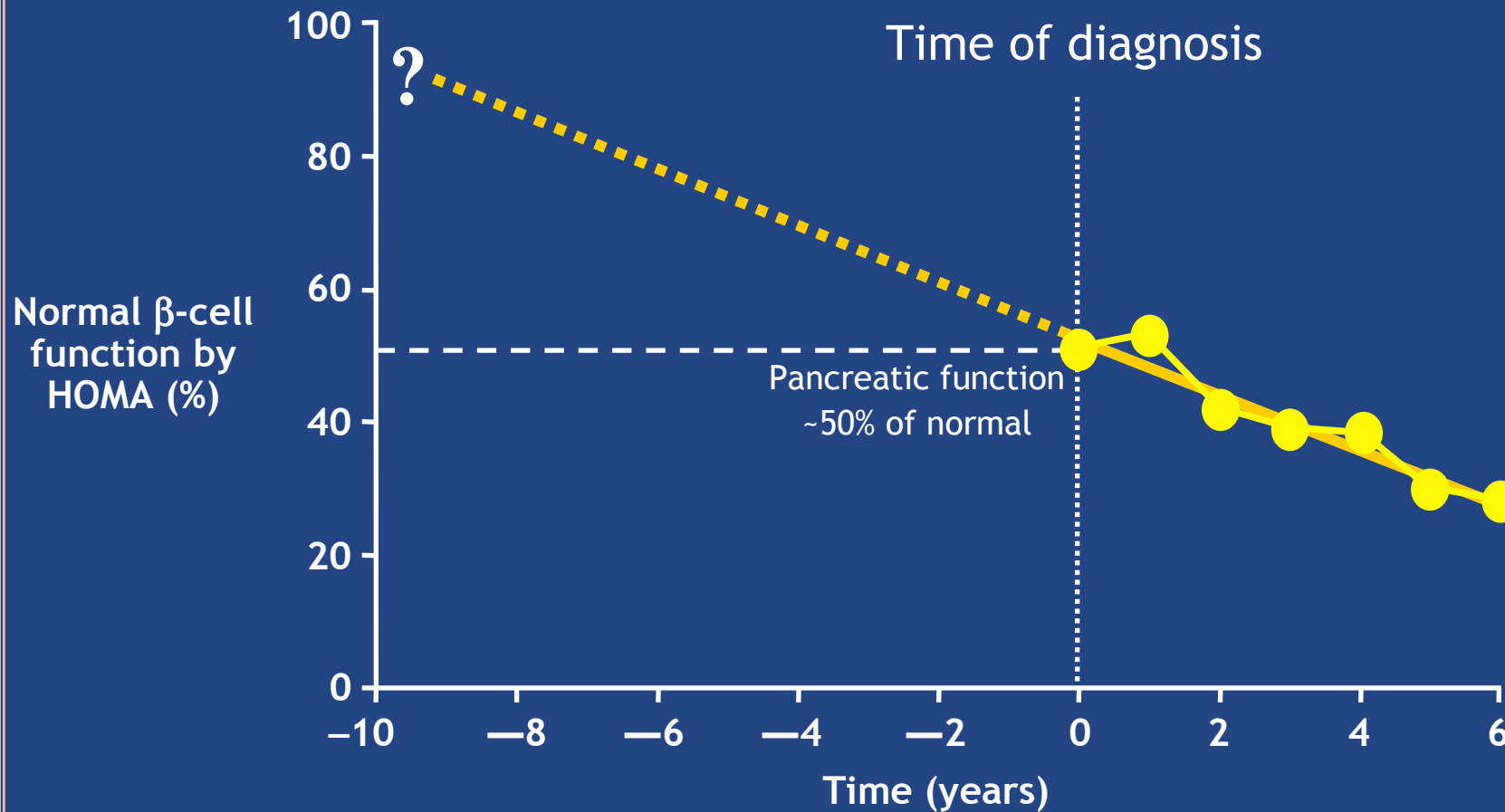
} 79%



RELATIONSHIP BETWEEN INSULIN RESISTANCE, INSULIN DEFICIENCY AND GLYCAEMIA



DECREASING β -CELL FUNCTION AS PART OF THE PROGRESSION OF T2DM



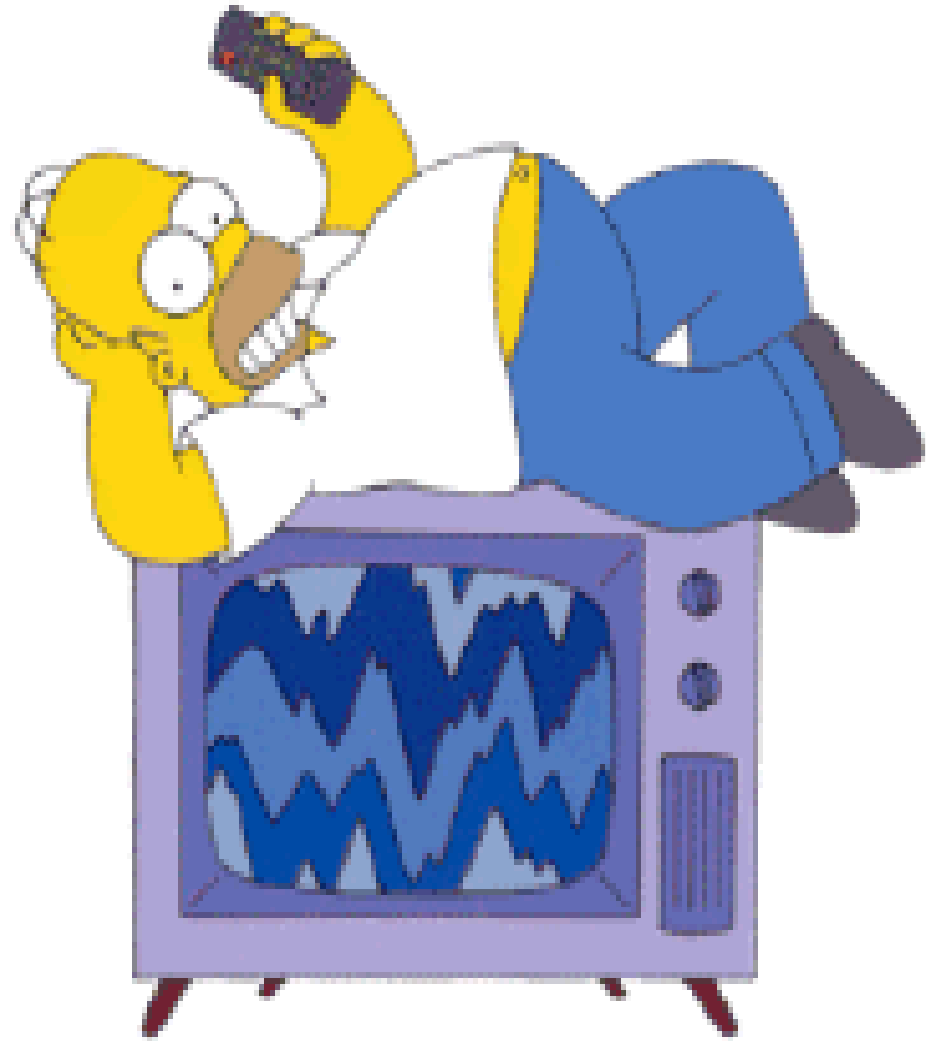
HOMA=homeostasis model assessment
Adapted from Holman RR. Diabetes Res Clin Pract 1998;40(suppl 1):S21-5.

***IN WESTERN
COUNTRIES AROUND
90% OF TYPE 2
DIABETES IS
ATTRIBUTABLE TO
WEIGHT GAIN.***

(DIABETES VOICE MAY 2003)

***60% OF
AUSTRALIANS AGED
25 OR
OVER ARE
OVERWEIGHT AND
20% ARE OBESE***

(Australian Diabetes, Obesity and Lifestyle Study 2002).

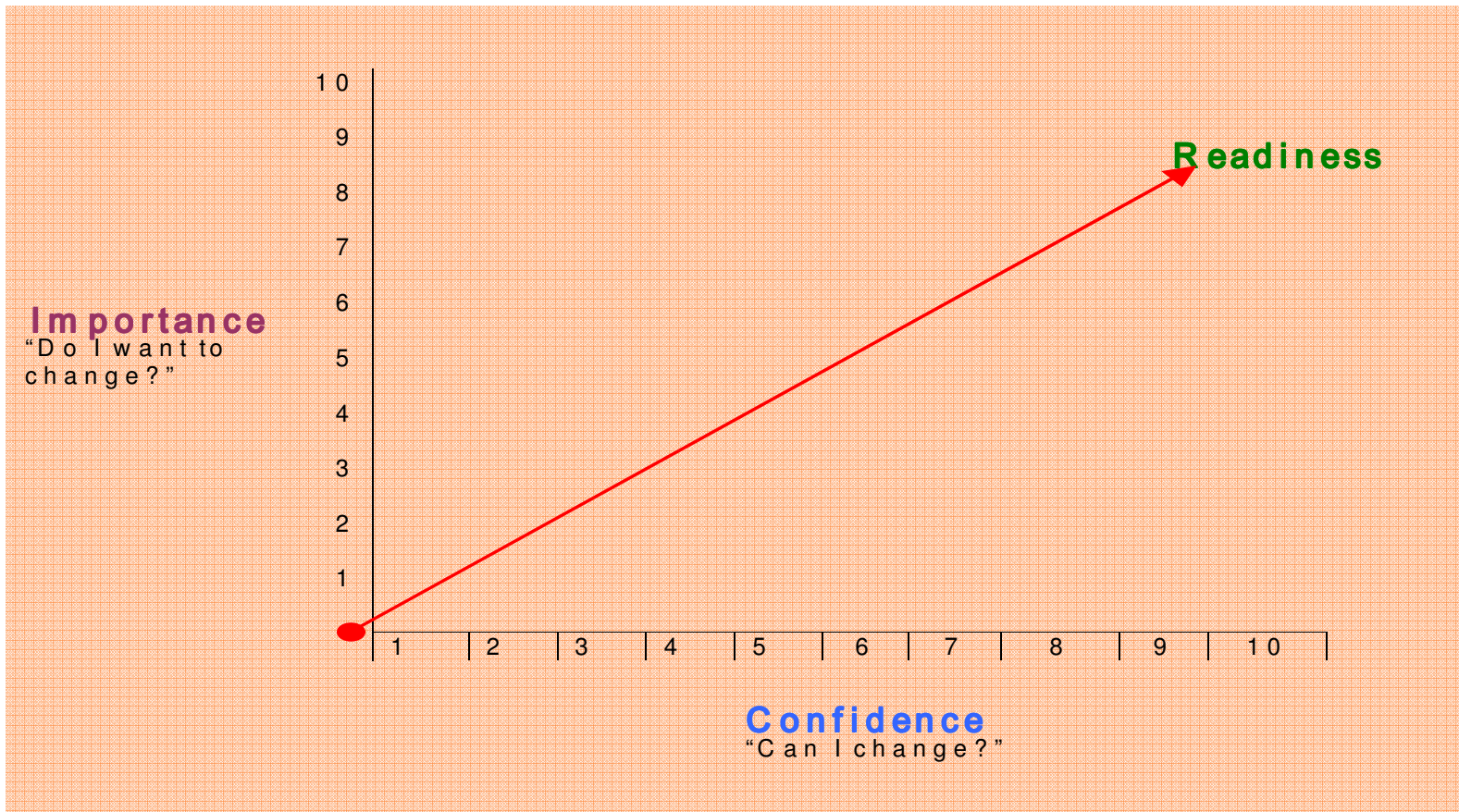


SEDENTARY DEATH SYNDROME (SeDS)

IGT/Type 2 diabetes
Insulin resistance
Central obesity
- Plasma cholesterol
Hypercoagulability
Hypertension
Resting tachycardia
Physical inactivity
Weak skeletal muscles



Importance-Confidence-Readiness



SCREENING

Why screen?

Diagnose undiagnosed



1. Your age group?

Under 35 years	0 points
35 – 44 years	2 points
45 – 54 years	4 points
55 – 64 years	6 points
65 years or over	8 points

2. Your gender?

Female	0 points
Male	3 points

3. Ethnicity/Country of birth:

3a. Are you of Aboriginal, Torres Strait Islander, Pacific Islander or Maori descent?

No	0 points
Yes	2 points

3b. Where were you born?

Asia (including the Indian sub-continent), Middle East, North Africa, Southern Europe	2 points
Other	0 points

4. Have either of your parents, or any of your brothers or sisters been diagnosed with diabetes (type 1 or type 2)?

No	0 points
Yes	3 points

5. Have you ever been found to have high blood glucose (sugar) (for example, in a health examination, during an illness, during pregnancy)?

No	0 points
Yes	6 points

6. Are you currently taking medication for high blood pressure?

No	0 points
Yes	2 points

7. Do you currently smoke cigarettes or any other tobacco products on a daily basis?

No	0 points
Yes	2 points

8. How often do you eat vegetables or fruit?

Everyday	0 points
Not everyday	1 point

9. On average, would you say you do at least 2.5 hours of physical activity per week (for example, 30 minutes a day on 5 or more days a week)?

Yes	0 points
No	2 points

10. Your waist measurement taken below the ribs (usually at the level of the navel)?

For those of Asian or Aboriginal or Torres Strait Islander descent:

Men	Women	
Less than 90 cm	Less than 80 cm	0 points
90 – 100 cm	80 – 90 cm	4 points
More than 100 cm	More than 90 cm	7 points

For all others:

Men	Women	
Less than 102 cm	Less than 88 cm	0 points
102 – 110 cm	88 – 100 cm	4 points
More than 110 cm	More than 100 cm	7 points

Add up your score

Your risk of developing type 2 diabetes within 5 years*:

5 or less: Low risk
Approximately one person in every 100 will develop diabetes.

6–14: Intermediate risk
For scores of 6–8, approximately one person in every 50 will develop diabetes.
For scores of 9–14, approximately one person in every 20 will develop diabetes.

15 or more: High risk
For scores of 15–19, approximately one person in every seven will develop diabetes.
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If you scored 15 or more points, it is important that you discuss your score with your doctor.

*The overall score may overestimate the risk of diabetes in those aged less than 25 years and underestimate the risk of diabetes in people of Aboriginal and Torres Strait Islander descent.

The Australian Type 2 Diabetes Risk Assessment Tool was originally developed by the International Diabetes Institute on behalf of the Australian, State and Territory Governments as part of the COAG Diabetes reducing the risk of type 2 diabetes initiative.

UNDIAGNOSED

- For every PWD diagnosed another undiagnosed
- Ausdiab 1 and 2
- 10% of newly diagnosed already have complications
- 1 in 100 of newly diagnosed will have vision threatening retinopathy!



Diabetes is serious:

- ✓ Commonest cause of blindness in working age
- ✓ Commonest reason for dialysis
- ✓ Commonest reason for amputations
- ✓ Major cause of heart disease and stroke.



AUSDIAB MORTALITY – IFG, IGT

- The risk of death was increased in impaired fasting glucose (HR 1.6, 95% CI 1.0 to 2.4)
- and impaired glucose tolerance (HR 1.5, 95% CI 1.1 to 2.0)
- CVD accounted for 65% of all deaths in dysglycaemic group – IFG (HR 2.5, 95% CI 1.2 to 5.1) not IGT

Risk of Cardiovascular and All-Cause Mortality in Individuals With Diabetes Mellitus, Impaired Fasting Glucose, and Impaired Glucose Tolerance: The Australian Diabetes, Obesity, and Lifestyle Study (AusDiab)



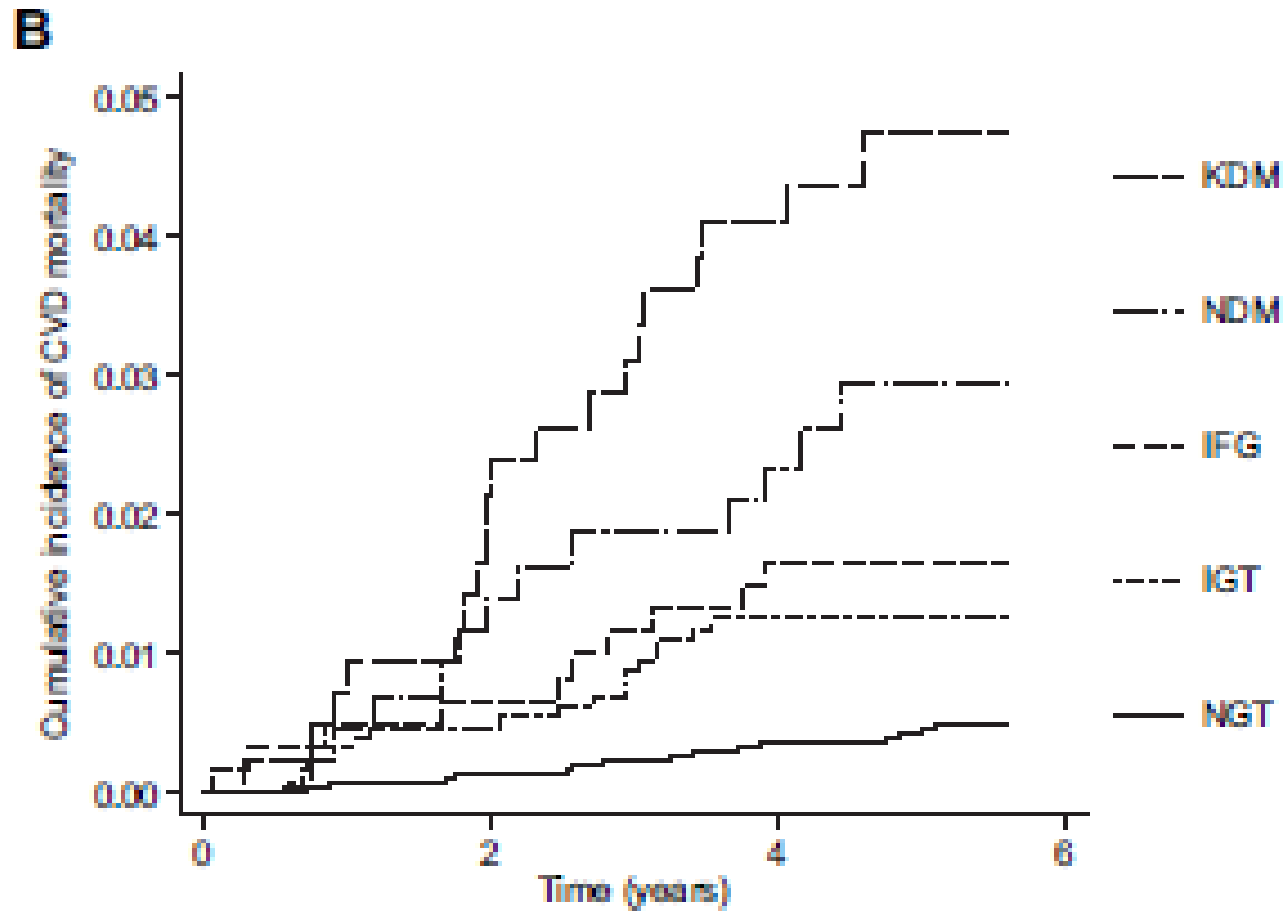
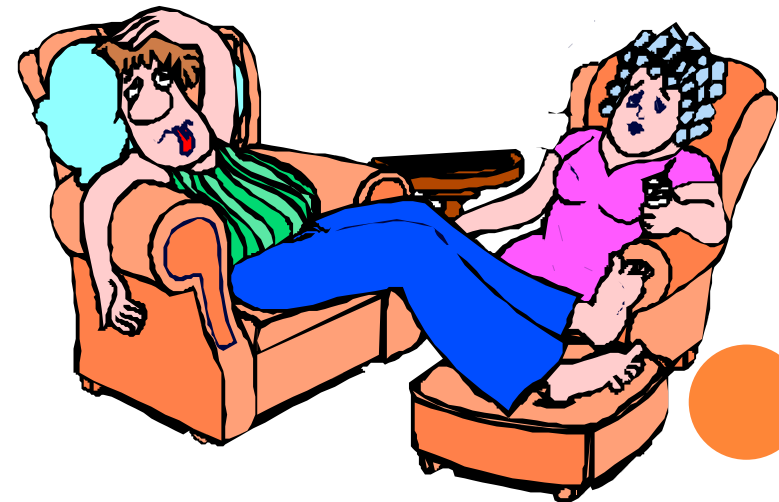


Figure 2. Unadjusted cumulative incidence of all-cause mortality (A) and CVD mortality (B) according to glucose metabolism categories: the AusDiab study.



SIGNS AND SYMPTOMS OF DM

- Excessive urination
- Thirst
- Recurrent infections / Thrush
- Tiredness / Drowsiness
- Weight loss
- Blurred vision
- Hyperglycaemia
- Dehydration
- Urinary ketones
- Decreased blood pH
- Glycosuria



COMMONEST SYMPTOM OF DIABETES?



○ Nothing



SCREENING

Why screen?

Prevent diabetes in those at risk



1. Your age group?

Under 35 years	0 points
35 – 44 years	2 points
45 – 54 years	4 points
55 – 64 years	6 points
65 years or over	8 points

2. Your gender?

Female	0 points
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3. Ethnicity/Country of birth:

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EXERCISE & WEIGHT LOSS?

How to weigh yourself and get the most accurate result.
I can't believe I have been doing it wrong all these years!



We must get the word out!



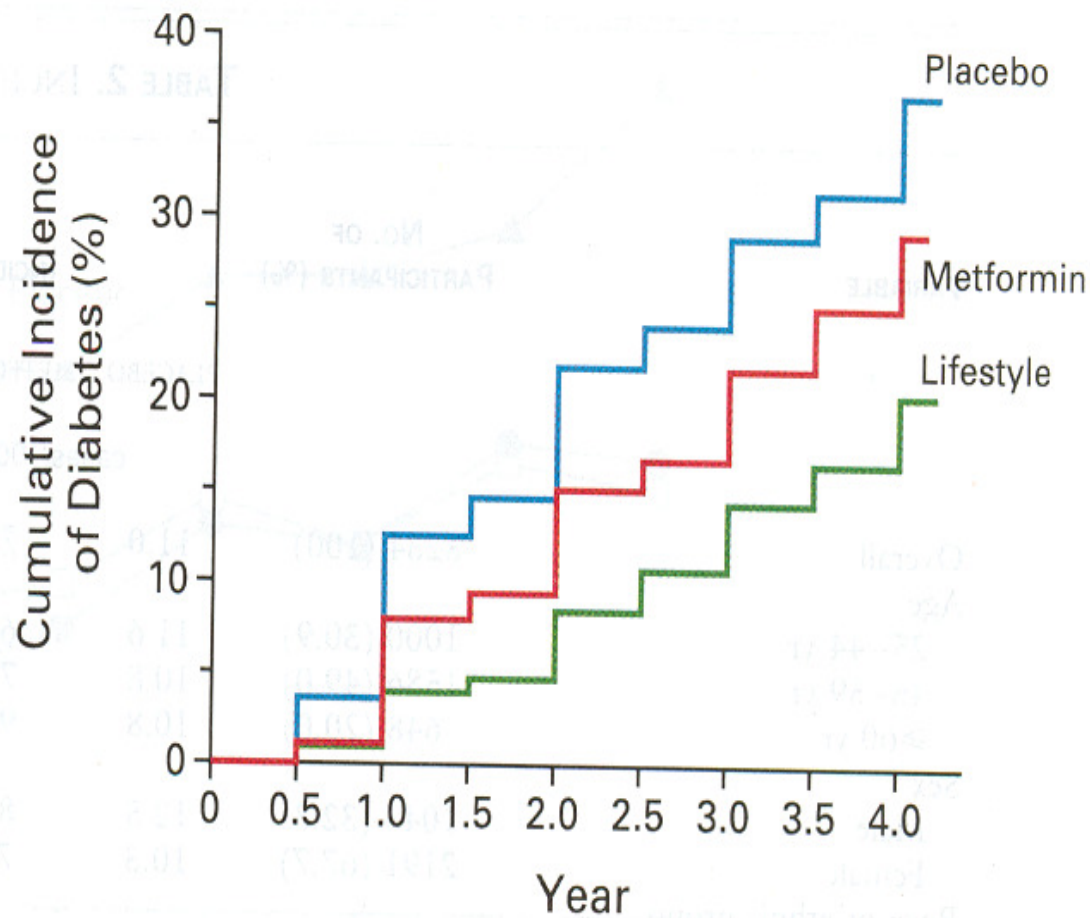


Figure 2. Cumulative Incidence of Diabetes According to Study Group.

The diagnosis of diabetes was based on the criteria of the American Diabetes Association.¹¹ The incidence of diabetes differed significantly among the three groups ($P < 0.001$ for each comparison).



FINISH DIABETES PREVENTIONS STUDY

- LOW year 1 was 4.2kg vs 0.8kg in the control group
- LOW year 2 was 3.5kg vs 0.8kg in the control group
- The cumulative incidence of diabetes after four years was 11 percent in the intervention group and 23 percent in the control group. (58% reduction)
- Directly associated with changes in lifestyle



TABLE 3. SELF-REPORTED CHANGE IN DIETARY AND EXERCISE HABITS DURING THE FIRST YEAR OF THE INTERVENTION, ACCORDING TO TREATMENT GROUP.*

VARIABLE	INTERVENTION	CONTROL	P VALUE†
	GROUP (N=253)	GROUP (N=247)	
	% of subjects		
Decreased consumption of fat	87	70	0.001
Changed the quality of fat	70	39	0.001
Increased consumption of vegetables	72	62	0.01
Decreased consumption of sugar	55	40	0.001
Decreased consumption of salt	59	50	0.03
Decreased consumption of alcohol	26	23	0.43
Increased exercise‡	36	16	0.001

TABLE 4. SUCCESS IN ACHIEVING THE GOALS OF THE INTERVENTION BY ONE YEAR, ACCORDING TO TREATMENT GROUP.*

GOAL	INTERVENTION GROUP	CONTROL GROUP	P VALUE†
	% of subjects		
Weight reduction >5%	43	13	0.001
Fat intake <30% of energy intake	47	26	0.001
Saturated-fat intake <10% of energy intake	26	11	0.001
Fiber intake \geq 15 g/1000 kcal	25	12	0.001
Exercise >4 hr/wk‡	86	71	0.001

THE CHALLENGE

- Systematically identify those at risk
- Assess
- Advise
- Refer



The Australian Type 2 Diabetes Risk Assessment Tool (AUSDRISK)

- | | | | | | | | | | | | | | | | | | | | | | | | | | |
|--|---|------------|--------------|--|-----------------|-----------------|----------|-------------|------------|----------|------------------|-----------------|----------|------------|--------------|--|------------------|-----------------|----------|--------------|-------------|----------|------------------|------------------|----------|
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| Men | Women | | | | | | | | | | | | | | | | | | | | | | | | |
| Less than 90 cm | Less than 80 cm | 0 points | | | | | | | | | | | | | | | | | | | | | | | |
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Add up your score

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Risk over 5 years

14 > < 20 - 1 in 7

20 or more - 1 in 3



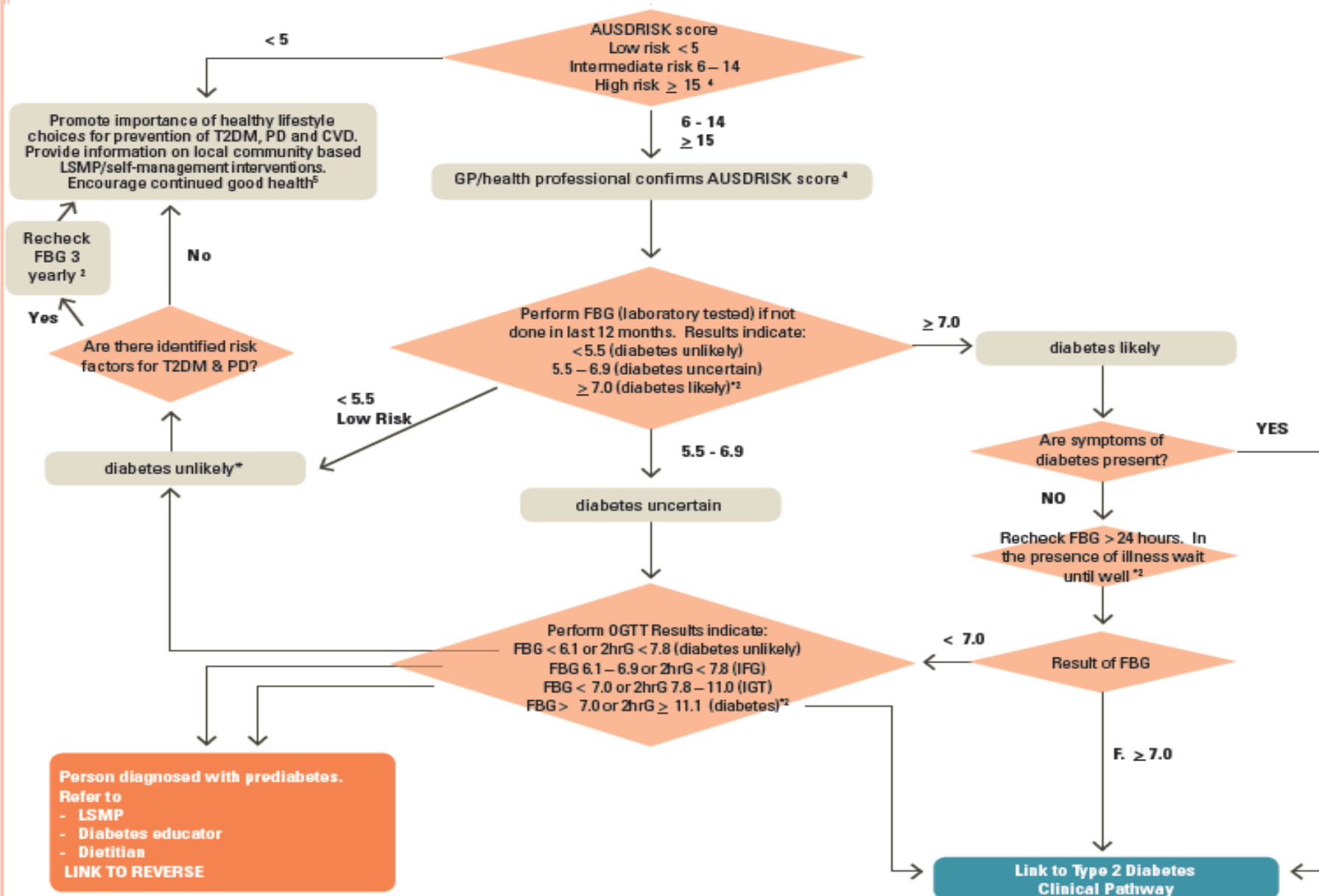
GROUPS NOT REQUIRING RISK ASSESSMENT

(IN REALITY NOT PRACTICE ☺)

- Gestational diabetes (50% lifetime risk)
- Heart disease
- PCOS
- IFG/IGT
- Low prevalence psychiatric disorders

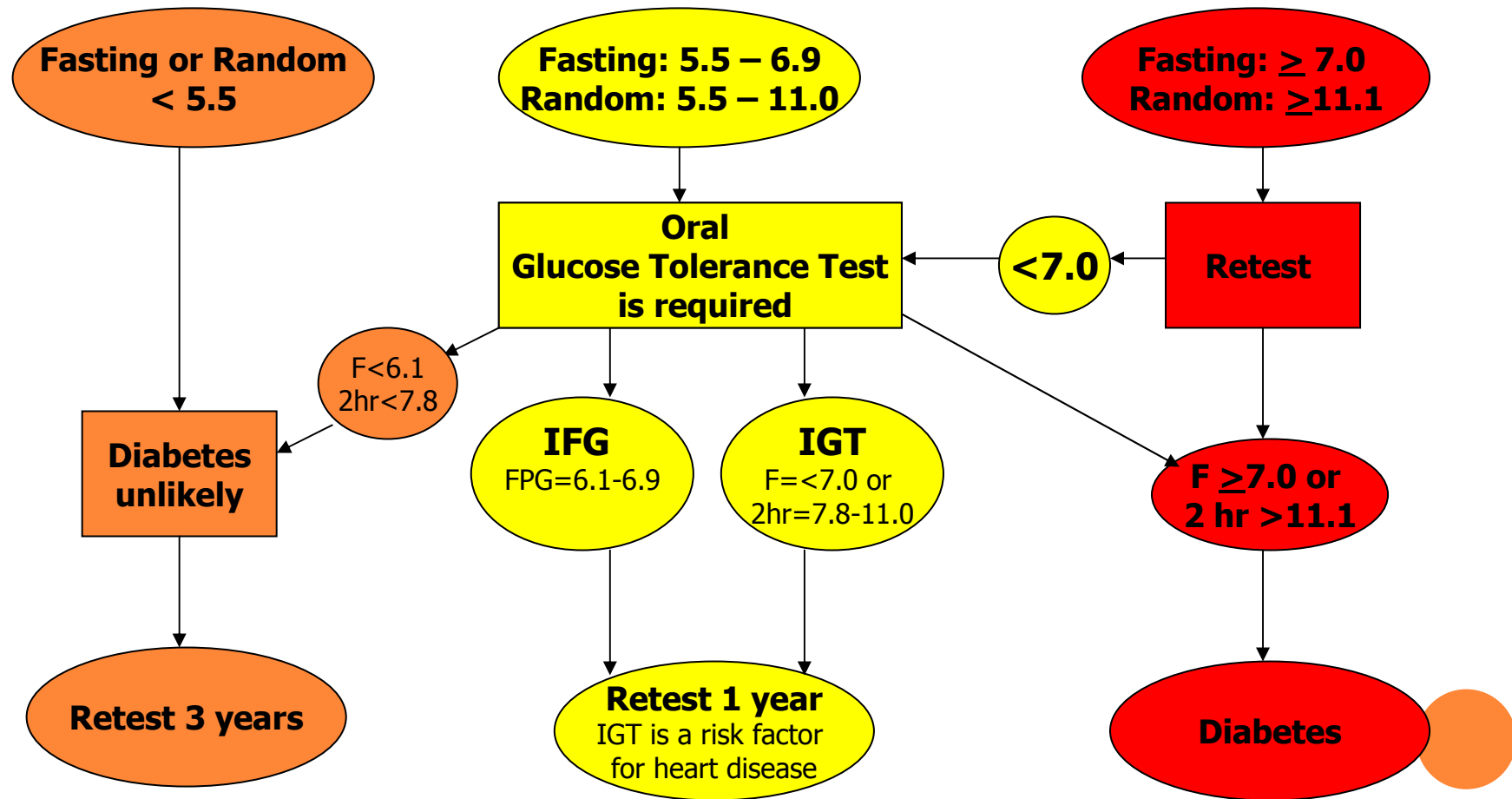


Confirming risk



SCREENING & DIAGNOSIS GUIDELINES*

Diagnosis must always be made on Venous Plasma in a laboratory



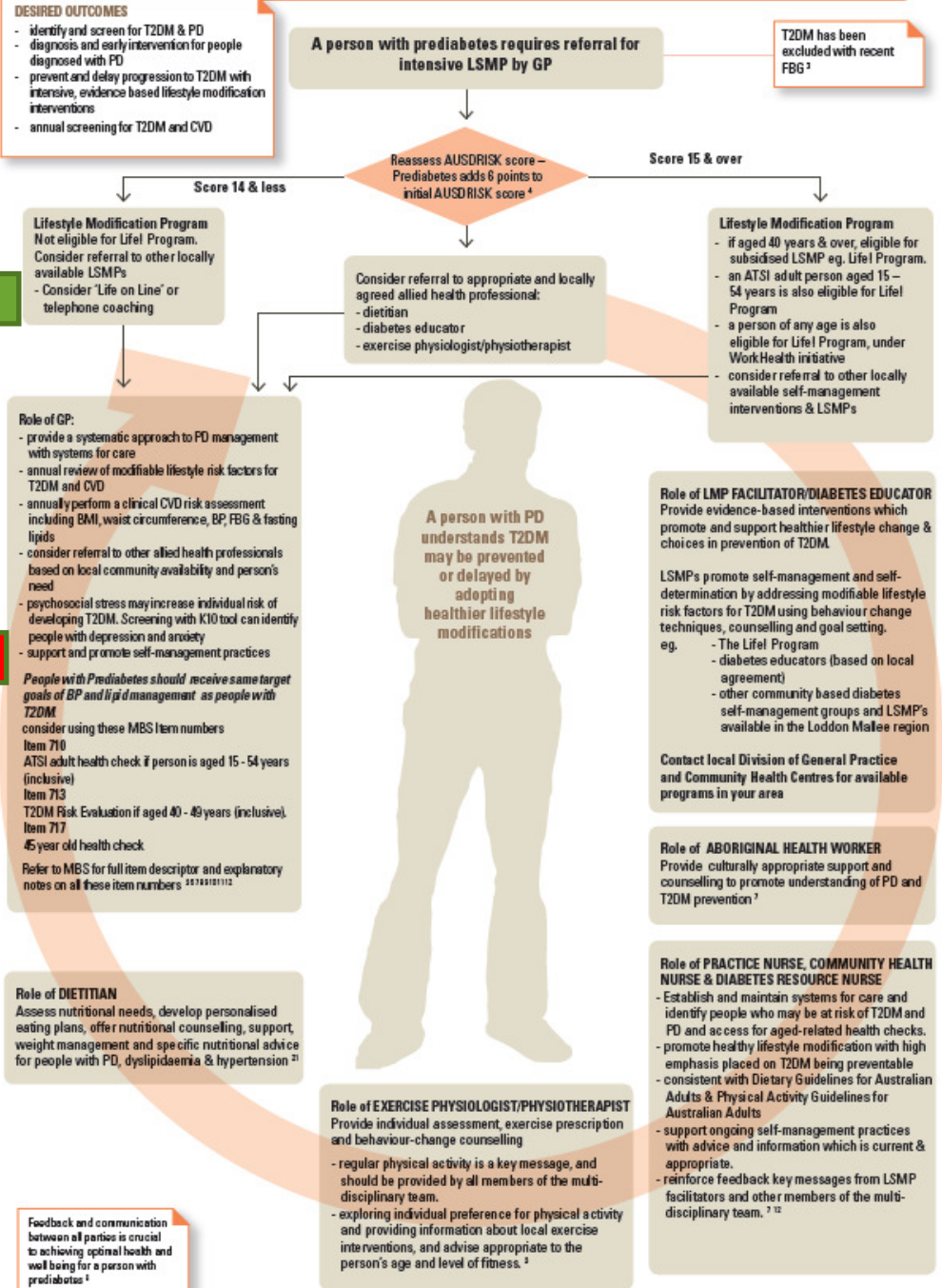
Good team approach to care

Evidence

annual review of modifiable lifestyle risk factors for T2DM and CVD
 annually perform a clinical CVD risk assessment including BMI, waist circumference, BP, FBG & fasting lipids

At least!

Prediabetes Ongoing Self-Management Pathway



BARRIERS

- Group based program
- 40-49 after hours sessions required
- Access - low attendance to GPs
- Seriousness
- Salience



HOW TO DO IT?

- Search your database for IFG & IGT
- Use the pen tool
- Call in patients 5 per week
- Use practice nurses to assess and advise
- Use Lifescripts/ Motivational interviewing to motivate
- Make diabetes risk assessment part of every care plan



DIABETES PREVENTION

- 713
- 40-49 yo
- High risk of diabetes according to Ausdrisk (≥ 15)
- Risk must be done before visit
- Review patients' risk factors and instigate early interventions eg LMP

