

Type 2 Diabetes & Exercise for ABORIGINAL AND TORRES STRAIT ISLANDER POPULATIONS

Using exercise in the treatment of type 2 diabetes (T2DM) for your Aboriginal and Torres Strait Islander Patients

Benefits of Exercise in T2DM Treatment:

- Exercise can improve glycemic control by lowering blood glucose levels and increasing insulin sensitivity
- Physical activity can reduce the risk of cardiovascular disease which is higher for T2DM patients
- Long term complications of T2DM such as neuropathy, retinopathy, and nephropathy can be delayed or prevented with regular exercise
- Exercise can improve social and emotional well-being especially for patients with chronic conditions



Precautions in starting an exercise program

Exercise is Medicine (EIM) Australia recommends being mindful of the following points before starting a T2DM patient on an exercise program

- **Low blood glucose:** Hypoglycemia can occur in T2DM patients, although rarely. The combination of exercise and diabetic medications may decrease blood glucose levels to a dangerous level. Educating your patients about monitoring their glucose and warning symptoms can help prevent hypoglycemic episodes from occurring
- **Risk of cardiac events:** Remaining inactive usually outweighs the risk of a cardiac event at the onset of regular exercise, but T2DM patients are at higher risk for cardiovascular disease. Patients with additional risk factors such as age, smoking, or high cholesterol as well as the desire to exercise vigorously should consult a General Practitioner (GP) before beginning an exercise program
- **Peripheral neuropathy:** This is a later stage complication of T2DM resulting in diminished sensation in the feet. Appropriate footwear, regular foot inspection, and low impact exercises should be incorporated in exercise programs for patients with peripheral neuropathy to prevent the cause and progression of infections going unnoticed.

EIM exercise recommendations for all T2DM patients

TYPE OF EXERCISE	INTENSITY	DURATION	FREQUENCY
Aerobic exercise (for heart and lung fitness)	Moderate Vigorous	Total of 210 min per week Total of 125 min per week	On at least 3 days a week with no more than two consecutive days without exercising
Resistance training (for muscle and bone strength)	Moderate to vigorous	60 minutes per week (included in total above)	2 or more times per week (2-4 sets of 8-10 repetitions)

Exercise recommendations for Aboriginal and Torres Strait Islander populations:

- Group exercise may be more effective than individual exercise plans in increasing physical activity in Aboriginal and Torres Strait Islander people
- Gender specific exercise groups may have better uptake than mixed groups
- Refer patients to group exercise opportunities or team based sports in your community
- If concerned about exercise safety, consult a general practitioner or an accredited exercise physiologist

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How to spot patients at high risk for T2DM

Waist Circumference (WC) measurements

- Visceral fat is more predictive of a patient developing T2DM than fat distributed on a patient's extremities
- WC provides a better measurement of visceral fat than Body Mass Index (BMI)
- Men with WCs greater than 102 cm are at high risk for T2DM
- Women with WCs greater than 88cm are at high risk T2DM

Race

- Aboriginal and Torres Strait Islander patients are 3.3x more

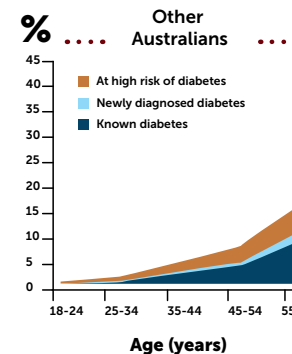
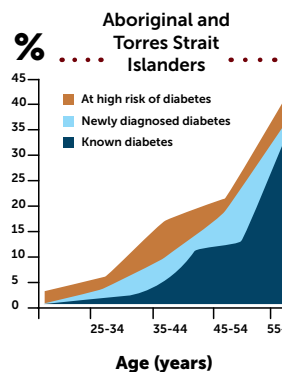
likely to have T2DM than other Australians

Age

- At age 35, Australians' risk for T2DM increases as they age. As seen in the chart, Aboriginal and Torres Strait Islander patients can present even younger with T2DM

Lifestyle

- Physically inactive and poor dietary habits put patients at higher risk of T2DM. Counseling your patients on how to make small changes with exercise and food choices could lead to a healthier lifestyle



Age-specific prevalence rates of diabetes and those at high risk among people aged 18 and over, by indigenous status, 2012-2013

Tools for Assessing Your Patient's Risk of T2DM:

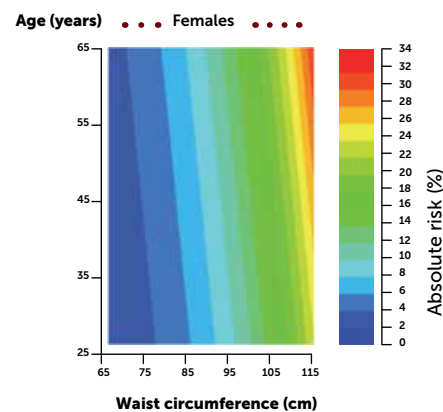
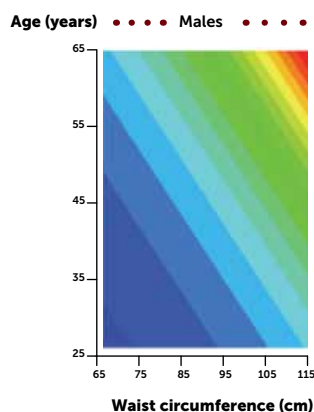
5 year risk of T2DM

- Australian Type 2 Diabetes Risk tool (AUSDRISK): www.health.gov.au/preventionoftype2diabetes
- A questionnaire accessing risk factors for T2DM for all Australians

10 year risk of T2DM

- This tool was developed based off T2DM statistics in an Aboriginal community and could possibly be more specific to Aboriginal people
- Assess risk from the patient's gender, age, and waist circumference

Below: Gender-specific absolute risk (%) of type 2 diabetes, using waist circumference and age (years)



Right: Thumbnail image of Australian Type 2 Diabetes Risk tool



References and further information:

- Exercise is Medicine Australia: <http://exerciseismedicine.org.au/>
- Find an Accredited Exercise Physiologist: <http://essa.org.au>
- Australian Institute of Health and Welfare 2015. The health and welfare of Australia's Aboriginal and Torres Strait Islander peoples 2015. Cat. no. IHW 147. Canberra: AIHW.
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- The Department of Health. Australian Type 2 Diabetes Risk Assessment Tool (AUSDRISK). Australian Government, 2013. Website.
- Adegbija O, Hoy W, Wang Z (2015). Predicting Absolute Risk of Type 2 Diabetes Using Age and Waist Circumference Values in an Aboriginal Australian Community. PLoS ONE 10(4): e0123788. Doi: 10.1371/journal.pone.0123788
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