The Australian type 2 Diabetes Risk (AUSDRISK) assessment tool’s predicative capacity needs to be refined to determine appropriate scoring for persons with spinal cord injury.

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1. **Your age group**
   - Under 20 years: 0 points
   - 20 - 44 years: 2 points
   - 45 - 64 years: 4 points
   - 65+ years or over: 8 points

2. **Your gender**
   - Female: 0 points
   - Male: 2 points

3. **Your ethnicity/country of birth**
   - Are you of Aboriginal, Torres Strait Islander, Pacific Islander or Maori descent?
     - No: 0 points
     - Yes: 2 points
   - Australia: 0 points
   - Asia (excluding the Indian sub-continent), Middle East, North Africa, Southen Europe: 2 points
   - Other: 2 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: 2 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: 2 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?**
   - Every day: 0 points
   - Not every day: 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, and while standing)**
    - Waist measurement (cm): 0 points
      - Men: 0 points
        - Less than 90 cm: 0 points
        - 90 - 100 cm: 1 point
        - 100 - 115 cm: 2 points
        - More than 115 cm: 3 points
      - Women: 0 points
        - Less than 80 cm: 0 points
        - 80 - 88 cm: 1 point
        - 88 - 99 cm: 2 points
        - More than 99 cm: 3 points
    - Add up your points 0 points

Your risk of developing type 2 diabetes within 5 years:

- 0 or less: Low risk
- 0 - 9: Intermediate risk
- 10 or more: High risk

To reduce your risk, consider:

- Weight management
- Physical activity
- Healthy diet
- Quit smoking
- Stress management
- Regular health check-ups

If you scored 0-11 points in the ASSESSMENT, your risk is increased for type 2 diabetes. Discuss your score and your results with your doctor. Improving your lifestyle may help reduce your risk of developing type 2 diabetes.

If you scored 12 points or more in the ASSESSMENT, you may have undiagnosed type 2 diabetes or be at high risk of developing the disease. See your doctor about having a fasting blood glucose test. Act now to prevent type 2 diabetes.
Findings:

Of the 79 participants, 81% were male. The majority had complete neurological levels of injury within the cervical region. The mean age was 53 years with a mean of 23 years since injury.

The highest risk factors identified on the AUSDRISK were:
- large waist circumferences - 81% had the maximum points score
- insufficient exercise - 60%
- taking anti hypertensive medication - 21%

Neurological levels seem to have made no difference in predicting diabetes.

There was a positive correlation between length of time since injury and an AUSDRISK high risk score.
Comparison of HbA1c % and mmol/mol for risk classification (AUSDRISK)

The AUSDRISK classified 53 persons (67%) at high risk of developing diabetes, yet the 2 highest HbA1C results on that day were 6.3% and 6.8%; all other persons were below 6%.

<table>
<thead>
<tr>
<th>Characteristic</th>
<th>AUSDRISK low/intermediate</th>
<th>AUSDRISK high</th>
<th>P level*</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>&lt; 12 points (n = 26)</td>
<td>≥ 12 points (n = 53)</td>
<td></td>
</tr>
<tr>
<td>HbA1c %</td>
<td>5.2</td>
<td>5.38</td>
<td>.026</td>
</tr>
<tr>
<td>HbA1c mmol/mol</td>
<td>33.08</td>
<td>35.08</td>
<td>.022</td>
</tr>
</tbody>
</table>

*T-test

Limitation- due to the small sample size and not being a powered study, the findings cannot be generalised
Recommendations:

• Due to the spinal cord injured population being recognized as having 2-fold increased odds of type 2 diabetes, independent of known risk factors, a policy of early and continued screening for diabetes in this vulnerable population is recommended.

• Given the strong association between spinal cord injury and diabetes, rather than screening with AUSDRISK…. an annual HbA1c is a safer bet to assess the severity of diabetes in this patient population. Any results above acceptable levels could then be referred on for fasting blood glucose testing.

• All participants thought it very convenient to have their HbA1C analysed at home, and it may be that Point of Care equipment brought to the home, is the way forward.

• Although Medicare rebate for GPs for annual HbA1C in persons at-risk is now approved
THIS VALIDATION PROJECT HAS BEEN PUBLISHED (2016)

A PROSPECTIVE COMPARATIVE STUDY OF THE AUSTRALIAN TYPE 2 DIABETES RISK ASSESSMENT TOOL WITH A HAEMOGLOBIN A1C ASSAY IN PERSONS WITH A SPINAL CORD INJURY.
JANNINGS W, FRY M, GALLAGHER R. AJAN 33, 3 P13-20

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