

# POSITIVE CARDIOMETABOLIC HEALTH FOR ADOLESCENTS WITH AN INTELLECTUAL DISABILITY: an early intervention framework

## ADAPT YOUR PRACTICE while addressing **STANDARD TARGETS**<sup>1</sup>

Plan for: communication adjustments; engagement with support networks; extra time; consent; teamwork.

Activity	Diet, lifestyle weight/waist	Socioeconomic resources	Blood pressure	Glucose regulation	Fasting blood lipids	Psychotropic prescription
<ul style="list-style-type: none"> <li>» Physical activity: (e.g. &gt;60 mins per day)</li> <li>» Screen-based activities: &lt;2 hrs per day</li> </ul>	<ul style="list-style-type: none"> <li>» Non-smoker, balanced diet, no alcohol or other drug use</li> <li>» BMI<sup>2</sup>: ≤85th centile</li> <li>» Waist: height ratio: &lt;0.5</li> </ul>	<ul style="list-style-type: none"> <li>» Socioeconomic status is associated with cardiometabolic health</li> <li>» Ensure adequate access to housing, healthcare, transportation, education and employment opportunities</li> </ul>	<ul style="list-style-type: none"> <li>» &lt;90th centile</li> <li>» Use appropriate cuff size for arm circumference</li> </ul>	<ul style="list-style-type: none"> <li>» For most: FPG ≤5.5 mmol/L; HbA1c &lt;42 mmol/mol (6.0%)</li> <li>» For people with diabetes: HbA1c &lt;58 mmol/mol (7.5%)</li> <li>» <i>For aversion to venepuncture see over</i></li> </ul>	<ul style="list-style-type: none"> <li>» Total Chol &lt;4.4 mmol/L</li> <li>» LDL &lt;2.85 mmol/L</li> <li>» HDL &gt;1.56 mmol/L</li> <li>» Trig &lt;1.02 mmol/L</li> </ul>	<ul style="list-style-type: none"> <li>» Evidence based prescription to treat symptoms of defined mental illness and/or when challenging behaviours are severe and non-responsive to other interventions</li> <li>» Minimum effective dose and length of treatment<sup>3</sup></li> </ul>

## Any values outside of target range: **DON'T JUST SCREEN – INTERVENE**

Tailored intervention brochures can be downloaded from <https://3dn.unsw.edu.au/positive-cardiometabolic-health-ID>

## Using a person-centred approach **PROVIDE TAILORED LIFESTYLE & NUTRITIONAL INTERVENTIONS:**

If arranging multidisciplinary follow-up falls outside your practice scope make appropriate referrals to the person's GP and ensure proactive follow-up.

For physical health interventions create a **GP Management Plan** (MBS item: 721) and a **Team Care Co-ordination Plan** (MBS item: 723).

For Mental Health interventions consider using a **Mental Health Treatment Plan** (MBS items: 2700, 2701, 2715 or 2717) and referral to a psychiatrist and/or psychologist.

<ul style="list-style-type: none"> <li>» ↓ sedentariness; ↓ screen time; ↑ physical activity; Account for any co-existing physical impairments*</li> <li>» Consider referral to <b>exercise physiologist</b> (MBS item: 10953) or <b>physiotherapist</b> (MBS item: 10960)</li> </ul>	<ul style="list-style-type: none"> <li>» ↓ energy intake; stop soft drinks/juices; ↑ vegetables and fibre</li> <li>» Consider referral to <b>dietitian</b> (MBS item: 10954); <b>exercise physiologist</b> (MBS item: 10953); <b>physiotherapist</b> (MBS item: 10960); <b>occupational therapist</b> (MBS item: 10958)<sup>4</sup></li> <li>» Referral to smoking or D&amp;A cessation program</li> </ul>	<ul style="list-style-type: none"> <li>» Include social worker in multidisciplinary case conference (MBS items: 735 – 758). If the person has a diagnosed mental illness they can also receive individual <b>social worker</b> sessions (MBS item: 80150)</li> <li>» Referral to disability support services</li> </ul>	<ul style="list-style-type: none"> <li>» Consider antihypertensive therapy if lifestyle intervention alone is insufficient*</li> <li>» Limit salt in diet</li> <li>» Education about <b>blood pressure</b> management</li> </ul>	<ul style="list-style-type: none"> <li>» <b>Diabetes educator</b> (MBS item: 10951) <b>AT RISK: FPG 5.6 – 6.9 mmol/L; HbA1c 42 – 47 mmol/mol (6.0 – 6.4%); OGTT;</b> if abnormal refer to specialist. Consider metformin if lifestyle intervention insufficient. <b>DIABETES: FPG ≥7.0 mmol/L, RPG ≥11.1 mmol/L, HbA1c ≥48 mmol/mol</b> Endocrine review</li> </ul>	<ul style="list-style-type: none"> <li>» Referral to paediatrician to consider Statin if lifestyle intervention alone is insufficient*</li> <li>» Fibrate for triglycerides</li> </ul>	<ul style="list-style-type: none"> <li>» Consider switching, decreasing or discontinuing if metabolic side effects emerge; rationalise any polypharmacy; where possible avoid high metabolic liability medication <b>as first line treatment*</b> (<b>Home medicines review</b> – MBS item: 900); provide <b>psychotropic education</b></li> </ul>
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<sup>1</sup>Certain causes of intellectual disability may alter baseline cardiometabolic risk. <sup>2</sup>BMI may be inaccurate if person has muscle wasting caused by physical disability or an inability to stand upright. If BMI is >30, assume at risk waist circumference.

<sup>3</sup>Weight gain in first 3 months should be <5 kg (or ≤7% from baseline). <sup>4</sup>In people with dietary insufficiencies consider checking folate and Vit B12. \*Consider referral to specialist if additional input required.

**Monitoring:** Annual cardiometabolic monitoring should occur for all people with intellectual disability.

**If psychotropic medication (excluding stimulants) is commenced please use the following schedule:**

*Note: more frequent monitoring should occur if clinically indicated. Some medications such as clozapine have additional monitoring requirements. Consider ECG/cardiology review if concern re. QT prolongation or cardiovascular risk factors present.*

	Baseline	Weekly for first 6 weeks	3 months	6 months	9 months	Annually
<b>Family Hx</b> (diabetes, obesity, CVD in first degree relatives, kidney disease)	✓					✓
<b>Personal and medication Hx</b> (cause of ID, polycystic ovary syndrome, past psychotropic medication use – dose, efficacy and side effects, current medications)	✓					✓
<b>Lifestyle review</b> (smoking, alcohol, physical activity, diet)	✓		✓	✓	✓	✓
<b>Weight/Waist circumference</b>	✓	✓	✓	✓	✓	✓
<b>Other examinations</b> (BMI, BP, pulse)	✓		✓			✓
<b>Fasting Lipids and Glucose</b>	✓		✓	✓		✓
<b>HbA1c</b>	✓					✓*

\*In people with well-controlled diabetes, HbA1c could be performed 3–6 monthly.

Certain genetic causes of intellectual disability may alter the person's cardiometabolic profile. **It is important to identify the cause of ID where possible and to proactively manage individuals at risk to prevent further complications.** Syndromes with cardiometabolic risk factors include:

Syndrome	Diabetes mellitus	Hypertension	Hypotension	Obesity	Dyslipidaemia
Down	✓		✓	✓	✓
Turner	✓	✓		✓	✓
Tuberous sclerosis		✓			
Williams		✓			
Angelman				✓	
Sotos	✓	✓			
Prader-Willi	✓	✓		✓	✓

Adapted from: Wallace, R. A. (2004). "Risk factors for coronary artery disease among individuals with rare syndrome intellectual disabilities." *Journal of Policy and Practice in Intellectual Disabilities* 1(1): 42 – 51.

## Problem solving fear or refusal of blood tests

- » Tailor communication about blood test rationale and procedure. Accessible information can be downloaded [here](#).
- » Involve the person's support networks. Having someone familiar attend the blood test may make the person feel more at ease.
- » Behavioural support staff may be able to conduct rehearsal prior to the appointment.
- » Have the family or support worker call ahead and explain the situation to the pathologist. Ask if there is a pathologist who has experience working with people with ID.
- » Request an anaesthetic cream or patch.
- » If needed, consider single dose prn benzodiazepam prior to blood test.
- » If obtaining a fasting sample is too hard, non-fasting samples are satisfactory for most measures excluding triglycerides.
- » Clarify and obtain consent. If necessary consider requesting a blood test while the person is under general anaesthetic for another procedure.

## Specific pharmacological interventions

- » **Consider metformin if:** impaired glucose; polycystic ovary syndrome; obesity or rapid weight gain.
- » **Metformin therapy:** start at 250 mg before dinner for two weeks, then increase to 250 mg bd. Dose can be increased by 500 mg per week to a maximum of 2 grams daily. For off-label use in obesity and pre-diabetes, consent should be obtained. If side-effects of nausea, abdominal cramping, shift to after meal (or the XR preparation).
- » **Lipid lowering therapy:** refer to specialist paediatrician. Some medications used to treat metabolic disorder are contraindicated in pregnancy (e.g. some antihypertensives and lipid lowering drugs).
- » **Antihypertensive therapy:** refer to specialist paediatrician.
- » **Vitamin D:** glucose metabolism, bone and muscle health may all be impacted by Vit D deficiency. For people at **high risk of Vit D deficiency** (for example due to anticonvulsants, residential status) monitor Vit D levels. <50 nmol/L: **replenish stores:** cholecalciferol 4,000 IU per day for one month. **Maintenance:** 1,000 IU. Target >80 nmol/L.



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