

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

ADAPT YOUR PRACTICE while addressing STANDARD TARGETS¹

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"> » 150 minutes moderate intensity exercise per week (e.g. 30 minutes 5 days per week) » Reduce sedentary behaviour 	<ul style="list-style-type: none"> » Non-smoker, balanced diet, minimise alcohol and other drug use » BMI²: 18.5 – 24.9 kg/m² Waist circumference: <94 cm males, <80 cm females 	<ul style="list-style-type: none"> » Socioeconomic status is associated with cardiometabolic health. » Ensure adequate access to housing, healthcare, transportation, education and employment opportunities 	<ul style="list-style-type: none"> » For most: <140 mmHg systolic and <90 mmHg diastolic » For people with diabetes, chronic kidney disease or vascular disease: <130/80 mmHg 	<ul style="list-style-type: none"> » FPG target: <5.5 mmol/L » Individualise HbA1c targets for people with diabetes, generally <7% (53 mmol/mol)³ » <i>For aversion to venepuncture see over</i> 	<ul style="list-style-type: none"> » TChol ≤5.5 mmol/L » LDL ≤4 mmol/L » For people with high CV risk (e.g. diabetes, hypertension, chronic kidney disease and prior heart disease): consider LDL ≤2 mmol/L » Trig ≤1.6 mmol/L 	<ul style="list-style-type: none"> » Evidence based prescription to treat symptoms of defined mental illness and/or when challenging behaviours are severe and non-responsive to other interventions » Minimum effective dose and length of treatment⁴

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"> » Provide a tailored exercise prescription and account for any co-existing physical impairments* » Consider referral to exercise physiologist (MBS item: 10953) or physiotherapist (MBS item: 10960) 	<ul style="list-style-type: none"> » Consider referral to dietitian (MBS item: 10954); exercise physiologist (MBS item: 10953); physiotherapist (MBS item: 10960); occupational therapist (MBS item: 10958)⁵ » Referral to smoking or D&A cessation program 	<ul style="list-style-type: none"> » Include social worker in multidisciplinary case conference (MBS items: 735 – 758). If the person has a diagnosed mental illness they can also receive individual social worker sessions (MBS item: 80150) » Referral to disability support services 	<ul style="list-style-type: none"> » Consider antihypertensive therapy if lifestyle intervention alone is insufficient* » Limit salt in diet » Education about blood pressure management 	<ul style="list-style-type: none"> » Tailor diabetes education/intervention (diabetes educator (MBS item: 10951)) DIABETES: FPG ≥7.0 mmol/L; RPG ≥11.1 mmol/L; HbA1c >5.6% (38 mmol/mol) – Endocrine review, monitor HbA1c 3 monthly AT RISK: 5.6 – 6.9 mmol/L – 6 monthly glucose monitoring, consider metformin if lifestyle intervention insufficient 	<ul style="list-style-type: none"> » Consider Statin if lifestyle intervention alone is insufficient*. Consider in context of absolute risk stratification » Fibrate for triglycerides 	<ul style="list-style-type: none"> » Consider switching, decreasing or discontinuing if metabolic side effects emerge; rationalise any polypharmacy; where possible avoid high metabolic liability medication as first line treatment* (Home medicines review – MBS item: 900); provide psychotropic education
--	--	---	--	--	--	--

¹Certain causes of intellectual disability may alter baseline cardiometabolic risk – see over. ²BMI may be inaccurate if person has muscle wasting. If BMI is >30, assume at risk waist circumference. ³Higher HbA1c levels (e.g. <8.0%, (64 mmol/mol)) are acceptable in those with reduced ability to detect or treat hypoglycaemia, the elderly, or those with reduced life expectancy. ⁴Weight gain in first 3 months should be <5 kg (or ≤7% from baseline); ⁵In 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
Family Hx (diabetes, obesity, CVD in first degree relatives, kidney disease)	✓					✓
Personal and medication Hx (cause of ID, polycystic ovary syndrome, past psychotropic medication use – dose, efficacy and side effects, current medications)	✓					✓
Lifestyle review (smoking, alcohol, physical activity, diet)	✓		✓	✓	✓	✓
Weight/Waist circumference	✓	✓	✓	✓	✓	✓
Other examinations (BMI, BP, pulse)	✓		✓			✓
Fasting lipids and glucose	✓		✓	✓		✓
HbA1c	✓					✓*

*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 tablet before breakfast and dinner for two weeks then increase to 500 mg bd. Dose can be increased to a maximum of 3 g daily in diabetes or pre-diabetes. For off-label use in obesity and pre-diabetes, consent should be obtained. Side effects of nausea, diarrhoea or abdominal cramps should not be tolerated and dose shifted to after meals and/or reduced (or shift to the XR preparation).
- » **Lipid lowering therapy:** use PBS guidelines. *Statin initiation for cholesterol lowering:* simvastatin 10 mg nocte; atorvastatin 10mg nocte; pravastatin 10 mg nocte; rosuvastatin 10 mg nocte.
- » **Antihypertensive therapy:** multiple agents available.
- » **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.



UNSW
AUSTRALIA



DEPARTMENT OF
DEVELOPMENTAL
DISABILITY
NEUROPSYCHIATRY



Funded by NSW Health

Endorsed by:

The Royal Australian and New Zealand College of Psychiatrists
The Heart Foundation
Australian Diabetes Educators Association
Australian College of Nursing
Prader-Willi Syndrome Association of Australia
Tuberous Sclerosis Australia
The Australian College of Mental Health Nurses
NSW Council for Intellectual Disability
Diabetes Australia
ACI Intellectual Disability Network

To cite: Julian Trollor, Carmela Salomon, Jackie Curtis, Andrew Watkins, Simon Rosenbaum, Katherine Samaras & Philip B. Ward, 2016, *Positive cardiometabolic health for adults with an intellectual disability: an early intervention framework.* UNSW Australia

Adapted with permission from Curtis J, Newall H, Samaras K. ©HETI 2011