### Physical activity:
- Non-smoker, balanced diet, no alcohol or other drug use
- BMI: ≤85th centile
- Waist: height ratio: <0.5

### Socioeconomic resources
- Socioeconomic status is associated with cardiometabolic health
- Ensure adequate access to housing, healthcare, transportation, education and employment opportunities

### Blood pressure
- <90th centile
- Use appropriate cuff size for arm circumference

### Glucose regulation
- For most: FPG ≤5.5 mmol/L; HbA1c <42 mmol/mol (6.0%)
- For people with diabetes: HbA1c <58 mmol/mol (7.5%)
- For aversion to venepuncture see over

### Fasting blood lipids
- Total Chol <4.4 mmol/L
- LDL <2.85 mmol/L
- HDL >1.56 mmol/L
- Trig <1.02 mmol/L

### Diet, lifestyle weight/waist
- Physical activity: (e.g. >60 mins per day)
- Screen-based activities: <2 hrs per day

### 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](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.

### Activity | Diet, lifestyle weight/waist | Socioeconomic resources | Blood pressure | Glucose regulation | Fasting blood lipids | Psychotropic prescription
---|---|---|---|---|---|---
- Physical activity: (e.g. >60 mins per day) | - Non-smoker, balanced diet, no alcohol or other drug use | - Socioeconomic status is associated with cardiometabolic health | - <90th centile | - For most: FPG ≤5.5 mmol/L; HbA1c <42 mmol/mol (6.0%) | - Total Chol <4.4 mmol/L | - Evidence based prescription to treat symptoms of defined mental illness and/or when challenging behaviours are severe and non-responsive to other interventions
- Screen-based activities: <2 hrs per day | - BMI: ≤85th centile | - Ensure adequate access to housing, healthcare, transportation, education and employment opportunities | - Use appropriate cuff size for arm circumference | - For people with diabetes: HbA1c <58 mmol/mol (7.5%) | - LDL <2.85 mmol/L | - Minimum effective dose and length of treatment

### Psychotropic prescription
- 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 treatment
- For most: FPG ≤5.5 mmol/L; HbA1c <42 mmol/mol (6.0%)
- For people with diabetes: HbA1c <58 mmol/mol (7.5%)
- For aversion to venepuncture see over

### Limitations
- Certain causes of intellectual disability may alter baseline cardiometabolic risk.
- 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.
- Weight gain in first 3 months should be ≤5 kg (or ≤7% from baseline).
- 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.

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

*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:

- **Down**
- **Turner**
- **Tuberous sclerosis**
- **Williams**
- **Angelman**
- **Sotos**
- **Prader-Willi**


### 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 2 weeks, then increase to 250 mg bid. 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.

### 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.