

Positive Cardiometabolic Health Resource

Lester UK Adaptation: Positive Cardiometabolic Health Resource

This Cardiometabolic Health Resource supports the recommendations relating to monitoring physical health in the NICE guidelines on psychosis and schizophrenia in adults

(www.nice.org.uk/guidance/cg178) and young people (www.nice.org.uk/guidance/cg155).

In addition it also supports the statement about assessing physical health in the NICE quality standard for psychosis and schizophrenia for adults (www.nice.org.uk/guidance/qs80).

National Institute for Health and Care Excellence, November 2015



This resource aligns with the Core20PLUS5 initiative aimed at addressing the 15-year mortality gap experienced by individuals with severe mental illness.

The primary factors driving this decreased life expectancy are comorbid cardiometabolic and cardiovascular diseases. There is a pressing need to concentrate on potentially preventable health issues, medication side effects, and limited access to healthcare services.

Although this resource primarily addresses antipsychotic treatment, its principles are equally applicable to other psychotropic medications used in managing long-term mental health conditions, such as mood stabilisers.

For all people in the “red zone” (see next page): Care should always be person-centred, tailoring discussion to enable shared decision-making.

The primary healthcare team and specialist mental health team will collaborate to support the individual, ensuring appropriate monitoring and interventions are provided and communicated.

Don't just
**SCREEN –
INTERVENE**
for all people in
the “red zone”

* In 2025, the authors added an adolescent supplement targeted to those aged 14-17 years experiencing psychosis.



ADULT Positive Cardiometabolic Health Resource

An **intervention framework** for people aged 18yrs and over experiencing **psychosis** and **schizophrenia**.

Smoking

Health Behaviours and Life-skills

Body Mass Index (BMI) Weight

Blood Pressure

Glucose Regulation

Assess by fasting blood glucose (FPG) and HbA1c

Blood Lipids

Current smoker

Unhealthy diet
AND/OR
Physical inactivity/sedentariness
AND/OR
Harmful alcohol intake
(>14 units/wk)

BMI ≥ 25 kg/m²
(≥ 23 kg/m² if from Black, Asian, minority ethnic background)
AND/OR
Rapid weight gain: particularly after new antipsychotic initiation

>140 mm Hg systolic
AND/OR
>90 mm Hg diastolic

HbA1C or Glucose threshold:
HbA1C ≥ 42 mmol/mol ($\geq 6\%$)
AND/OR
FPG ≥ 5.5 mmol/l
OR
RPG ≥ 11.1 mmol/l

High risk of CVD by validated tool, e.g. QRisk3 <http://qrisk.org>
NB: Current CVD risk scores likely to underestimate risk in people aged <30

CARE SHOULD ALWAYS BE PERSON-CENTRED, TAILORING DISCUSSION TO THE NEEDS OF THE PERSON TO ENABLE SHARED DECISION-MAKING

Follow NICE guidelines on tobacco use www.nice.org.uk/ng209
Brief intervention/ behavioural support
Offer combined NRT and/or varenicline
Referral to Smoking Cessation service

Promote positive health behaviours:
• Healthy eating guidance www.nhs.uk/live-well/eat-well
Follow UK Chief Medical Officers' Guidance on:
• Physical Activity
• Low-risk alcohol intake

Follow NICE obesity guidelines: www.nice.org.uk/cg189
Clinical review if >5% (av.3-4kg) wt gain within 4 weeks of taking a new antipsychotic

Refer for investigation, diagnosis and treatment by appropriate clinician if necessary.
Note: family history of diabetes and/or premature heart disease heightens cardiometabolic risk.

Offer antihypertensive therapy if safe and appropriate
Follow NICE hypertension guidelines www.nice.org.uk/ng136
Limit salt intake in diet

At High Risk of Diabetes
HbA1c 42-47 mmol/mol (6.0%-6.4%)
FPG 5.5-6.9 mmol/l
i. Offer referral to evidence-based, lifestyle-change programme
ii. If ineffective, offer metformin modified release if safe and appropriate

Diabetes
HbA1c ≥ 48 mmol/mol ($\geq 6.5\%$)
FPG ≥ 7.0 mmol/l
RPG ≥ 11.1 mmol/l
Diabetes review
Follow NICE diabetes guidelines www.nice.org.uk/ng28

Offer lipid lowering therapy if safe and appropriate
Follow NICE guidelines www.nice.org.uk/ng238
AND
Refer to specialist if total cholesterol >9, non-HDL chol >7.5 or TG >20 (mmol/l)

Stop smoking
Anticipate impact on antipsychotic drug metabolism; alter dose appropriately

Improve quality of diet
Daily physical activity ≥ 30 mins/day
Alcohol intake <14 units/wk

BMI 18.5-24.9 kg/m²
(18.5-22.9 kg/m² if from Black, Asian, minority ethnic background)

<140/90 mm Hg

Prevent or delay onset of diabetes
HbA1c <42 mmol/mol ($<6\%$)
FPG <5.5 mmol/l

Individualise HbA1c target but typically 47-58 mmol/mol (6.5-7.5%)

Primary Prevention:
Offer atorvastatin 20mg od if $\geq 10\%$ risk (validated risk tool)
OR
Secondary Prevention:
Offer atorvastatin 80mg od
Aim: reduce non-HDL chol by 40%; review 3 months

RED ZONE

INTERVENTIONS

TARGET



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History and examination following initiation or change of antipsychotic medication

When initiating or reviewing medications it is important to discuss possible side effects and interactions with other medications as part of Personalised Care and Support Planning (PCSP).

Frequency: Normally psychiatrist-led. Planned physical assessment should follow the table below during the first twelve months following initiation or switch to a new antipsychotic. Baseline assessment is essential. Weight should be assessed weekly for the first six weeks of taking a new antipsychotic, as rapid early weight gain (e.g., 3-4 kg within the first 4 weeks) predicts severe long-term weight gain and higher risk of cardiometabolic disorders. In the longer term, review annually unless an abnormality emerges requiring more intensive monitoring and/or intervention.

At review

History: Seek history of rapid weight gain. Also review smoking, exercise, diet and alcohol use. Ask about family history (diabetes, obesity, CVD in first degree <55 yrs male relatives and <65 yrs female relatives) and gestational diabetes. Note and record ethnicity.

Examination: Weight, BMI, waist circumference, BP, pulse (developmentally appropriate norms should be used for people under age 18). Note differing BMI and waist circumference thresholds across racial/ethnic groups reflect differences in regional body fat and body composition.

Investigations: Plasma glucose (FPG), HbA1c, and lipids (total cholesterol, non- HDL, HDL, triglycerides). Non-fasting samples are satisfactory but note reference ranges for glucose and triglycerides differ. Also note HbA1c may be falsely low if glucose is rising rapidly as this measurement reflects average glucose of the previous 6-8 weeks.

Risk assessment tools: QRisk3 (<https://qrisk.org>) for CVD and QDiabetes (<https://qdiabetes.org>) for type 2 diabetes account for severe mental illness (SMI). However, these tools were not developed for this group. The **Primrose Research Programme** has shown that current CVD risk scores are likely to underestimate risk. PsyMetRiC (<https://psymetric.app/>) provides an SMI-specific tool tailored for ≤35s with first episode psychosis to assess risk of short-term weight gain, medium-term metabolic syndrome and longer-term type 2 diabetes. Irrespective of tool used, risk scores should always be weighed alongside individual factors, including patient preference, to inform rather than dictate clinical decisions.

ECG: Include if there is specific risk of CVD (e.g., co-existing hypertension, diabetes), personal history of CVD, family history of CVD, or examination reveals irregular pulse (if ECG confirms atrial fibrillation, follow NICE guidelines www.nice.org.uk/ng196); or if person taking certain antipsychotics (see SPC) or other drugs known to cause ECG abnormalities (e.g., erythromycin, tricyclic anti-depressants, anti-arrhythmics – see British National Formulary for further information).

Chronic Kidney Disease (additionally increases risk of CVD): Screen those with co-existing diabetes, hypertension, CVD, family history of chronic kidney disease, structural renal disease (e.g., renal stones):

1. Monitor renal function with creatinine and estimated glomerular filtration rate (eGFR).
2. Monitor for early proteinuria: urine albumin creatinine ratio (laboratory analysis) If evidence of chronic kidney disease, follow NICE guidance www.nice.org.uk/ng203.

Monitoring: How often and what to do

Applies to adults prescribed antipsychotics and mood stabilizers.

	Baseline	Weekly for first 6 weeks	12 weeks	Annually
Personal/Family History	●			●
Lifestyle review¹	●		●	●
Weight	●	●	●	●
Waist circumference	●			●
BP	●		●	●
FPG/HbA_{1c}	●		●	●
Lipid profile²	●		●	●

¹. Smoking, diet, physical activity, and alcohol. ². A non-fasting sample is satisfactory



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Behaviour change and pharmacological interventions

Specific behaviour change interventions should be discussed in a collaborative, supportive and encouraging way, taking into account the person's preferences, barriers they face, and need for reasonable adjustments. Support behaviour change using motivational interviewing as a brief intervention integrated into short consultations (e.g., www.bmjjournals.org/content/340/bmj.c1900).

- **Nutritional counselling:** advise to avoid less healthy snacks, take-away/fried food and sugary drinks, reduce energy intake to prevent weight gain, increase fibre intake. (NHS Eat Well: www.nhs.uk/live-well/eat-well/).
- **Limit alcohol intake:** use low-risk drinking guidelines (UK Chief Medical Officers www.gov.uk/government/publications/alcohol-consumption-advice-on-low-risk-drinking).
- **Physical activity:** advise to increase physical activity to a minimum of 150 minutes of 'moderate-intensity' physical activity per week (e.g. 30 mins on 5 days/wk); minimise sedentary time: break-up periods of inactivity (UK Chief Medical Officers www.gov.uk/government/publications/physical-activity-guidelines-adults-and-older-adults).
- **Smoking cessation:** smoking can impact on the metabolism of psychotropic drugs. Change in smoking status may require prompt drug dose alteration of certain antipsychotics, especially clozapine with its potential for rapid and serious toxicity (within a week).

If the person has not successfully reached their targets within three months, offer relevant pharmacological interventions as adjuncts to behaviour change interventions if safe and appropriate to do so, and in collaboration with the GP:

Anti-hypertensive therapy: follow NICE guidance www.nice.org.uk/ng136.

Lipid lowering therapy: follow NICE guidance www.nice.org.uk/ng238.

Note: if total cholesterol >9, non-HDL chol >7.5 or TG>20 (mmol/l), refer to metabolic specialist.

Treatment of diabetes: follow NICE guidance www.nice.org.uk/ng28.

Treatment of those at high risk of diabetes: Follow NICE guidance (recommendation 19) – www.nice.org.uk/PH38:

- **Metformin modified release** may be offered as an adjunct to intensive lifestyle intervention if behaviour change has not prevented/slowed progression of hyperglycaemia, particularly for those with BMI >35 kg/m²

- Adhere to British National Formulary guidance on safe use (in particular ensure renal function is adequate).
- Start with a low dose e.g., 500mg once daily and build up, as tolerated, to 1500–2000mg daily.

Review of antipsychotic and mood stabiliser medication: discussions about medication should involve the person, carer if appropriate, psychiatrist and the GP.

Ensure appropriate discussions if evidence of:

- Rapid substantial weight gain particularly following new antipsychotic initiation (e.g., 3-4kg < 4 weeks).
- Worsening of cardiometabolic indices (abnormal lipids, BP, or glucose) at 3-month check-up.

The psychiatrist should proactively consider, and discuss with the person, the potential risks and benefits of switching antipsychotic drug, both on physical and psychiatric health.

- As a first step prescribed dosages should follow BNF recommendations; rationalise any polypharmacy.
- Changing antipsychotic medication requires careful clinical judgement to weigh any benefits against the risk of relapse of the psychosis.
- An effective trial of medication is considered to be the person taking the medication, at an optimum dosage, for a period of 4-6 weeks.
- If clinical judgment and the person's preference support continuing with the same treatment, then ensure appropriate further monitoring and clinical considerations are carried out regularly.

It is advised that all side effects to antipsychotic medication are regularly monitored especially when commencing a new antipsychotic medication (**GASS questionnaire** <https://rightdecisions.scot.nhs.uk/media/2352/glasgow-antipsychotic-side-effect-scale-gass.pdf>) and that any side effects, as well as rationale for continuing, changing or stopping medication is clearly recorded and discussed with the person.

The Psychiatrist should maintain responsibility for monitoring the person's physical health and the effects of anti-psychotic medication for at least the first 12 months or until the person's condition has stabilised, whichever is longer. Thereafter, the responsibility for this monitoring may be transferred to primary care under shared care arrangements.

Discuss any non-prescribed therapies (including complementary therapies) which the person wishes to use; discuss the safety and efficacy of the therapies, and possible interference with the therapeutic effects of prescribed medication and psychological treatments.



ADOLESCENT Positive Cardiometabolic Health Resource

An intervention framework for adolescents aged 14-17 yrs experiencing psychosis.

Smoking

Health Behaviours and Lifestyle changes

Body Mass Index (BMI) Weight

Blood Pressure

Glucose Regulation

Blood Lipids

Current smoker (tobacco, vaping) – ask regularly

Dietary concerns
AND/OR
Physical inactivity/
sedentariness

Harmful alcohol intake or other substance use

Rapid weight gain:
>5% within 4wks of new antipsychotic initiation
OR
BMI \geq 91st centile (assess using RCPCH BMI charts)

BP persists \geq 90th centile systolic and/or diastolic
(ESH guidance table 1
>95th= hypertension
90-95th= high-normal
<90th normal)

Glucose or HbA1C threshold:
FPG \geq 5.5 mmol/l OR RPG \geq 11.1 mmol/l
HbA1C \geq 42 mmol/mol (\geq 6%)

Abnormal lipids: use local laboratory reference range for adolescent assessment
QRisk3 should not be used to assess CVD risk in adolescents (see appendix)



Considerations for young people aged 14-17 years

Proactive cardiometabolic screening is recommended by NICE for this young population with psychosis ([NICE CG155](#)). This should be offered 6 monthly as a minimum when their condition is stable. When abnormalities or increased risk are identified, onward referral for further assessment and intervention is appropriate. Whilst many aspects of risk identification and management apply irrespective of age, some specific considerations for young people are necessary:

Developmentally appropriate: physical development varies greatly in adolescence related to growth and stage of puberty. Thus, differing developmental trajectories preclude the use of rigid age boundaries to assess cardiometabolic risk and rely more on clinical judgement and experience. For example, 16-18 year olds sit between adolescent and adult guidance in terms of risk identification and management (adult ranges vs centile charts).

Capacity: the Mental Capacity Act (MCA) applies to young people aged 16-17 years, who clinicians should assume have capacity to make decisions unless proven otherwise. For under-16s, the MCA does not apply and Gillick competence should instead be considered to help assess whether a child has the maturity to make their own decisions and to understand the implications of those decisions.

Shared decision making should underpin physical health screening and management in partnership with the young person, their family/carers, and include consultation with other key stakeholders (e.g. GP, Children and Young People's Mental Health services practitioner, Paediatrician).

Involve parents/carers/important others: encouraging and incorporating their unique perspectives, insight and observations empowers their active role in a young person's treatment plan and recovery.

Consider the particular needs of disabled young people, autistic young people, those with a learning disability or SEND: they are more likely to experience inequitable care and practitioners must [make reasonable adjustments \(Equality Act 2010\)](#) to ensure they can access effective care.

Looked After Children: monitoring should be an integral part of statutory annual health assessments.

Safeguarding: practitioners should bear in mind principles of safeguarding in all consultations with children and young people.

Ethnicity: BMI and BP centile charts provided were developed for CYP for White ethnicities. Currently a higher index of clinical suspicion will be required for all other ethnic groups.

Collaborative working: proactive management of cardiometabolic risk in this age group depends on mental health services (usually Early Intervention in Psychosis services or Children and Young People's Mental Health services) and primary care aligning aspects of monitoring and risk identification (e.g. use of centile charts rather than adult ranges for BP and BMI).

- Whilst antipsychotic initiation and proactive identification of potential cardiometabolic risk remain key functions of mental health services, the context for collaboration with primary care may be different. For instance, General Practitioners (GPs) are less familiar with psychosis in younger people (typically seeing a new case under age 16 every five years).
- Whilst GPs usually feel able to manage physical comorbidities in older people, they may not feel confident in assessing or initiating treatment of a physical health problem in an under-18 with psychosis.

Inequalities in core determinants of health (e.g. affordability of healthy foods, access to physical activities); consider how social prescribing and signposting to local services could help overcome these.

Local commissioners: should consider how young people with psychosis, as a vulnerable group for severe health inequalities, can access local evidence based lifestyle change programmes, that address key modifiable CVD risks (e.g. smoking cessation, weight management, nutrition and physical activity).

Complications of Excess Weight (CEW) Clinics: commissioned by NHSE at a national level as a tertiary referral service for children and young people organised by postcode in England <https://www.england.nhs.uk/get-involved/cyp/specialist-clinics-for-children-and-young-people-living-with-obesity/>

Polypharmacy: Where psychotropic polypharmacy is present, additional monitoring and supervision may be required to minimise the risk of physical health complications.

While this adolescent supplement focuses on protecting the cardiometabolic health of young people with psychosis, the principles can be applied to young people taking antipsychotic medication for other non-psychotic psychiatric disorders.



ADOLESCENT Positive Cardiometabolic Health Resource

An intervention framework for adolescents aged 14-17 yrs experiencing psychosis.

Appendix

BODY MASS INDEX (BMI) – see RCPCH BMI charts. A BMI ≥ 91 st centile suggests overweight. A child ≥ 98 th centile suggests clinically obese. Values for adolescents based on the [RCPCH BMI centile charts](#) are shown in Fig 1.

Fig. 1	Girls (BMI kg/m ²)		Boys (BMI kg/m ²)	
	91st centile	98th centile	91st centile	98th centile
14	23.5	26.5	22.5	25.2
15	24	27	23	26
16	24.7	27.7	24	26.7
17	25	28.2	24.5	27.5

- If BMI ≥ 91 st centile: offer referral to local weight management services if:
 - i) assessed to have **hypertension, glucose or lipid disturbance** or
 - ii) evaluated to have **co-morbidities related to excess weight**. These include:
 - **Obstructive sleep apnoea** (OSA): typically restless sleep with snoring, stop/start breathing accompanied by morning headaches. OSA is more frequent in those with psychosis and increases the risk of CVD and diabetes and poorer mental and physical outcomes.
 - **Polycystic ovary syndrome** (PCOS): amenorrhoea, irregular periods, acne and hirsutism. PCOS can also arise from antipsychotic-induced hyperprolactinaemia (prolactin level needed).
 - **Non-alcohol related fatty liver disease** (NAFLD): asymptomatic, detect by liver function tests.
 - **Idiopathic intracranial hypertension**: typically, excess weight accompanied by regular night-time and morning headache.
- If BMI ≥ 98 th centile: offer referral to local weight management services

BLOOD PRESSURE – see 2016 European Society of Hypertension guidelines for the management of high blood pressure in children and adolescents. Hypertension in children is defined as systolic blood pressure (SBP) and/or diastolic blood pressure (DBP) persistently **at least 95th percentile** for sex, age and height measured on at least three separate occasions.

- For adolescents aged 15 years and under: refer to the following ESH centile charts:
 - [ESH TABLE 2. Blood pressure for boys by age and height percentiles](#)
 - [ESH TABLE 3. Blood pressure for girls by age and height percentiles](#)
- For adolescents aged 16 years and over: follow the [Lester BP guidance for adults](#) with its threshold for the diagnosis of hypertension of $>140/90$ mmHg.

Monitoring: How often and what to do

	Baseline	Weekly for first 6 weeks	12 weeks	Every 6 months when stable
Personal/Family History	●			●
Lifestyle review ¹	●		●	●
Weight	●	●	●	●
Waist circumference	●			●
BP	●		●	●
FPG/HbA _{1c}	●		●	●
Lipid profile ^{2,3}	●		●	●

1. Smoking, diet, physical activity, alcohol and substance use.

2. A non-fasting sample is satisfactory.

3. While evidence supports the use of statins in adolescents with Familial Hyperlipidaemia, the evidence for lipid-lowering therapy in other groups is limited or lacking.

[Monitoring table derived from NICE CG 155 supplementary information on baseline monitoring](#)

Offer ECG: if physical examination has identified specific cardiovascular risk (e.g. hypertension); if there is a personal history of cardiovascular disease; if there is a family history of cardiovascular disease such as sudden cardiac death or prolonged QT interval; if specified in the SPC of the prescribed antipsychotic; or the child or young person is being admitted as an inpatient.

QRISK should not be used to assess CVD risk in adolescence.

The Lester Positive
Cardiometabolic
Health Resource
was co-produced by
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HQIP

Healthcare Quality
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**CENTRE FOR
MENTAL
HEALTH**

BDA

The Association
of UK Dietitians

**Rethink
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The logo for the British Cardiovascular Society, featuring a red heart icon.

The British Cardiovascular Society (BCS) have reviewed and support the use of the adolescent supplement.

The logo for the College of Mental Health Pharmacy, featuring a blue stylized head profile icon and the letters 'CMHP'.