Psychotropic Monitoring Guide

journey to change

NHS Tees, Esk and Wear Valleys NHS Foundation Trust

ANTIPSYCHOTICS

- Amisulpride
- Aripiprazole
- Cariprazine
- Chlorpromazine
- Clozapine
- Flupentixol
- Haloperidol
- Lurasidone
- Olanzapine
- Paliperidone
- Quetiapine
- Risperidone
- Trifluoperazine
- Zuclopenthixol

HDAT

ANTIDEPRESSANTS

- Agomelatine
- Citalopram
- Clomipramine
- Duloxetine
- Escitalopram
- Fluoxetine
- Imipramine
- Lofepramine
- Mianserin
- Mirtazapine
- Phenelzine
- Trazodone
- Venlafaxine

MOOD STABILISERS

- Carbamazepine
- Lamotrigine
- Lithium
- Valproate

ADHD

- Atomoxetine
  - 10 years and under
  - 11 years & over
- Dexamfetamine
  - 10 years and under
  - 11 years & over
- Guanfacine
  - 10 years and under
  - 11 years & over
- Lisdexamfetamine
  - 10 years and under
  - 11 years & over
- Methylphenidate
  - 10 years and under
  - 11 years & over

DEMENTIA

- Donepezil
- Galantamine
- Memantine
- Rivastigmine

MISCELLANEOUS

- Cyproterone acetate

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General notes

- This guidance refers to the physical health monitoring required by NICE, CKS, Summary of Product Characteristics (SPC), BNF or other respected source – some monitoring may be recommended in guidance on the condition the drug is being used for, rather than being specific to the drug itself
- The guidance does not replace clinical judgement. Further tests may be necessary on an individual patient basis. TEWV clinicians should state the rationale for additional tests if requesting them from primary care.
- The absence of a specific drug in these guidelines indicates that there are no specific monitoring requirements for that drug
- This guide is intended to be used in conjunction with the TEWV Safe Transfer of Prescribing Guidance and all other TEWV clinical guidelines
- Interpretation of and action required following test results is outside of the scope of this guidance. Please refer to the clinical guideline related to the indication and drug.
- Some parameters of physical health monitoring of pregnant people taking psychotropic drugs are not applicable (waist circumference, lipids, prolactin) , or may be checked at non-psychiatric health appointments (BP, pulse, weight) – please check relevant patient records / WebICE to avoid repeat or unnecessary tests. Monitoring should return to normal parameters once the person is 3 months postnatal
- “Periodically”, “frequently” and “ongoing” are monitoring frequency terms used in reference sources. Where they are stated in these guidelines, clinical judgement should be applied to the specific frequency of monitoring required for individual patients.

Antipsychotics[1] (exc. chlorpromazine, clozapine & olanzapine – see next slide)

	Weight or BMI[2]	Fasting glucose + HbA1c	Prolactin	Lipids	Blood Pressure	Pulse	CVD risk assessment	Smoking history	Assessment of side effects[3]	U&Es (inc. creatinine & eGFR)	FBC	LFTs	Waist circumference	ECG	CK
Pre-treatment	✓	✓	✓	✓	✓	✓	✓	✓		✓	✓	✓	✓	✓[4]	✓
Weekly **(for first 6 weeks)**	✓														
3 months after initiation	✓		✓	✓	✓	✓		✓	✓						
6 months after initiation		✓													
12 months after initiation	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓[4]	
Every 12 months thereafter	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓[4]	

1. For BPSD - there are few guidelines around monitoring of antipsychotics for use in dementia as they are not licensed for long term use. When long term low dose antipsychotics are used solely for the treatment of severe distress in people living with dementia a more personalised approach to monitoring should be considered. Monitoring should only be undertaken if the results will change clinical practice. Monitoring should look at the ongoing need for the medication and to a consideration of de-prescribing.
2. Measure height when measuring weight in under 18's; monitor more often, and plot on a chart, if patient gaining weight rapidly
3. Use an appropriate side-effect rating scale, e.g. LUNSERS, SESCAM, GASS. Should include assessment of movement disorders (EPSEs), sexual side-effects and menstrual irregularities (in females under 50 years)

4. Before starting antipsychotic medication, offer the person an ECG if:
   - It is specified in the drug's summary of product characteristics (SPC), i.e. haloperidol, pimozide & sertindole, or
   - A physical examination has identified a specific cardiovascular risk (e.g. hypertension), or
   - There is a family history of cardiovascular disease, a history of sudden collapse, or other cardiovascular risk factors such as cardia arrhythmia, or
   - The person is being admitted as an inpatient

   Repeat at least annually if any of the above apply, or if otherwise clinically indicated

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Antipsychotics[1] – chlorpromazine, clozapine & olanzapine

	Weight or BMI[2]	FBC[5]	Fasting glucose + HbA1c	Lipids	Prolactin	Blood Pressure[6]	Pulse[6]	CVD risk assessment	Smoking history	Assessment of side effects[7]	U&Es (inc. creatinine & eGFR)	LFTs	Waist circumference	ECG	CK
Pre-treatment	✓	✓	✓	✓	✓	✓	✓	✓	✓		✓	✓	✓	✓[8]	✓
Weekly	✓[3]														
1 month after initiation			✓												
3 months after initiation	✓			✓	✓	✓	✓		✓	✓					
6 months after initiation	✓[4]		✓	✓[4]											
9 months after initiation	✓[4]			✓[4]											
12 months after initiation	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓[8]	
Every 4-6 months thereafter			✓												
Every 12 months thereafter	✓			✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓[8]	

1. For BPSD - there are few guidelines around monitoring of antipsychotics for use in dementia as they are not licensed for long term use. When long term low dose antipsychotics are used solely for the treatment of severe distress in people living with dementia a more personalised approach to monitoring should be considered. Monitoring should only be undertaken if the results will change clinical practice. Monitoring should look at the ongoing need for the medication and to a consideration of de-prescribing.
2. Measure height when measuring weight in under 18's; monitor more often, and plot on a chart, if patient gaining weight rapidly
3. For first 6 weeks
4. Not required with chlorpromazine
5. **CLOZAPINE ONLY** – additional mandatory monitoring required – weekly x 18 weeks, then 2-weekly x 34 weeks, then 4-weekly thereafter
6. **CLOZAPINE ONLY** – additional (daily) monitoring required during titration – see initiation checklist
7. Use an appropriate side-effect rating scale, e.g. LUNSERS, SESCAM, GASS. Should include assessment of movement disorders (EPSEs), sexual side-effects and menstrual irregularities (in females under 50 years)
8. Before starting antipsychotic medication, offer the person an ECG if:
   - A physical examination has identified a specific cardiovascular risk (e.g. hypertension), or
   - There is a family history of cardiovascular disease, a history of sudden collapse, or other cardiovascular risk factors such as cardia arrhythmia, or
   - The person is being admitted as an inpatient

   Repeat at least annually if any of the above apply, or if otherwise clinically indicated

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Antipsychotics – HDAT (all drugs)

https://intranet.tewv.nhs.uk/download.cfm?doc=docm93jijm4n1463.pdf&ver=19482

	Weight or BMI	FBC[1]	HbA1c	Lipids	Prolactin	Blood Pressure & pulse[2]	Temperature	CVD risk assessment	Hydration status	Assessment of side effects[6]	U&Es (inc. creatinine & eGFR)	LFTs	Waist circumference	ECG	Cognitive function[4]
Pre-HDAT	✓		✓	✓	✓	✓	✓	✓	✓		✓	✓	✓	✓	✓
Once steady state reached after dose increase									Be mindful of signs of dehydration[5] on a continuous basis					✓	
3 months after initiation	✓					✓	✓			✓	✓	✓	✓		
6 months after initiation	✓					✓	✓			✓	✓	✓	✓	✓	
9 months after initiation	✓					✓	✓			✓	✓	✓	✓		
12 months after initiation	✓		✓	✓	✓	✓	✓			✓	✓	✓	✓	✓	
Every 3 months thereafter	✓					✓	✓			✓	✓	✓	✓		
Every 6 months thereafter														✓6	
Every 12 months thereafter			✓	✓	✓										✓

1. **CLOZAPINE ONLY** – mandatory monitoring required – weekly x 18 weeks (from initiation of treatment), then 2-weekly x 34 weeks, then 4-weekly thereafter
2. Supine and standing BP
3. Use an appropriate side-effect rating scale, e.g. LUNSERS, SESCAM, GASS. Should include assessment of movement disorders (EPSEs), sexual side-effects and menstrual irregularities (in females under 50 years)
4. Especially in older people
5. Thirst/dry mouth, lethargy, low volume/concentrated urine
6. Repeat at times of acute illness, when interacting drugs are introduced or if patient experiences symptoms that could be due to arrhythmias, e.g. syncope or fits

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Agomelatine

	LFTs[1]
Pre-treatment	✓
3 weeks after initiation	✓
6 weeks after initiation	✓
12 weeks after initiation	✓
24 weeks after initiation	✓
12 months after initiation	✓[2]
Every 12 months thereafter	✓[2]

1. Restart schedule if dose increased
2. Only if clinically indicated

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Citalopram / Escitalopram

	Serum Magnesium[1]	ECG[2]
Pre-treatment	✓	✓
12 months after initiation	✓	
Every 12 months thereafter	✓	

1. At risk groups only: over 65 years AND taking a diuretic or PPI; BMI <18
2. If pre-existing cardiac disease; contra-indicated if QT-interval is prolonged; further ECG monitoring only required (every 6 months) if:
   - Unstable cardiac disease / high risk of arrhythmia
   - Change in CV status
   - Change in metabolic capacity (e.g. liver impairment)

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Clomipramine

	LFTs	Blood pressure	U&Es[1]	ECG[2]
Pre-treatment	✓	✓	✓	✓
12 months after initiation	✓	✓		
Every 12 months thereafter	✓	✓		

1. Recommended to check for hypokalaemia (risk factor for QT-prolongation)
2. If pre-existing CV disease

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Duloxetine

	Blood pressure (if known hypertension/CVD)
Pre-treatment	✓
During first month of treatment	✓

Fluoxetine

	ECG (if pre-existing CV disease)
Pre-treatment	✓

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Imipramine

	Blood pressure	FBC	Symptoms of sore throat / fever / etc	LFTs	Cardiac function
Pre-treatment	✓1				
"In first few months"		✓	✓2		
"Periodically"				✓3	✓4

1. Patients with hypotension or a labile circulation may react to the drug with a fall in BP
2. Check FBC if occur
3. If hepatic disease
4. If patient is elderly

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Lofepramine

	FBC	Blood pressure
Pre-treatment	✓	✓
"Periodically"	✓[1]	

1. Only if pre-treatment monitoring indicates need

Mianserin

	FBC	Symptoms of sore throat / fever / etc
Pre-treatment	✓	
4 weeks after initiation	✓	
8 weeks after initiation	✓	
12 weeks after initiation	✓	
"Ongoing"		✓[1]

1. Check FBC if occur

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Mirtazapine & trazodone

	Symptoms of sore throat / fever / etc
"Ongoing"	✓[1]

1. Check FBC if occur

Phenelzine

	LFTs	Blood pressure
Pre-treatment	✓[1]	✓
"Frequently"		✓

1. Avoid initiation if abnormal

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Venlafaxine

	Pulse	Blood pressure
Pre-treatment	✓	✓
“Periodically” and after dose changes	✓[1]	✓

1. Only at doses >225 mg daily

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Carbamazepine

	U&Es	FBC	LFTs	Weight / BMI	ECG[2]	TFTs	Urinalysis & BUN[4]
Pre-treatment	✓	✓	✓	✓	✓		
After each dose change					✓		
2 weeks after initiation	✓1						
1 month after initiation	✓1						
2 months after initiation	✓1						
3 months after initiation	✓1						
6 months after initiation	✓	✓	✓	✓		✓3	
12 months after initiation	✓	✓					
Every 6 months thereafter	✓						
Every 12 months thereafter		✓					
"Periodically"			✓				✓

1. Particularly sodium levels (risk of hyponatraemia via SIADH)
2. If CVD or risk factors present
3. In hypothyroid patients
4. Blood urea nitrogen

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Lamotrigine

	FBC	U&Es	LFTs
Pre-treatment	✓	✓	✓

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Lithium

	Serum LITHIUM level	Weight / BMI	U&Es (inc. creatinine & eGFR)	Serum CALCIUM level	TFTs	FBC	Blood pressure	ECG	Albumin-creatinine ratio (ACR)	Signs of neurotoxicity[11]
Pre-treatment[1]		✓6	✓	✓	✓	✓	✓	✓9		
5-7 days after initiation[2]	✓									At every clinical contact
Weekly[3]	✓									
3 months after initiation	✓								✓10	
6 months after initiation	✓	✓	✓7	✓	✓					
9 months after initiation	✓									
12 months after initiation	✓	✓	✓	✓	✓					
Every 3 months thereafter	✓4,5									
Every 6 months thereafter		✓	✓7	✓	✓8					

1. Within two months of initiation
2. And 5-7 days after every dose change
3. Until levels are stable (=two consecutive levels within target range at the same dose) after initiation or dose change
4. More frequently if urea or creatinine levels become elevated, or eGFR falls over 2 or more tests
5. After 1 year of stable treatment, may be extended to 6-monthly in patients who meet all of these criteria: *age >65 years; target range <0.8mmol/L; no interacting medicines; no risk of impaired renal or thyroid function, raised Ca or other complications; good symptom control; good adherence to prescribed dose*

6. + height (for BMI calculation)
7. Consider checking renal function with every serum lithium level check (first consideration if levels out of range)
8. More frequently if evidence of impaired renal or thyroid function, raised Ca or increase in mood symptoms (may be related to impaired thyroid function)
9. If existing or risk of CVD
10. See shared care guidelines for guidance on action and further monitoring
11. For example – paraesthesia, ataxia, tremor, cognitive impairment

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Valproate

	FBC[2]	LFTs[3]	Weight / BMI	Coagulation screen[2]	Platelets[2]	Pregnancy test[4]
Pre-treatment[1]	✓	✓	✓	✓	✓	✓
"Periodically" for first 6 months		✓				
6 months after initiation	✓	✓	✓			
12 months after initiation	✓	✓	✓			
Every 12 months thereafter	✓	✓	✓			

1. Also consider HbA1c, lipids and blood pressure as discretionary pre-treatment tests
2. FBC, platelet count, bleeding time & coagulation screen also required before surgery and in case of spontaneous bruising / bleeding
3. Check albumin and clotting if LFTs abnormal
4. In patients of child-bearing potential (contra-indicated in pregnancy for bipolar disorder); if negative, valproate must not be used unless the conditions of the Pregnancy Prevention Programme are met and only if other treatments are ineffective or not tolerated, as judged by an experience specialist; Annual Risk Acknowledgement Form (ARAF) must be completed

MONITORING OF VALPROATE PLASMA LEVELS:
Routine monitoring is not required.
Monitoring may be considered if:

- There are concerns about adherence to treatment;
- Response to treatment is inadequate despite confirmed adherence to a therapeutic dose;
- Dose-related side-effects or toxicity is suspected

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ADHD medicines (exc. guanfacine - see later slide): children 10 years & under

	Heart Rate	Blood Pressure	Weight	Height	ECG	Notes
Pre-treatment	✓	✓	✓	✓	✓1	Monitor psychiatric symptoms and appetite when completing 6 monthly and dose change checks.
Before & after each dose change	✓	✓				
3 months after initiation			✓			
6 months after initiation	✓	✓	✓	✓		
9 months after initiation			✓			
12 months after initiation	✓	✓	✓	✓		
Every 3 months thereafter			✓			
Every 6 months thereafter	✓	✓		✓		

1. An ECG is not needed before starting stimulants or atomoxetine unless the person has any of the following features, or a co-existing condition that is being treated with a medicine that may pose an increased cardiac risk:
   - history of congenital heart disease or previous cardiac surgery
   - history of sudden death in a first-degree relative under 40 years suggesting a cardiac disease
   - shortness of breath on exertion compared with peers
   - fainting on exertion or in response to fright or noise

Compare results with normal range for the person's age/use centile chart where appropriate.

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ADHD medicines (exc. guanfacine - see later slide): children 11 years & over / adults

	Heart Rate	Blood Pressure	Weight (BMI for adults)	Height (under 18 only)	ECG	Notes
Pre-treatment	✓	✓	✓	✓	✓[1]	Monitor psychiatric symptoms and appetite when completing 6 monthly and dose change checks.
Before & after each dose change	✓	✓				
6 months after initiation	✓	✓	✓	✓		
12 months after initiation	✓	✓	✓	✓		
Every 6 months thereafter	✓	✓	✓	✓		

1. An ECG is not needed before starting stimulants or atomoxetine unless the person has any of the following features, or a co-existing condition that is being treated with a medicine that may pose an increased cardiac risk:
   - history of congenital heart disease or previous cardiac surgery
   - history of sudden death in a first-degree relative under 40 years suggesting a cardiac disease
   - shortness of breath on exertion compared with peers
   - fainting on exertion or in response to fright or noise

Compare results with normal range for the person's age/use centile chart where appropriate.

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Guanfacine: children 10 years & under

	Heart Rate	Blood Pressure	Weight & BMI	Height	Signs & symptoms of somnolence & sedation	ECG	Assessment of CV status (inc. QT prolongation & arrythmia)	Notes
Pre-treatment	✓	✓	✓	✓	✓2	✓1	✓2	Monitor psychiatric symptoms and appetite when completing 6 monthly and dose change checks.
During titration (weekly)	✓	✓			✓			
Before & after each dose change	✓	✓	✓	✓	✓			
3 months after initiation	✓	✓	✓	✓	✓			
6 months after initiation	✓	✓	✓	✓	✓			
9 months after initiation			✓	✓	✓			
12 months after initiation	✓	✓	✓	✓	✓			
Every 3 months thereafter			✓					
Every 6 months thereafter	✓	✓		✓	✓			

1. An ECG is not needed before starting guanfacine unless the person has any of the following features, or a co-existing condition that is being treated with a medicine that may pose an increased cardiac risk:
   - history of congenital heart disease or previous cardiac surgery
   - history of sudden death in a first-degree relative under 40 years suggesting a cardiac disease
   - shortness of breath on exertion compared with peers
   - fainting on exertion or in response to fright or noise

   Compare results with normal range for the person's age/use centile chart where appropriate.
2. Assess to identify patients at risk

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Guanfacine: children 11 years & over / adults

	Heart Rate	Blood Pressure	Weight & BMI	Height (under 18 only)	Signs & symptoms of somnolence & sedation	ECG	Assessment of CV status (inc. QT prolongation & arrythmia)	Notes
Pre-treatment	✓	✓	✓	✓	✓2	✓1	✓2	Monitor psychiatric symptoms and appetite when completing 6 monthly and dose change checks.
During titration (weekly)	✓	✓			✓			
Before & after each dose change	✓	✓	✓	✓	✓			
3 months after initiation	✓	✓	✓	✓	✓			
6 months after initiation	✓	✓	✓	✓	✓			
9 months after initiation			✓	✓	✓			
12 months after initiation	✓	✓	✓	✓	✓			
Every 6 months thereafter	✓	✓	✓	✓	✓			

1. An ECG is not needed before starting guanfacine unless the person has any of the following features, or a co-existing condition that is being treated with a medicine that may pose an increased cardiac risk:
   - history of congenital heart disease or previous cardiac surgery
   - history of sudden death in a first-degree relative under 40 years suggesting a cardiac disease
   - shortness of breath on exertion compared with peers
   - fainting on exertion or in response to fright or noise

   Compare results with normal range for the person's age/use centile chart where appropriate.
2. Assess to identify patients at risk

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Dementia medicines – donepezil, galantamine, memantine & rivastigmine

	Pulse	U&Es including eGFR	LFTs	Weight	ECG
Pre-treatment	✓	✓	✓	✓	✓[3]
After each dose increase during titration	✓				
At each review[1]	✓				
"Periodically"				✓[2]	✓[4]

1. More frequently if symptomatic
2. Rivastigmine and galantamine only
3. Indicated for unexplained syncope, bradycardia and patients taking concomitant cardiac rate-limiting medication e.g. beta-blockers, amiodarone, certain antidepressants, antipsychotics, antibiotics (this list is not exhaustive)
4. Rivastigmine only (see summary of product characteristics, section 4.4))

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Cyproterone acetate

	LFTs	FBC	Adrenocortical function (cortisol, ACTH)	Signs & symptoms of meningioma[1]	Parameters of carbohydrate metabolism[2]
Pre-treatment	✓	✓			
6 months after initiation	✓	✓	✓	✓	✓
12 months after initiation	✓	✓	✓	✓	✓
Every 12 months thereafter	✓	✓	✓	✓	✓

1. Meningiomas are usually benign, but as they are space occupying lesions, they can put pressure on neurological structures. This can cause a variety of symptoms including changes in vision, hearing loss or ringing in the ears (tinnitus), loss of smell, headaches that worsen with time, memory loss, seizures, or weakness in extremities. Clinicians should be vigilant for these symptoms and signs in patients taking cyproterone but should also be aware that meningiomas can be asymptomatic.
2. In diabetics only

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