LITHIUM – Monitoring Summary

Appendix Three – Monitoring Parameters.			
Parameter	**Frequency**	**Result**	**Action for Primary Care**
As well as responding to absolute values in laboratory tests, a rapid change or a consistent trend in any value should prompt caution and extra vigilance.			
Plasma lithium level taken 10-14 hours post-dose. NB: samples should be taken as close to 12-hours post-dose as possible. • Record results in the patient's record as well as patient-held purple lithium pack, or other suitable recording mechanism. It is advisable to document the actual time interval between the last dose and the blood sample	**At least every 12 weeks for the first year, then every 6 months.** More frequent long-term monitoring may be advised by the specialist team in some circumstances (e.g. elderly, renal impairment, altered laboratory parameters, poor symptom control or adherence, concurrent interacting medicines) or if most recent 12-hour plasma lithium level is at the threshold of target range. **Consider additional monitoring whenever there is a change in the patient's circumstances, e.g. intercurrent illness.**	**12-hour plasma lithium level. Below target range** NB: range for each patient to be determined by the specialist team. Note that local reference ranges may vary	Assess adherence, including discussion with patient and check of GP clinical systems. Offer advice on adherence if appropriate (e.g. daily routines, reminders). Ensure level was taken 12 hours after lithium dose. Contact specialist team for advice if suspected that the dose is too low.
		Above target range NB: range for each patient to be determined by the specialist team. Note that local reference ranges may vary	Ensure level was taken 12 hours after lithium dose and that the correct dose has been prescribed and taken. Check for interactions, hydration, patient's physical and mental status, and features of toxicity. Repeat level if necessary. **Withhold lithium if there are features of toxicity.** Contact specialist team for advice in all cases. If ≥2.0mmol/L – consider sending patient to A&E, based on clinical presentation (e.g. features of toxicity) and inform specialist team.
		Within target range but toxicity suspected NB: range for each patient to be determined by the specialist team. Note that local reference ranges may vary	Contact specialist team for advice. Referral to secondary care may be required depending on the severity of symptoms and the certainty of toxicity. Use clinical judgement to determine the urgency of referral.
		Within target range but marked change since last level (and there has been no dose change) NB: range for each patient to be determined by the specialist team. Note that local reference ranges may vary	Establish whether level was taken 12 hours after lithium dose. Repeat level with an urgency determined by clinical judgement. Assess adherence, including discussion with patient and check of GP clinical systems. Offer advice on adherence if appropriate (e.g. daily routines, reminders). **More frequent monitoring may be required.**
• **TFTs**	**Every 6 months.** More frequent monitoring (particularly renal function)	**Thyroid function** Altered TFTs without symptoms	Contact specialist team for advice. During lithium treatment, TFTs are commonly abnormal; the TSH can rise early in treatment but settle with time.

	may be advised by the specialist team in some circumstances (e.g. elderly, renal impairment, altered TFTs, concurrent interacting medicines).		Note that the symptoms of hypothyroidism can be difficult to discriminate from depression and common side effects of lithium.
		Subclinical hypothyroidism • Raised TSH • Normal T4 Clinical features not overtly manifest	
		Overt hypothyroidism • High TSH • Low T4 Symptomatic	Contact specialist team for advice, which may include input from endocrinology services. Thyroid hormone replacement is usually indicated and often continued throughout the course of lithium treatment.
		Hyperthyroidism	Contact specialist team for advice, which may include input from endocrinology services.
Parameter	**Frequency**	**Result**	**Action for Primary Care**
• **eGFR**	**Every 6 months.** More frequent monitoring (particularly renal function) may be advised by the specialist team in some circumstances (e.g. elderly, renal impairment, altered TFTs, concurrent interacting medicines).	• eGFR <45ml/min • rapidly falling eGFR gradual decline in eGFR	The response to impaired or deteriorating renal function should be individualised. Contact specialist team for advice, which may include input from nephrology services. A cardiovascular risk profile may guide specialist advice and should be provided if available. Use clinical judgement to determine the urgency of consultation. Anticipate the need for increased monitoring as trends in renal function are more useful than absolute values. In the elderly or those at the extremes of muscle mass, creatinine clearance provides a better estimate of renal function than eGFR. Adjustments to dose may be advised. If renal function is significantly compromised, lithium may no longer be an appropriate treatment and specialists will advise accordingly.
		Renal function Polyuria and polydipsia	Polyuria is common with lithium and often well tolerated. Advise the patient to maintain adequate fluid intake and advocate excellent oral hygiene.

			Contact specialist team for advice, which may include input from nephrology services. In some instances, dose adjustment or specific treatments may be advocated.
• **U&Es** • **Calcium**	**Every 6 months.** More frequent monitoring (particularly renal function) may be advised by the specialist team in some circumstances (e.g. elderly, renal impairment, altered TFTs, concurrent interacting medicines).	**U&Es or calcium out of range**	Check that the most recent 12-hour plasma lithium level is in the desired range and act accordingly if not. Determine whether there are symptoms and signs related to the electrolyte disturbance or lithium toxicity. Consider arranging an ECG in those at risk for QT prolongation. Contact specialist team for advice. Changes in calcium levels may reflect parathyroid dysfunction and input from endocrinology services may be indicated.
• **Height, weight, and BMI.**	**Every 6 months.** More frequent monitoring (particularly renal function) may be advised by the specialist team in some circumstances (e.g. elderly, renal impairment, altered TFTs, concurrent interacting medicines).	**Weight and BMI** Outside healthy range	Provide appropriate support on multicomponent interventions to increase physical activity levels, improve eating behaviour and quality of diet. Remind patient of the importance of maintaining adequate fluid intake and avoiding dehydration while exercising. Consider measuring waist circumference for individualised monitoring. Patients should be instructed to avoid sudden changes in diet, especially avoiding low sodium diets. Lithium levels are influenced by body weight and so for patients being supported to lose weight, lithium levels may need to be checked more frequently (akin to other situations of caution). Use clinical judgement, lithium levels and the rate of weight loss when determining the frequency of blood tests. **If rapid weight gain – discuss with specialist**
Additional monitoring – bipolar disorder			
Diet, nutritional status and level of physical activity, **Cardiovascular status including pulse and BP, LFTs,** **Metabolic status including fasting blood glucose, HbA_{1c} and blood lipid profile.**	Annually as part of physical health check recommended in NICE CG185 Bipolar disorder: assessment and management.		
Physical health check (bi-polar disorder)	Any physical health problems should be treated by the appropriate primary care health professional and communicated to the specialist team within 14 days.		

Therapeutics Advisory Group

Improving lives together
Norfolk and Waveney Integrated Care System

Title	LITHIUM - Monitoring Summary
Description of policy	*To inform healthcare professionals*
Scope	*Norfolk and Waveney Integrated Care System*
Prepared by	Norfolk and Waveney ICB Medicines Optimisation Team
Impact Assessment (Equalities and Environmental)	*Please indicate impact assessment outcome:* *Positive impact* *Adverse impact - low - action plan completed as per guidance* *Adverse impact - medium - action plan completed as per guidance* *Adverse impact - high - action plan completed as per guidance* *No impact* ***No policy will be approved without a completed equality impact assessment***
Other relevant approved documents	Lithium shared care agreement
Evidence base / Legislation	Level of Evidence: *A. based on national research-based evidence and is considered best evidence* ***B. mix of national and local consensus*** *C. based on local good practice and consensus in the absence of national research based information.*
Dissemination	Is there any reason why any part of this document should not be available on the public web site? ☐ Yes / No ☒
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1.0	MO Team	To support prescribing	July 2025