

**Kent and Medway JPC: Shared Care Guideline for Prescribing Oral
 Liothyronine**

Document history:

Version	Date	Main changes / comments
Draft 1.0	26/11/19	
Draft 1.1	09/06/2020	Review of existing Liothyronine therapy removed from shared care agreement. Changes to shared care agreement form and correspondence is in process
Draft 1.2 and 1.35	November 2020	Discussed with GP and Endocrinologist comments raised from November JPC. Updated to agreed Kent and Medway template Review of existing Liothyronine therapy removed from shared care agreement.
Draft 1.4	April 2021	Updated to cover RMOC criteria and subsequent Medway document, pathway flowcharts removed. Draft changes to be confirmed by JPC

Shared Care Protocol template

Oral Liothyronine for adult patients with hypothyroidism

AREAS OF RESPONSIBILITY FOR SHARED CARE

This shared care agreement outlines suggested ways in which the responsibilities for managing the prescribing of **liothyronine** can be shared between the specialist and general practitioner (GP). GPs are invited to participate. If the GP is not confident to undertake these roles, then he or she is under no obligation to do so (*please refer to Principles of Shared Care Agreements in point 2h*). In such an event, the total clinical responsibility for the patient for the diagnosed condition remains with the specialist. Refer to Principles of Shared Care document for full details, in summary:

- Transfer of monitoring and prescribing to Primary care is normally after the patient is on regular dose and with satisfactory investigation results for at least 4 weeks
- The duration of treatment will be determined by the specialist based on clinical response and tolerability.
- All dose or formulation adjustments will be the responsibility of the initiating specialist unless directions have been discussed and agreed with the GP/primary care clinician
- Termination of treatment will be the responsibility of the specialist.

PRESCRIBING INFORMATION

1. Background

Combination levothyroxine / liothyronine should not be used *routinely* in the management of hypothyroidism as there is insufficient population based clinical evidence to show that combination therapy is superior to levothyroxine monotherapy.⁵

Liothyronine monotherapy is rarely used in practice. This shared care document is only to be used in the situations where alternative treatments have been found to be inadequate.

2. Indications (*Please state whether licensed or unlicensed*)

Combination therapy: As part of the overall holistic management of patients with hypothyroidism, NHS consultant endocrinologists may start a trial of combination levothyroxine and liothyronine ONLY in circumstances where all other treatment options have been exhausted:

1. Where symptoms of hypothyroidism persist despite optimal dosage with levothyroxine (TSH 0.4-1.5mU/L). Please see section 8 for TSH reference ranges for those patients already on combination therapy
2. Where alternative causes of symptoms have been excluded (see section 14).

Monotherapy: Liothyronine monotherapy is not recommended in hypothyroidism and should only be prescribed in exceptional circumstances, in line with RMOC/JPC guidance, such as:

- Clearly distinguishable specific levothyroxine medication intolerance including extremely rare cases of levothyroxine induced liver injury.
- Potentially for patients who do not effectively metabolise levothyroxine to liothyronine, if agreed by a consultant NHS endocrinologist assessing the patient according to RMOC/JPC guidance.⁵

This shared care guideline should be read in conjunction with RMOG guidance.⁵

3. Pharmaceutical aspects

Route of administration: Oral

Formulation: Tablet

Administration details: See BNF and SPC (www.medicines.org.uk/emc)

Other important information: There can be variation in the licensing of different medicines containing the same drug. Oral forms available from special- order manufacturers include: tablet, capsule, oral suspension, oral solution.² Patients switched to a different brand should be monitored (particularly if pregnant or if heart disease present) as brands without a UK licence may not be bioequivalent.² Only licensed brands should be used under this shared care agreement.

4. Exclusions or contraindications

Please note this does not replace the Summary of Product Characteristics (SPC) and should be read in conjunction with it.

1. Patients with thyroid cancer who need liothyronine as part of their investigation and treatment will remain under the specialist care.
2. Women who are planning pregnancy who are taking liothyronine should remain under specialist care as liothyronine is not recommended in pregnancy. If pregnancy occurs contact endocrinologist/initiating specialist and arrange for transfer of care back to them.
3. In rare cases where liothyronine is used for resistant depression, therapy should be supervised by a consultant psychiatrist. Prescribing should remain with the consultant psychiatrist. *This is off licence and not approved locally.*
4. The prescribing of unlicensed liothyronine and thyroid extract products (e.g. Armour thyroid) is not supported.
5. Known hypersensitivity to the drug or any of its excipients
6. Thyrotoxicosis
7. Cardiac arrhythmias.
8. Angina

5. Initiation and ongoing dose regime (by specialist)

Note -

- *Transfer of monitoring and prescribing to Primary care is normally **after the patient is stable on a regular dose** and with satisfactory investigation results for period of time as agreed by the specialist.*
- *The duration of treatment will be determined by the specialist based on clinical response and tolerability.*
- *Specialist to specify the length of treatment supplied to the patient in order to indicate to primary care when new supply will be required for forward planning.*
- *All dose or formulation adjustments will be the responsibility of the initiating specialist unless directions have been discussed and agreed with the primary care clinician*
- *Termination of treatment will be the responsibility of the specialist.*

When liothyronine is prescribed as part of a combination treatment with levothyroxine

When liothyronine is commenced a reduction in levothyroxine dose will be required. Specialists should individualise approach to dose changes. However, typically, for every 10microgram of liothyronine (half tablet of 20microgram preparation) the levothyroxine dose should be reduced by 50micrograms.

(E.g. levothyroxine 125microgram each morning would become 75microgram levothyroxine each morning and 10microgram liothyronine each morning).

Response is assessed via pre and post symptom scoring or quality of life questionnaire. (20 – 25 micrograms of liothyronine sodium is equivalent to approximately 100 micrograms of levothyroxine sodium)²

Liothyronine Monotherapy:

Patients will be stabilised by the specialist. Also see [BNF](#) or [Summary of Product Characteristics\(SPC\)](#)

6. Specialist responsibilities for monitoring (including frequency)

At initiation:

1. Ensure the patient fulfils the criteria for treatment.
2. To ensure that all alternative causes of symptoms have been excluded.
3. To prescribe, monitor and assess response biochemically and assess physical and psychological wellbeing after at least 3 months of treatment and until treatment dose is stabilised.
4. **Where new patients whose symptoms persist on levothyroxine and combination therapy is indicated (see section 1 above):** Prescribing responsibility should remain with the endocrinologist until there is a formal assessment of the safety and benefit of treatment within 6 months of starting therapy, evidenced by quality of life improvements and biochemical markers.^{5,6}

At review:

1. Patients initiated on liothyronine or maintained on liothyronine after a review by an NHS consultant endocrinologist should be offered an annual follow-up appointment with the endocrinologist or NHS Consultant Physician with expertise in thyroid disorders.
2. To support and advise primary care prescribers when dose adjustments are required in response to routine monitoring.
3. To ensure that the patient has an adequate supply of medication until a general practice supply can be arranged.
4. To accept back care of hypothyroidism for the patient where the GP no longer feels confident to undertake this role e.g. where the patient becomes unstable.

7. GP responsibility

1. To agree to prescribe liothyronine in line with the shared care guideline once a stable dosing regimen has been determined by specialist care.
2. Ensure no drug interactions with concomitant medicines that are added at a later time.
3. Report adverse events to the MHRA on a Yellow Card www.mhra.gov.uk/yellowcard and to the specialist.

4. Monitoring (including frequency):

Monitor biochemistry (TSH) annually unless otherwise as recommended by the specialist

- Monitoring is by TSH levels measured from blood tests taken prior to the morning medication.
- Initially and following a dose change a repeat test will be required at 6-8 weeks. After dose stabilisation, monitoring should only be required annually unless there is a change in symptoms that may warrant the checking of TSH levels.
- Please see section 8 for TSH levels

Review/follow up:

5. See section 8 for TSH level and action needed
6. Report to and seek advice from the specialist on any aspect of patient care, which is of concern and may affect treatment.
7. Contact initiating trust (section 12) for advice and guidance if GP and patient want to consider discontinuing treatment.
8. Refer the care of hypothyroidism for the patient back to the consultant endocrinologist where the GP no longer feels confident to undertake this role. E.g. where the patient becomes unstable.

8. Dose Management in response to monitoring

For those patients on levothyroxine and liothyronine COMBINATION THERAPY

Results	Management
TSH Level	Action for GPs
More than 5mU/L	Increase levothyroxine dose by 25 microgram and recheck TSH in 6 to 8 weeks ⁵
0.4 – 5.0 mU/L	If patient asymptomatic: No change required If patient is symptomatic: seek specialist advice
Less than 0.4 mU/L	Seek specialist advice

For those patients on liothyronine monotherapy

Results	Management
TSH Level	Action for GPs
More than 5mU/L	Seek specialist advice
0.4 – 5.0 mU/L	If patient asymptomatic: No change required If patient is symptomatic: seek specialist advice
Less than 0.4 mU/L	Seek specialist advice

9. Significant medicine interactions – prescriber must consider interactions with any and all repeat medication the patient is taking at the time of initiation

For a comprehensive list consult the [BNF](#) or [Summary of Product Characteristics\(SPC\)](#)

10. Adverse effect management

Specialist to detail action to be taken upon occurrence of a particular adverse event as appropriate. Most serious toxicity is seen with long-term use and may therefore present first to GPs Specialist to detail in shared care agreement form below.

When used in combination with Levothyroxine ⁵:

ADVERSE EVENT	ACTION TO BE TAKEN	BY WHOM
Angina, arrhythmia	Stop liothyronine, check TSH seek specialist advice	GP
Other symptoms of excessive dose: Palpitations, restlessness, tremor, diarrhoea, headache, muscle cramps	Continue liothyronine, check TSH	GP

When used as Liothyronine Monotherapy ⁷:

ADVERSE EVENT	ACTION TO BE TAKEN	BY WHOM
Angina, arrhythmia	check TSH and if abnormal to discuss or seek advice from Consultant	GP
Other symptoms of excessive dose: Palpitations, restlessness, tremor, diarrhoea, headache, muscle cramps	check TSH and if abnormal to discuss or seek advice from Consultant	GP

11. Advice to patients and carers

The specialist will counsel the patient with regard to the benefits and risks of treatment and will provide the patient with any relevant information and advice

1. Before shared care is put in place the patient must be fully informed of the plan and must be in agreement with it.
2. The patient should report to the specialist or GP if he or she does not have a clear understanding of the treatment or has any concerns relating to treatment.
3. Attend appropriate specialist, GP and other follow up appointments and co-operate with assessments and blood tests.
4. Inform the specialist or the GP of any other medication being taken, including herbal or over the counter products
5. Seek help urgently if side effects are suspected, or are otherwise unwell.

12. Specialist contact information

Trust	Specialist name	Contact details
Medway Maritime Hospital (MFT)		
Maidstone and Tunbridge Wells (MTW)		
Darent Valley Hospital (DVH)		
East Kent Hospitals University NHS Foundation Trust (EKHUFT)		

13. Additional information

Some possible causes of persistent symptoms in euthyroid patients on levothyroxine T4.⁵

- **Endocrine / autoimmune-** Diabetes mellitus, Adrenal insufficiency, Hypopituitarism, Coeliac disease, Pernicious anaemia
- **Haematological-** Anaemia, Multiple myeloma
- **End organ damage-** Chronic liver disease, Chronic kidney disease, Congestive cardiac failure
- **Nutritional-** Deficiency of any of the following: Vitamin B12 ,Folate, Vitamin D, Iron
- **Metabolic-** Obesity, Hypercalcaemia ,Electrolyte imbalance
- **Drugs-** Beta-blockers, Statins, Opiates
- **Lifestyle-** Stressful life events, Poor sleep pattern, Work-related exhaustion, Alcohol excess
- **Other-** Obstructive sleep apnoea, viral and postviral syndromes, chronic fatigue syndrome, carbon monoxide poisoning, depression and anxiety, polymyalgia rheumatic

14. References

Acknowledgements: Adapted from shared care guidance written by Basingstoke, Southampton & Winchester District Prescribing Committee and from RMOC guidance

References

1. Summary of product characteristics for Liothyronine
2. British National Formulary Accessed online.
3. Wiersinga W, M, Duntas L, Fadeyev V, Nygaard B, Vanderpump M, P, J, 2012 ETA Guidelines: The Use of L-T4 + L-T3 in the Treatment of Hypothyroidism. Eur Thyroid J 2012;1:55-71

4. Okosieme, Gilbert J, Abraham P, et al. Management of primary hypothyroidism: statement by the British Thyroid Association Executive Committee. Clin Endocrinol (Oxf). 2016;84):799-808.
5. Regional Medicines Optimisation Committee (RMOC). Guidance – Prescribing of Liothyronine. June 2019
6. National Institute for Health and Care Excellence. NG145. Thyroid disease: assessment and management. 20 Nov 2019
7. Specialist advice from Dr Maria Acosta (date?)

Appendix 1
REQUEST TO SHARE CARE AND AGREEMENT FORM

Shared care title and document version

The expectation is that this information, along with the full shared care protocol, provides sufficient information to enable GP* to be confident to take on clinical and legal responsibility for prescribing and monitoring. GP* to review and must respond to provider trust request to share care within 2 weeks, using form provided.

**This may be any primary care prescribing clinician.*

For completion by specialist (with shared care agreement form)			
Patient name			
DOB			
NHS Number			
Patient weight (kg)			
Drug (s) Dose, frequency, and route at handover			
Diagnosis (please indicate if unlicensed or "off-label")			
Date of first prescription by specialist			
Date of the next blood monitoring review date			
Estimated date for prescribing responsibility to be with GP* (at least 28 days after first prescribing)			
Special prescribing advice for this patient, to include any other medication patient is taking for same condition			
KEY PRIMARY CARE INFORMATION (refer to full shared care guideline for full details)			
GP* Responsibilities			
MONITORING (as per Shared Care document unless stated below)			
Frequency of GP* monitoring			
Frequency of specialist review			
TEST	NORMAL RANGE	Pre-Treatment Baseline Result (specialist responsibility)	Initiation of treatment Result (specialist responsibility)
ACTION TO BE TAKEN IF ABNORMAL RESULT			
TEST	RESULT	ACTION	

SHARED CARE AGREEMENT FORM

This form is used to agree shared care between specialist, patient and GP*.

Specialist and patient agreement

By signing below we accept:

- The Kent and Medway CCG shared care principles
- The requirements and responsibility defined in this drug specific shared care protocol
- To provide medication for the transition period (at least 28 days)

Specialist name:	Patient name:
Designation:	DOB:
Provider Trust:	NHS number:
Direct telephone number:	
Email:	
Specialist signature:	Patient signature:
Date:	Date:

GP* response to shared care request

Please return to specialist within **2 weeks** of receipt of request to share.

This form is to be completed by the GP* who is requested to share care.

I agree to accept shared care as set out in this shared care protocol and KMCCG shared care principles.

I have not received adequate support to take over prescribing therefore I do not accept shared care for this patient.

My reasons for not accepting are:

Please note that GP agreement is voluntary, with the right to decline to share care if for any reason you do not feel confident in accepting clinical responsibility.

GP* name	
Designation	
Direct telephone number	
Email	
Practice address	
GP* signature	
Date	