

## MID AND SOUTH ESSEX MEDICINES OPTIMISATION COMMITTEE (MSEMOC)

### UNLICENSED DRIED THYROID HORMONE EXTRACTS (ARMOUR® THYROID):

**BLACK: NOT RECOMMENDED FOR PRESCRIBING IN PRIMARY, COMMUNITY OR SECONDARY CARE**

### LIOTHYRONINE:

**RED: NOT RECOMMENDED FOR PRESCRIBING IN PRIMARY OR COMMUNITY CARE**

**Mid and South Essex CCGs** do not support the prescribing of Armour® Thyroid for any indication in primary, community or secondary care.

**Mid and South Essex CCGs** do not support the prescribing of liothyronine monotherapy or combination therapy in the long-term treatment of hypothyroidism in primary or community care.

#### New Patients:

New patient prescribing should remain with the hospital specialist. Primary care prescribers should not initiate for any new patient.

#### Existing patients:

Patients who are already receiving liothyronine on prescription from their primary care prescribers and cannot be switched to levothyroxine should be repatriated back to the hospital specialist. Where repatriation has not been agreed, primary care prescribers may consider switching to levothyroxine, as per Appendix 1.

#### **Levothyroxine alone is the treatment of choice for hypothyroidism.**

Liothyronine (T3) is the active thyroid hormone and the majority is produced by peripheral conversion of levothyroxine (T4). Interest in the use of liothyronine in combination with levothyroxine has been in existence for many years. There is currently insufficient evidence of clinical and cost effectiveness to support the use of liothyronine (either alone or in combination) for the treatment of hypothyroidism with respect to cognitive function, social functioning and wellbeing in the treatment of hypothyroidism. Levothyroxine alone is therefore the treatment of choice for hypothyroidism.

Use of unlicensed dried thyroid hormone extracts, such as Armour® Thyroid, is not recommended. It is harder to select, monitor and adjust the dose of T3 containing preparations than T4, and it is likely therefore that using T3 and T4 will increase risk of stroke and osteoporosis from slight over treatment over many years. The variation in hormonal content and large amounts of liothyronine may lead to increased serum concentrations of T3 and subsequent thyrotoxic symptoms, such as palpitations and tremor. Whilst it is possible that some patients might benefit from the use of combination treatment or Armour® Thyroid, the parameters identifying such a patient group have yet to be clearly identified.

Liothyronine is only recommended in Mid and South Essex CCGs for post-thyroidectomy thyroid cancer patients. Patients that need to receive radioactive iodine treatment (Radioiodine Remnant Ablation, RRA) after their surgery will initially be started on liothyronine due to its shorter half-life and therefore faster onset of action than levothyroxine. These patients will remain on liothyronine until the oncologist is confident that they will not need any more radioactive iodine at which point they are switched over to levothyroxine. There should therefore be no need to accept prescribing for these patients in primary care.

#### **Recommendations**

- Prescribers should not accept new requests to prescribe liothyronine or Armour® Thyroid for hypothyroidism.
- The Royal College of Physicians considers liothyronine to be a specialist medication which should be prescribed by specialist endocrinologists. Patients who are already receiving liothyronine on prescription from their primary care prescribers and cannot be switched to levothyroxine should be repatriated back to the hospital specialist. As per NHS England guidance on 'Items which should not routinely be prescribed in primary care' responsibility for this lies with a consultant Endocrinologist. Where repatriation



has not been agreed, primary care prescribers may consider switching to levothyroxine, as per Appendix 1.

- Patients taking liothyronine due to intolerance to levothyroxine tablets (e.g. lactose intolerance) should be reviewed and switched to the levothyroxine manufactured by TEVA which is suitable in lactose and galactose intolerance.
- Patients who decline to the switch or are intolerant should be referred to the Endocrinologist.

Providers commissioned to provide services on behalf of Mid and South Essex CCGs are reminded that they are required to follow the local joint formulary and prescribing guidance, as detailed in the medicines management service specification of their contract.

### Appendix 1: Switching advice (liothyronine to levothyroxine) from local specialists

Approximate equivalent daily dose of liothyronine to levothyroxine	
Liothyronine (micrograms)	Equivalent dose of levothyroxine (micrograms)
5	25
10	50
15	75
20	100
30	150
40	200
60	300
80	400
100	500

Approximate equivalent daily dose of Armour® Thyroid to levothyroxine	
Armour® Thyroid/ Thyroid Sicca	Equivalent Dose of levothyroxine
¼ grain(15mg)	25 micrograms
½ grain(30mg)	50 micrograms
1 grain (60mg)	75-100 micrograms
1 + ½ grains (90mg)	125 micrograms
2 grains (120mg)	150 micrograms
3 grains (180mg)	250 micrograms
4 grains (240mg)	350 micrograms
5 grains (300mg)	400 micrograms

Doses should be rounded to nearest 25micrograms. **Thyroid function tests (TSH and T4) should be repeated in eight weeks after switching to determine the appropriateness of the new dose.**

<b>References</b>	<ul style="list-style-type: none"> <li>▪ Management of primary hypothyroidism: statement by the British Thyroid Association Executive Committee. Clinical Endocrinology (2016) 84, 799–808: <a href="http://onlinelibrary.wiley.com/doi/10.1111/cen.12824/pdf">http://onlinelibrary.wiley.com/doi/10.1111/cen.12824/pdf</a></li> <li>▪ PrescQIPP bulletin 121 December 2015. Switching liothyronine (L-T3) to levothyroxine (L-T4) in the management of primary hypothyroidism (<a href="#">LINK</a>)</li> <li>▪ NICE guideline [NG145]: Thyroid disease: assessment and management. November 2019: <a href="https://www.nice.org.uk/guidance/ng145/chapter/Recommendations">https://www.nice.org.uk/guidance/ng145/chapter/Recommendations</a></li> <li>▪ NHS England: Items which should not routinely be prescribed in primary care. June 2019: <a href="https://www.england.nhs.uk/wp-content/uploads/2019/08/items-which-should-not-routinely-be-prescribed-in-primary-care-v2.1.pdf">https://www.england.nhs.uk/wp-content/uploads/2019/08/items-which-should-not-routinely-be-prescribed-in-primary-care-v2.1.pdf</a></li> </ul>
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