



24 August 2017

Dear Colleague,

**Recommendation to consider the following change in clinical practice: Prescribing of capsule-based Levothyroxine to be considered as an option instead of Liothyronine for new or existing patients.**

The Effective Prescribing Programme (EPP) has been working on opportunities for Boards to take forward clinically safe efficiencies in prescribing practice. We have identified an initiative which is unlikely to result in poorer patient outcome but is a cost effective opportunity to consider individual patient suitability to start / switch from liothyronine to levothyroxine capsules (Appendix 4). The Programme Board make this recommendation ensuring patient safety and care is paramount and will be sustained through its implementation. Furthermore, the Board recognises that this start / switch will be made through consultation with patients.

Both liothyronine and levothyroxine are prescribed to patients for primary hypothyroidism in Primary Care settings in NHSScotland, sometimes on the recommendation of a clinical endocrinologist. In terms of a direct comparison, levothyroxine has a longer half-life and provides suitable stable and physiological quantities of thyroid hormones, enabling daily dosage, as opposed to liothyronine, which cannot maintain steady state levels with a single daily dosage. Single daily dosing might prove to be a desirable option for patients.

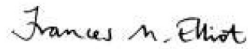
The combination of levothyroxine and liothyronine, in both non- and physiological proportions, has not consistently been shown to be more beneficial than levothyroxine alone with respect to cognitive function, social functioning and wellbeing. The variation in hormonal content and large amounts of liothyronine may lead to increased serum concentrations of liothyronine and subsequent thyrotoxic symptoms, such as palpitations and tremors (Appendix 1). Management of these patients with levothyroxine alone might prove beneficial as a result of fewer adverse effects.

As a result of the above assessment, patient safety and patient-centred care would be improved or sustained through the implementation of a clinical review. This patient-centred approach would be crucial to the review process through full engagement and shared decision making with patients. Face to face consultations would be required to take place before any prescription is switched over and a review period will then begin. If patients do not want to switch to levothyroxine in the first instance they should be offered a trial of levothyroxine with reassurance that returning to liothyronine will be possible if the levothyroxine has a poorer effect.

Based on the evidence above NHS Boards are asked to (Appendices 2 & 3):

- review the position of liothyronine in their local formularies and
- review the prescribing of liothyronine to patients with a view to switching to levothyroxine where appropriate
- consult local clinicians regarding the contents of this letter

If you have feedback or suggestions for any additional implementation support that could be provided through the Effective Prescribing Programme, please get in touch.



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Medical Director  
NHS Fife  
Co-Chair EPP Board



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### **Appendix 1: Guidance on the Prescribing of Liothyronine (T3) Containing Products for the Management of Primary Hypothyroidism**



Liothyronine  
guidance.pdf

### **Appendices 2 & 3: British Thyroid Association – Management of Primary Hypothyroidism & FAQs for GPs**



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#### Appendix 4

#### Liothyronine Potential Savings (August – October 2016)

Potential saving (one quarter) based on switching liothyronine for therapeutically equivalent dose of levothyroxine (i.e. 75mcg tablets at price of £2.82 for 28 pack) by NHS Board.

Health Board	Patient Count	Number of Paid Items	Paid Quantity	PD Paid GIC excl. BB	Potential saving* (25% Switch)	Potential saving* (50% Switch)	Potential saving* (75% Switch)
NHS AYRSHIRE & ARRAN	78	141	8,915	£82,209.03	£20,327.79	£40,655.58	£60,983.37
NHS BORDERS	23	48	1,960	£18,074.00	£4,469.15	£8,938.30	£13,407.45
NHS DUMFRIES & GALLOWAY	32	69	5,068	£46,734.20	£11,555.95	£23,111.89	£34,667.84
NHS FIFE	59	99	6,056	£55,844.98	£13,808.76	£27,617.53	£41,426.29
NHS FORTH VALLEY	43	87	5,519	£50,893.05	£12,584.30	£25,168.60	£37,752.91
NHS GRAMPIAN	30	54	4,200	£38,730.00	£9,576.75	£19,153.50	£28,730.25
NHS GREATER GLASGOW & CLYDE	184	352	28,696	£264,618.11	£65,432.00	£130,864.01	£196,296.01
NHS HIGHLAND	50	106	6,798	£62,687.27	£15,500.65	£31,001.31	£46,501.96
NHS LANARKSHIRE	113	223	16,510	£152,245.77	£37,645.74	£75,291.49	£112,937.23
NHS LOTHIAN	155	250	13,505	£124,535.40	£30,793.81	£61,587.63	£92,381.44
NHS ORKNEY							
NHS SHETLAND							
NHS TAYSIDE	140	253	17,868	£164,768.48	£40,742.23	£81,484.46	£122,226.69
NHS WESTERN ISLES							
<b>Scotland</b>	<b>922</b>	<b>1,708</b>	<b>116,355</b>	<b>£1,072,959.29</b>	<b>£265,310.17</b>	<b>£530,620.34</b>	<b>£795,930.51</b>