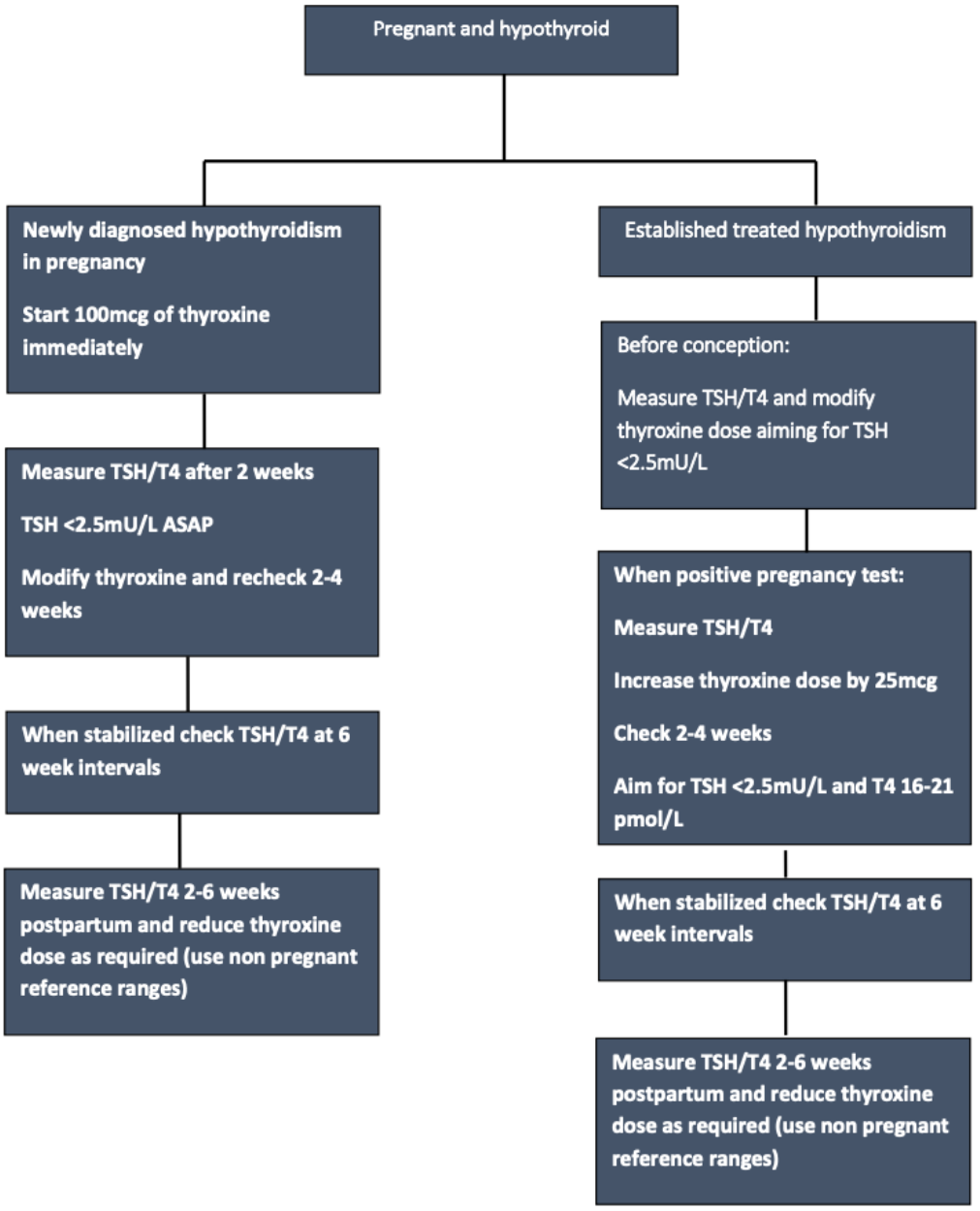
Thyroid disease in pregnancy

TARGET AUDIENCE	Maternity department
PATIENT GROUP	Pregnant women

Summary



Section 1 – Introduction

Thyroid dysfunction affects 1% of pregnancies. It is known that thyroid disturbance is associated with adverse pregnancy outcomes such as preterm delivery, low birthweight infants, miscarriage, gestational hypertension and stillbirth [(1)]. The commonest thyroid disease seen in clinical practice is hypothyroidism. The aim of this guideline is to inform the health care provider of the framework for managing these patients and to provide guidance for onward referral.

Section 2 – Scope

This guideline is available for guidance in the management of pregnant women with thyroid disease in both the inpatient and outpatient setting NHS Lanarkshire.

Section 3 – Guidance

The following NHSL pregnancy-specific trimester reference ranges should be used in the interpretation of all TFT's whether a woman during pregnancy. However, when a patient in on medication for hypothyroidism we aim for a TSH <2.5mU/L and a T4 of 16-21 pmol/L.

	1st trimester	2nd trimester	3rd trimester
TSH (mlU/L)	0.33 – 4.59	0.35 – 4.1	0.21 – 3.15
T3 (pmol/L)	3.8 – 6.0	3.2 – 5.5	3.1 – 5.0
T4 (pmol/L)	12.1 – 19.6	9.6 – 17.0	8.4 – 15.6

(NEW LAB RANGES 2024)

Hypothyroidism

TFT results will indicate a raised TSH and low T3 and T4. For patients on adequate thyroid replacement therapy, maternal and fetal outcomes are good and the pregnancy is unaffected by hypothyroidism. Hypothyroidism can occur after treatment for hyperthyroidism, for example after radioactive iodine therapy for Grave's disease. The difference for this group is that there is a very small risk of neonatal thyrotoxicosis because of transplacental transfer of thyroid stimulating antibodies (TRABS).[(2)]

Hyperthyroidism

TFT results indicate a raised T3 and T4 and suppressed TSH. The commonest cause of hyperthyroidism in pregnancy is Graves' disease. For those patients with good control on anti-thyroid drugs and those women in remission from Grave's disease, maternal and fetal

outcomes are usually good and the pregnancy is unaffected by maternal hyperthyroidism. These women will be managed in the Medical Obstetric clinic therefore the role for the generalist and midwifery team is identification and referral to the Medical Obstetric Team following the woman's booking appointment. Ideally, these women should have received pre-pregnancy counselling through the medical obstetric clinic.

Group A - those with current/previous hypothyroidism (no history of hyperthyroidism/thyrotoxicosis):

Gestation/situation	Background/action	Responsible clinician	Recommendation
Pre-pregnancy	No input or pre-pregnancy review required as managed in primary care		
Booking appointment with CMW	Check TFT's (TSH/T4/T3) Document current thyroxine dose and ensure compliance. Reassure that thyroxine is safe in pregnancy. All women should have thyroxine dose increased when a pregnancy is confirmed by 25mcg daily.[3]	CMW/GP	Aim for a TSH of <2.5mU/L Advise that CMW should liaise with named consultant who should liaise with GP.
During pregnancy	Check TFT's 6-weekly if stable or more frequently if further changes to dose (2-4 weeks after dose change) Growth scans are not indicated.	CMW/named medical team	Ensure compliance. Aim for TSH <2.5mU/L. CMW to liaise with named consultant regarding any increase in medications. If TSH remains significantly

Gestation/situation	Background/action	Responsible clinician	Recommendation
			elevated seek advice from medical obstetric team.
Intrapartum	As per intrapartum pathway		
Postnatal	Patient to return to pre-pregnancy dose prior to discharge. TFT's should be check in 2-6 weeks postnatally by GP	GP	Immediate discharge summary to communicate change of dose with GP, patient advised to arrange follow up with GP.

Group B: those who are euthyroid/hypothyroid after treatment for previous hyperthyroidism/thyrotoxicosis:

Gestation/Situation	Background/Action	Responsible clinician	Recommendation
Pre-pregnancy	No input or pre-pregnancy review required as managed in primary care		
Booking appointment with CMW	Check TFT's (TSH/T4/T3) and TRABs a booking. If hypothyroid, document current thyroxine dose and ensure compliance. Reassure that thyroxine is safe in pregnancy. All women should have thyroxine dose	CMW/Named Consultant	*If euthyroid* - no action required *If hypothyroid* - increase thyroxine by 25mcg daily and check in 2-4 weeks. Aim for TSH <2.5mU/L. Advise that CMW should liaise with named consultant who should liaise

Gestation/Situation	Background/Action	Responsible clinician	Recommendation
	increased when a pregnancy is confirmed by 25mcg daily.[2]		with GP re thyroxine dose changes *Positive TRABS* (>1.9U/L) – refer to med obs clinic. *NEGATIVE TRABS* - no changes
During pregnancy	Check TFT's 6 weekly if stable, check more frequently if further changes to dose (2-4 weeks after dose change) Growth scans are not indicated for this group of patients unless positive TRABS.	CMW/medical team Med obs clinic	*If euthyroid* - aim for pregnancy specific ranges for TSH and T4 (table 1) *If hypothyroid:* aim for TSH <2.5mU/L and T4 16-21pmol/L. Aim for pregnancy specific ranges for TSH and T4 in each trimester (Table 1) Ensure compliance if TSH remains elevated despite medication increase. Consider Medical Obstetric review if patient on high doses of thyroxine (>300mcg). Neonatal team should be made aware of patients with positive TRABS as there is an increased risk of

Gestation/Situation	Background/Action	Responsible clinician	Recommendation
			neonatal thyrotoxicosis
Intrapartum	Treat as per pathway		
Postnatal	If on thyroxine patient to return to pre-pregnancy dose prior to discharge. TFT's should be check 6 weeks postnatally by patient's primary care provider. Small risk of flare if inadequate treatment of previous primary hyperthyroidism	GP	Immediate discharge summary to communicate change of dose with GP, patient advised to arrange follow up with GP.

Group C: Those with current hyperthyroidism/thyrotoxicosis:

Gestation	Action	Responsible clinician	Recommendation
Pre-pregnancy	pre-pregnancy review with GP and/or med obs team to ensure compliance with medication and euthyroid	Primary care	
Booking appointment with CMW	Check TFT's and Thyroid stimulating antibodies (TRABS) at booking then refer to Medical obstetric clinic.	CMW	Refer to med obs

Gestation	Action	Responsible clinician	Recommendation
	Ensure compliance with medication		
During pregnancy	Check TFT's 4 weekly Check TRABS 32 weeks. Routine anomaly scan if well controlled High risk anomaly scan if new diagnosis of hypethyroidism in pregnancy, thyrotoxic in pregnancy or high doses of PTU or carbimazole. Growth scans are indicated and fetal goitre and fetal arrhythmias should be considered in patients with positive TRABS, on high doses of PTU/cabimazole or who remain thyrotoxic. Lowest possible maintenance dose of medication should be used and ideally stop	CMW/named medical team	Ensure compliance. Aim for pregnancy specific ranges for TSH and T4 in each trimester (Table 1). Neonatal Team should be made aware of patients with positive TRABS as there is an increased risk of neonatal thyrotoxicosis in these babies

Gestation	Action	Responsible clinician	Recommendation
	medication in third trimester.		
Intrapartum	Hyperthyroidism is not an indication for CS. Treat as per pathway for intrapartum management		
Postnatal	Breastfeeding is contraindicated only with high doses of PTU or carbimazole. TFT's should be check 6 weeks postnatally by patient's primary care provider. Risk of postnatal flare should be explained to patient	GP	Immediate discharge summary to communicate any medications to be restarted or reviewed with GP, patient advised to arrange follow up with GP.

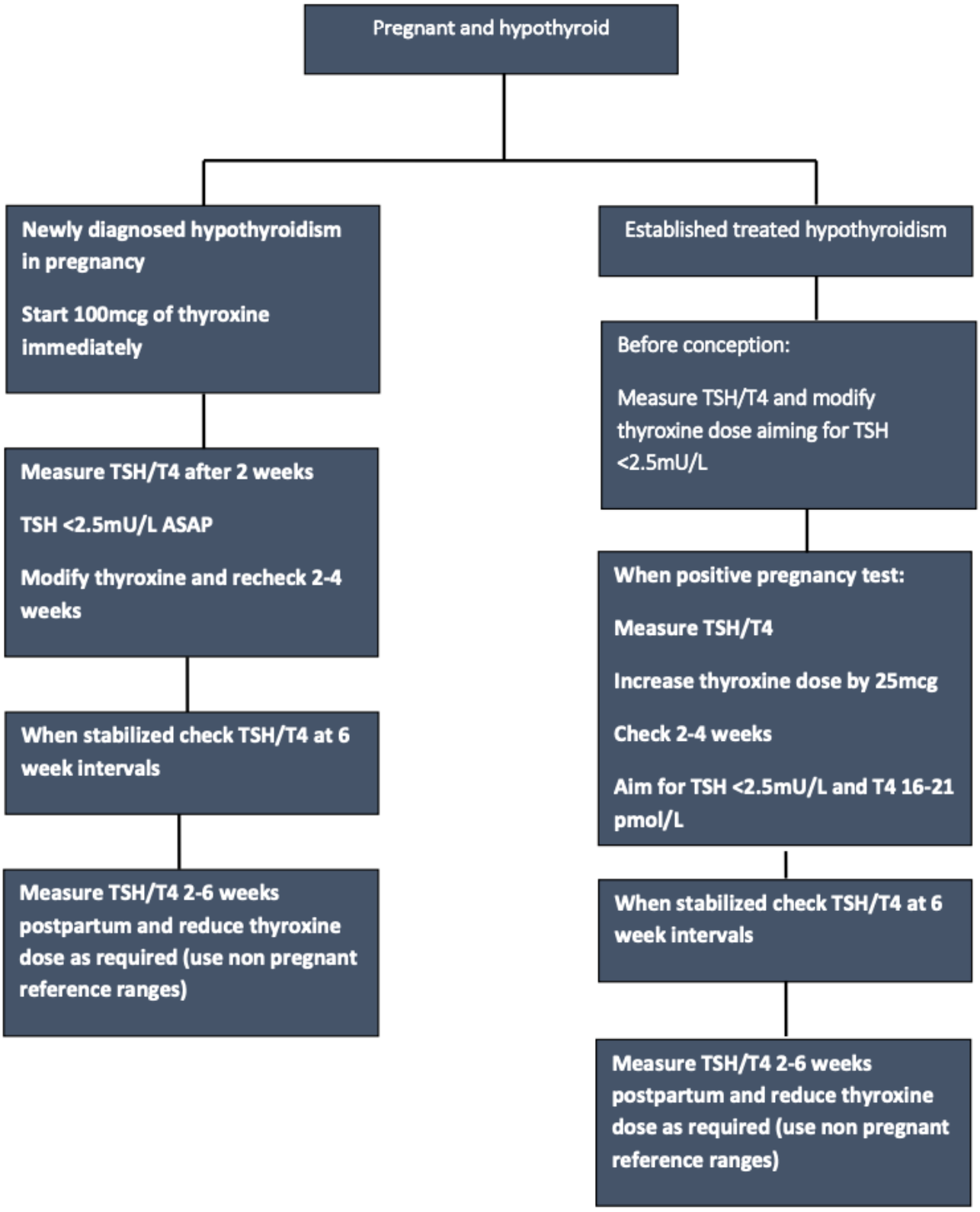
Section 4 – Abbreviations

PTU	propylthiouracil
T4	free T4
TFT's	thyroid function tests
TSH	thyroid stimulating hormone

Section 5 – References

1. Girling J. 2008 Thyroid disease in pregnancy. TOG;10:237-243
2. Abalovich M. 2007 Management of thyroid dysfuntion during pregnancy and postpartum: An Endocrine Society Clinical Practice Guideline. JCEM;92(8):S1-S47
3. Toft A. 2004 Increased levothyroxine requirements in pregnancy – Why, when and how much? NEJM;351(3):292-3.

Appendix 1


Pregnant and hypothyroid
Newly diagnosed hypothyroidism in pregnancy
Start 100mcg of thyroxine immediately
Measure TSH/T4 after 2 weeks
TSH <2.5mU/L ASAP
Modify thyroxine and recheck 2-4 weeks
When stabilized check TSH/T4 at 6 week intervals
Measure TSH/T4 2-6 weeks postpartum and reduce thyroxine dose as required (use non pregnant reference ranges)
Established treated hypothyroidism
Before conception:
Measure TSH/T4 and modify thyroxine dose aiming for TSH <2.5mU/L
When positive pregnancy test:
Measure TSH/T4
Increase thyroxine dose by 25mcg
Check 2-4 weeks
Aim for TSH <2.5mU/L and T4 16-21 pmol/L
When stabilized check TSH/T4 at 6 week intervals
Measure TSH/T4 2-6 weeks postpartum and reduce thyroxine dose as required (use non pregnant reference ranges)

Appendices

1. Governance information for Guidance document

Lead Author(s):	G Buchanan
Endorsing Body:	Maternity Clinical Effectiveness Group
Version Number:	3
Approval date	Effective from 23/10/24 (date of lab implementation)
Review Date:	9.10.27
Responsible Person (if different from lead author)	As above

CONSULTATION AND DISTRIBUTION RECORD	
Contributing Author / Authors	E Jarvie & C Willocks
Consultation Process/Stakeholders:	Maternity Clinical Effectiveness group process

CHANGE RECORD

Date	Lead Author	Change	Version No.
June 2020	G Buchanan	Original	1
December 2023	G Buchanan	General update	2
9.10.24	G Buchanan	New TFT reference ranges	3