

# Patient-centered Management of Hypothyroidism

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## Abstract

This communication from the National Indian Patient-centered Thyroid management group (InPACT) deals with a novel, yet essential, aspect of hypothyroidism management. The authors describe the role and scope of patient-centered care in this condition. They focus on the relevance of a patient-centered clinical approach, which will help decide appropriate targets, as well as techniques to achieve those targets. Means of helping persons with hypothyroidism live a healthy life, such as education about precaution in concomitant food and medications intake, as well as sick day management, are discussed.

**Keywords:** Hashimoto's thyroiditis, medication counseling, patient education, thyroid-stimulating hormone, thyroxin

## INTRODUCTION

Patient-centered care (PCC) is the provision of *care that is respectful of and responsive to individual patient preferences, needs, and values and ensuring that patient values guide all clinical decisions*.<sup>[1]</sup> This concept is especially important in chronic disease management, which depends on a healthy relationship between patient and provider, which is marked by reciprocal respect.<sup>[2]</sup> In the past, the *Indian Journal of Endocrinology and Metabolism* has promoted the cause of PCC in endocrinology.<sup>[3]</sup> This call is based on realization of the relevance of PCC<sup>[1]</sup> and importance of practicing patient-centered professionalism.<sup>[4]</sup>

Recently, calls have also been made to focus on patient-centric behavior in the management of thyroid disease.<sup>[5,6]</sup> In this communication, we focus on the various components of hypothyroidism management, where patient-centered, or informed and shared decision-making is required. Such a discussion will promote better dialog between patient and physician and contribute to enhanced quality of care.

## DIAGNOSIS

The symptoms of hypothyroidism are many and varied. They span virtually every organ system, and their list of differential diagnosis is endless.<sup>[7]</sup> In fact, "the physician who knows thyroid knows medicine."

A detailed history taking is required to identify possible causes of symptoms. Supposedly "subclinical" hypothyroidism is often accompanied by symptoms, which may or may not be due to thyroid dysfunction. More often than not, "symptoms of hypothyroidism" may actually be due to anemia, hypovitaminoses D, dyselectrolytemia, poor sleep hygiene, or lack of physical conditioning. At the same time, innocuous looking complaints, such as hair fall, may be a marker of hypothyroidism.<sup>[8]</sup>

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Such clinical considerations can be resolved only through an empathic history, taken in a patient central manner. Used in this context, the phrase implies that the patient's needs and concerns should form the center of the patient–physician conversation, with the physician playing the role of an active listener. The physician's ear plays the role of a diagnostic or triage tool<sup>[9]</sup> in such a dialog and should be given the same importance as other tools.

## INVESTIGATIONS

Investigations should be ordered in a rational manner, depending on what information is required. For example, screening for autoimmune hypothyroidism requires only a thyroid-stimulating hormone (TSH) estimation while a workup for central hypothyroidism is incomplete without a thyroxine or free thyroxine (T4 or FT4) test. Follow-up of primary thyroid patients on levothyroxine therapy is done with TSH and that of central hypothyroid patients with T4 or FT4.<sup>[7]</sup>

Choice of investigations may also depend on availability, accessibility, and affordability as well as trustworthiness. Thyroid antibody estimation, for example, should be ordered only if the results will impact clinical decision-making, and if the report is expected to be reliable.

Patients should also be informed about the timing of investigations in advance and about whether to take their thyroid medication on the day of testing. There is no need to miss levothyroxine if TSH monitoring is planned. If a person chooses to get her TSH checked in the afternoon or evening, she should preferably get it tested at the same time, each time.

## TARGET OF THERAPY

All hypothyroid patients are not the same, and all patients should not have the same target for therapy. Therapeutic TSH targets are usually decided according to etiology of hypothyroidism and phase of life. Patients treated for thyroid cancer with surgery should aim for a lower TSH target (TSH <0.1 mIU/ml)<sup>[10]</sup> though this can be relaxed if risk of recurrence is low. Patients with autoimmune hypothyroidism usually aim for a target with normal reference range. During preconception and pregnancy, targets are lowered as per current guidelines.<sup>[11]</sup>

Patient-centered thyroidology should include discussion regarding well-being, symptoms, and comorbid conditions while deciding targets of levothyroxine therapy. Patients who are symptomatic even though they may have TSH levels below the upper reference limit may benefit from lower targets (and higher doses). Conversely, persons with TSH above lower reference limit with, or at risk of, comorbid conditions such as atrial fibrillation and osteoporosis, too, should be offered relaxed targets [Table 1].

Target setting can also be influenced by psychosocial considerations, including anticipated frequency of clinical and biochemical follow-up. Patients coming from remote places, without access to regular, good-quality thyroid monitoring, should aim for relatively less aggressive targets. This will help avoid iatrogenic complications while respecting the philosophy of quaternary prevention.<sup>[12]</sup> Such an approach is concordant with the biopsychosocial model and should be encouraged in thyroidology, just as it is in diabetology.<sup>[13]</sup>

## DOSE OF LEVOTHYROXINE

While standard recommendations are available for the dose of levothyroxine supplementation,<sup>[7]</sup> the initial dose is usually decided by the treating physician, in a responsible patient-centered manner.<sup>[14]</sup> In most adult patients, an average dose of 1.6 mcg/kg/day is required. The initial dose may be 1 mcg/kg/day in healthy patients or a fixed dose of 12.5–25 mcg in patients at risk of heart failure. At the other end of the spectrum, severely hypothyroid patients awaiting clearance for surgery or at risk of myxedema coma or diagnosed during pregnancy can be started on much higher doses.

Change of dosage can also be done in a patient-centered manner. The patient should be given a choice of up or down titrating dose by either shifting to a different dose strength (e.g., from 100 mcg to 125 mg or to 75 µg) or by changing the number of tablets consumed per week (e.g., from 7/week to 9/week or 5/week). Such an approach may enhance patient satisfaction and adherence to therapy.

## TIMING OF ADMINISTRATION

Conventionally, levothyroxine is administered as a once daily dose, upon waking up, at least 30–60 min before breakfast.

**Table 1: Patient-centered thyroid-stimulating hormone targets: A proposed framework**

Domain	Lower TSH targets	Higher TSH targets
Etiology*	Thyroid cancer (treated)	-
Stage of life	Preconception, pregnancy	Elderly
Comorbid conditions	Depression, preoperative stage for planned surgery, PCOS, OSA, NAFLD	Osteopenia/osteoporosis, atrial fibrillation, other heart disease
Investigations	Dyslipidemia, transaminitis	Low bone density
Clinical course	Nonresolution of symptoms	“Brittle” TSH
Attitude to therapy	High commitment	“Intolerance” to L-thyroxine
Ability to undergo frequent monitoring	Patients able to undergo frequent monitoring	Patients unable to undergo frequent monitoring

\*TSH is not taken as a target in Graves' disease, central hypothyroidism, sick euthyroid syndrome. NAFLD: Nonalcoholic fatty liver disease, OSA: Obstructive sleep apnea, PCOS: Polycystic ovary syndrome, TSH: Thyroid-stimulating hormone

While this rule should be followed, it should not be taken as an Aurangzebian diktat. Some patients may wish to take the medication at night, due to reasons of convenience or tolerability. Patients on irregular work shifts or those who begin their day with shifts or those who begin their day with high doses of antacids may benefit from personalized time schedules.

Patients may also choose to take their weekly dose requirement in one or two doses, provided they are able to tolerate it. Such decisions can be made in a shared manner, during the patient–physician interaction. We promote what we call “good clinical sense” in such decision-making.<sup>[15]</sup>

## FREQUENCY OF FOLLOW-UP

Frequency of follow-up varies according to patients’ needs and preferences. In general, patients with state control, on a stable replacement/supplementation dosage and regime, need not return for follow-up more frequently than 3–6 months. Patients who experience brittle or erratic TSH control, who undergo frequent changes in dose, have unsolved clinical issues, or who experience significant changes in health status (such as concomitant medical, surgical, or obstetric conditions) need frequent follow-up. In pregnancy, the current guidelines now recommend follow-up at approximately 4 weekly intervals.<sup>[11]</sup>

## CONCOMITANT MEDICATIONS AND FOODS

A list of concomitant medications and foods which should be avoided with levothyroxine, or which should be administered at least a few hours apart from levothyroxine, must be provided to the patient. Concomitant drug therapy which should activate thyroid vigilance, for example, amiodarone, lithium, and metformin should also be mentioned. Such lists need not be comprehensive and should be prepared keeping the patient’s medical history in mind. This patient-centered gesture will increase the chances of the suggestions contained in the list being followed.

## SICK DAY MANAGEMENT

Patients with hypothyroidism may encounter other illnesses during the course of life. To be complete, patient-centered discussion should mention important aspects of sick day management. What to do if a tablet is inadvertently missed, how to manage treatment during travel, and potential drug–drug interactions should be discussed. The need to inform other health-care professionals about one’s thyroid status must be emphasized.

## SUMMARY

The two pillars of PCC are communication<sup>[16,17]</sup> and competence. This discussion highlights salient features of

hypothyroidism. These features lend themselves to a patient-centered approach. The treating physician should be conversant with, confident about, and able to communicate these facts, in a clear manner. Attention to these issues, if carried out in an empathic dialog, will help improve patient–physician bonding, improve satisfaction and adherence, contribute to better outcomes in persons with hypothyroidism. Future research should the focus on these aspects of thyroidology.

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## Conflicts of interest

There are no conflicts of interest.

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