

Theme	Relevant TDF Domain	Sub-Theme	Example Quote
Patient-level barriers	Beliefs about consequences	Preference or perceived need for medication	"One obstacle would just be if the patient really, and this is something that I would take into account, if the patient is really invested in that medication. So, maybe they were not feeling very well. They started it. And now, they feel great, and they've attributed that to taking that medication." (Participant 3) "The problem being that once the idea is planted in their head that that is what they are supposed to do, it is difficult to unroot that." (Participant 6)
	Emotion	Patient anxiety/concerns about lower dose	"But for the patient that is open to making a change, people are still cautious. Especially depending on why they started thyroid hormone. So, if they started thyroid hormone because they had been gaining weight and they feel like their weight improved, or because they had depressed mood and they feel like that improved, it is hard to de-escalate therapy in that person." (Participant 4) "A few conversations have ended up in tears where patients went storming out of the office. But there would be patients who just feel better on a particular dose. They are absolutely refusing to make changes. Patients who just think that this is what they need, and this is what their body needs." (Participant 10)
	Knowledge	Misinformation and lack of knowledge	"I think my experience has been that a lot of patients may not be aware that thyroid hormone dose is not something that will stay the same. Like, for their whole life." (Participant 1) "There are a few patients who have a hard time because they read a lot online, and they just get this advice from thyroid experts which are not endocrinologists. And it is hard. But I try my best." (Participant 8)
Physician-level barriers	Environmental context and resources	Time constraints	"I think also, these discussions take time. So, I think sometimes too, a little concern that if I enter into this discussion, how late am I going to be running for my next patient? Is this the right juncture to do it?" (Participant 3) "I do get a little apprehensive because I know it can be a time-consuming conversation." (Participant 6)
	Behavioral regulation	Physician Inertia	"[...] but people will then say "Its in the normal range. I am not going to adjust it." Either because its too much work to adjust it or it's inertia, or you don't realize because its in a normal range, but that's to much treatment probably for them and for their age physiologically." (Participant 2) "I think sometimes it is done with someone else and then I kind of continue it." (Participant 13)
	Knowledge	Physician lack of knowledge about deprescribing	"I would argue that probably a lot of people don't even, it might not even enter onto their radar, at this point in time. Just because I think we tend to think of thyroid hormone as a, often as a vital medication for patients" (Participant 3) "I have not received any specific training in deprescribing. Like taking somebody off." (Participant 18)
System-level barriers	Environmental context and resources	Lack of clinical guideline	"[...] if we had more clear guidelines on how often we should be checking a TSH, (I: Right) maybe that would be helpful." (Participant 17) "I certainly looked it up to date. Its pretty limited in terms of that type of detail." (Participant 5) "I have to say, even if you go to conferences and you read lot, which I could read more, but you know, you might just not have your finger on every new guideline." (Participant 13)
	Environmental context and resources	Increased need for follow up	"I think one of the biggest barriers, though, is that our follow ups are every three months." (Participant 15) "So, I think this past year with the pandemic has been a particular challenge in terms of making sure that proper follow-up of thyroid function has been done for patients on thyroid hormone replacement therapy." (Participant 1)
	Environmental context and resources	Limited availability of health records	"And sometimes there are delays in getting past medical records. So, we sometimes are not aware that someone had started on thyroid hormone replacement until months later after we get their outside medical records." (Participant 1) "I often inherit patients who are on it. And I do wonder like what the circumstances were. Sometimes you can figure it out. But sometimes it is a little bit more challenging depending upon what records they have..." (Participant 3) "I do run more into a problem when an Endocrinologist is outside the system. Its less easy to be in contact with them." (Participant 7)

Table S1. Sample participant quotations of relevant theme and sub-theme for reported barriers to deprescribing thyroid hormone.

Theme	Relevant TDF Domain	Sub-Theme	Example Quote
Physician-patient communication	Beliefs about consequences	Discussion of potential harms	"[...] I do discuss with them the risks and benefits or lack of benefits (Laugh)... the risk and benefits of thyroid hormone replacement" (Participant 6) "If I can have an adequate time to explain to them why I am doing what I am doing. The risks of having too much thyroid – that's helpful." (Participant 7)
	Skills	Explanation of physiology and lab results	"Yeah, its like this big range of people that got it, and its sort of confusing because then I have to explain that the higher the TSH, and the lower is not what you think, in terms of what you need." (Participant 2) "[...] and I explain to them the natural increase in TSH as people get older and how it is not uncommon for people to be mislabeled as having hypothyroidism." (Participant 6) "So, I would talk by educating them. I would show them the actual number on my screen. Like turn my monitor to them and say, "Look. This is your TSH. Not once. Not twice. Like multiple times..." (Participant 10)
	Knowledge	Setting expectations	"For patients for whom I am starting them on thyroid hormone replacement, I often try to mention that up front so that there is an awareness that the dosage requirement may change over time." (Participant 1) "I tell 99% of my patients, the first time that I ever meet them, that "I am not interested in having you take any medicines you don't need. We don't want you to take any more prescriptions than you absolutely need to take." (Participant 11)
Physician-patient relationships	Skills	Familiarity of patient preferences	"But like, I think it is just being leading with empathy. Like listening to patients. Figuring out what their worries are. You know, the same thing is like when we are talking about their hesitancy or anything we are doing. You just have to be on the same page." (Participant 9) "Well, things that help are an ongoing relationship with that patient. Right? And understanding what their goals of care are. And letting them know what my goals for them are, as well. And that how we can again try to help you only take those medicines you absolutely need." (Participant 11)
	Social influences	Sense of trust	"So, it is so patient dependent. It is generally not terribly difficult because I feel like if I explain things pretty well and people have formed a relationship with me and they are trusting, usually we are able to make some headway." (Participant 4) "How you get along with the patient, I feel like the trust that the patient has with you is the most important part of everything in order to continue to a great follow-up and compliance with the patient." (Participant 8)
	Skills	Discussion of long-term plan	"But also reassure the patient, "But just to make sure that we are doing the right thing, let's plan to recheck your thyroid function tests in six weeks just to see and to make sure that they are still within the acceptable range and that we are on the right track with doing this." (Participant 3) "So, I think if they know that I'm on their side and I will be monitoring things... and making sure that we keep track of your blood work, and I will give you feedback of what we need to do, then patients have more confidence in what I try to guide them to do." (Participant 11)
Patient-level facilitators	Motivation and Goals	Motivation to reduce medications	"They love it. (Laugh) Less medicine. Not one more pill. And I sell it like, "There is one less pill that you have to take. That is really good." And then they are like, "Oh, yay!" Rather than the other way around." (Participant 10)
	Knowledge	Presence of comorbid medical conditions	"So, if he already had atrial fibrillation and I said, "Gosh, this could get worse." You know, with too much thyroid hormone, you know that would be one thing. Versus, "Gosh, you are in your 70's, you are at risk for developing atrial fibrillation. You haven't had it, but maybe you are lucky. We should decrease it." So, it would help to guide my conversation." (Participant 4)
	Memory, attention, and decision processes	Duration of time taking thyroid hormone	"The ones who were just recently placed on it for a mildly elevated TSH are more accepting of decreasing it, especially if their symptoms are not severe. The ones who have a lot of fatigue or had a lot of weight gain are much more hesitant to decrease it. The ones with thyroid cancer is nearly impossible." (Participant 6)

Table S2. Sample participant quotations of relevant theme and sub-theme for reported facilitators to deprescribing thyroid hormone.