

When we talk about patients that are dissatisfied with levothyroxine therapy, it's actually a very broad topic that we should try to address it on a piecemeal. So first, let's start with historical context. I like old books, and I have a collection of old thyroid books. So I think I read most books that were published on the thyroid subject since 1880.

And nowhere did I find that patients on desiccated thyroid extract were dissatisfied with treatment of hypothyroidism. Not a single time I saw a book making reference to patients that were unhappy. But mostly why? I told you in the beginning the therapy was focused on resolving symptoms of patients.

And so they really gave so much thyroid hormone to those patients up to the point that they could not tolerate more, because they were having side effects. Obviously, we know that that's not ideal, making someone thyrotoxic to treat hypothyroidism. We don't want to do that, because their side effects-- bone metabolism, atrial fibrillation, cognitive problems, psychiatric problems-- so we don't want to do that.

However, patients were satisfied. This group of patients that were dissatisfied, they started to show up after the treatment transitioned from desiccated thyroid extract to monotherapy with levothyroxine. So the problem is two things happened during that transition. Number one, instead of giving desiccated thyroid extract with both T4 and T3, we started giving T4 only. And the other thing was the dose of thyroid hormone replacement was dramatically reduced, because now we were monitoring with serum TSH.

So not only the quality of the treatment changed, but the amount of the treatment changed. Patients were taking the equivalent to 400 micrograms of levothyroxine. And then all of a sudden, they go down to 150. So many patients complained. Not only that. Patients that were newly diagnosed with hypothyroidism, they were being given 150 again until normalized serum TSH.

And many were OK, but some were not happy, were dissatisfied. How were they dissatisfied? The symptoms are being tired, low energy, poor cognition, difficulty managing body weight. Those are the main symptoms that patients complained about.

We recently did a survey asking hypothyroid patients, what is brain fog for them? If they have brain fog, how do they classify? What are the symptoms that they refer to as being brain fogged? And that's what they said, being tired, low energy, issues with memory. And we know from other surveys that difficulty in managing body weight is also there. It's also present.

Now, can we blame these symptoms only on the fact that the quality of the thyroid hormone replacement therapy changed from thyroid extract containing T4 and T3 to monotherapy with levothyroxine? And also, to the amount of replacement therapy that we're giving, that reduced in many cases by 50%, major reduction? It seems that that's what caused it, because after that, during the '80s, I think was 1986 that a group of patients responded to a survey created by the British Thyroid Foundation.

And they said, this is how we feel. We feel strange. We don't understand what's going on, because we were OK before. And now we feel like with this dissatisfaction with treatment of hypothyroidism. And amazingly, we thought we were alone. But now, we see that other patients feel the same way we do. And that's what started the whole process of recognition that patients on levothyroxine monotherapy might not be completely satisfied with treatment.