So as it relates to combination therapy what we as state ideologies define combination therapy is usually modulating the dose of levothyroxine and adding some liothyronine. We do have evidence of pharmaco equivalency as it relates to T3 versus T4 therapy. And we know that roughly the potency as it relates to adjusting the TSH between levothyroxine and liothyronine, is liothyronine is threefold more potent.

So, if we were to change 30 micrograms of levothyroxine, we will give roughly 10 micrograms of liothyronine divided in two doses. As it relates in general again, the go to treatment is reducing the dose of levothyroxine by 25 micrograms and then adding two tablets by 5 micrograms of liothyronine twice a day.

And that gives a relatively equivalent dose that then we need to assess on the normalization of TSH and normalization or rising of T3 levels. We can predict a rise of T3 levels everywhere between 20% to 30% from baseline by starting the combination therapy. This is data from my laboratory, and it's a mathematical modeling we still need to validate in humans. How that relates to symptoms is a different story. And that's something that we need to discuss with patients.

This is not proven and this is pure personal experience. When I engage in non-levothyroxine only therapy with patients, I first ask what is the most disabling symptom that the patient relates to hyperthyroidism. And, occasionally I give a visual analog scale, so from 0 to 10, where are you with your baneful? Where are you with your cold intolerance? Where are you with your fatigue?

And then, when I assess the patient on my follow up visit I say, OK you told me that your major complaint was cold intolerance, how are you doing today? Where are you at? And then we have a discussion do we want to go forward or it's not worth your time, and your money, and taking multiple pills instead of one.