

Bedtime intake of levothyroxine may enhance thyroid hormone levels

[Bolk N. Arch Intern Med. 2010;170:1996-2003.](#)

Taking levothyroxine at bedtime may cut thyrotropin levels as well as boost free thyroxine and triiodothyronine levels in patients with hypothyroidism, according to recent data.

Between 2007 and 2008, patients with primary hypothyroidism were divided into two groups. They were randomly assigned to receive one capsule of placebo in the morning and one capsule of levothyroxine at bedtime or [levothyroxine](#) in the morning and placebo at bedtime for 3 months. After another 3 months, the groups switched treatment regimens.

Data indicated that, compared with morning intake, taking levothyroxine at bedtime decreased thyrotropin level by 1.25 mIU/L (95% CI, 0.6-1.89; $P<.001$). Bedtime intake also increased [free thyroxine](#) (F₄) level by 0.07 ng/L (95% CI, 0.02-0.12; $P=.01$) and total triiodothyronine level (T₃) by 6.5 ng/L (95% CI, 0.9-12.1; $P=.02$), according to researchers at Maastad Hospital Rotterdam in the Netherlands.

Treatment, however, appeared to have little effect on blood pressure, BMI, heart rate or lipid and serum creatinine levels, with no differences emerging between the two groups. According to questionnaires administered at baseline, 3 months and the study's conclusion, quality-of-life also remained similar among all patients.

At the end of the trial, 34 of 90 patients reported feeling better during the period of morning intake of levothyroxine. Results also revealed that 31 patients preferred taking the medication before bedtime and 25 had no preference. After 1 year, more than half of patients still favored bedtime intake.

“Bedtime levothyroxine intake could be more convenient for patients, as they do not have to postpone breakfast,” the researchers wrote. “After our study was completed, more than half of the patients decided to continue with bedtime intake of levothyroxine.”

The researchers also recommended that clinicians consider switching patients to bedtime intake if they do not exhibit significant improvement in normal thyrotropin or FT₄ levels, although they still stressed the importance of taking the medication on an empty stomach.



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