

# LEVOTHYROXINE REQUIREMENT IN CONGENITAL HYPOTHYROIDISM: 12-YEAR LONGITUDINAL STUDY

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## Background

The replacement therapy with Levo-Thyroxine (LT4) in Congenital Hypothyroidism (CH) aims to ensure normal growth and neuropsychological development. Few data are available about the appropriate dose during childhood and early adolescence.

## Objective and hypotheses

We performed a multicenter observational study in a large sample of patients with congenital hypothyroidism

1. to evaluate LT4/kg/day requirement from diagnosis until 12 years of age
2. to assess any differences in relation to the different etiology of CH as concerns the LT4/kg/day requirement

## Patients and Method

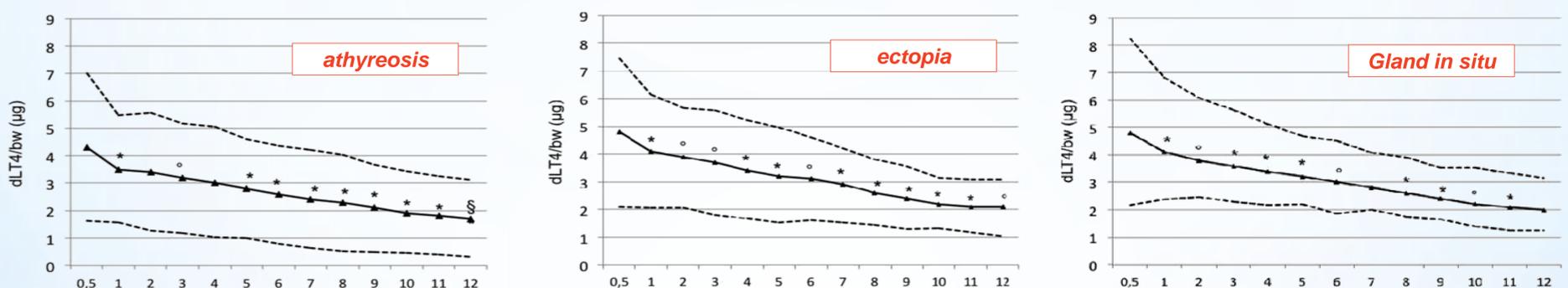
216 permanent CH pts (142 F) born between 1980 and 2001 ➔ 56 pts athyreosis (25.9%)  
 101 pts ectopia (46.8%)  
 59 pts in situ gland (27.3%)

Age at diagnosis: 23.2 ± 12.0 days,

Starting LT4 dose: 9.1 ± 2.7 (5.0-18.4) µg/kg/day.

LT4 dose was assessed at 6 and 12 months and then yearly until 12 years of age and the LT4/kg/day calculated

## Results



- ✓ The LT4/kg/day requirement at 6 months of age was correlated with the requirement at each later time point.
- ✓ The LT4/kg/day dose was modified less frequently in patients with in situ thyroid (40.5%) than in patients with ectopic gland (47.4%) or with athyreosis (48.9%).

	0,5 y	1 y	2 y	3 y	4 y	5 y	6 y	7 y	8 y	9 y	10 y	11 y	12 y
In situ gland vs ectopia		0.002	0.013	0.003	0.02	0.003	<0.001	<0.001	0.006	0.003	0.008	0.003	0.001
In situ gland vs athyreosis	0.002	<0.001	<0.001	<0.001	0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Athyreosis vs ectopia		0.018	0.04								0.038		

The LT4/kg/day requirement on the basis of etiology

## Conclusions

- ✓ Euthyroidism may be achieved by 3-4 and 2-3 mcg/kg/day of LT4 in preschool and in school CH patients.
- ✓ The patients with in situ gland require a lower dose than the other ones. The patients with ectopia or athyreosis require more frequently a change in the daily dose, and thus such patients have to be followed up more frequently.
- ✓ The dose at 6 months seems to be predictive of future requirements.

Disclosure Statement: Authors declare no conflict of interest related to this work.