

# Thyroid Dysfunction in the First Year of Life in Infants with Down syndrome: Linear Growth Over 4 Years.



Nada Al Aaraj, Ashraf Soliman, Maya Itani, Shayma Mohamed, Ahmed Khalil, Ashraf Adel.  
Pediatric department, Hamad General Hospital (HGH), Doha-Qatar



## Introduction

Down syndrome (DS) is associated with thyroid dysfunction including both congenital and acquired hypothyroidism. Data about thyroid function in infants <1 year with DS is scarce.

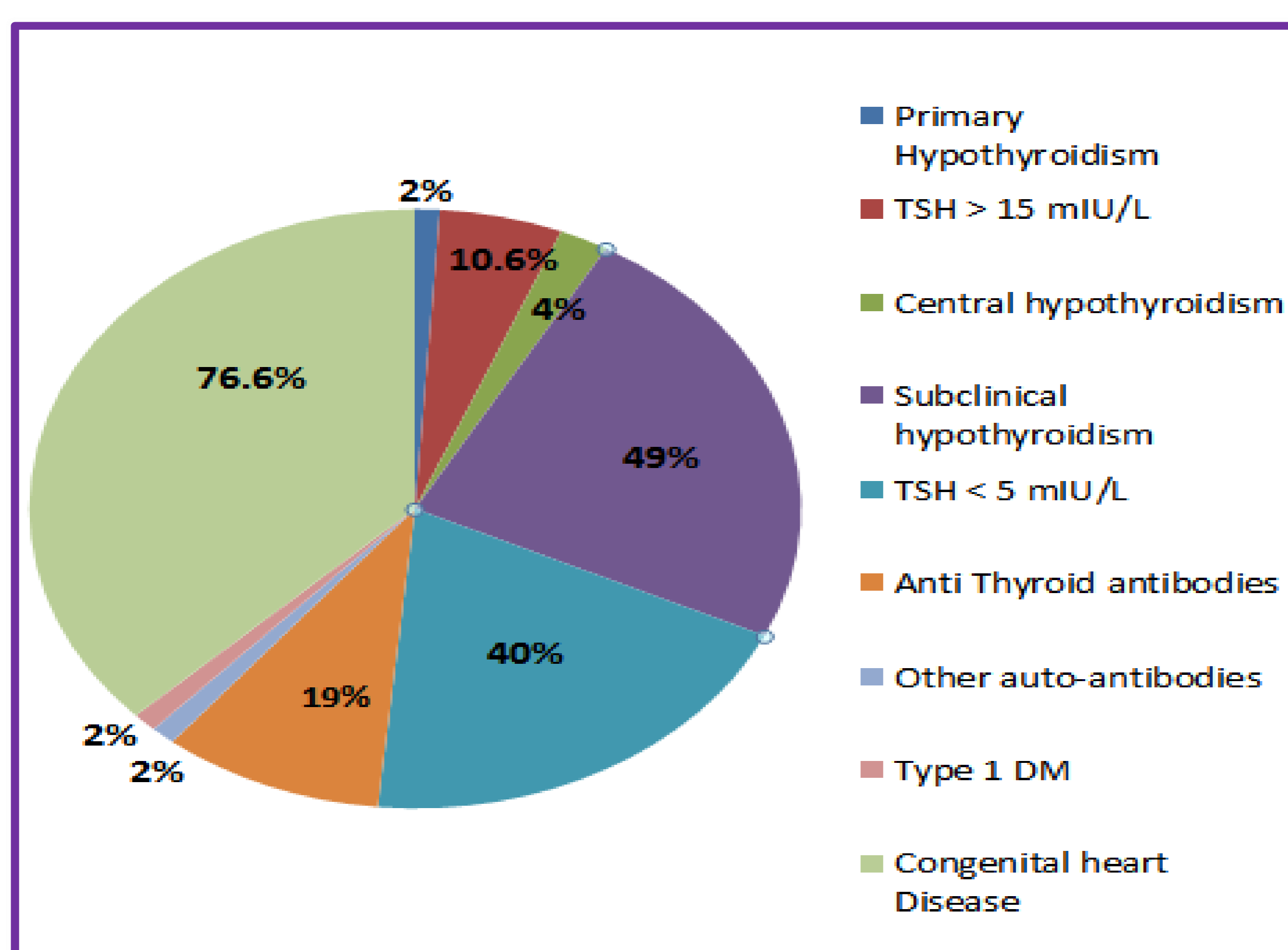
We aim to study the prevalence of different thyroid dysfunctions and other associated disorders among infants with DS and its effect on linear growth and weight gain.

## Methods

A retrospective cohort study of thyroid function in infants with DS (n= 47) (22 M, 25 F) (below 1 year, Mean age=0.5 +/-0.3), attended the general pediatric clinic at HGH. We followed up their linear growth and weight gain for an average of 4 years.

## Results

Prevalence of thyroid dysfunction in infants with DS < 1 year of age



## Conclusion

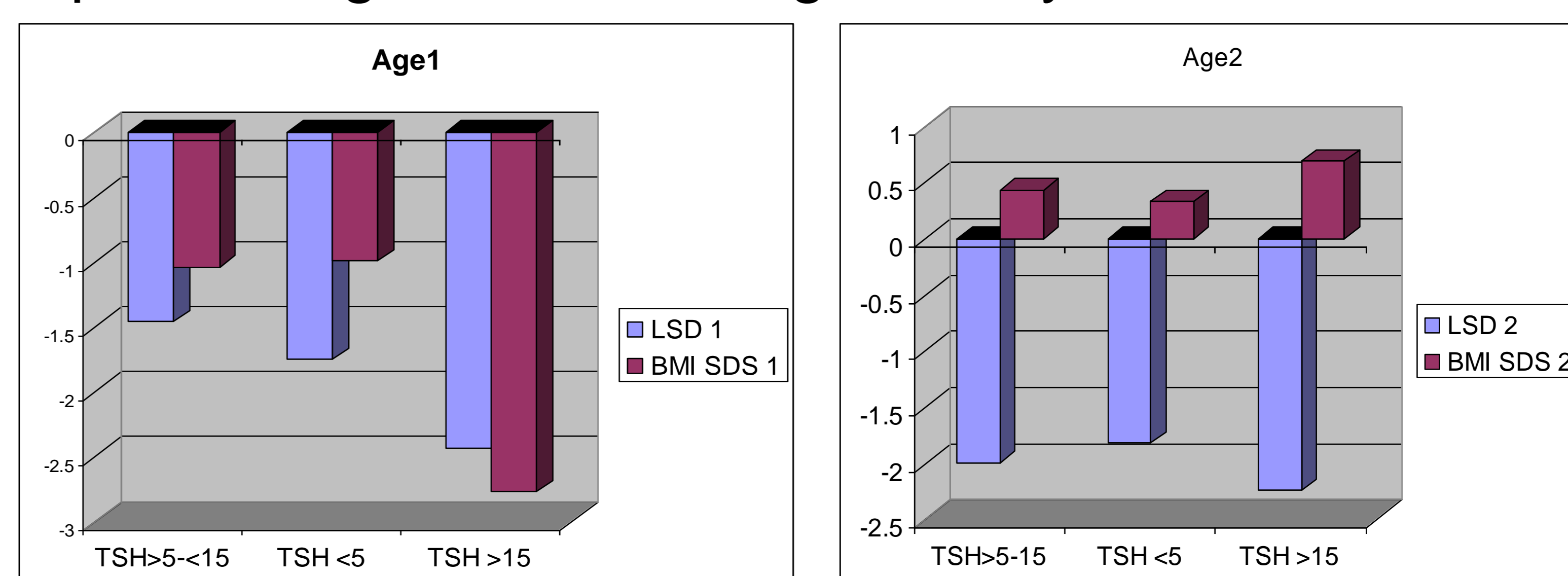
Early treatment of Thyroid dysfunction in DS maintains growth comparable to DS without thyroid dysfunction

Authors with no conflict of interest

Table 1: The Growth in Children with DS categorized according to their primary thyroid function

Group	Age 1	LSD 1	BMI SDS 1	Age 2	LSD 2	BMI SDS 2	Delta HT SDS	Delta BMI SDS
TSH >5-<15	0.5	-1.5	-1.0	4.4	-2	0.43	-0.5	1.4
TSH <5	0.5	-1.7	-1	2.5	-1.82	0.33	-0.07	1.3
TSH >15	0.3	-2.4	-2.8*	4.5	-2.24	0.7	0.20	3.5*

\*p<0.05, Age 1 = 6 mon, Age 2 = 4 y.



## Discussion

- Infants with DS < 1 year of age had a high prevalence of thyroid dysfunction.
- Subclinical HT (TSH > 5 and normal FT4) is the most frequent thyroid abnormality.
- Both primary and secondary HT were found.
- Autoimmunity against thyroid was detected in 19 % of these young infants (early autoimmunity).
- Infants with TSH > 15 mIU/L had significantly lower BMISDS and were non-significantly shorter than other groups (p= 0.03 and p =0.14 respectively).
- Infants with TSH> 15 mIU/L were treated with L thyroxine. After an average of 4 years of treatment, the BMISDS and HtSDS did not differ among the 3 groups.

Author contacts:  
Nada Alaaraj, MD  
[nalaaraj@hamad.qa](mailto:nalaaraj@hamad.qa)  
No.+97466981673  
Pediatric department  
Hamad general Hospital  
P.O.BOX:3050

