

**Republic of Iraq  
Ministry of Higher Education  
And Scientific Research  
University of Diyala  
College of Medicine**



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## *Hypothyroidism in children*

**A project submitted to the council of College of Medicine /  
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Requirements for the Degree of bachelor**

**Done By**

**Ali Adnan Abbas**

**Supervised By**

**Dr. Asmaa Najm Abed**

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(نَرْفَعُ دَرَجَاتٍ مِّنْ نَّشَأٍ وَفَوْقَ كُلِّ ذِي عِلْمٍ عَلِيمٌ..)

صدق الله العظيم

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## الاهداء

الاهداء اولاً الى وجه الله تعالى

في جميع مراحل الحياة يوجد أناس يستحقون منا الشكر والتقدير واولى  
الناس بالشكر

الى روح والدي العزيز الذي جرع الكأس فارغاً ليسقيني قطرة حب  
والدتي العزيزة التي وضعتني على طريق الحياة وكان لها الفضل الكبير  
لنجاحي

والى جميع من وقفوا بجانبني وساعدوني وبالخصوص

الى أصدقائي والى جميع اساتذتي الكرام بوجه عام والى الدكتورة

**"اسماء نجم"** المشرفة على البحث بوجه خاص التي كان لها دور كبير  
في اعطائي المعلومات القيمة اهدي لكم بحث تخرجي المتواضع وأتمنى ان  
تحوز على رضاكم .

## أشكر والتقدير

الحمد لله الذي هدانا وأعدنا وأمدنا والهمنا الصبر على المشاق ووفقنا لما  
نحن عليه

فله الحمد والشكر ابتداءً وانتهاءً

وارفع كلمة الشكر الى الدكتورة اسماء نجم

وفقها الله فقد كانت سندا لي على طول الطريق

والى كل من مد يد العون لي من قريب او بعيد

وقبل ان امضي اقدم اسمى ايات الشكر والامتنان والتقدير والمحبة

الى الذين مهدوا لي طريق العلم والمعرفة

# Congenital hypothyroidism

## Abstract.

Congenital hypothyroidism is a disorder of thyroid gland which is frequently encountered in clinical practice in which decrease thyroid hormone levels below normal. The two Thyroid hormones(T<sub>3</sub>,T<sub>4</sub>) plays vital roles in a wide variety of body functions. With particular reference to Normal growth, Neurological development, mental health and basal metabolism.

## Introduction

Thyroid gland regarded part of peripheral endocrine system( i.e. those glands situated outside central nervous system.it is characteristically shaped as butterfly with central isthmus joining together its two lateral lobes , its located at midline anterior to the trachea and larynx.at the level of C5 to T1 vertebrae.

The highly vascular thyroid gland secrete two important hormones(T3,T4) that regulate basal body metabolism (including energy and temperature) as well as calcitonin that oppose the net effects of parathyroid hormone(PTH) on plasma calcium level ,in the regulation of calcium metabolism.

The thyroid hormones also plays a role in normal growth and development, and can augment the function and effects of sympathetic nervous system.[1-6]

Hypothyroidism classified as congenital which is treatable thyroid hormone deficiency(at birth cause thyroid gland agenesis) that causes severe mental retardation and growth deficiency if not detected and treated early[7], and Acquired hypothyroidism which is develop after birth, typically during late childhood or adolescence. The condition is very common, affecting 1 in 1250 children according to the National Health and Nutrition Examination and Survey(NHANESIII)[8].

### Epidemiology of congenital hypothyroidism

Sporadic cases of congenital hypothyroidism account for approximately 85% of cases;15% are hereditary(autosomal recessive).more than 4 million infants are screened yearly in the united states, and 1000 infants receive the diagnosis of congenital hypothyroidism each year. An incidence

of approximately 1 in 4000 newborn. In one study , the incidence was 1 in 4000 in white infants, 1 in 2000 Hispanic infants, and 1 in 32000 in African American infants .

The incidence is twice as high in females, and congenital hypothyroidism is more common in twins. The longer(delay) of the diagnosis and treatment, the lower the intelligence quotient(IQ) versus expected IQ.

### **Pathophysiology of congenital hypothyroidism**

Thyroid dysgenesis , a group of disorder occurring during thyroid development that include ectopic thyroid , thyroid aplasia, and thyroid hypoplasia , in born errors of thyroxine synthesis(dyshormogenesis) are the most common



cause of congenital hypothyroidism. and usually associated with other autoimmune diseases.[9]

### Clinical features

the clinical features of CH are often subtle and many newborn infants remain undiagnosed during the critical treatment sensitive period.

The evolution of symptoms also slow very.

Most common symptoms are post maturity, prolonged jaundice, constipation , abnormal crying , lethargy and feeding difficulties.

On examination macroglossia, cold or mottled skin, wide fontanelle, edema, hypothermia, flat nasal bridge ,umbilical hernia, protuberant abdomen, slow reflexes.[10]

## Diagnosis

Given the difficulty in diagnosing congenital hypothyroidism in the newborn period based on signs and symptoms, all hospitals in the united states, under supervision of state health departments, screen for this disease using blood collected from baby's heel before discharging from hospitals. This process is called Newborn screening.

When there is positive results ( a low level of thyroid hormone with high level of thyroid stimulating hormone, called TSH, from pituitary).[11]

## Treatment of congenital hypothyroidism

Congenital hypothyroidism is treated by giving thyroid hormone medication in a pill form called levothyroxine .many children while require treatment for life .

Levothyroxine should be crushed and given once daily ,mixed with a small amount of water ,formula, or breast milk using a dropper or syringe.

Giving baby his or her thyroid hormone EVERY DAY and having regular checkups with pediatric endocrinologist will help ensure that baby will have normal growth and mental development.[4,5,11]

## **Conclusion**

**Congenital hypothyroidism regarded acritical condition since the relation between the thyroid hormone and physical, mental development in children therefore early diagnosis and treatment is very necessary to avoid any bad outcome, early screening of thyroid hormones immediately after birth regarded the best way.**

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