

## **PREVALENCE OF TOOTH ABNORMALITIES IN TEMPORARY TEETH AT CHILDREN WITH DOWN SINDROME**

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### **Abstract**

*Dento-maxillary abnormalities are considered disorders in the harmony of developmental processes of dento-maxillary components. This study aimed to collect information on the prevalence of dental abnormalities in Down syndrome, which may be unique or associated abnormalities. The study consisted of the analysis of all Down syndrome patients 6 months -6 years of age in the genetics department of the Municipal Clinical Hospital, Dr. Gavril Curteanu "Oradea. 57 cases with Down Syndrome were observed. The abnormalities detected were: hypodontia, microdontia, taurodontism, enamel hypoplasia, dental transposition, delayed eruption. Following the centralization of the results we concluded that 55 patients (99.7%) had single or multiple dental abnormalities, the most frequent being taurodontia 45 patients (79%). Dental abnormalities were also associated with skeletal abnormalities.*

**Key words:** native teeth, Down Sindrome, dento-maxillary abnormalities

### **INTRODUCTION**

One of the most common genetic disorders is Down syndrome also called trisomy 21. (1,2). This is a chromosomal dysfunction caused by the presence of an additional chromosome in the genetic construct (the genome) that is present since embryo embryo. Chromosome 21 is the smallest of human chromosomes. Thus, a child is born with 47 chromosomes instead of 46. Statistics show that in Romania there are approximately 30,000 people with Down syndrome

At Down syndrome patients , we have the following characteristics: mental retardation and physical (3,21) brachichesia, short neck, mongoloid facies, hypertebism (eyelid gap), eyelid epiculate eyelid, strabismus, growth of the horizontal base of the skull, maxillary retrograde with a false mandibular prognacity and inverse occlusion, macroglossia (lingual volume), vestibulo-inclination of the lower front group due to lingual pressure.

The prevalence of periodontal disease in people with Down syndrome shows an increased risk due to the presence of a deficient immune

system. (6) The caries incidence is low (8,21), however, much of this research was done when people with Down syndrome lived in institutions and had a very limited diet that could have an impact on cariogenic risk.

Bruxism may be triggered by a state of chronic anxiety. Other dysfunctions that may occur are: dental malocclusion, dysfunction of the temporomandibular joint due to laxity of support ligaments and underdeveloped nervous control.

Dental trauma is commonly encountered due to lack of motor development, as well as fracture or dislocation of previous teeth.

Dental abnormalities have an incidence five times higher than the normal population (9,10). The teeth most commonly absent in primary teeth are lateral incisors (11,16,17). Seagriff-Curtin et al. (13,15,18) claims that the most common dental abnormalities in Down syndrome are number abnormalities and abnormalities of the teeth of these patients may have changes in shape and volume: taurodonia, dental dysplasia, frequent anodontics, eruption (delay), morphology(19, 20) . There are several classifications of dental anomalies according to the criteria used, the most conclusive and often used being the International Disease Classification (ICD)

The International Classification of Diseases (ICD) (14, 21) refers to teeth eruption, developmental and developmental disorders, respectively:

1. Size – microdontia, macrodontia
2. Number and Eruption - Supranumerary, Anodont, Hipoontia, Oligodontia, Pseudoanodontia, False Anodontia
3. Shape /Forn-Fusion
  - Crown -Fusion ,Gemination, aurodontism,,Talon”s Cup
  - Root-Concrecence, Enamel Pearl, Dilaceration, Flexion, Ankylosis
4. Defects of Enamel and Dentin - Amelogenesis Imperecta, Dentinogenesis Imperecta, Dentinal Dysplasia

### **The purpose of the study**

The aim of our study is to determine the incidence of dental anomalies at Down Sindrom childrens 6 months-6 years in Bihor county.

### **MATERIAL AND METHOD**

To achieve the proposed objectives, we selected a group of 57 children diagnosed with Down's syndrome, patients within the genetics department of the Municipal Clinical Hospital, Dr. Gavril Curteanu in September 2011-August 2018.

The inclusion criteria of the subjects in the study group were: subjects aged 6 months to 6 years, sex 23 girls and 34 boys and the socio-economic environment. Dental anomalies were analyzed according to the

International Disease Classification (ICD) (14,21), which refers to tooth eruption, developmental and developmental disorders. The data were centralized in the tables and statistically processed. Based on results and examinations, conclusions were drawn.

## RESULTS AND DISCUSSION

Of the 57 children with Down syndrome investigated, 55 children had dental abnormalities, and 2 children were not diagnosed with dental abnormalities. Of the 57 children diagnosed with Down's syndrome, 24 children presented a single anomaly representing 42.1%, 26 children had two associated abnormalities representing 45.6%, and three associated abnormalities were 5 children representing 8.8% of all investigated children.

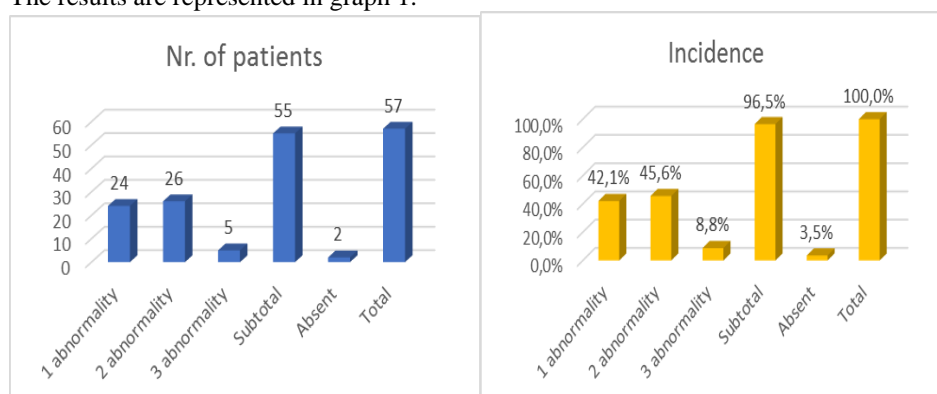
There are no significant differences between men and women.

Table 1

Prevalence of Dental Anomalies in Subjects with Down or Associated Down Syndrome

Dental anomalies - numeric	Sex		TOTAL
	Male	Female	
1	12	12	24
2	11	15	26
3	3	2	5
Absent	1	1	2
TOTAL	27	30	57

The results are represented in graph 1.



Graph 1- Prevalence of Dental Anomalies in Subjects with Down or Associated Down Syndrome

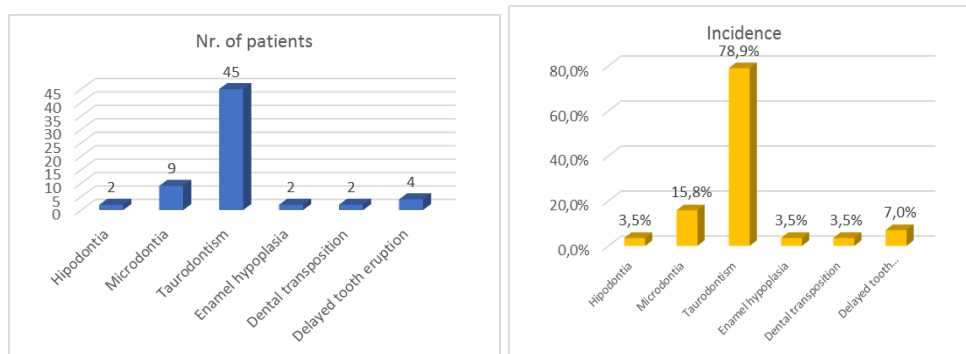
In the comparative statistical analysis, the dental nomads analyzed in children with Down syndrome, out of a total of 57 subjects, 45 children

presented taurodontism (79%), 9 children showed microdonty (15.8%), 4 children had eruptive retardation 7%), 2 children with hypodonty (3.5%), 2 children with enamel hypoplasia (3.5%), 2 children with dental transposition (3.5%). There are no significant differences from the point of view. It also observes the presence of several associated abnormalities.

*Table 2*

Frequency of diferend types of dental abnormalities encountered in investigated subjects

Dental Anomalies	Sex		Total
	Male	Female	
Taurodontism	21	24	45
Microdontism	5	4	9
Delayed dental eruption	2	2	4
Hypodontism	2	0	2
Enamel hypoplasie	1	1	2
Dental transposition	0	2	2



Graph 2. Frequency of diferend types of dental abnormalities encountered in investigated subjects

## CONCLUSIONS

1. Patients with Down syndrome have a very high prevalence of dental anomalies in 96.45%
2. With more patients (96.5%), there are 1 or 2 associated dental abnormalities.
2. Within the entire study group, the most common abnormality was taurodontism(22) in the proportion of (78.9%), which was observed in 45 of the analyzed subjects. The least common were hypodontists, enamel hypoplasia and dental transpositions.
3. Dental abnormalities are associated with Down's syndrome specific facies as well as changes and abnormalities in the musculoskeletal (21)

4. There were no significant differences in sex depending on the frequent anomalies or their type.
5. Due to the mental retardation and associated anxiety, it is difficult to treat dental treatment in people with Down syndrome. Due to this impediment, many dentists do not treat this category of patients.

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