



# Palatal Therapy in A Child with Down Syndrome: Case Report

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Received: 📅 April 22, 2021

Published: 📅 May 06, 2021

## Abstract

Down syndrome (DS) or chromosome 21 trisomy is a genetically provided human condition, it is a more common chromosomal alteration in humans. The presence of the extra chromosome in the genetic makeup determines specific physical characteristics in the oral cavity, such as orofacial muscle hypotonia and lingual protrusion. The aim of this paper is to describe the clinical case of M.S patient, 11 months old, with Down syndrome, admitted to the children's clinic of UNOESC, accompanied by her mother. In the clinical dental examination, the patient presents with Atresic palate, hypotonia and lingual protrusion, in addition to insufficient lip sealing, with indication for the use of the palatal memory plate (PPM) or Castillo Morales, a device indicated for those associated with functional diagnosis of hypotonia, with lingual protrusion, labial hypotonia, open mouth and craniofacial malformation. PPM promotes neuromuscular balance of the face and neck, and consequently affects the movements of the head and body, has the function of stimulating the tongue and upper lip and the development of nasal breathing. The treatment sequence followed the molding steps, making the model and, from there, the base plate was made in acrylic resin with extension, for adaptation in the child's pacifier. After making the retentions on the lateral edges to stimulate the musculature of the mucosa and upper lip, the device was polished and adapted to the baby. It is intended that the device cause lingual retraction to the oral cavity, movements of stimulation of the lips and lip sealing. The recommended time for the child to use the device initially is five to ten minutes twice or three times a day, and as the child adapts to the device, the time of use increases.

**Keywords:** Pediatric dentistry; patients with special needs; jaw orthopedics

**Abbreviations:** DS: Down Syndrome; PPM: Palatal Memory Plate

## Introduction

Down Syndrome (DS) is a congenital, autosomal chromosomal disease with craniofacial characteristics and generalized muscle hypotonia, which provides important changes in the skeletal system. It is also known as chromosome 21 trisomy, a genetically determined human condition, and is the most common chromosomal alteration in humans. Monitoring with an orthodontist should extend from the first year of life to adulthood, with constant monitoring and correction of abnormalities. that appear during the development and maturation of dental and skeletal structures [1]. Among the oral characteristics of people with down syndrome. They may present dental changes such as hypodontia, conoid teeth or microdontia, hypoplasia of dental enamel, fusion, twinning, bullfighting, delay or

reversal of the eruption order of primary teeth. The palate has an ogival shape and its dimensions are reduced while the tongue has a relative macroglossia [2]. The Palatal Memory Plate was developed by the doctor Rodolfo Castillo Morales (1941-2011) is a device used as a therapy in children with oro-muscular hypotonia with lingual protrusion and open mouth, characteristics common to patients with down syndrome [3]. PPM has stimulators for the tongue and lips that induce lip sealing and the maintenance of the tongue inside the mouth leading to an improvement in the child's orofacial muscles and the development of nasal breathing. The objective of the work is to describe the clinical case of an 11-month-old M.S patient with down syndrome, admitted to the children's clinic of UNOESC, accompanied by his mother, in the first half of 2021 [4].

## Case Report

M.S patient, 11 months old, with Down Syndrome, admitted to the children's clinic at UNOESC, accompanied by his mother, in the first semester of 2021. In the clinical dental examination, the patient presented with atresic palate, hypotonia and lingual protrusion, in addition to insufficient lip sealing (Figure 1), with indication for the use of palatal memory plate (PPM) (Figure 1).

The treatment sequence followed the molding steps with infant trays and Hydrogum ® alginate, casting of the mold with stone plaster, and from the plaster model, the base plate was made in acrylic resin with extension, also in acrylic for adaptation in the child's pacifier (Figure 2). The device was polished, inspected for the presence of grooves and tips that could damage the child's mucosa [5]. Retentions were also carried out on the lateral edges to stimulate the musculature of the mucosa and upper lip.



Figure 1: Extra Oral Photos.



Figure 2: Palatal Memory Plate.

## Final Considerations

It is intended that the device causes lingual retraction to the oral cavity, movements of stimulation of the lips and lip sealing. The recommended time for the child to use the device initially is five to ten minutes twice or three times a day.

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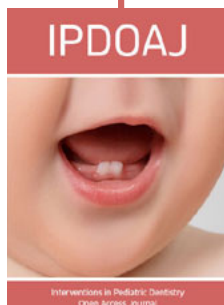
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DOI: [10.32474/IPDOAJ.2021.06.000230](https://doi.org/10.32474/IPDOAJ.2021.06.000230)



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