

**Introduction:** The human microbiome is a complex ecosystem that varies considerably across the body and between individuals.<sup>1</sup> Postnatally the child is exposed to microorganisms from maternal and environmental sources and influenced by infant feeding, developing its own microbiome that will continue evolving throughout life.<sup>2</sup> Several studies have been carried out to determine the influence of the mode of delivery on the oral microbiome, and some influence on bacterial colonization has been verified.<sup>3,4</sup> However, the influence on oral fungal colonization is still unknown.

**Methods:** In 200 healthy students from the Faculty of Dentistry of University of Porto, colonization by yeast in the oral cavity was evaluated by collecting unstimulated saliva. Yeast isolation was performed by pour-plaque technique using Sabouraud Agar medium supplemented with chloramphenicol and ChromAgar Candida medium for species identification. Statistical analysis was performed using the chi-square test and t-test for independent samples.

**Results:** Participants' mean age was  $21.61 \pm 1.86$  years old, with a total yeast prevalence of 37.5%. *Candida albicans* was the most isolated species present in 76.5% of the colonized participants. In comparison to caesarean section, the participants born by normal delivery presented higher oral yeast prevalence (41.6% vs. 25.8%,  $p=0.035$ ) and higher oral yeast load ( $13.68 \pm 38.02$  vs.  $1.69 \pm 0.62$  Log CFU/mL,  $p=0.030$ ).

**Conclusion:** Our results suggest that delivery mode influences the oral mycobiome throughout life, specifically, normal delivery appears to promote the oral yeast colonization.

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## Why, how and when are patients with Chromosomal anomalies hospitalized?



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**Aim:** We aim to describe Chromosomal anomalies (CA) related hospitalizations characteristics and specific trends in

order to understand why, how and when are these patients hospitalized.

**Introduction:** CA affect approximately 2% of the world population.<sup>1</sup> Due to this low prevalence not many studies regarding hospitalizations are available in this set of conditions. Hospitalizations represent an overall health and prognosis indicator that may allow the implementation of specific health care policies regarding prevention measures to avoid CA-related hospitalizations.

**Methods:** A retrospective observational study was performed using a national hospitalization database that gathers all public hospital admissions between 2000 and 2014. CA were selected based on codes 758.0× to 758.7× codified by the International Classification of Diseases – 9th Revision – Clinical Modification. Birth date, sex, charges, admission/discharge date, discharge status, primary/secondary diagnoses were analyzed for each specific CA.

**Results:** CA related hospitalizations accounted for 0.08% of all the hospitalizations. Down syndrome represented 75.9% of all CA-related hospitalizations and 80.2% (approximately 30M€) of all the charges attributed to CA related hospitalizations. The median age of CA-related patients was 9.0 years old. The leading causes of hospitalization in different CA varied between pneumonia (3.6–18.6%) and live birth related diagnoses (7.9–52.5%). Mean number of hospitalizations ranged from 1.0 to 2.1 per patient and mean charges per hospitalization varied from 2 339 to 4 520 €.

**Conclusion:** CA hospitalizations have high mean charges per hospitalization, high length of stay and high in-hospital mortality. Down syndrome accounts for the majority of CA hospitalizations, representing the CA with higher economic burden in the health system. Klinefelter syndrome hospitalizations occur at a younger age than the described mean age of diagnoses in all Klinefelter syndrome patients, a novel finding not previously described.

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## Efficiency of web application and spaced repetition algorithms as an aid in preparing to practical examination of histology



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**Aim:** The aim of this study is to evaluate impact of using web application on the results of histology practical exam as well as to check if the SuperMemo-based algorithm is a useful tool in medical education.