

# **ABSTRACT / OBJECTIVES**

### **Context:**

• The COVID-19 pandemic significantly affected children's health, contributing to higher BMI and increased risk of dental caries.

### **Rationale:**

• This study examines the impact of pandemic-related changes on BMI and dental health in children aged 6-12 in San Antonio, Texas.

### **Objectives:**

- Analyze BMI trends pre- and post-pandemic using UT Health San Antonio medical records.
- Examine the link between high BMI and sugar-rich diets, which increase dental caries risk.

### **Role of Pediatric Dentists:**

• Biannual visits to monitor BMI, provide nutritional counseling and detect systemic conditions (e.g., type 2 diabetes, sleep apnea).

## **MATERIALS and METHODS**

#### **Data Source:**

•1,520 participants from UT Health San Antonio medical and dental initial records.

Inclusion criteria ASA 1 and 2.

•Exclusion missing records, significant health conditions or prior weight management interventions.

#### **Study Periods:**

•Pre-pandemic: 2017–2019.Post-pandemic: 2021–2023.

#### **Key Parameters:**

•BMI levels. Dietary habits. Dental caries prevalence, age and gender.

Shift in BMI among the pediatric population in San Antonio, Texas: Pre-and Post-COVID-19 Implications in Pediatric Dentistry

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## RESULTS

#### **BMI Increase:**

 Post-pandemic children showed higher BMI due to reduced ph activity and sedentary lifestyles.

#### **Dental Caries Association:**

 Children with higher BMI were more prone to dental caries due rich diet.

#### **Data analysis:**

 Linear regression confirmed a significant trend in BMI amore aged 6–12, with a marked spike in 2021.

- Gender distribution remained balanced across all years. A new pandemic increase in BMI, particularly **among males**.
- Logistic regression further demonstrated caries risk assessment (CRA) increased significantly, showing a consistent rise from 2018 onward and persisting through the post-COVID years.





Table 1. Estimate for each year stratified by gender

| Characteristic              | <b>Overall</b> , N = 1,318 <sup>1</sup> | <b>2017</b> , N = 211 <sup>1</sup> | <b>2018</b> , N = 239 <sup>1</sup> | <b>2019</b> , N = 233 <sup>1</sup> | <b>2021</b> , N = 178 <sup>1</sup> | <b>2022</b> , N = 208 <sup>1</sup> | <b>2023</b> , N = 249 <sup>†</sup> | p-<br>value <sup>2</sup> |
|-----------------------------|---|------------------------------------|------------------------------------|------------------------------------|------------------------------------|------------------------------------|------------------------------------|--------------------------|
| AGE                         | 8.76 2.00                               | 8.87 1.86                          | 8.84 2.00                          | 8.81 2.14                          | 8.87 1.97                          | 8.60 1.91                          | 8.61 2.05                          | 0.5                      |
| GENDER                      |   |                                    |                                    |                                    |                                    |                                    |                                    | 0.4                      |
| F                           | 642 (49%)                               | 91 (43%)                           | 122 (51%)                          | 115 (49%)                          | 85 (48%)                           | 97 (47%)                           | 132 (53%)                          |                          |
| М                           | 676 (51%)                               | 120 (57%)                          | 117 (49%)                          | 118 (51%)                          | 93 (52%)                           | 111 (53%)                          | 117 (47%)                          |                          |
| BMI                         | 19.2 4.9                                | 19.0 4.2                           | 19.1 4.9                           | 19.0 4.7                           | 20.3 6.2                           | 19.1 4.9                           | 18.8 4.7                           | 0.2                      |
| Unknown                     | 4                                       | 1                                  | 1                                  | 0                                  | 1                                  | 1                                  | 0                                  |                          |
| CRA                         |   |                                    |                                    |                                    |                                    |                                    |                                    | <0.001                   |
| L                           | 16 (1.2%)                               | 6 (2.8%)                           | 4 (1.7%)                           | 2 (0.9%)                           | 0 (0%)                             | 2 (1.0%)                           | 2 (0.8%)                           |                          |
| А                           | 252 (19%)                               | 66 (31%)                           | 57 (24%)                           | 44 (19%)                           | 25 (14%)                           | 34 (16%)                           | 26 (10%)                           |                          |
| Н                           | 1,050 (80%)                             | 139 (66%)                          | 178 (74%)                          | 187 (80%)                          | 153 (86%)                          | 172 (83%)                          | 221 (89%)                          |                          |
| <sup>1</sup> Mean SD; n (%) |   |                                    |                                    |                                    |                                    |                                    |                                    |                          |

Table 2. Caries Risk Assessment over time.

## **RESULTS** (cont.)

|              | Characteristic Beta 95% Cl <sup>7</sup> p-value                                 | Characteristic OR <sup>7</sup> 95% Cl <sup>7</sup> p-value  |
|--------------|---|---|
|              | AGE   | AGE   |
| nysical      |   | AGE 0.00 0.00, 0.00 <0.001                                  |
|              | AGE 61 51,70 <0.001   | AGE <sup>2</sup> 0.67 0.00, 113 0.9                         |
|              | AGE <sup>2</sup> -6.1 -15, 3.0 0.2  | GENDER  |
|              | GENDER  | F — —   |
|              | F — —   | M 110 000 155 0.2   |
|              | M 0.21 -0.29, 0.72 0.4  | IVI 1.10 0.09, 1.55 0.5                                     |
| to a sugar-  | Year  | Year  |
|              | 2017 — —  | 2017 — —  |
|              | 2018 0.11 -0.75, 0.97 0.8   | 2018 1.55 1.02, 2.34 0.039                                  |
|              | 2019 0.14 -0.73, 1.0 0.8  | 2019 2.17 1.40, 3.38 < 0.001                                |
|              | 2021 1.3 0.37, 2.2 0.006  | 2021 3.29 1.99, 5.58 < 0.001                                |
| ona children | 2022 0.34 -0.55, 1.2 0.4  | 2022 2.43 1.54, 3.89 < 0.001                                |
| ong onnaron  | 2023 0.01 -0.84, 0.87 >0.9  | 2023 4.13 2.55, 6.85 < 0.001                                |
|              | <sup>†</sup> CI = Confidence Interval   | <sup>†</sup> OR = Odds Ratio, CI = Confidence Interval      |
| otable post- | Table 3. Linear regression adjusted by age in quadratic form, gender, and year. | Table 4. Caries Risk Assess<br>regression by age, gender, a |

- CONCLUSIONS
- A significant post-pandemic increase in BMI among children aged 6–12 in San Antonio, Texas, with the most pronounced spike observed in 2021.
- The persistent upward trend in BMI levels through 2023 underscores the enduring impact of the COVID-19 pandemic on pediatric health.
- The prevalence of high caries risk assessment (CRA) since 2018, exacerbated during the post-pandemic years.
- These findings emphasize the interconnected nature of systemic and oral health, particularly in children with high BMI.
- The study underscores the critical role of pediatric dentistry in addressing these dual challenges.
- Public health interventions and preventive dental care are essential to mitigate the long-term effects of the pandemic on children's health and promote healthier lifestyles.

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ment logistic and year



