



Prevalence of Secondary Cleft Lip Revisions: Analysis of National Database

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BACKGROUND

Primary cleft lip repair is performed to restore normal upper lip anatomy, form and function. Existing literature addresses various surgical approaches to the primary and secondary cleft lip repairs, yet few studies evaluate the national prevalence of secondary cleft lip revisions. This retrospective analysis evaluated the incidence of secondary cleft lip revisions.

OBJECTIVES

1. Appreciate the geographical distribution of secondary cleft lip repairs
2. Comprehend how the incidence and prevalence of secondary cleft lip revisions have changed over time
3. Explain various factors associated with decreased cleft lip revision rates

METHODS

This retrospective study used TriNetX, a national deidentified aggregate database encompassing over 110 million patients across 78 different healthcare organizations in the United States (US). The study evaluated patients less than 12 months of age who had an initial unilateral (CPT-40700) or bilateral cleft lip repair (CPT-40701 or CPT-40702) from 1/1/2000 to 9/16/2023. Patients identified to have had a subsequent cleft lip revision (CPT-40720) were categorized by the year of their initial cleft lip repair. Patient demographic data were extracted and analyzed through TriNetX, which divided the US into four regions: Northeast, Midwest, South, and East. Logarithmic interpolation analysis was performed using PRISM software.

RESULTS

Prevalence of Cleft Lip Revisions over Time

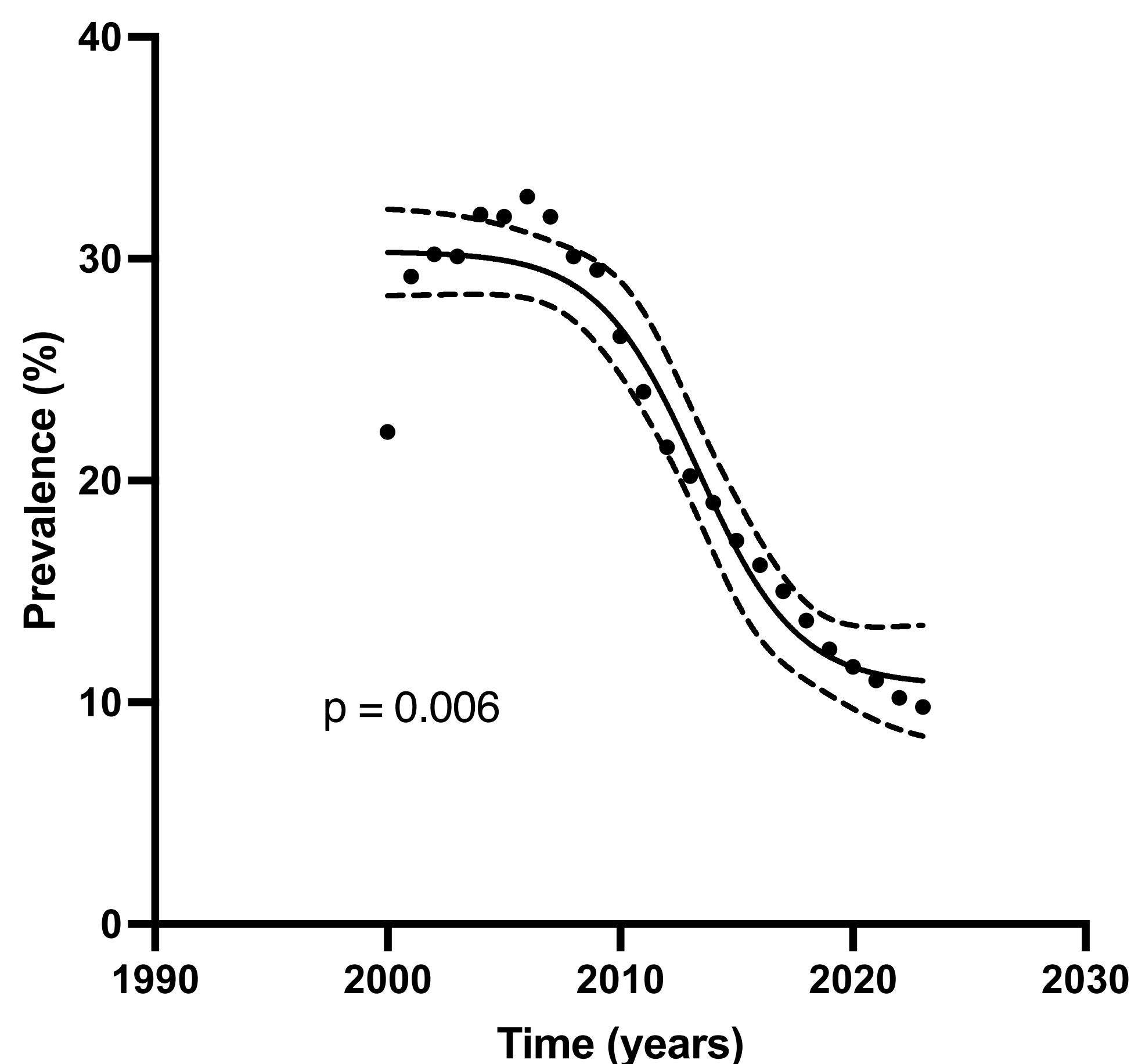
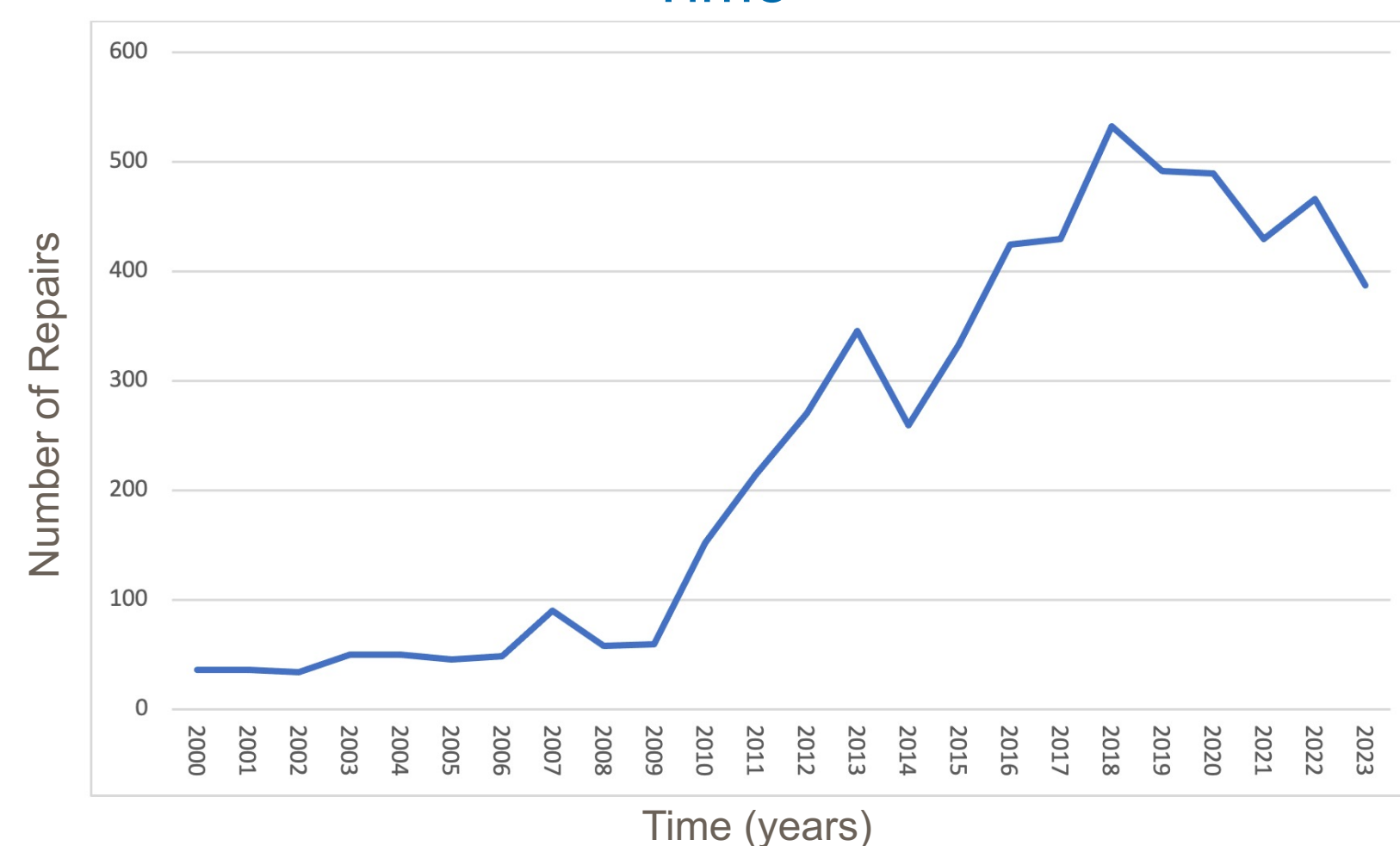


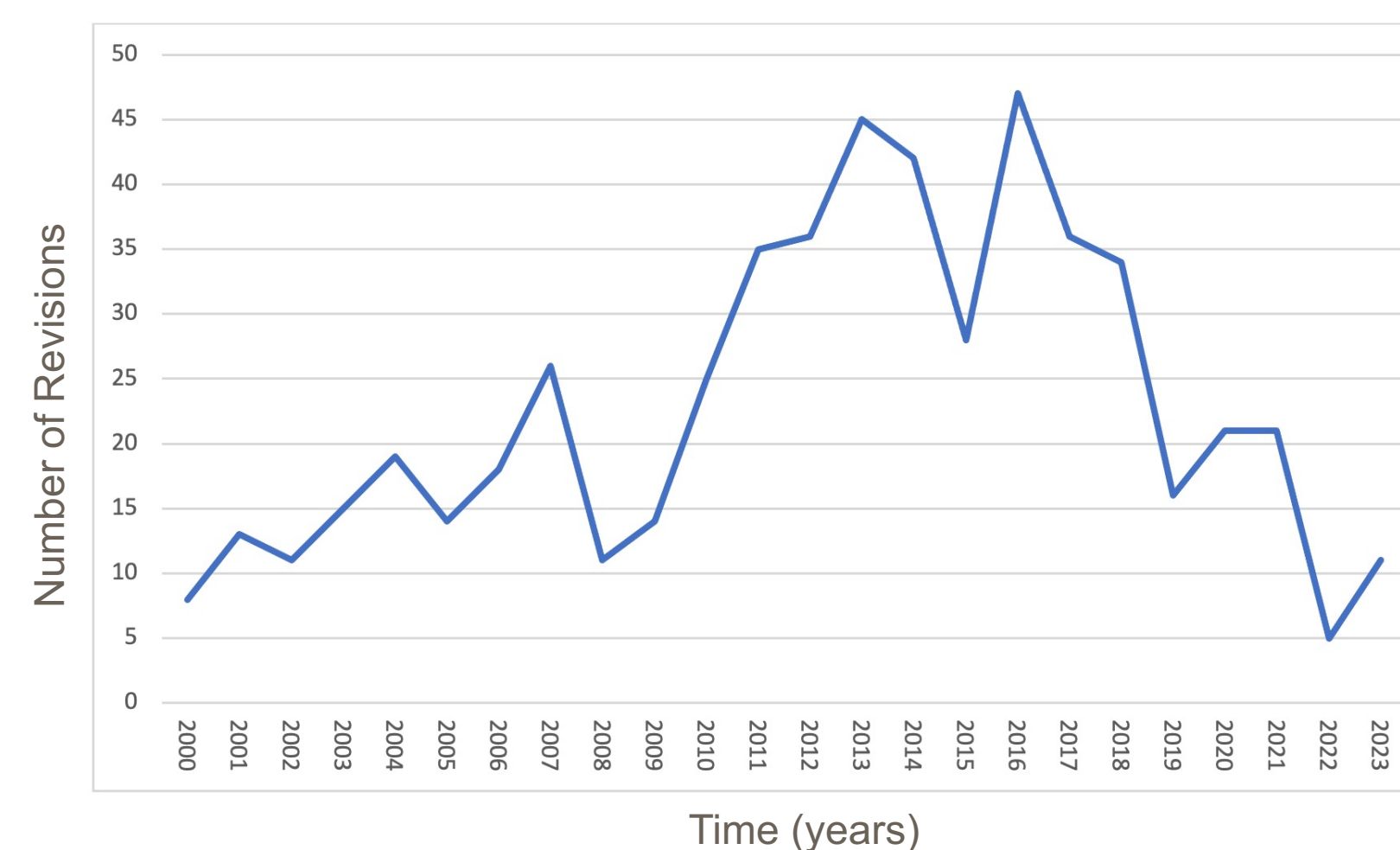
Figure 1. The prevalence of cleft lip revisions peaked in 2006 at 32.8% and have been in progressive decline to 9.8% in 2023 ($p=0.0006$, $R^2=0.93$).

Incidence of Primary Cleft Lip Repairs Over Time



The incidence of primary cleft lip repairs has increased from 36 patients in 2000 to 466 patients in 2022

Incidence of Cleft Lip Revisions Over Time



The incidence of secondary cleft lip revision has varied, with a peak in year 2016 at 47.

A total of 5,726 patients under 12 months of age underwent primary cleft lip repair. Among these patients, 551 (9.6%) required subsequent cleft lip revisions. In the group of patients who underwent cleft lip revision, 63% were male and 60% were white. Geographically, the Midwest had the highest revision rate (55%), followed by the South (21%), West (17%), and Northeast (6%).

CONCLUSIONS

While the incidences of primary cleft lip repair and secondary revisions have varied, the prevalence of secondary cleft lip revisions have significantly decreased over time. Advancing surgical techniques may be contributing to better initial repair and a subsequent decrease in revision rates. Similarly, preoperative interventions such as nasoalveolar molding (NAM) could also be leading to an improved quality of initial repair, decreasing the need for future revision.

IMPLICATIONS

By providing insight into the incidence and prevalence of cleft lip revisions, this study could inspire future research into technique comparison and NAM outcomes, hopefully improving the quality of care for all cleft lip repair patients.

DISCLOSURES

No conflicts to disclose. References available upon request.