

# Dental Anomalies in Leukodystrophy: An Age- and Sex-Matched Cohort Study



Erin Brewer,<sup>1\*</sup> Kristin Watt,<sup>2</sup> Emily Meneses,<sup>1</sup> Catherine Flaitz,<sup>2</sup> Chaitanya P. Puranik,<sup>1,2</sup>  
 \*Presenting author, <sup>1</sup>Children's Hospital Colorado, and <sup>2</sup>School of Dental Medicine, University of Colorado Aurora, CO

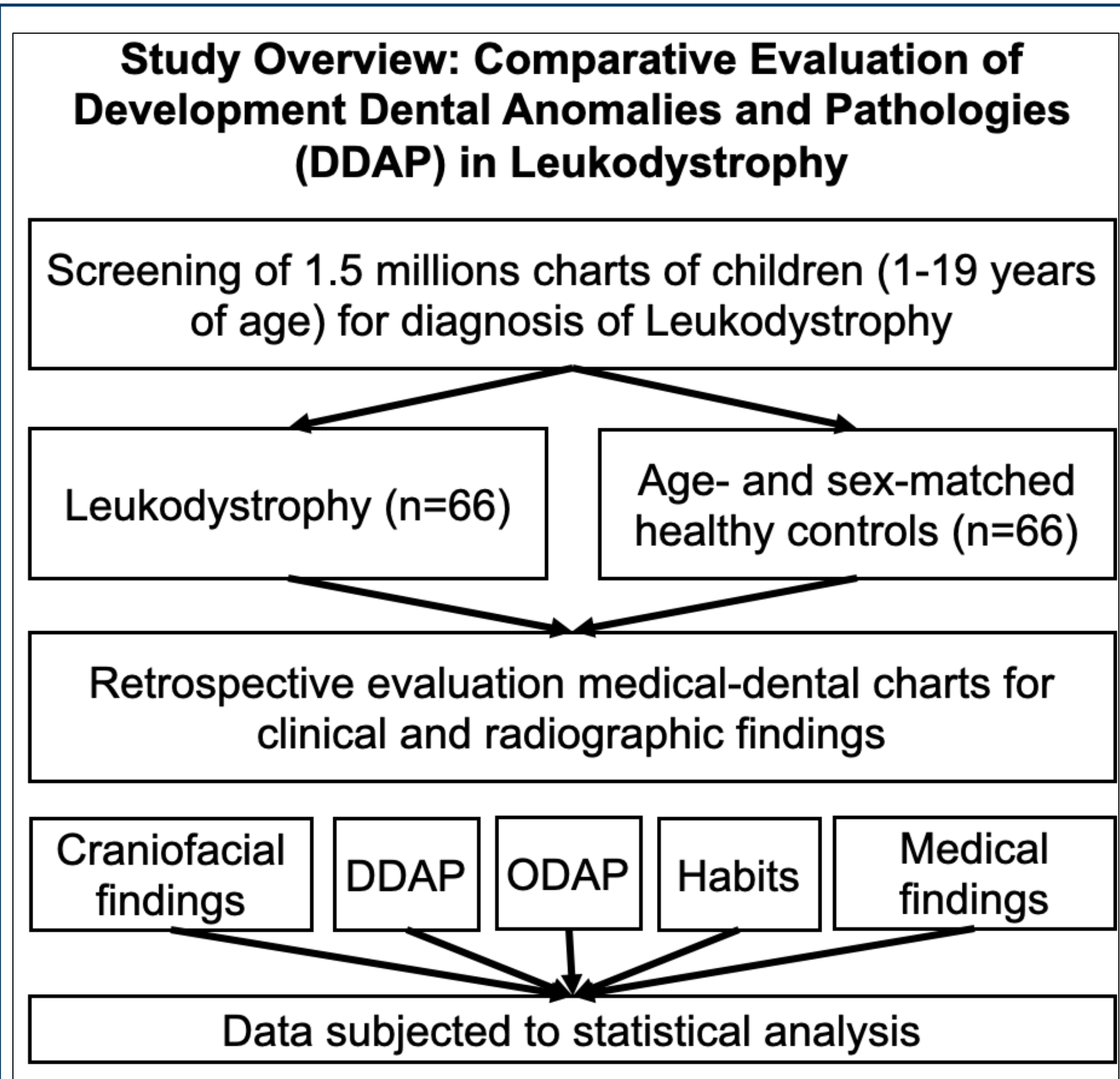


Children's Hospital Colorado

## BACKGROUND

- ❖ This observational cohort study evaluated the prevalence of medical and dental findings in children with leukodystrophy compared to age- and sex-matched healthy controls.
- ❖ The project hypothesized that children with leukodystrophy have a higher incidence of medical findings, dental anomalies (DDAP), or pathologies (ODAP).

## METHODS



## RESULTS

**Table 1: Demographics variables from age- and sex-matched subjects from each study cohort**

Parameter	Leukody. (n=66)	Controls (n=66)	P-value
Age (years) Median (Q1, Q3)	10.0 (6.25, 15.0)	10.0 (6.25, 15.0)	0.947
Sex-female	31 (47.0%)	31 (47.0%)	1
Race			
American Indian/Alaska Native	1 (1.5%)	0 (0%)	<0.001
Asian	1 (1.5%)	3 (4.5%)	
Black/African American	2 (3.0%)	12 (18.2%)	
More than one race/other/unknown	10 (15.1%)	21 (31.8%)	
White/Caucasian	52 (78.8%)	30 (45.5%)	
Ethnicity- Hispanic or Latino	17 (25.8%)	39 (59.1%)	<0.001
Status- Deceased	14 (21.2%)	0 (0%)	<0.001
Percentile weight Median (Q1, Q3)	15.8 (1.56, 51.1)	61.5 (32.8, 86.1)	<0.001
Percentile height Median (Q1, Q3)	12.6 (0.191, 49.3)	57.9 (32.3, 78.5)	<0.001
Body mass index Median (Q1, Q3)	16.8 (14.8, 19.1)	18.3 (15.7, 22.4)	0.0211
Cardiovascular findings	14 (21.2%)	6 (9.1%)	0.0893
Respiratory findings	23 (34.8%)	6 (9.1%)	<0.001
Musculoskeletal findings	42 (63.6%)	3 (4.5%)	<0.001
Immunological findings	5 (7.6%)	0 (0%)	0.0578
Endocrine findings	14 (21.2%)	0 (0%)	<0.001
Genitourinary findings	19 (28.8%)	2 (3.0%)	<0.001
Central nervous system findings	66 (100%)	8 (12.1%)	<0.001
Peripheral nervous system findings	3 (4.5%)	0 (0%)	0.244
Gastrointestinal findings	34 (51.5%)	4 (6.1%)	<0.001
Hepatobiliary findings	5 (7.6%)	0 (0%)	0.0578
Behavioral findings	32 (48.5%)	10 (15.2%)	<0.001
Otorhinolaryngological findings	31 (47.0%)	8 (12.1%)	<0.001
Hematological findings	19 (28.8%)	3 (4.5%)	<0.001
Ophthalmological findings	30 (45.5%)	10 (15.2%)	<0.001
Non-verbal	28 (46.7%)	2 (3.0%)	<0.001

**Table 2: Craniofacial and developmental anomalies and pathologies in each study cohort**

Parameter	Leukody. (n=66)	Controls (n=66)	P-value
<b>Craniofacial findings</b>			
Dysmorphic facial features	9 (100%)	0 (0%)	<0.001

## CONCLUSIONS

- ❖ Children with leukodystrophy had a higher prevalence of complex medical findings as compared to the healthy controls.
- ❖ Children with leukodystrophy were associated with an increased prevalence of dysmorphic facial features compared to the healthy controls.
- ❖ The prevalence of DDAP or ODAP was not significantly different between healthy children and those with leukodystrophy; this could be due to the variable underlying mutations or findings.
- ❖ Reduced access to routine dental care among leukodystrophy children highlights a gap in interdisciplinary care.

## IMPLICATIONS

- ❖ Integration of pediatric dental services with medical care may improve oral healthcare outcomes for children with leukodystrophy.
- ❖ Further studies should explore interdisciplinary care models to address barriers to dental access in this population and study genotypic-phenotypic correlations between dental findings.

## ACKNOWLEDGEMENTS

The support for the statistical analysis was provided by the Center for Research Outcomes in Children's Surgery (ROCS), Children's Hospital Colorado.