

CURRICULUM VITAE

ULRICH KLEIN, DMD, DDS, MS

Chairperson, Departments of Pediatric Dentistry
Children's Hospital Colorado and University of Colorado School of Dental Medicine

PERSONAL HISTORY

Office Address: Children's Hospital Colorado | 13123 E 16th Ave, B-240 | Aurora, CO 80045
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EDUCATION	DEGREE	YEAR
Dentistry College of Dentistry University of Nebraska Medical Center, Lincoln, NE	DDS	1998
Fellowship in Clinical Pediatric Dentistry University of Illinois at Chicago, Chicago, IL	Fellowship	1996-97
Residency in Pediatric Dentistry College of Dentistry University of Iowa, Iowa City, IA	Certificate and Master of Science Degree	1994-96
Residency in Orthodontics College of Dentistry University of Giessen, Giessen, Germany	Certificate Orthodontics	12/1977-11/80
Doctoral Thesis College of Dentistry University of Giessen, Giessen, Germany	USA PhD equivalent	1975-78
Dentistry College of Dentistry University of Giessen, Giessen, Germany	DMD	1971-76

SPECIALTY BOARD CERTIFICATION	YEAR
Pediatric Dentistry	2003

LICENSURE	YEAR
Germany and European Union	1976 - present
Michigan, Kansas, Nebraska - Dentistry	1998 - 09
Colorado - Dentistry	2003 - present

PROFESSIONAL EXPERIENCE

DATES

CURRENT ACADEMIC APPOINTMENTS

Professor (C/T), Pediatric Dentistry Children's Hospital Colorado and SDM	2010 – present
Chairperson, Department of Pediatric Dentistry University of Colorado Denver School of Dental Medicine	11/2007 – present
Chairperson, Department of Pediatric Dentistry Children's Hospital Colorado	9/2006 – present
Director, Postgraduate Pediatric Dentistry Program Children's Hospital Colorado	8/2004 – present
Director of Orthodontics & Member, Cleft Palate Team Children's Hospital Colorado	5/2003 – present

PAST ACADEMIC APPOINTMENTS

Associate Professor (C/T), Pediatric Dentistry Children's Hospital Colorado and SDM	5/2003–6/2010
Assistant Professor, Pediatric Dentistry College of Dentistry, University of Nebraska Medical Center	5/1999–8/2002
Associate Program Director, Postgraduate Program, Pediatric Dentistry College of Dentistry, University of Nebraska Medical Center	2000–2002
Clinical Instructor in Orthodontics, Postgraduate Program, Orthodontics College of Dentistry, University of Giessen, Germany	12/1980–6/1981

PRIVATE PRACTICE

Children's Medicaid Clinic, Aurora, CO	10–11/2002
University Dental Associates College of Dentistry, University of Nebraska Medical Center	5/1999–8/2002
Orthodontist in private solo practice Kulmbach, 95326, Germany	8/1981–6/1994

HOSPITAL APPOINTMENTS

Children's Hospital Colorado, Aurora, CO	Category V privileges	2003 – present
University of Nebraska Medical Center, Omaha, NE	Category IV privileges	1999–2002

OTHER NOTABLE PROFESSIONAL ACHIEVEMENTS

<u>Development and implementation of scenarios for simulation training</u> Residents' emergency training with advanced manikins in a simulation laboratory Center for Advancing Professional Excellence (CAPE) at UCHSC	Fall 2008
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<u>CODA Accreditation TCH Pediatric Dentistry Residency Program</u>	Fall 2007
Main individual responsible for authoring, presenting, and defending the Self–Study Report to the Commission on Dental Accreditation of the American Dental Association (CODA)	
Outcome: Full accreditation for 7 years without reporting requirements	
<i>Children’s Hospital Colorado Pediatric Dentistry Residency Program</i>	
<u>Implementation of axiUm EMR System: direction and participation</u>	2005 – present
<i>Department of Pediatric Dentistry, Children’s Hospital Colorado, Aurora, CO</i>	
<u>CODA Accreditation UNMC Postgraduate Program</u>	Fall 2000
Primary individual responsible for authoring, presenting, and defending the Self–Study Report to CODA. Outcome: Full Reaccreditation for 7 years	
<i>Pediatric Dentistry Division of the University of Nebraska College of Dentistry</i>	

HONORS AND AWARDS

YEAR

Section Editor orthodontics for journal Pediatric Dentistry	2014-18
Fellow, American College of Dentists (FADC)	2013
OKU Colorado Chapter Convocation Address	2011
Honorary Alumni Award University of Colorado Denver School of Dental Medicine	2009
Member, Omicron Kappa Upsilon National Dental Honor Society	2008
Parent–to–Parent Organization: “Professionals Who Care” Award	2008
Leadership Seminar, Center for Creative Leadership, Colorado Springs, CO	2006
American Academy of Pediatric Dentistry Foundation Research Award	2003
Dean’s Leadership Institute, College of Medicine, University of Nebraska	2002
American Academy of Pediatric Dentistry Graduate Student Research Award	1997

I. TEACHING ACTIVITIES

PRE-DOCTORAL LEVEL

<u>Didactic:</u> Co–lecturer DSPS 6620/7700 and DISP 7140/7340	2004 – present
a. Exodontia and Space Management (2hr lecture)	
b. Nitrous Oxide in Pediatric Dentistry (2hr lecture)	
c. Restorative Options in Pediatric Dentistry (2hr lecture)	
d. Adolescent Dentistry (2hr lecture)	

Clinical: Pre–doctoral Clinic Co–instructor DSPD7757/8855 and DISP 8240/8340

University of Colorado School of Dental Medicine

<u>Clinical:</u> Pediatric Dentistry PDE 636/663: Co–instructor	1997–2002
<i>College of Dentistry, University of Nebraska Medical Center</i>	

POSTDOCTORAL LEVEL

Children’s Hospital Colorado

<u>Clinical:</u> Regular resident clinic, orthodontic program, and operating room supervision	2003 – present
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Didactic:

Director: An Orthodontic Primer for Pediatric Dentists (seminars, readings, lectures, case discussions)
Lectures for Residents on various topics relevant to pediatric dentistry

Residency Program, Pediatric Dentistry
College of Dentistry, University of Nebraska Medical Center
Clinical: Resident clinic and operating room supervision 1999–2002
Didactic: Seminars for residents on various topics relevant to pediatric dentistry
 Residency Program, Pediatric Dentistry

TEACHING MATERIALS DEVELOPED

Annual Pediatric Dentistry Residency Handbook (~ 100 pages) 2004 – present
 Reading material (articles, book chapters) for ABPD Board preparation 2004 – present
 Lectures for pre-doctoral and resident education 1999 – present

II. RESEARCH AND SCHOLARLY ACTIVITIES

CURRENT RESEARCH

1. Tooth anomalies (pyramidal roots, “9-year” molars)
2. Nitrous oxide

FINANCIAL RESOURCES / GRANTS AND CONTRACTS

Direction of a financially successful and nationally respected department and Pediatric Dentistry Residency Program 2006 - present

Delta Dental Cavity Free @ 3 Grant to Children’s Hospital Colorado Dental Center 2008 (b) (4)

Wrote grant application and developed business plan together with (b) (6)

Principal investigator 2007 (b) (4)

Immunologic marker assays in children undergoing dental rehabilitation under general anesthesia before and after extraction treatment: a pilot study.
 Children’s Hospital Colorado Clinical Translational Research Institute (CTRC) Grant

Principal investigator 2006 (b) (4)

Nitrous oxide concentrations [N₂O] in the posterior nasopharynx compared to flowmeter settings in children
 Children’s Hospital Colorado Clinical Translational Research Institute (CTRC) Grant

Principal investigator (25%FTE) and administrator 2000–02 \$153k

Interdisciplinary enhancement and expansion of pediatric dental residency training.
 Health Resources and Services Administration (HRSA) Grant

Principal investigator Fall 2000 (b) (4)

The WAND™ anesthetic delivery system vs. traditional handheld syringes:
 A pilot CT scan study of the spread of the solution for PDL anesthesia
 University of Nebraska College of Dentistry Seed Grant

PUBLICATIONS (all in peer reviewed journals)

Klein U, (b) (4)

Submitted for publication (b) (4)

Klein U, (b) (4)

Submitted for publication (b) (4)

Klein U, Managkil R, DeWitt P. Parents' Ability to Assess Dental Fear in their Six- to 10-year-old Children. *Pediatr Dent*. 2015 Sep-Oct;37(5):436-41. PMID 26531086

Gandhi R, **Klein U.** Autism Spectrum Disorders: An Update on Oral Health Management. *J Evid Base Dent Pract* 2014;S1: [1-12].

Klein U, Storey B, Hanson PD. Benefits of externships with pediatric dentistry programs for potential residents: program directors' and current residents' perceptions. *J Dent Educ*. 2014 Mar;78(3):473-80. PMID: 24609349

Klein U, Kleier DJ. Sodium Hypochlorite Accident in a Pediatric Patient. *Pediatr Dent* 2013;35(7):456-60.
Greene AE, Roosevelt GE, Grubenhoff JA, Klein U. Little boy black and blue. *Pediatr Emerg Care*. 2011; 27(8):758-9. PMID: 21822090

Khaled J, Klein U, Meinke D. Assessment of Noise Exposures in a Pediatric Dentistry Residency Clinic. *Pediatr Dent* 2011; 33: 342-7

Klein U, Robinson TJ, Allshouse A. End-Expired Nitrous Oxide Concentrations Compared to Flowmeter Settings During Operative Dental Treatment in Children *Pediatr Dent* 2011; 33:56-62

Klein U, Hunzeker C, Hutfless S, Galloway A. Quality of anesthesia for the primary anterior maxillary segment in pediatric Patients: Comparison of the P-ASA nerve block using the *CompuMed™* delivery system with traditional supraperiosteal injections. *J Dent Child* 2005;72:119-25

Klein U, Bucklin B, Poulton T, Bozinov D, Tiede S. Nitrous oxide concentrations in the posterior nasopharynx during administration by nasal mask. *Pediatr Dent* 2004;26: 410-16

Klein U, Buehler B. Dental management of an adolescent with Trisomy 13 Syndrome: A case report. *J Dent Child* 2004;71:91-95

Klein U, Kanellis MJ, Drake D. Effects of four anticaries agents on lesion depth progression in an in vitro caries model. *Pediatr Dent* 1999;21:176-80

Klein U, Nowak A. Characteristics of patients with autistic disorder (AD) presenting for dental treatment: a survey and chart review. *SCD* 1999;19:200-7

Klein U, Nowak A. Autistic disorder: a review for the pediatric dentist. *Pediatr Dent* 1998;20:312-7

BOOK CHAPTERS

- Klein U**, (updated and revised) Chapter 17: Oral Medicine and Dentistry; 2015
Current Diagnosis & Treatment Pediatrics, 22nd ed. McGraw Hill Medical Textbook
- Klein U**, Chapter 15: Nitrous oxide administration in Pediatric Dentistry; in Clark/Brunick 2014
Handbook of Nitrous Oxide and Oxygen Sedation, 4th ed., Mosby Elsevier
- Klein U**, (updated and revised) Chapter 17: Oral Medicine and Dentistry; p 465-476 2012
Current Diagnosis & Treatment Pediatrics, 21th ed. McGraw Hill Medical Textbook
- Klein U**, Facial Swelling and Odontogenic Infections; pages 94-99 2011
Berman's Pediatric Decision Making, 5th ed. Elsevier Mosby 2011
- Klein U**, (updated and revised) Chapter 16: Oral Medicine and Dentistry; pages 442-451 2010
Current Diagnosis & Treatment Pediatrics, 20th ed. McGraw Hill Medical Textbook
- Klein U**, Chapter 16: Oral Medicine and Dentistry; pages 427-436 2008
Current Diagnosis & Treatment Pediatrics, 19th ed. McGraw Hill Medical Textbook

ABSTRACTS

- Tan GM, Failma J, Barley G, **Klein U**. 2009
Teaching Medical Crisis Management to Dental Residents: Is Simulation the Way to Go?
Abstract presented at the 2nd Intl. Paediatric Simulation Symposium Florence, Italy
- Burton C, Kanellis M, Lensch C, **Klein U**, and Drake D. Special Issue A: abstract #256. 1998
J Dent Res 1998;77:137

RESIDENT/GRADUATE STUDENT THESES DIRECTED

(Titles are listed in the table clinics section)

III. SERVICE ACTIVITIES

GOVERNANCE

- Elected Member, Medical Board of Children's Hospital Colorado May 2014

PRESENTATIONS

- What's New in Pediatric Dentistry?
6hr Presentation to general and specialty dentists in Grand Junction, CO October 2013
- Ankyloglossia (Tongue-Tie) in Breastfed Infants
Presentation to lactation consultants and nurses at PSL (CE course to obtain nursing CEUs and special lactation education credits (CERPs)) October 2012
- Eruption Disturbances
Presentation at Colorado Academy for Pediatric Dentistry Fall Meeting October 2012
- Cherubism August 2012

Presentation at Craniofacial Anomalies Conference at CHCO

Frenectomy for Feeding Difficulties in Infants Apr&Aug 2012

Presentation to Lactation groups at CHCO and DHMC

New Realities in Healthcare May 2011

Presentation to all Program Directors at the Annual Convention of the AAPD in New York, NY

Does Malocclusion Affect Speech Development? Sept 2010

Annual Meeting of the Colorado Dental Hygienists' Association

The Interface Speech Pathology – Orthodontics Sept 2008

Annual Meeting of Speech Language Pathologists at The Children's Hospital, Aurora

The Children's Hospital Pediatric Dentistry Program: History to Present Feb 2008

Colorado Academy of Pediatric Dentistry Annual Meeting in Denver, CO

The Role of the Pediatric Dentist on the Cleft-Palate-Team April 2007

American Cleft Palate Association Meeting, Broomfield, CO

International Adoption Panel: Pediatric Dentistry & Orthodontic Perspectives April 2007

American Cleft Palate-Craniofacial Association 64th Meeting, Broomfield, CO

VISITING PROFESSOR PRESENTATIONS

Rare diseases and how to treat them from a dental standpoint Dec 2014

Presentation to residents and faculty of the pediatric dentistry program of the U of Iowa

50% N₂O: What Does That Number Mean for Dentists and Anesthesiologists? Dec 2014

University of Iowa / Noon lecture series

New insights on nitrous oxide use in pediatric dentistry Aug 2011

Center for Pediatric Dentistry, University of Washington, Seattle, WA

New research findings about nitrous oxide application in pediatric dentistry Jan 2011

Department of Pediatric Dentistry, Nationwide Children's Hospital, Columbus, OH

1. Orthodontics for the special needs patient Nov 2004

2. Six-year-molar extraction in orthodontics

Department of Orthodontics, University of Washington; Seattle, WA

TABLE CLINICS PRESENTED

Paimagham B, Klein U , Blumhagen R, Kroehl M, Sain J Incidence of pyramidal molars in a sample of 10,168 panoramic radiographs and their relationship with taurodontism and other dental anomalies <i>Poster presented at the AAPD Annual Convention, Seattle, WA</i>	May 2015
Rinehard J, Klein U , Allshouse A. “9-year molars”: Incidence and Associated Medical and Dental Comorbidities <i>Poster presented at the AAPD Annual Convention, Boston, MA</i>	May 2014
Managkil R, Klein U , DeWitt PE. <u>GRSA Finalist Award Winner</u> Can Parents Accurately Assess Their Children’s Dental Fears? <i>Poster presented at the AAPD Annual Convention, Boston, MA</i>	May 2014
LeBlanc J, Klein U , McNair B. Increases in Children’s Heart Rates During Typical Dental Procedures <i>Poster presented at the AAPD Annual Convention, Orlando, FL</i>	May 2013
Kinder MM, Klein U , Capocelli KE, Batson DH, DeWitt PE Systemic Effects of Odontogenic Infections in Children: A Chart Review <i>Poster presented at the AAPD Annual Convention, San Diego, CA</i>	May 2012
Mielke C, Klein U , Allshouse A. Comparison of End-expired N ₂ O Concentrations: Titration vs. Rapid Induction Method <i>Poster presented at the AAPD Annual Convention, New York, NY</i>	May 2011
Brady, M, Klein U , McNair, B. Comparison of Heart Rate Changes in Children During Typical Dental Procedures <i>Poster presented at the AAPD Annual Convention, New York, NY</i>	May 2011
Igowski, A, Klein U, Hess E CRT® Bacteria: Specificity and Sampling Method in Children Ages 3 – 6 Years <i>Poster presented at the AAPD Annual Convention, Chicago, IL</i>	May 2010
Webb M, Klein U . Markers of Systemic Inflammation in Children with Profound Dental Caries Receiving Dental Treatment under General Anesthesia: A Pilot Study <i>Poster presented at the AAPD Annual Convention, Honolulu, HI</i>	May 2009
Reyes N, Klein U . Survey of parental knowledge of the field of pediatric dentistry <i>Poster presented at the AAPD Annual Convention, Honolulu, HI</i>	May 2009
Warren K, Klein U . AAP and AAPD Dietary Guidelines: A survey of parental awareness and food selection motivators <i>Poster presented at the AAPD Annual Convention, Washington, DC</i>	May 2008
Snively K, Klein U . Post-operative visit compliance following treatment of ECC under GA <i>Poster presented at the AAPD Annual Convention, Washington, DC</i>	May 2008
Jadid K, Klein U . Assessment of noise in a pediatric dentistry clinic <i>Poster presented at the AAPD Annual Convention, Washington, DC</i>	May 2008
Galbraith C, Klein U . Assessment of pain sensation during local anesthesia delivery in traditional dental injections using the Vibraject dental syringe attachment vs. lip shaking	May 2007

as a means of distractive stimulation

Poster presented at the AAPD Annual Convention, San Antonio, TX

Houser Z, **Klein U**. Factors influencing discrepancies between planned and actual time usage for general anesthesia in a hospital operating room setting. May 2007

Poster presented at the AAPD Annual Convention, San Antonio, TX

Ibrahim A, **Klein U**. Dental Health knowledge and perceptions of parents at their child's first dental visit: a survey. May 2007

Poster presented at the AAPD Annual Convention, San Antonio, TX

Miner J, **Klein U**. Parental attitudes and expectations regarding the adequacy of dental services provided to their child with special health care needs: a survey. May 2006

Poster presented at the AAPD Annual Convention, Cincinnati, OH

Kirkham D, **Klein U**. Comparison of the VibraJect™ vs. lip shaking as means of distractive stimulation during traditional dental injections. May 2005

Poster presented at the AAPD Annual Convention, Orlando, FL

Cummings A, **Klein U**. Effects of premature primary maxillary incisor loss on intercanine width. May 2005

Poster presented at the AAPD Annual Convention, Orlando, FL

Klein U, Bucklin B, Poulton T, Bozinov D, Tiede S. Actual nitrous oxide concentrations in the posterior nasopharynx during administration by nasal mask. May 2003

American Academy of Pediatric Dentistry Annual Convention –

Foundation Research Award Competition; New York, New York;

Hunzeker C, **Klein U**, Huftless S, Galloway A. Quality of anesthesia for the primary anterior maxillary segment in pediatric patients: comparison of the P-ASA nerve block with traditional supraperiosteal injections. May 2002

Poster presented at the AAPD Annual Convention, Denver, CO.

Rallison M, **Klein U**. Premature loss of the primary maxillary Incisors: Preliminary results on its effects on maxillary inter-canine arch width. May 2002

Poster presented at the AAPD Annual Convention, Denver, CO

Klein U. Spread of anesthetic solutions for various intraoral local anesthesia techniques: a CT scan evaluation. May 2000

Poster presented at the AAPD Annual Convention in Nashville, TN

Hamilton S, **Klein U**. Radiographically visualized spread of anesthetic solution injected with the Stabident® Local Anesthesia System in the dog. Mar 2000

Poster presented at the Professionals' Day of the College of Dentistry; Lincoln, NE

Klein U, Kanellis M, Drake D. Effects of anticaries agents on lesion depth progression in an *in vitro* model of baby bottle tooth decay. June 1996

Poster presented at the 43rd Annual Scientific Session Iowa Section of the AADR, Iowa City, IA

Klein U, Kanellis M, Drake D. Effects of anticaries agents on lesion depth progression in an *in vitro* model of BBTd. May 1996

Poster presented at the American Academy of Pediatric Dentistry Annual Session in Chicago, IL

Klein U, Kanellis M. Survey on Dental Emergency Services in Johnson County, Iowa. Sept 1995

Poster presented at the Iowa Dental Alumni Day; Iowa City, IA

CONTINUING EDUCATION COURSES PRESENTED

New and Interesting Facts in Pediatric Dentistry (6 credit hrs CE Course) <i>Northern California Dental Association</i>	November 2015
What's Good to Know in Pediatric Dentistry (4 credit hrs CE Course) <i>University of Colorado Denver School of Dental Medicine</i>	March 2014
What's New in Pediatric Dentistry? (4 credit hrs CE Course) <i>University of Colorado Denver School of Dental Medicine</i>	April 2012
Medial Immobilization: Certification Course for Dentists (6 credit hrs CE Course) <i>Metropolitan Denver Dental Society and School of Dental Medicine</i>	1-2 times/year since 2007
Pediatric Dentistry Update for the General Practitioner (4 credit hrs CE Course) <i>University of Colorado Denver School of Dental Medicine</i>	2008
“The KaVo Diagnodent [®] – a new aid in caries detection” <i>Continuing Education Caravan for Nebraska Dentists; Lincoln, NE</i>	2001

COMMITTEE APPOINTMENTS

University of Colorado School of Dental Medicine

Tenure and Promotion Committee	2008–present
Executive Committee	2007–present

University

Colorado Multiple Institutional Review Board	2003–2005
Administrative Committee (UNMC)	2000–2002

Children's Hospital Colorado

Clinical Medical Director's Meeting	2007–2011
Surgical Chairs' Meeting	2006–pres
Surgical Block Time Committee	2010–pres

Society/Professional Organizations

District V Representative, American Academy of Pediatric Dentistry	2003–2006
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Service on Editorial Boards

Ad-hoc Consultant Reviewer: JDE	2013–pres
Ad-hoc Consultant Reviewer: Medical Principles and Practice	2010–pres
Ad-hoc Consultant Reviewer: Clinical Anatomy	2008
Editorial Board, <i>Journal of Dentistry for Children</i>	2004–2010
Section Editor, <i>Pediatric Dentistry</i>	2014–2018
Editorial Board, <i>Pediatric Dentistry</i>	2011–2014
Consultant Reviewer, <i>Pediatric Dentistry</i>	2004–2010

MEMBERSHIP IN PROFESSIONAL ORGANIZATIONS

German Orthodontic Society	1981–pres
American Academy of Pediatric Dentistry	1994–pres
Colorado Association of Pediatric Dentistry	2003–pres

American Board of Pediatric Dentistry	2003–pres
American Cleft Palate–Craniofacial Association	2005–pres
Consultant Positions	
Site Visitor for Pediatric Dentistry, CODA	2009–2015
American Board of Pediatric Dentistry: Examiner, Oral Clinical Examination	2008–2014
American Board of Pediatric Dentistry: Consultant item writing workshop	2012
American Board of Pediatric Dentistry: Question Editor Sub–committee	2009–11
Judge, Poster–Discussion Session <i>AAPD Annual Convention, Denver, CO</i>	May 2002
Judge, Poster–Discussion Session <i>Midwest Medical and Dental Student Research Conference; Omaha, NE</i>	May 2002
Judge, Poster–Discussion Session <i>AAPD Annual Convention, Washington, DC</i>	May 2001
Judge, Poster–Discussion Session <i>Midwest Medical and Dental Student Research Conference; Omaha, NE</i>	May 2001
Judge, Poster–Discussion Session <i>AAPD Annual Convention, Nashville, TN</i>	May 2000