



Centre for Dental and Oral Medicine  
University of Zürich  
Clinic for Orthodontics and Paediatric Dentistry  
Head: Prof. Dr. Timo Peltomäki

## Appendix 4

# The Zürich Postgraduate Education Program in Paediatric Dentistry

## „EAPD Curriculum Guidelines“

### 1. MAIN GOALS

The overall goals of the Zürich Postgraduate Education Program in Paediatric Dentistry are:

- To graduate specialists in Paediatric Dentistry who are competent and confident in all areas of Paediatric Dentistry.
- To produce specialist Paediatric Dentists to meet the oral health need of infants, children, adolescents or patients with special care needs, and who will continue to seek additional knowledge and skills throughout their careers.
- To produce Paediatric Dentists capable of carrying out scientific investigation in both clinical and basic science aspects of the speciality.
- To produce specialists able to collaborate in multidisciplinary teams concerned with the welfare of children.
- To produce specialists in Paediatric Dentistry who are able to teach the dental care of children within the speciality as well as for general dentistry and for other health care workers.

## 2. Program Objectives

The objective of the Zürich Postgraduate Education Program in Paediatric Dentistry is to produce students who:

1. are competent in all the skills of dentistry pertaining to the specialist care of infants, children, adolescents and patients with special care needs,
2. are competent and experienced in the design, implementation and completion of a preventive dental care program for every type of paediatric dental patient,
3. are competent and experienced in behaviour management techniques, so that the majority of their patients can be treated without the use of adjunct medications,
4. are fully trained in the theory and practice of sedation for use in hospital and dental office practice,
5. are competent and experienced in all aspects of hospital and operating room practice, the admitting and care of children to hospital and the carrying out of full mouth restorative care and minor oral surgery in the hospital setting,
6. are competent and experienced in the provision of restorative, prosthetic and interceptive orthodontic care for infants, children, adolescents and patients with special care needs.
7. are competent and experienced in the care of oro-facial trauma in infants, children and adolescents,
8. have a knowledge of craniofacial growth and development, to be skilled in the diagnosis of problems of occlusion, facial growth, functional abnormalities,
9. are experienced in the recognition of problems concerning the temporomandibular joint of children and adolescents, and to be able and/or refer such patients.
10. are competent and experienced in the provision of dental care for patients with special care (handicapping) conditions and to be able to treat the majority of such patients in the dental office practice,
11. know the principles of research design and methodology. Each student should be able to conduct library research, literature searches and to design research studies. They should, on completion of a course, have carried out a research project of their own, under supervision, completed a Masters thesis or equivalent and prepared a paper suitable for publication in an internationally recognised and refereed journal.

### 3. General Conditions

1. The education of paediatric dentists takes place at the Centre for Dental and Oral Medicine, University of Zürich, Clinic for Orthodontics and Paediatric Dentistry and the Public School Dental Services in Zürich.
2. Candidates must be qualified within EU rules and two years of general dental experience is recommended but not mandatory.
3. The basic objective of the programme is to educate a Specialist in Paediatric Dentistry including the main goals.
4. The program requires full or part time attendance providing that the required numbers of hours are achieved.
5. The postgraduate students are receiving a salary, depending on available positions and conditions.
6. The program lasts 3 years. The content of the program is distributed between clinical experience, including practice of at least 50%, didactic study and academic courses (10%-20%) and the carrying out and completion of a research project (10%-20%) suitable for publication in an international journal (See also Accreditation Application 5.2).  
The Program takes place:
  - at the Centre for Dental and Oral Medicine, University of Zürich, Clinic for Orthodontics and Paediatric Dentistry (for contents see: Appendix 2 "Timetable")
  - in the Public School Dental Services, Zürich (either in the Clinic North or Clinic Aussersihl) mainly clinical practice and carrying out the research project (for contents see Appendix 2 "Timetable")
7. The core programme requires 75% of the specified training guidelines. The remaining time can be supplemented by additional (elective) activities.
8. The clinical staff-student ratio in supervising treatments is 1:1 in the Clinic for Orthodontics and Paediatric Dentistry and 1:2 in the Public School Dental Service.
9. Students are treating patients under supervision of qualified paediatric dentists.
10. Students are gaining experience in the treatment of patients that require a multidisciplinary approach.
11. The students are involved in the undergraduate education.
12. Students must conduct a research project and the report should be publishable in an international journal.
13. At the end of the programme final exams are taking place following the specifications of the Swiss Society for Paediatric Dentistry (SVK) and the Swiss Dental Society (SSO).

## 4. Specific Conditions

<b>Director</b>	Prove credentials in paediatric dentistry	50% Public School Dental Services 50% Centre for Dental and Oral Medicine Clinic for Orthodontics and Paediatric Dentistry, University of Zürich	Dr. H. van Waes
	Academic appointment/university recognition		
	Academic appointment/university recognition (associate professor or above or equivalent)		
	Full time		
<b>Paediatric dentist</b>	At least one full time	100% Centre for Dental and Oral Medicine Clinic for Orthodontics and Paediatric Dentistry, University of Zürich	Dr. S. Benzinger
		100% Public School Dental Services Clinic North	Dr. Ch. Langerweger
		40% Public School Dental Services Clinic Aussersihl	Dr. A. Nigg
		40% Public School Dental Services Clinic Aussersihl	Dr. F. Dietlicher
		100% Public School Dental Services Clinic North	Dr. A. Dyster-Aas
		100% Private Practice	Dr. R. Ammann
<b>Library</b>		See Accreditation Application 4.10	
<b>Laboratory Clinical research Administrative facilities</b>		See Accreditation Application	
<b>Non academic staff</b>	Support the programme with efficient conduct and patient care	See Accreditation Application 2.6	
<b>Evidence of other discipline staff support and collaboration</b>	Fullfil the objectives of the programme	There is a well established collaboration between the departments	
<b>Sufficient other teachers</b>	Realize the necessary subjects within the objectives of the programme	See Accreditation Application 2.3	Prof. Dr. T. Peltomäki
			Dr. W. Gnoinski
			Dr. H.-U. Luder
			Dr. G. Menghini
			Dr. L. Gallo
<b>Research opportunities Statistical assistance Computer facilities</b>	are available	See Accreditation Application	
<b>collaboration with paediatricians</b>	mainly with the Children`s Hospital, Zürich		
<b>Chronically sick Handicapped conditions</b>	The Program issues the care of such patients	See Accreditation Application 6.4	

## 5. Objectives of obligatory courses

### Basic sciences

	Competent to	Knowledge of	Familiar with	who
<b>Paediatrics</b>		<ul style="list-style-type: none"> <li>• Growth and development of the human body</li> <li>• Psychological growth and development</li> </ul>		Peltomäki Van Waes
			<ul style="list-style-type: none"> <li>• Principles of classification of relevant syndromes of the head and neck in relation to aetiology, prognosis and reaction to the treatment</li> <li>• Epidemiology, pathogenesis and management of relevant diseases in children and adolescents</li> <li>• Concept of biological age and determination of skeletal age, and stages of sexual development</li> </ul>	Gnoinski Peltomäki
<b>Growth and development of craniofacial skeleton</b>	<ul style="list-style-type: none"> <li>• Define anatomical features, tissues systems and functional anatomy essential for comprehension of:</li> <li>• Growth of the craniofacial skeleton</li> <li>• Development of skeleton deformities</li> <li>• Dentofacial orthopedics</li> <li>• Orthognatic surgical correction of facial dysmorphism and malocclusion</li> </ul>			Peltomäki Luder

<p><b>Growth and development of craniofacial skeleton</b></p>		<ul style="list-style-type: none"> <li>• Growth sites in the craniofacial skeleton</li> <li>• Post-natal growth changes in the craniofacial region, including soft tissues</li> <li>• Variation in the function of components within the craniofacial region relevant to facial growth</li> <li>• Adolescent growth spurt and its relationship to growth of the craniofacial complex</li> <li>• Individual variation in facial configuration</li> <li>• Influence of environmental factors on facial growth</li> </ul>		<p>Peltomäki</p>
<p><b>Development of the dentition (normal and abnormal)</b></p>	<ul style="list-style-type: none"> <li>• Recognize and identify a given situation of the dentition in terms of:</li> <li>• Normality or abnormality</li> <li>• Development stage attained</li> <li>• Future development</li> <li>• Possibilities for interceptive measures to improve the ultimate situation</li> </ul>			<p>Peltomäki</p>
<p><b>Genetics</b></p>			<ul style="list-style-type: none"> <li>• Genetic principles essential for comprehension of</li> <li>• The development of the head</li> <li>• Craniofacial malformations</li> </ul>	<p>Luder</p>
<p><b>Embryology of the head</b></p>		<ul style="list-style-type: none"> <li>• Embryology of the craniofacial structures for understanding normal growth and development of face, jaws and teeth, effects of teratogenesis and development of clefts and other facial congenital malformations</li> </ul>		<p>Luder</p>

<p><b>Cell biology</b></p>		<ul style="list-style-type: none"> <li>• Biological aspects essential for the understanding of:</li> <li>• Cell metabolism under normal and abnormal conditions</li> <li>• Tissue formation and proliferation</li> <li>• Development of bone, cartilage, teeth and muscle</li> <li>• Facial growth</li> <li>• Temporomandibular joint</li> <li>• Tooth movements and reactions in tooth supporting tissues</li> <li>• Dentofacial orthopedics</li> <li>• Soft tissue changes related to orthodontics</li> <li>• Mechanism of tooth resorption</li> <li>• Tooth eruption theories</li> </ul>		<p>Peltomäki Luder</p>
<p><b>Biostatistics</b></p>	<ul style="list-style-type: none"> <li>• Understand and evaluate statistical aspects in current literature</li> <li>• Evaluate validity of statistical methodology and interpretation of findings in clinical and research papers relevant to pedodontics and related subjects</li> </ul>			<p>Menghini Gallo</p>
			<ul style="list-style-type: none"> <li>• Commonly used statistical methods</li> <li>• Data processing procedures</li> <li>• Principles of epidemiologic surveys</li> <li>• Research designs</li> <li>• Sample composition and requirements for control groups</li> <li>• Data analysis and critical interpretation of findings</li> </ul>	<p>Menghini Gallo</p>

<b>Research methodology</b>	<ul style="list-style-type: none"> <li>• Perform an analytical review of biomedical research and clinical research papers</li> <li>• Write a protocol for a research project</li> <li>• Interpret own research findings</li> <li>• Evaluate validity of conclusions in research papers</li> <li>• Present research findings in oral and written form</li> </ul>			Van Waes Gallo
		<ul style="list-style-type: none"> <li>• Various methods of research design</li> </ul>		Van Waes Gallo
			<ul style="list-style-type: none"> <li>• Philosophy of science</li> <li>• Ethical aspects of research on animals and humans</li> </ul>	Gnoinski
<b>Dental materials</b>		<ul style="list-style-type: none"> <li>• Property and composition of materials used in paediatric dentistry</li> <li>• Parameters for selection of correct materials for various procedures</li> <li>• Proper handling and application of the materials</li> </ul>		Van Waes

## Aspects of management, administration and ethics

	Competent to	Knowledge of	Familiar with	who
<b>Office management</b>		<ul style="list-style-type: none"> <li>• Design of a practice in paediatric dentistry; in private as well as in a hospital setting</li> <li>• Equipment and instruments needed in such a practice</li> <li>• Recruitment, selection and training of auxiliary personnel</li> <li>• Financing and administration of a practice in paediatric dentistry</li> <li>• Public relationships</li> </ul>		Van Waes Langerweger
<b>Use of computers</b>			<ul style="list-style-type: none"> <li>• Utilization of computers in clinical paediatric dentistry and patient management</li> </ul>	Langerweger
<b>Ergonomics</b>	<ul style="list-style-type: none"> <li>• Optimal position of patient, practitioner, chairside assistant and placement of instruments to conduct specific clinical tasks</li> <li>• Most efficient sequence to perform specific clinical procedures</li> </ul>			Van Waes
<b>Legislation</b>		<ul style="list-style-type: none"> <li>• Rules and laws that apply to a practice in paediatric dentistry</li> <li>• Responsibilities and services vulnerable to malpractice law suits</li> <li>• Different insurance coverage required</li> <li>• Procedures to follow when a law suit arises</li> </ul>		Van Waes
<b>Professional ethics</b>	<ul style="list-style-type: none"> <li>• Behaviour and conduct expected of a paediatric dentist as health care provider</li> <li>• Ethical standards that apply to relationships with personal, patients and colleagues</li> <li>• Quality assurance, as a tool to define goals, analyze oral health care given and for continuous improvement</li> </ul>			Van Waes Dyster-Aas

## Diagnosis and treatment planning

	Competent to	Knowledge of	Familiar with	who
<b>The infant and toddler</b>	<ul style="list-style-type: none"> <li>• assess information by interviewing and counseling the parents with respect to:</li> <li>• prenatal, natal and neonatal history</li> <li>• development history</li> <li>• medical history</li> <li>• dental history</li> <li>• evaluation of oral hygiene</li> <li>• risk factors of early caries development</li> <li>• sucking habits and risk for early development of malocclusion</li> <li>• feeding history</li> <li>• social situation</li> <li>• examine the infant and toddler in a non-threatening way</li> <li>• differentiate oral tumours and cysts including Epstein`s pearls, Bohn`s nodules, congenital epulis, lymphangiomas</li> <li>• diagnose and treat nursing bottle caries or other forms of caries</li> <li>• treat oral candidiasis and primary herpetic stomatitis</li> <li>• manage emergencies; trauma related, as well as non-trauma related</li> <li>• make intra- and extraoral radiographs</li> </ul>			Clinical Team

<b>The infant and toddler</b>		<ul style="list-style-type: none"> <li>• clinical implications of preterm birth</li> <li>• child abuse/neglect</li> <li>• abnormalities and pathological conditions that can be diagnosed on radiographs</li> <li>• methods and risks involved in making radiographs in paediatric dentistry</li> </ul>		Clinical Team
			<ul style="list-style-type: none"> <li>• Digital radiographic and other imaging techniques</li> </ul>	Langerweger
<b>The 3-6 years old</b>	<ul style="list-style-type: none"> <li>• Examine this age group encompassing:</li> <li>• Behavioural assessment</li> <li>• Extraoral examination</li> <li>• Intraoral examination</li> <li>• Consider any preventive measurement</li> <li>• Assess oral hygiene and risk for caries development</li> <li>• diagnose oral motor function</li> <li>• Diagnose and manage early loss or displacement of primary teeth</li> <li>• Diagnose early signs of malocclusion</li> <li>• Diagnose pulpal conditions</li> </ul>			Clinical Team
<b>The 6-12 years old</b>	<ul style="list-style-type: none"> <li>• In addition to the guidelines for the 3-6 years old, one has to be competent to:</li> <li>• diagnose the need for preventive measurements related to oral hygiene, sealants, nutrition and fluoride intake</li> <li>• evaluate occlusal development</li> <li>• prevent and manage trauma</li> <li>• participate in health care decisions</li> </ul>			Clinical Team
		<ul style="list-style-type: none"> <li>• orthodontic diagnosis and treatment planning</li> </ul>		Peltomäki

<b>The over 12 years old and adolescence</b>	<ul style="list-style-type: none"> <li>• In addition to former guidelines, one has to be competent to:</li> <li>• diagnose early signs of periodontitis</li> <li>• evaluate growth and development</li> </ul>			Clinical Team
		<ul style="list-style-type: none"> <li>• Temporomandibular joint disorders</li> </ul>		Peltomäki
		<ul style="list-style-type: none"> <li>• Sexual abuse</li> <li>• Illicit drug use</li> <li>• Eating disorders</li> </ul>		Children`s Hospital Continuing Education

## Behavioural science/patient management – Sedation/general anaesthesia

	Competent to	Knowledge of	Familiar with	who
<b>Patient management</b>	<ul style="list-style-type: none"> <li>• Assessment of behaviour management problems</li> <li>• Behaviour management techniques</li> <li>• Approach multi-cultural ethically related problems</li> <li>• Application of the informed-consent-model</li> </ul>			Clinical Team Van Waes
		<ul style="list-style-type: none"> <li>• Principles of biological psychology</li> <li>• Cognitive psychology and learning</li> <li>• Developmental psychology and social psychology (theories of child development, age and stages, life span development, person perception, attitudes and social influences on behaviour)</li> <li>• Principles of communication theory</li> <li>• Psychological, ethical and philosophical aspects of the dentist-patient relationship</li> <li>• Structure and content of conversations in the informed-consent-model</li> <li>• Attitudes and types of response in professional conversations</li> </ul>		Van Waes Ammann

<b>sedation</b>				
<b>Control of pain (painless dentistry)</b>	<ul style="list-style-type: none"> <li>• administration of local anesthetics to children</li> <li>• recognizing and treating local and general complications during and after administering local anesthetics</li> <li>• applying reanimation techniques</li> <li>• allergic reactions to local anesthetics</li> </ul>			Van Waes Reanimation Course Dr. G. Staubli (Head of the Emergency Department at the Children`s Hospital Zürich)
		<ul style="list-style-type: none"> <li>• Psychology of pain (types of pain, structure of pain perception, social and cultural influences of pain behaviour and measuring pain)</li> <li>• Interaction of local anesthetics with drugs</li> <li>• Local and general complications after administering local anesthetics</li> </ul>		Van Waes Ammann
<b>Conscious sedation (is applicable to the legislation of the country.)</b>	<ul style="list-style-type: none"> <li>• informed consent</li> <li>• instructions to parents or responsible individual(s)</li> <li>• medical history and physical examination relevant for administration of conscious sedation</li> <li>• medical appraisal and risk assessment (ASA)</li> <li>• consult from appropriate medical staff members as indicated by the patient's condition</li> <li>• perform inhalation sedation and sedation by means of pharmacological approach</li> <li>• operative, postoperative monitoring (oximetry, measuring heart and respiratory rates and blood pressure) and applying appropriate discharge criteria, with proper documentation</li> <li>• manage any reasonable foreseeable complications</li> </ul>			Van Waes Clinical Team Gerber

	<ul style="list-style-type: none"> <li>• apply supportive and resuscitation measures</li> </ul>			
		<ul style="list-style-type: none"> <li>• physiology of breathing, blood circulation and central nervous system</li> <li>• effects of nitrous oxide/oxygen on breathing, blood circulation, protective reflexes, consciousness, coping and patients' experience of pain and anxiety</li> <li>• indications and contra-indications of inhalation sedation and sedations using of drugs</li> <li>• drug pharmacology, effects, doses and use of current drugs</li> <li>• indications and contra-indications of sedation by nitrous oxide hazards to the health of patients and personnel</li> <li>• scavenging and exhaust systems</li> <li>• back-up emergency services</li> <li>• legislation, rules and laws that apply on sedation</li> </ul>		<p>Van Waes Clinical Team Gerber</p>
			<ul style="list-style-type: none"> <li>• financial considerations and quality assurance</li> <li>• basic conditions of nitrous oxide/oxygen delivery equipment</li> <li>• surveillance and maintenance of the nitrous oxide/oxygen delivery equipment</li> </ul>	<p>Clinical Team</p>
<p><b>Deep sedation</b> When applicable to the legislation of the various countries. In most countries deep sedation is not allowed without the presence of an anaesthesiologist.</p>		<ul style="list-style-type: none"> <li>• all skills for conscious sedation including:</li> <li>• Intravenous access</li> <li>• preoperative dietary evaluation</li> <li>• performance of deep sedation</li> </ul>		<p>In Switzerland only with stand by of an anaesthesiologist</p>

<b>General anesthesia</b>		<ul style="list-style-type: none"><li>• In addition to the guidelines previously recommended for conscious sedation, the graduate should be able to demonstrate knowledge of:</li><li>• paediatric dental service organization (outpatient, inpatient, emergency and ambulatory services)</li><li>• indications and contra-indications for the use of general anaesthesia</li><li>• infection control measures in care setting areas</li><li>• interpreting laboratory tests</li><li>• drugs and equipment used in general anesthesia</li></ul>		Clinical Team Gerber
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## Prevention

	Competent to	Knowledge of	Familiar with	who
<b>Management of Dental Caries Prevention</b>		<ul style="list-style-type: none"> <li>• the disease process in primary dentition and in permanent dentition.</li> <li>• the role of bacteria</li> <li>• the role of sucrose</li> <li>• the role of host-specific defense mechanisms</li> <li>• biochemical events in dental plaque</li> <li>• predilection sites</li> <li>• the acute and the chronic lesion</li> <li>• psycho-social aspects and risk assessment</li> </ul>		Clinical Team Menghini
<b>Scientific basis of caries prevention</b>	<ul style="list-style-type: none"> <li>• give dental health education for the child and the parents</li> <li>• perform professional preventive care</li> </ul>			Clinical Team Menghini
		<ul style="list-style-type: none"> <li>• possibilities of caries control by modification of diet evidence for the influence of the diet on caries relative cariogenicity of carbohydrates possible modifications of the diet to reduce caries</li> <li>• the limitation of sucrose consumption to mealtimes possible replacement of sucrose by other sweeteners in food</li> <li>• prevention of caries by increasing the resistance of the tooth fluorides</li> <li>• mechanisms by which fluoride reduces caries</li> <li>• water fluoridation</li> <li>• home care</li> <li>• professional care</li> <li>• fissure sealants</li> <li>• remineralisation phenomena</li> </ul>		Clinical Team Menghini

		<ul style="list-style-type: none"> <li>• preventive aspects in restorative dentistry</li> <li>• prevention of caries by mechanical plaque control</li> <li>• prevention of caries by antimicrobial plaque control</li> <li>• chlorhexidine and other antiseptics</li> <li>• fluoride</li> <li>• prevention of caries by avoiding transmission of cariogenic micro-organisms</li> <li>• immunology and vaccination</li> </ul>		
<b>Evaluation of preventive methods</b>	<ul style="list-style-type: none"> <li>• initiate and cooperate in organization and performance of preventive dental care</li> <li>• consult of the caries preventive dental care for children and adolescents</li> <li>• evaluate effect of preventive programmes and methods within dental care for children and adolescents</li> <li>• evaluate cost/value of preventive measures</li> </ul>			Clinical Team
		<ul style="list-style-type: none"> <li>• interpretation of data on caries prevention</li> <li>• interaction of factors in disease</li> <li>• estimation of single and combined measures</li> <li>• prediction of future caries development</li> <li>• cost/value of preventive measures</li> </ul>		Menghini

<b>Management of prevention of periodontal disease</b> 1. Insight in the types of periodontal disease.	<ul style="list-style-type: none"> <li>• make diagnosis upon a relevant patient history and clinical examination</li> </ul>			
		<ul style="list-style-type: none"> <li>• childhood and adolescent gingivitis</li> <li>• acute necrotizing ulcerative gingivitis</li> <li>• early onset periodontitis</li> <li>• localized juvenile periodontitis</li> <li>• rapidly progressive periodontitis</li> <li>• pre-pubertal periodontitis</li> <li>• periodontal disease associated with systemic factors</li> <li>• conditions which cause gingival hyperplasia</li> <li>• defects in host defences resulting in accelerated periodontal breakdown</li> </ul>		Van Waes Clinical Team Collaboration with the Department of Periodontology
			<ul style="list-style-type: none"> <li>• chronic (adult) gingivitis</li> <li>• adult periodontitis</li> </ul>	undergraduate
<b>Management of prevention of periodontal disease</b> 2. Epidemiology, etiology and microbiology of periodontal diseases		<ul style="list-style-type: none"> <li>• microbial plaque and its significance</li> <li>• the development of plaque and calculus</li> <li>• plaque ecology and structure of plaque</li> <li>• host defences against microbial plaque</li> <li>• factors influencing plaque formation</li> <li>• factors modifying the defence system</li> </ul>		undergraduate

<b>Prevention of gingivitis/periodontitis</b>	<ul style="list-style-type: none"> <li>• give dental health education for the child and the parents.</li> <li>• perform professional preventive care</li> <li>• initiate and cooperate in organization and performance of preventive dental care</li> <li>• consult of the preventive care for children and adolescents</li> </ul>			Clinical Team/ Menghini
		<ul style="list-style-type: none"> <li>• mechanical plaque control</li> <li>• antimicrobial plaque control</li> <li>• preventive programmes in children</li> <li>• home care</li> <li>• professional care</li> </ul>		Clinical Team
<b>Treatment of periodontitis</b>		<ul style="list-style-type: none"> <li>• the principles of periodontal treatment</li> </ul>		Clinical Team
<b>Management of multidiscipline treatment</b>	<ul style="list-style-type: none"> <li>• Insight in preventive measures of caries and periodontal disease for specific patient groups</li> <li>• take care that certain so called riskgroups among children e.g. children with handicap, chronic diseases or complicated social background will have regular dental care.</li> </ul>			Clinical Team
		<ul style="list-style-type: none"> <li>• social factors and preventive dentistry</li> <li>• prevention in mental and physical handicap children</li> <li>• preventive measures for orthodontic patients</li> <li>• prevention for hospitalized children</li> </ul>		Clinical Team

## Restorative Dentistry

	Competent to	Knowledge of	Familiar with	who
<b>Primary teeth</b>	<ul style="list-style-type: none"> <li>design cavities in relation to tooth anatomy and the characteristics of the restorative material</li> <li>analyse failures to minimise future complications</li> <li>choose treatment and restorative material in relation to the child's disease activity and age</li> <li>perform clinical pulpal diagnosis</li> <li>perform conservative as well as radical pulp treatments (pulp capping, partial pulpotomy, pulpotomy pulpectomy)</li> </ul>			Van Waes Clinical Team
		<ul style="list-style-type: none"> <li>full coverage techniques of primary teeth</li> <li>prosthetic replacement of primary anterior teeth</li> <li>methods to assess quality of restorations</li> </ul>		Van Waes Clinical Team
<b>Mixed Dentition</b>	<ul style="list-style-type: none"> <li>In addition to the guidelines for the primary teeth to be:</li> <li>prevent or treat pit and fissure caries using sealants and/or</li> <li>preventive restorations</li> <li>juvenile prosthodontics</li> <li>perform clinical pulpal diagnosis and perform pulp</li> <li>treatment in immature as well as mature teeth</li> </ul>			Van Waes Clinical Team

<b>Permanent Teeth</b>	<ul style="list-style-type: none"><li>• In addition to former guidelines, one should be:</li><li>• perform esthetic restorations using adhesive systems</li><li>• perform adequate endodontic treatment in the permanent dentition</li><li>• perform vital and non-vital bleaching</li><li>• perform esthetic veneering</li><li>• perform bonded bridges and splints</li></ul>			Van Waes Clinical Team
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## Orthodontics

	Competent to	Knowledge of	Familiar with	who
<b>Cephalometrics</b>	<ul style="list-style-type: none"> <li>• identify relevant anatomical structures on cephalograms</li> <li>• perform several cephalometric diagnostic analyses on tracings</li> <li>• validity and limitation of growth prediction including computerized prediction</li> </ul>			Peltomäki
		<ul style="list-style-type: none"> <li>• limitations of cephalograms and their analyses.</li> </ul>		Peltomäki
<b>Orthodontic biomechanics</b>	<ul style="list-style-type: none"> <li>• understand basic principles of material properties</li> <li>• estimate forces produced by specific orthodontic appliances used for preventive and interceptive purposes</li> </ul>			Peltomäki
		<ul style="list-style-type: none"> <li>• effect of different types of force application and force magnitude on cells and tissues</li> </ul>		Peltomäki
			<ul style="list-style-type: none"> <li>• the property and composition of orthodontic materials</li> </ul>	Peltomäki

<b>Aetiology and treatment</b>				
<b>Aetiology of malocclusion</b>		<ul style="list-style-type: none"> <li>• genetic and environmental factors that influence post-natal development of the dentition and facial growth</li> <li>• unfavorable influence of environmental factors and their interception</li> <li>• different modes of breathing</li> </ul>		Peltomäki
			<ul style="list-style-type: none"> <li>• normal and abnormal speech</li> <li>• various ways of swallowing</li> <li>• the process of mastication</li> </ul>	Peltomäki Clinical logopedics (Mrs. Gruner)
<b>Diagnostic procedures</b>	<ul style="list-style-type: none"> <li>• perform a thorough clinical and radiographic examination including determination of habitual occlusion</li> <li>• evaluate functional occlusion and different jaw relationships of patients</li> <li>• evaluate influence of functional components of soft tissues on dentofacial morphology</li> <li>• predict the likely effect on growth and development of face and dentition if no therapy is implemented</li> </ul>			Peltomäki
<b>Iatrogenic effects of orthodontic treatment</b>			<ul style="list-style-type: none"> <li>• possible influence of treatment on temporomandibular joints</li> <li>• effect of different types of treatment on dental caries risk and periodontal tissues in the long run factors involved in root resorption</li> <li>• possible influence of treatment on dentofacial appearance and aesthetics</li> </ul>	Peltomäki

<b>Orthodontic techniques</b>				
<b>Removable appliances</b>	<ul style="list-style-type: none"> <li>• indication, design and use of removable appliances</li> <li>• construct and repair removable appliances</li> </ul>			Peltomäki
		<ul style="list-style-type: none"> <li>• potential and limitation of removable appliances</li> </ul>		Peltomäki
<b>Functional appliances</b>			<ul style="list-style-type: none"> <li>• indication, design and use of functional appliances</li> <li>• potential and limitation of functional appliances</li> </ul>	Peltomäki
<b>Extra-oral appliances</b>		<ul style="list-style-type: none"> <li>• indication, design and use of various types of headgears, facial masks, chin-caps and combined extra-oral/functional appliances</li> <li>• potential and limitation of these appliances</li> </ul>		Peltomäki
<b>Partial fixed appliances</b>		<ul style="list-style-type: none"> <li>• indication and application of partial fixed appliances (e.g. lingual, palatal and vestibular arches, maxillary expansion devices and partially banded/bonded dental arches)</li> <li>• potential and limitation of different approaches in partial fixed appliance therapy</li> </ul>		Peltomäki
<b>Fixed appliances</b>			<ul style="list-style-type: none"> <li>• indication and application of fixed appliances.</li> <li>• different concepts and treatment approaches in design and biomechanical principles of fixed appliance therapy</li> <li>• potential and limitation of different appliance systems</li> </ul>	Peltomäki
<b>Retention appliances</b>		<ul style="list-style-type: none"> <li>• indication and contra-indication, design and use of retention appliances</li> <li>• potential and limitation of retention appliances</li> <li>• the most appropriate duration of retention</li> </ul>		Peltomäki

<b>Multidisciplinary treatment procedures</b>				
<b>Cleft palate treatment</b>		<ul style="list-style-type: none"> <li>• multidisciplinary approaches in the treatment of cleft palate patients</li> <li>• indication, timing and application of multidisciplinary treatment of cleft palate patients</li> <li>• specific aspects of orthodontic treatment in cleft palate patients</li> </ul>		Gnoinski Senn
<b>Orthodontic-periodontal treatment</b>		<ul style="list-style-type: none"> <li>• indication and contra-indication of orthodontic treatment in periodontally compromised dentitions</li> <li>• specific aspects of orthodontic treatment in periodontally compromised dentitions</li> <li>• contribution of orthodontic treatment to the periodontal condition of patients</li> </ul>		Peltomäki
<b>Multiple aplasia</b>		<ul style="list-style-type: none"> <li>• multidisciplinary approaches in the treatment of children with multiple aplasia</li> </ul>		Van Waes Department of Fixed Prosthodontics
<b>Physiology and pathophysiology of the stomatognathic system</b>			<ul style="list-style-type: none"> <li>• normal and abnormal functional occlusion of the dentition</li> <li>• normal and abnormal behavior of soft tissue structures</li> <li>• normal and abnormal functioning of the temporomandibular joint</li> <li>• diagnostic procedures regarding the temporomandibular joint</li> <li>• treatment procedures of temporomandibular joint disorders</li> </ul>	Peltomäki Ettlin (Department for TMD)

<b>Clinical experience</b>	<ul style="list-style-type: none"> <li>• diagnose and treat or make appropriate referral of singular conditions in the primary and developing permanent dentition including, but not limited to :</li> <li>• anterior and posterior space and tooth loss</li> <li>• transient or definitive crowding and irregularity of the teeth</li> <li>• oral habits</li> <li>• ectopic eruption</li> <li>• anterior/posterior crossbite</li> <li>• diastema closing by using simple fixed or removable appliances</li> <li>• diagnose the right timing to refer a patient to an orthodontist</li> </ul>			Clinical Team
			<ul style="list-style-type: none"> <li>• the techniques used for the orthodontic treatment of malocclusion</li> </ul>	Peltomäki

## DENTAL TRAUMATOLOGY

	Competent to	Knowledge of	Familiar with	who
	<ul style="list-style-type: none"> <li>• understand the principles of the prevention of injuries including early reduction of overjet, correction of habits and construction of mouth guards</li> <li>• carry out an examination and assessment of patients with dental injuries</li> <li>• including appropriate radiographs formulate an appropriate</li> <li>• treatment plan based on an understanding of the prognosis for the teeth</li> <li>• evaluate pulp status including an understanding of different pulp testing methods</li> <li>• carry out appropriate treatment for minor soft tissue injuries</li> <li>• understand the measures appropriate to prevent infection following injury</li> <li>• evaluate luxation injuries and the appropriate treatment including the appropriate use of splinting</li> <li>• treat injuries to the supporting bone</li> <li>• carry out pulp treatment of traumatised teeth including pulpotomy (Cvek type), apexification for immature teeth and root canal therapy for the completed apex</li> <li>• restore crown and crown/root fractures, including the use of composite resins, acrylic and porcelain crowns and veneers</li> <li>• diagnose and treat root</li> </ul>			<p style="text-align: center;">Van Waes</p>

	<p>fractures</p> <ul style="list-style-type: none"> <li>• understand the biological processes of hard tissue repair and resorption that occur following the replantation of teeth and clinical experience of the treatment after avulsion</li> <li>• carry out appropriate treatment following injury to the primary dentition</li> </ul>			
		<ul style="list-style-type: none"> <li>• the orthodontic management of traumatised teeth</li> <li>• recognising child physical abuse and be familiar with the correct treatment, notification procedures and follow-up</li> <li>• diagnosing maxillo-facial injuries and arrange for appropriate treatment</li> <li>• the recognition and treatment of anomalies of the developing permanent teeth that may arise from injury to the primary dentition</li> </ul>		Van Waes
			<ul style="list-style-type: none"> <li>• the classification, aetiology and epidemiology of dental injuries</li> <li>• the mechanism of the response of the oral tissues to injury and wound healing following injury</li> <li>• the principles of auto transplantation of teeth</li> <li>• the principles of osseo-integrated implants</li> <li>• the signs and symptoms of neurological injury</li> <li>• the planning of space management following the loss of an anterior tooth including the orthodontic options available</li> </ul>	Van Waes

## ORAL SURGERY/ORAL MEDICINE/ORAL PATHOLOGY

	Competent to	Knowledge of	Familiar with	who
	<ul style="list-style-type: none"> <li>• use oral biopsy techniques (excisional and incisional) of pathological lesions in children and adolescents</li> <li>• examine, diagnose and treat teeth, oral tumours and cysts in the newborn and neonate</li> <li>• examine, diagnose and treat oral manifestations of systemic disease in the soft and hard oral tissues, especially in children with               <ul style="list-style-type: none"> <li>• cardiac disease</li> <li>• renal disorders</li> <li>• endocrine disorders</li> <li>• immunologic disorders</li> <li>• bleeding disorders</li> <li>• malignant diseases</li> <li>• convulsive disorders</li> <li>• skeletal disease</li> <li>• chromosomal abberations</li> </ul> </li> <li>• examine, diagnose and treat bacterial, viral and fungal infections of the oral mucosa, especially in immunocompromized children</li> <li>• examine, diagnose and treat soft tissue lesions and abnormalities such as frenuloplasty</li> <li>• examine, diagnose and treat disturbances in tooth development induced by               <ul style="list-style-type: none"> <li>• fluorosis</li> <li>• tetracyclins</li> <li>• amelogenesis imperfecta</li> <li>• dentinogenesis imperfecta</li> </ul> </li> </ul>			<p>Van Waes</p>

	<ul style="list-style-type: none"> <li>• examine, diagnose and treat disturbances in tooth morphology, number and eruption</li> <li>• examine, diagnose and treat impacted teeth using surgical techniques including surgical orthodontic treatment</li> </ul>			
		<ul style="list-style-type: none"> <li>• examine, diagnose and treat bone lesions, cysts, tumours and tumour-like lesions in children and adolescents</li> </ul>		Van Waes
			<ul style="list-style-type: none"> <li>• maxillo-facial surgery in children</li> </ul>	Gnoinski Maxillo-Facial Consultation

## CHILDREN WITH SPECIAL NEEDS - MEDICALLY COMPROMISED

	Competent to	Knowledge of	Familiar with	who
	<ul style="list-style-type: none"> <li>• provide comprehensive dental care to severely medically, physically, mentally or socially compromised children and adolescents</li> <li>• provide comprehensive dental care for hospitalized children and adolescents</li> <li>• participate in multidisciplinary management of oral disease in medically, physically, mentally or socially compromised children and adolescents</li> <li>• prevent and manage oral motor disturbances in emotionally, physically or medically compromised children</li> </ul>			Van Waes
		<ul style="list-style-type: none"> <li>• infections in the immunocompromised host</li> <li>• prophylaxis for bacterial endocarditis</li> <li>• CDC recommendations on infection control</li> </ul>		Van Waes
			<ul style="list-style-type: none"> <li>• In-patient care of children admitted to paediatric, child rehabilitation, child psychiatry departments</li> </ul>	Van Waes