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*Postgraduate training in orthodontics, Specialist clinic for Orthodontics, University clinics, Göteborg*

## **Goals and description of the postgraduate program in orthodontics in Göteborg**

*(update 2018-09-01)*

### **Background**

In Göteborg the postgraduate training in orthodontics is run and financed by the Public Dental Service, Västra Götaland Region, at the Specialist clinic in Orthodontics.

The clinic is located inside the building of the Dental Institution where also the undergraduate education run by the University takes place.

Within the field of orthodontics the university staff (professor and associate professor) are mainly involved in the undergraduate education, particularly the in the theoretical part of the undergraduate educations. Research is of course another task for the academic staff.

### **Mission-involvement in education of the specialist clinic in orthodontics**

The orthodontist at the specialist clinic in orthodontics (Public dental service) are involved in various activities, beside patients' orthodontic care:

- orthodontic care of patients with CLP and syndromes,
- supervision of undergraduate students in their practical/clinical training,
- supervision and teaching of postgraduate training in orthodontics, -  
training of orthodontic assistants at national level.

### **Programme's goals**

The purpose of the postgraduate program is to prepare the resident to become a competent orthodontist, able to carry out any kind of orthodontic treatment in children and adults. Along with development of technical skills, this demands a thorough understanding of general biological principles and function, as well as comprehension of the science of orthodontics. Furthermore, the graduate will learn to understand and critically evaluate literature related to orthodontics.

Additional aims are to expose the resident to experience in teaching and research, by for example being involved in the undergraduate training and working with a research project that should be amenable for publication.

The ambition of the programme is to maintain a good balance between extensive clinical training on a broad variety of cases, an analytic approach to the orthodontic field seeking

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*Postgraduate training in orthodontics, Specialist clinic for Orthodontics, University clinics, Göteborg*

for scientific evidence, and experience of contemporary and updated clinical orthodontic tools.

Further ambition of the postgraduate programme is to maintain a high standard of education on an international level.

### **Requirements for Admission**

To be admitted to the Postgraduate Program in Orthodontics the applicant must have earned an L.D.S. or an equivalent degree and have acceptable academic records and references. In addition, a period of two years of clinical practice in general dentistry is required.

### **The Actual Curriculum**

The curriculum comprised six semesters (three academic years) of full time training, 40 hours a week including clinical activity, therapy planning meetings, and theoretical part of the program.

The program is based on approximately a total amount of 1840 hours every year and is divided in roughly in 50% for theoretical part (including courses/treatment planning etc) and 50% for the clinical part. See below for the description of the content of the theoretical and clinical training.

The designed program is based on the recommendations of the Swedish Board of Health and Welfare for specialization in Orthodontics from 1993. Since June 2018 the program follows the new guidelines of the Swedish board and Welfare (HSLF-FS 2017:77). The program follows also the recommendations of the 1992 Consensus Curriculum in European Orthodontic Postgraduate Education (updated in 2013) and is a member of the NEBEOP (Network of the Erasmus based orthodontic postgraduate programs) since June 2014.

### **The following parts are incorporated in the postgraduate training:**

#### *Theoretical courses*

The program has involved specific courses on various aspects of orthodontics as well as many other fields of odontology. The sources of knowledge have been research articles, textbooks and well-substantiated clinical evidence. The seminar leader/lecturers, with his/her wider and broader experience has acted as a guide for the students in interpreting articles and examining controversies.

During the first year of the program the postgraduate student goes through an introductory theoretical course based on active discussion the content of textbooks like

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*Postgraduate training in orthodontics, Specialist clinic for Orthodontics, University clinics, Göteborg*

“Contemporary orthodontics” by Proffitt et al 2012, “Orthodontics, current principles and Techniques” Graber et al 2011, and the “Fundamentals of orthodontic treatment mechanics” by Bennet and McLaughlin 2014, under the guidance of supervisor.

### **Clinical courses**

A number of practical courses have been given on the clinical treatment of various oral and dental problems. The training has included different types of clinical techniques with removable/functional and fixed appliances.

#### *Clinical practice*

The clinical practice, 20-24 hours per week, is performed in the specialist clinic of orthodontics in Göteborg, Sweden. The postgraduate student has been responsible for the treatment of about 110-120 patients presenting a wide variety of different malocclusions including:

Class I cases with crowding (treated with and without extractions)

Class II cases with crowding (treated with and without extractions)

Class II cases with large overjet

Deep bite and open bite cases with and without crowding

Spacing

Agensis of lateral incisors, premolars, also combined with other malocclusions

Palatally and buccally impacted upper cuspid uni- or bilateral, open and closed exposure

Class III cases (forced bite) in mixed dentition or early permanent dentition (interceptive)

Surgery: open bite, class III, class II

Adult cases, orthodontic treatment only or preprosthetic orthodontics

If necessary interceptive cases in mixed dentition with cross bites (removable plate or Quad helix) and anterior cross bites (removable plate, fixed appliance involving molars and incisors, or cross elastics or Delaire mask), class II with large overjet (activator) or mild crowding (EOT).

Most of the following treatment modalities/appliances have been experienced during the postgraduate training:

Fixed buccal SW appliance according to MBT treatment guidelines

Goshgarian, Transpalatal Bar (soldered), Quad helix, Rapid maxillary expansion, intrusion arch, auxiliary arches, Forsus, Herbst (casted), EOT, Delaire mask, Lingual technique

(Incognito), Miniscrews for skeletal anchorage and mesialisation/distalisation of dental groups (Orthoeasy and Vector TAS systems), Invisalign, a Self ligating bracket system, EOT activator, removable appliances (expansion, protrusion of incisors, bite raising etc.), cross-elastics.

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*Postgraduate training in orthodontics, Specialist clinic for Orthodontics, University clinics, Göteborg*

The clinical practice has been limited to orthodontics only.

*Scientific literature seminars (Journal club)*

Twelve to 16 seminars with evaluation and discussion of scientific literature within different areas of clinical orthodontics are held each year.

*Clinical seminars*

Weekly treatment planning meetings together with the clinical faculty are held twice a week. The graduate presents most of his/her cases for discussion in these seminars.

*Laboratory training*

Following methods/techniques/appliances have been trained and practiced in the lab and/or on phantom heads before being applied in the clinical practice on patients: preparation of Essix splints and retainers made of twisted stainless steel wires, preparation/grinding of Andresen and EOT activator, activation/adjustment of removable appliances, bending and adjustment of Goshgarian, Quad Helix and EOT, and wire bending for insertion in Straight wire brackets system.

*Research seminars*

A series of research seminars has been given on basic methods for conceiving a research project, writing a research protocol, and implementing and carrying out a research task.

*Clinical research*

The graduate takes part in a clinical research project. The progress of the research project is reported in form of oral presentation every year. A written report of this research project has been handed in and evaluated.

*Teaching experience*

The graduate is trained in various forms of presentations of clinical and scientific topics, and also participates in the teaching of undergraduate students.

**Evaluation and Examinations**

Oral tests assessments have been included in most of the theoretical courses. As part of the evaluation of the clinical progress, presentation of cases, critical analysis of scientific articles and presentation of seminars are carried out either each semester or yearly by the postgraduate student. In addition, the progress and performance is evaluated quarterly or both by the faculty members and by the graduate himself/herself.

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*Postgraduate training in orthodontics, Specialist clinic for Orthodontics, University clinics, Göteborg*

### *Requirements for the Certificate in Orthodontics*

To be allowed to take part in the final examination, the graduate had to have successfully completed all theoretical and clinical courses given during the six semesters, as well as completed all written reports of the seminar series. Thirty fully treated orthodontic cases are selected and evaluated and critically analysed has been handed in to the program director and the external examiner by the graduate for the final evaluation.

The final examination of the graduate comprises the evaluation of 30 documented cases, the clinical assessment of 15 out of those 30 cases by a supervisor member of the faculty and an oral examination and evaluation of the research report performed by an external examiner.

Following the successfully completed examination a Certificate of Specialisation in Orthodontics is issued.

### **Additional activities for each postgraduate student:**

**Journal Club:** 1 time/semester (critical reading and presentation of articles)

**Presentation of 5 year follow-up cases:** 1 times/semester (evaluation and presentation of orthodontic cases 5years post treatment)

**Consulting visits** in general practices at least 16 hours (4 half days)

**Consulting visits in clinic for cleft lip and palate** 16 hours

**Orthodontic international congress:** Once a year during the 3 year period

#### **Introduction course:**

-Contemporary Orthodontics, William R. Proffit, Fourth edition, 2009, Mosby

-Orthodontic treatment mechanics and the preadjusted appliances. John C Bennet, Richard P MacLaughlin

- Orthodontics, current principles and Techniques, 5<sup>th</sup> edition. Graber Vanarsdall Vig  
2012

-Orthodontic diagnosis and treatment planning by Per Johan Wisth and Kirsten Thunold.

-Introduction to the Bergen technique. A technical manual organized by Per Johan Wisth.

*Postgraduate training in orthodontics, Specialist clinic for Orthodontics, University clinics, Göteborg*

### **Demonstration for and supervision of undergraduate students Clinical**

supervision: 40 hours

#### ***Example of individual additional activities for postgraduate***

#### **Activities besides lectures, courses and clinical activity at the orthodontic clinic**

SOF (Svenska Ortodonti Föreningen) Annual meeting September 2013, Stockholm, Sweden

AAO (American Orthodontic Association) Annual Meeting May 2015, San Francisco, USA

#### **Envolvement in undergraduate training (Barnkliniken):**

10<sup>th</sup> Feb 2015 13-16

17<sup>th</sup> Feb 2015 13-16

3<sup>rd</sup> Mar 2015 8-12

17<sup>th</sup> March 8-12

21<sup>st</sup> Apr 2015 8-12

24<sup>th</sup> Aug 2015 13-16

8<sup>th</sup> Sep 2015 8-12

14<sup>th</sup> Sep 2015 13-16

2<sup>nd</sup> Oct 2015 8-12

5<sup>th</sup> Oct 2015 18-12

9<sup>th</sup> November 2015 8-12

#### **Consultations at FTV clinics (Public dental service, general practitioners) Ortodonti together with orthodontist**

FTV Bersjön (2<sup>nd</sup> December 2014, 13<sup>th</sup> March 2015, 5<sup>th</sup> June 2015)

FTV Guldheden (25<sup>th</sup> November 2015)

FTV Kärna (26<sup>th</sup> May 2015, 6<sup>th</sup> Oct 2015, 1 December 2015)

FTV Tuve (18<sup>th</sup> November 2014)

FTV Olskroken (10<sup>th</sup> March, 5<sup>th</sup> May, 13<sup>th</sup> Oct 2015)

#### **Seminars prepared by the postgraduate student:**

1<sup>st</sup> year: *Class II functional appliances*, 3 hours

2<sup>nd</sup> year: *Orthodontic treatment and soft tissue changes*, 45 minutes 3<sup>rd</sup>

year: *Treatment of impacted canines*, 3 hours

#### **Journal clubs:**

□ Abrahamsson C, Henrikson T, Nilner M, Sunzel B, Bondemark L, Ekberg EC.

*TMD before and after correction of dentofacial deformities by orthodontic and orthognathic treatment.* Int J Oral Maxillofac Surg. 2013 Jun;42(6):752-8

□ Al-Sibaie S, Hajeer MY. *Assessment of changes following en-masse retraction with miniimplants anchorage compared to two-step retraction with conventional anchorage in patients with class II division 1 malocclusion: a randomized controlled trial.* Eur J Orthod. 2014 Jun;36(3):275-83.

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*Postgraduate training in orthodontics, Specialist clinic for Orthodontics, University clinics, Göteborg*

□ Afrand M, Ling CP, Khosrotehrani S, Flores-Mir C, Lagravère-Vich MO.  
*Anterior cranial-base time-related changes: A systematic review. Am J Orthod Dentofacial Orthop.* 2014 Jul;146(1):21-32

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*Postgraduate training in orthodontics, Specialist clinic for Orthodontics, University clinics, Göteborg*

□ *Jonathan Sandler, Alison Murray, Badri Thiruvengkatachari, Rodrigo Gutierrez, Paul Speight, and Kevin O'Brien The effectiveness of 3 methods of anchorage reinforcement for maximum anchorage in adolescents; a 3-arm multicenter randomized clinical trial Am J Orthod Dentofac Orthop 2014; 146:10-20*

**5-10 years follow-up cases:**

1 five years retention control presented

1 ten years follow up case presented

**Auscultation at CLP clinic:**

15<sup>th</sup> December 2015

16<sup>th</sup> February 2016

**Research project:** A comparison of treatment outcome between lingual and labial fixed orthodontic appliances (to be presented as a poster at EOS Stockholm 2016)