

# Treating radiation-induced trismus in head and neck cancer

Exercise intervention and risk structures

Akademisk avhandling

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av

**Nina Pauli**

Fakultetsopponent:  
Professor Eva Munck Wikland  
Institutionen för klinisk vetenskap, intervention och teknik  
Karolinska Institutet, Stockholm

Avhandlingen baseras på följande arbeten:

- I. **The incidence of trismus and long-term impact on health-related quality of life in patients with head and neck cancer.**  
Pauli N, Johnson J, Finizia C, Andréll P.  
*Acta Oncol.* 2013 Aug;52(6):1137-45.
- II. **Exercise intervention for the treatment of trismus in head and neck cancer**  
Pauli N, Fagerberg-Mohlin B, Andréll P, Finizia C.  
*Acta Oncol.* 2014 Apr;53(4):502-9
- III. **Treating trismus - a prospective study on effect and compliance to jaw exercise therapy in head and neck cancer.**  
Pauli N, Andréll P, Johansson M, Fagerberg-Mohlin B, Finizia C.  
*Head and Neck* 2014. E-pub ahead of print.
- IV. **Risk structures for radiation-induced trismus in head and neck cancer.**  
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UNIVERSITY OF GOTHENBURG

# Treating radiation-induced trismus in head and neck cancer

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Nina Pauli

Department of Otorhinolaryngology / Head and Neck Surgery,  
Institute of clinical sciences at the Sahlgrenska Academy  
University of Gothenburg, Sweden

## Abstract

The overall aim of this thesis was to investigate the incidence of trismus in head and neck cancer (HNC) and to assess the treatment of radiation-induced trismus with a structured jaw exercise program using jaw mobilising devices. Furthermore the aim was to investigate anatomic risk structures related to the development of radiation-induced trismus. The patients were included at the Sahlgrenska University Hospital, Gothenburg, Sweden.

In the prospective study addressing trismus incidence (n=75), results demonstrated that the incidence of trismus was 9% pre-treatment and 28% at the one-year follow-up post-treatment. Patients with trismus reported greater problems with jaw-related problems, eating limitations, dry mouth, social eating, swallowing and pain compared to HNC patients without trismus.

In the two prospective intervention studies (n=100 and n=50) it was demonstrated that the structured exercise with jaw mobilising devices improved mouth opening with an average of 6.4 mm, and patients reported improvements in health-related quality of life and less trismus related symptoms compared to the control group. In the study investigating risk structures for trismus (n=216) it was demonstrated that mean doses of the masseter muscle and the temporomandibular joint were significant predictors for trismus.

In conclusion, trismus is a common symptom related to the treatment of HNC and regular measurement and assessment of trismus is important. Structured jaw exercise program is recommendable for the treatment of patients with trismus. The masseter muscle may be a possible candidate for future trismus-sparing techniques.

**Keywords:** Trismus, Head and Neck cancer, Radiotherapy, Jaw Exercise Therapy, Mastication Structures

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