

## Chapter 17

# Frey's Syndrome

### ABSTRACT

*Frey's syndrome is secondary to sympathetic denervation of sweat glands – reinnervation through the auriculotemporal nerve is a secondary event. The aberrant regeneration theory explains the physiopathology of Frey's syndrome. Frey's syndrome incidence after parotidectomy, without prevention techniques, is 40-80% by clinical questioning and 80–100% by objective testing. It occurs months to years after surgery. A topographic and quantitative testing for Frey's is required prior to its treatment – the iodine-sublimated paper histogram (ISPH) test has the majority of desired features. Intradermic botulinum toxin injection is a well-tolerated and efficient treatment. The recommended dilution is 50 IU/1 ml, inter-injection distance is 1 cm, and injection volume is 0.1 ml. Complications to avoid include (1) facial muscle paralysis (rare and reversible complication; inject only intradermally and avoid injecting toward the midline) and (2) pain during injection (if bothersome could be decreased by the prior application of topical anesthetic cream).*

### INTRODUCTION

Frey's syndrome is characterized clinically by sweating and flushing of the lateral aspect of the face and upper neck, usually around the parotid region, during meals with no direct relation with chewing (Figure 1) (Frey, 1923). It results from injury to the auriculo-temporal nerve (ATN), a branch of the mandibular division of the trigeminal nerve. Once present, gustatory sweating

DOI: 10.4018/978-1-7998-5603-0.ch017

### ***Frey's Syndrome***

and flushing remain unchanged; there is no spontaneous resolution, even after numerous years (Balfour & Bloom, 1970).

Despite the fact that similar cases were already reported by *Baillarger* in 1853, Frey's syndrome is named after *Dr. Lucia Frey-Gottesman*; a neurologist at the University of Warsaw, Poland who published a landmark paper entitled "syndrome du nerf auriculotemporal" in 1923 and called it auriculotemporal nerve syndrome (Dulguerov, Marchal, & Gysin, 1999).

Frey's syndrome is also known as *gustatory sweating and flushing syndrome*, *Baillarger's syndrome*, *Frey-Baillarger syndrome*, *Dupuy's syndrome*, and *auriculotemporal syndrome*.

*Figure 1. Frey's syndrome. Note the erythema of the face in the left parotid region (gustatory flushing).*



### **INCIDENCE**

The reported incidence of gustatory sweating after parotidectomy is highly variable. (Sood, Quraishi, & Bradley, 1998). In the late 1950s, this problem was seriously studied (Laage-Hellmann, 1957; Laage-Hellmann, 1958a; Laage-Hellmann, 1958b). A group of 123 patients who underwent a parotidectomy was evaluated retrospectively with a questionnaire and clinical testing. On questioning, 62% of the patients complained of problems during eating: 22%

26 more pages are available in the full version of this document, which may be purchased using the "Add to Cart" button on the publisher's webpage: [www.igi-global.com/chapter/freys-syndrome/256622](http://www.igi-global.com/chapter/freys-syndrome/256622)

## Related Content

---

### The Uses of Cannabinoids in Medicine and Their Spectroscopic Applications

Alev Erand Sefa Çelik (2023). *Medical Cannabis and the Effects of Cannabinoids on Fighting Cancer, Multiple Sclerosis, Epilepsy, Parkinson's, and Other Neurodegenerative Diseases* (pp. 235-257).

[www.irma-international.org/chapter/the-uses-of-cannabinoids-in-medicine-and-their-spectroscopic-applications/320050](http://www.irma-international.org/chapter/the-uses-of-cannabinoids-in-medicine-and-their-spectroscopic-applications/320050)

### Fall Prevention Activities and Resources in Norway: A Review

Ankica Babic (2021). *Integrated Care and Fall Prevention in Active and Healthy Aging* (pp. 223-241).

[www.irma-international.org/chapter/fall-prevention-activities-and-resources-in-norway/285640](http://www.irma-international.org/chapter/fall-prevention-activities-and-resources-in-norway/285640)

### The Role of Self-Efficacy and Aging in Managing Disease

Debra N. Weiss-Randall (2020). *Alternative Pain Management: Solutions for Avoiding Prescription Drug Overuse* (pp. 207-253).

[www.irma-international.org/chapter/the-role-of-self-efficacy-and-aging-in-managing-disease/237752](http://www.irma-international.org/chapter/the-role-of-self-efficacy-and-aging-in-managing-disease/237752)

### Importance of Biotechnology in the Development of Functional Foods in Emerging Countries: The Case of Chile

Carolina Alejandra Oliu (2019). *Complementary and Alternative Medicine: Breakthroughs in Research and Practice* (pp. 407-416).

[www.irma-international.org/chapter/importance-of-biotechnology-in-the-development-of-functional-foods-in-emerging-countries/211782](http://www.irma-international.org/chapter/importance-of-biotechnology-in-the-development-of-functional-foods-in-emerging-countries/211782)

### A Study on Automatic Segmentation and Classification of Skin Lesions in Dermoscopic Images

Ebtihal Abdullah Al-Mansour and Arfan Jaffar (2017). *Oncology: Breakthroughs in Research and Practice* (pp. 559-569).

[www.irma-international.org/chapter/a-study-on-automatic-segmentation-and-classification-of-skin-lesions-in-dermoscopic-images/158934](http://www.irma-international.org/chapter/a-study-on-automatic-segmentation-and-classification-of-skin-lesions-in-dermoscopic-images/158934)