



The
**Ehlers
Danlos**
Society™



EDS ECHO SUMMIT SERIES

PRESENTATION

Oro dental manifestations of EDS

SPEAKER

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Medical University of Innsbruck**

ECHO SUMMIT



Enamel

96% anorganic
hydroxyapatite

Dentine

mineral platelets embedded
in a collagen fibre mesh
(mainly I, also III and IV)

Gingiva

firmly attached to the
periostum of the bone by
collagenous fibers
(I, III, IV, VII; V may be present in
inflamed tissue)

Pulp

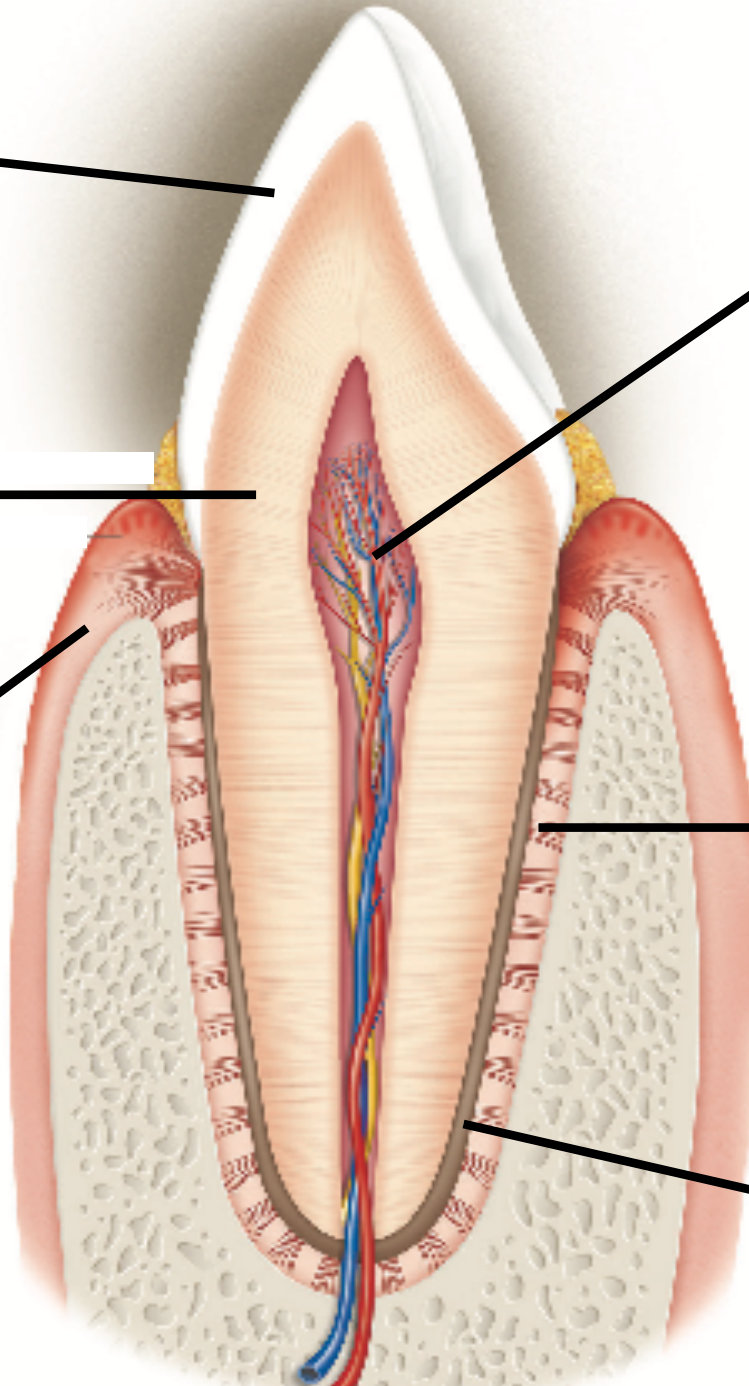
soft connective tissue (collagen I and III)

Periodontal ligament

collagen fiber bundles embedded in
ground substance
(I, III, XII) that span the distance between the
bone and the tooth

Cementum

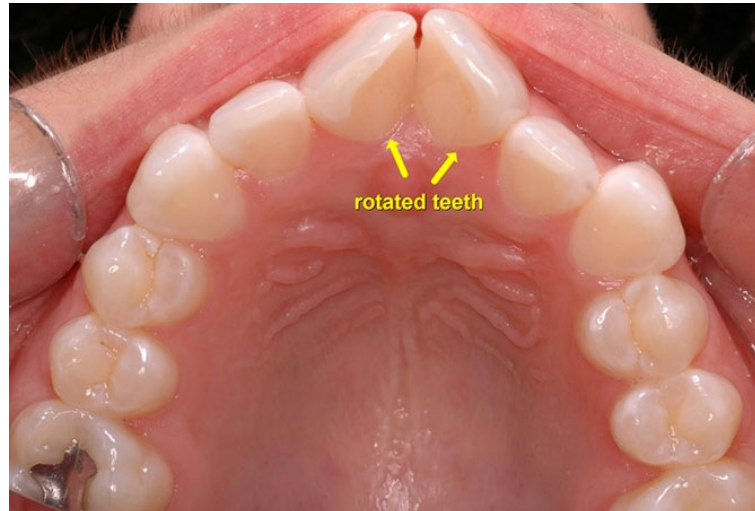
mineralized avascular hard
connective tissue
50% collagen I



Are these manifestations of EDS?



Supernumerary teeth



Rotated teeth



Tooth transposition

Single cases with hypermobile EDS and classical EDS

For references and sources see: Kapferer-Seebacher et al. Dental Manifestations of Ehlers-Danlos Syndromes: A Systematic Review. Acta Derm Venereol. 2020 Mar 25;100(7):adv00092.

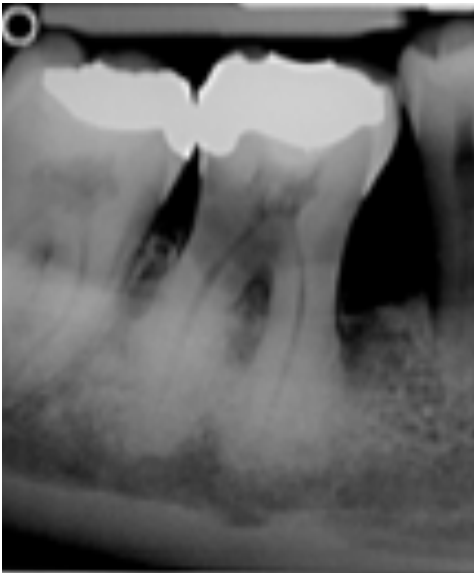


Is caries a
manifestation
of EDS?



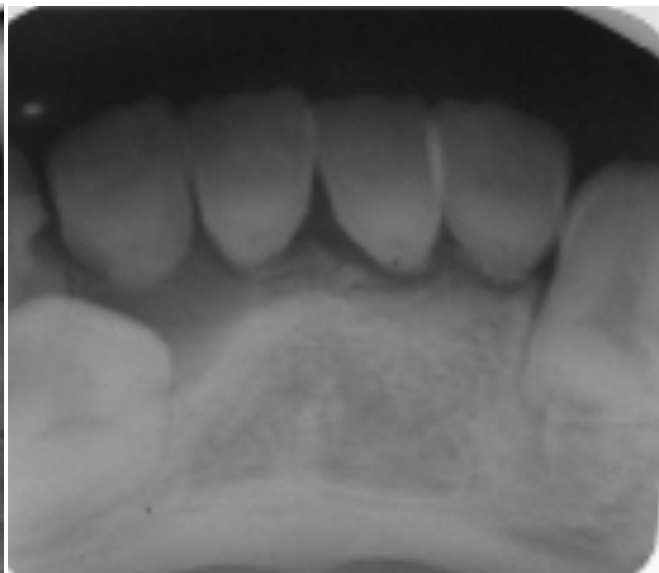
Dental manifestations with EDS

Pulp calcifications



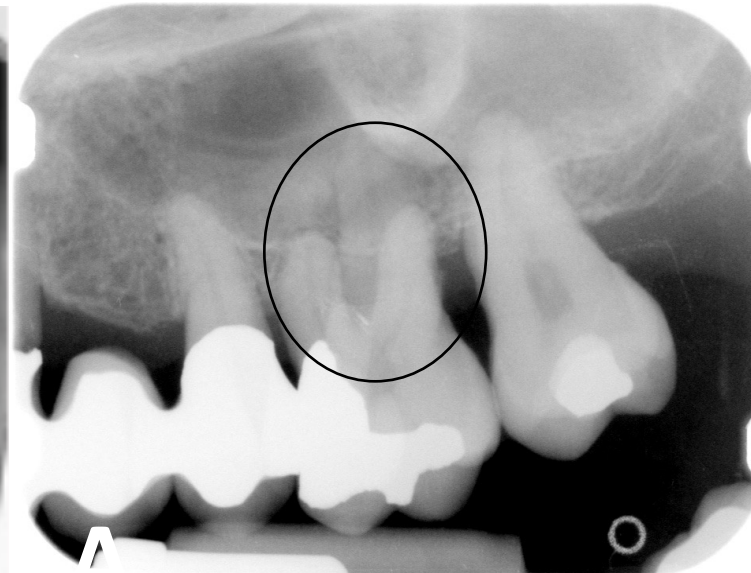
Classical EDS
Periodontal EDS
Hypermobile EDS

Hypoplastic roots



Classical EDS

Hypoplastic roots



Periodontal EDS

Exceeding roots



Vascular EDS

Dermatosparaxis EDS

Malfait et al. 2004: n = 3 (5 - 12 Jahre)

- Severe gingival hyperplasia in both jaws
- Hypermobility of the temporomandibular joint
- hypodontics, microdontics, opalescent teeth



Fragility of the skin, typical craniofacial features, lax skin, folding of the palms, growth retardation

Resistance to local anesthesia in people with EDS presenting for dental surgery

Schubart, Schaefer, Janicki, Adhkary, Schilling, Hakim, Bascom, Francomano, Raj. J Dent Anesth Pain Med 2019;19(5):261-70

Method

Questionnaire: 980 EDS + 249 non EDS respondents

"Have you ever had a problem with a local anesthetic injection not working adequately or properly?"

Results

EDS: 88% recalled inadequate pain prevention

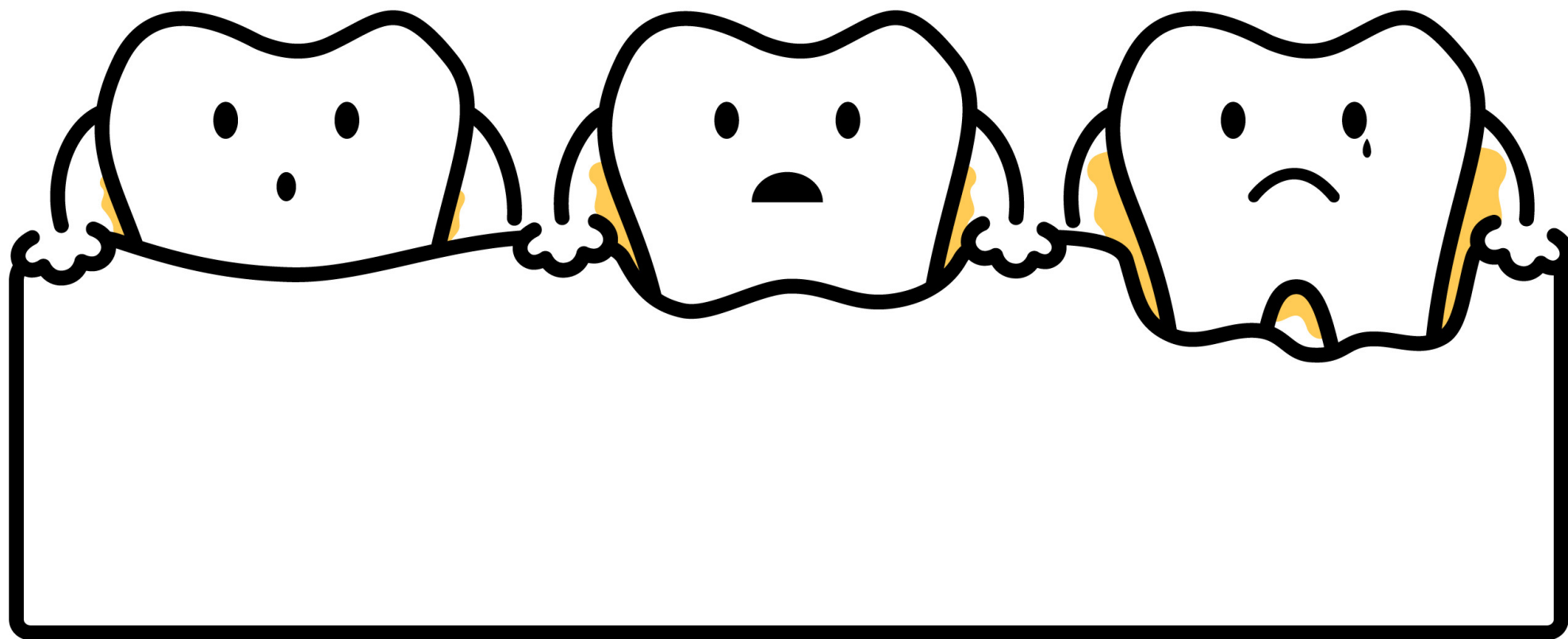
non EDS: 33% recalled inadequate pain prevention

The agent with the highest success rate was articaine (30%), followed by bupivacaine (25%), and mepivacaine (22%).

Oral health related quality of life

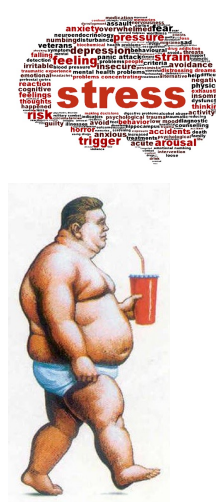


• Source: the Oral Health Atlas (2nd ed.)

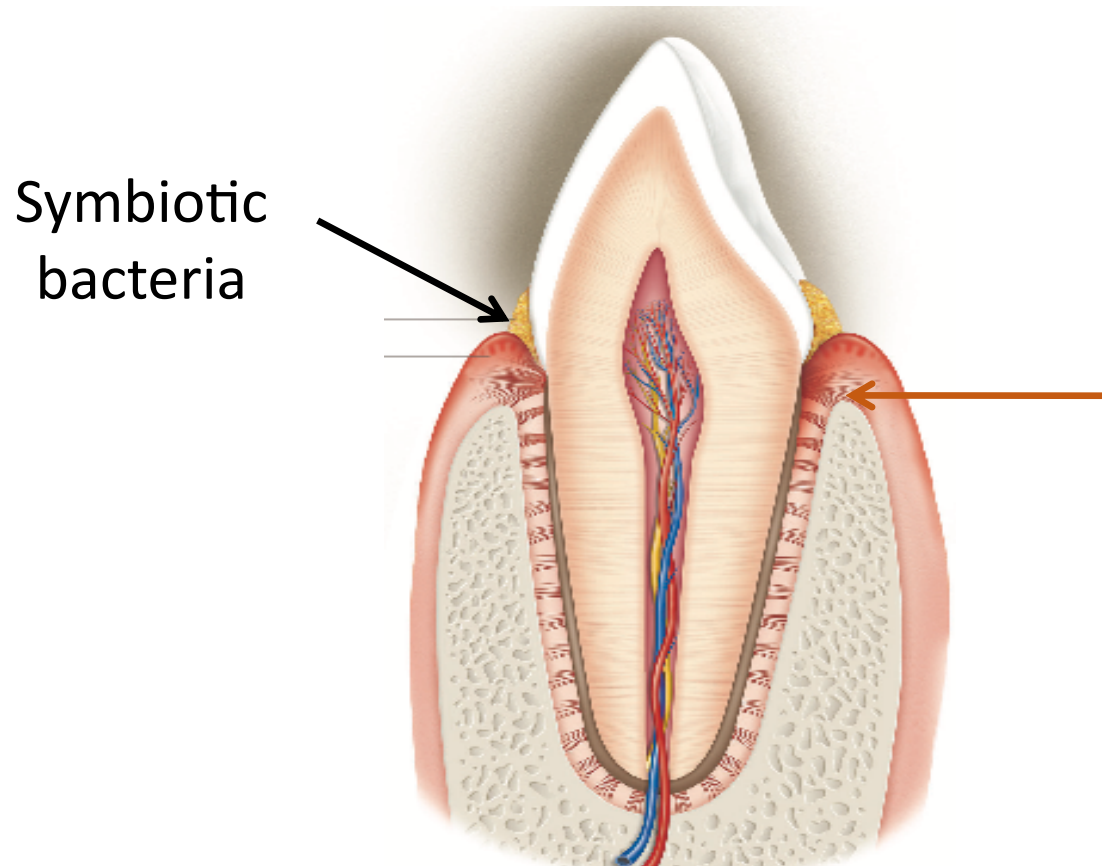


Periodontitis

WHAT IS PERIODONTITIS?

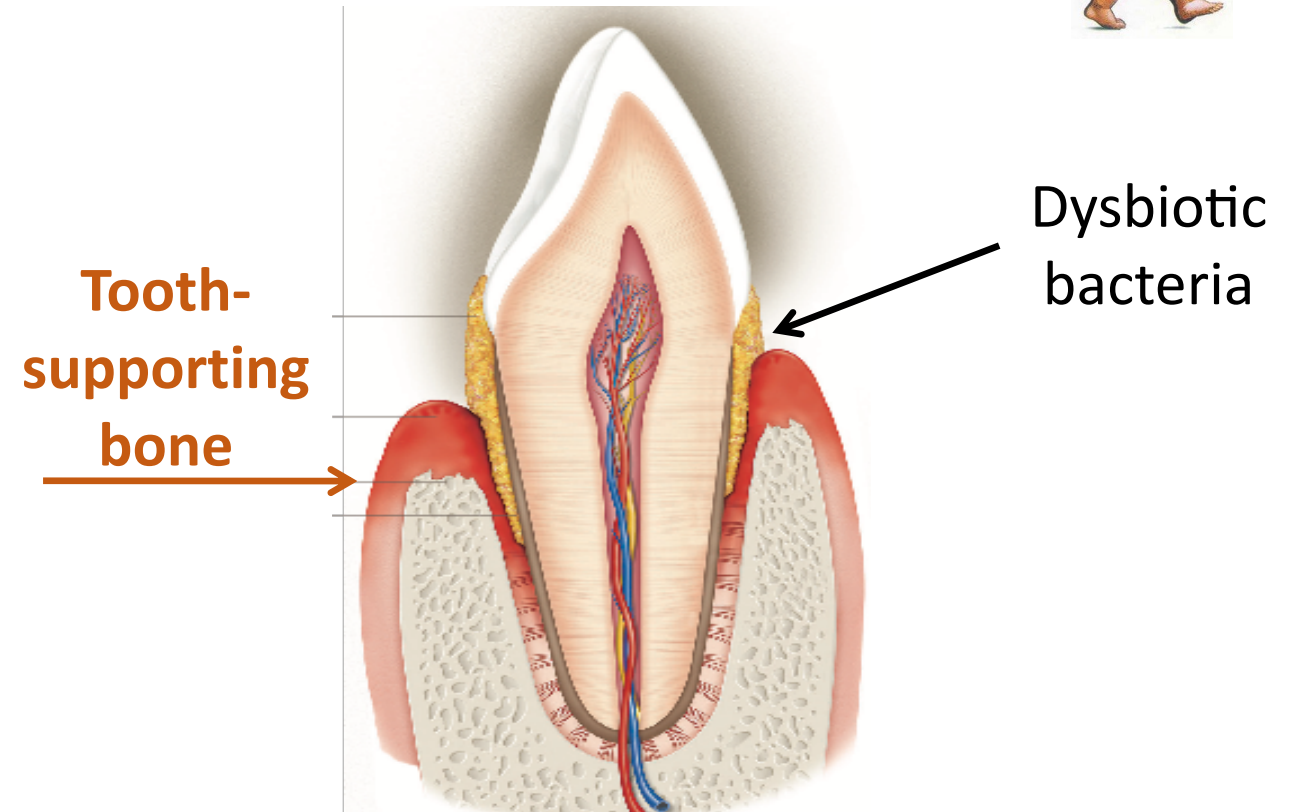


Healthy condition



Mild immune reaction

Periodontitis



Inflammatory bone loss

Is EDS associated with an increased risk of periodontitis?

„Periodontal disease has
to arise in **classical** a

British EDS

NO!

„There is not a single clinical study
showing that EDS is associated with an
increased risk of periodontitis!“

Kapferer-Seebacher 2021

in EDS type
EDS Type I.“
2018

most
e.“



Kapferer-Seebacher I, Lundberg P, Malfait F, Zschocke J. Periodontal manifestations of Ehlers-Danlos syndromes: A systematic review. J Clin Periodontol. 2017;44(11):1088-1100.

Vascular Ehlers-Danlos Syndrome (n = 23)

Ferré et al. 2012: n = 17 vEDS
 n = 46 age-matched controls

Periodontitis: 23.5% in vEDS
45% in controls

De Coster et al. 2005: n = 31; 6 of which with vEDS

→ No individuals with periodontitis

Periodontal EDS (formerly EDS VIII)

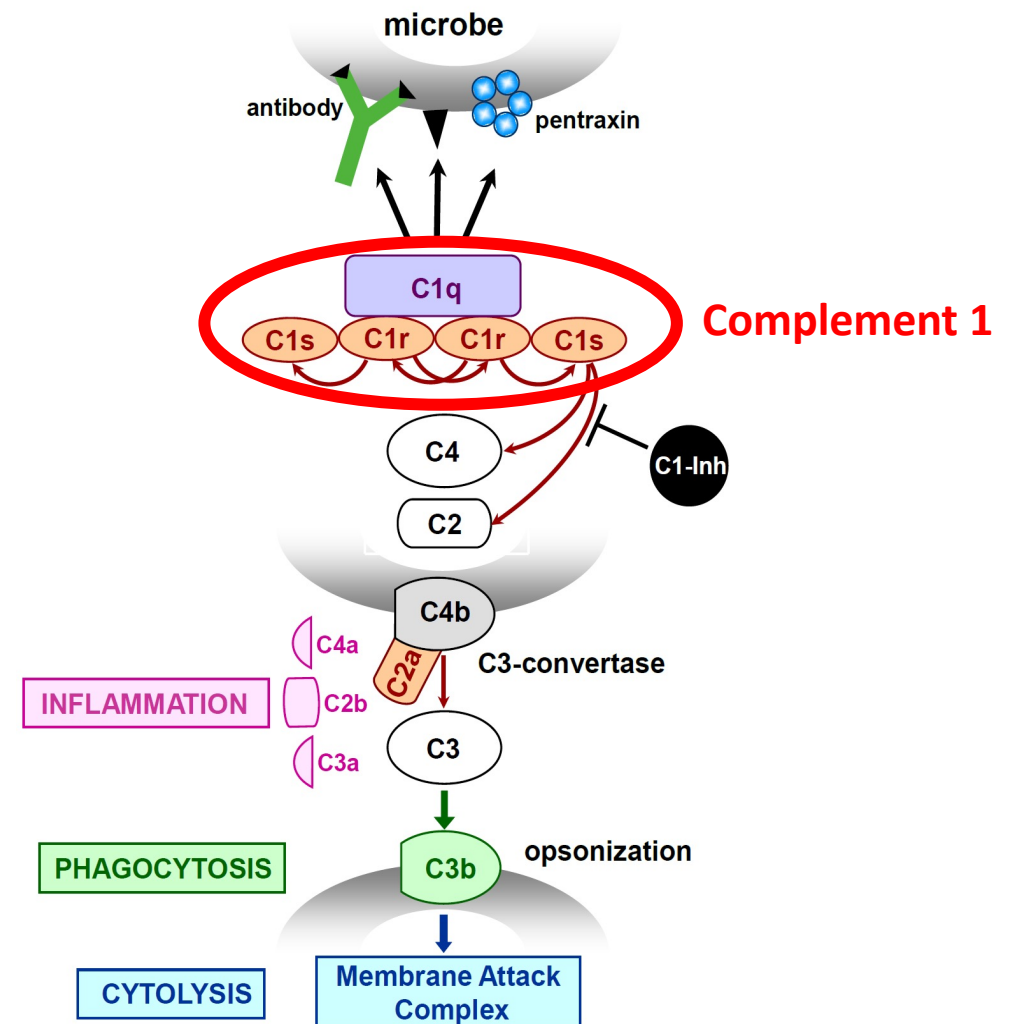
specific EDS subtype caused by mutations in C1R and C1S



Early severe periodontitis

Age of diagnosis (mean): 14 years

Complete tooth loss (mean): 20 years
without periodontal treatment



Periodontal EDS (formerly EDS VIII)

specific EDS subtype caused by mutations in C1R and C1S

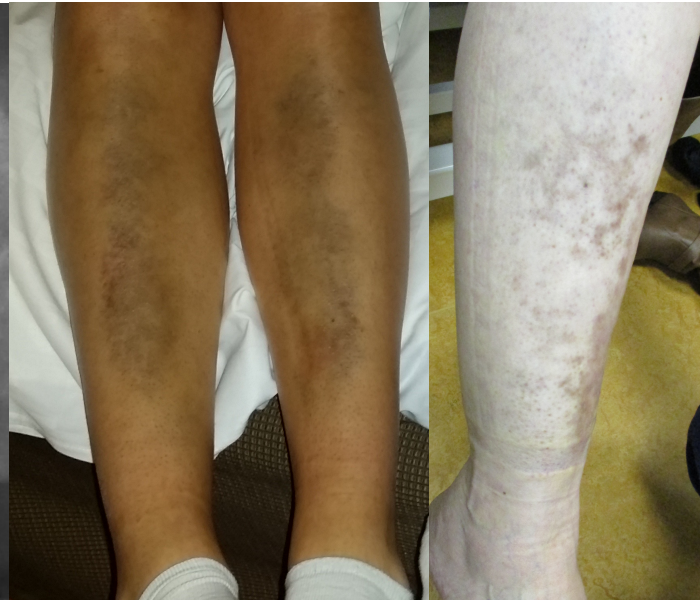


Early severe periodontitis

Age of diagnosis (mean): 12 years

Complete tooth loss (mean): 20 years

without periodontal treatment



Pretibial discolorations

79% of affected



Specific gum phenotype



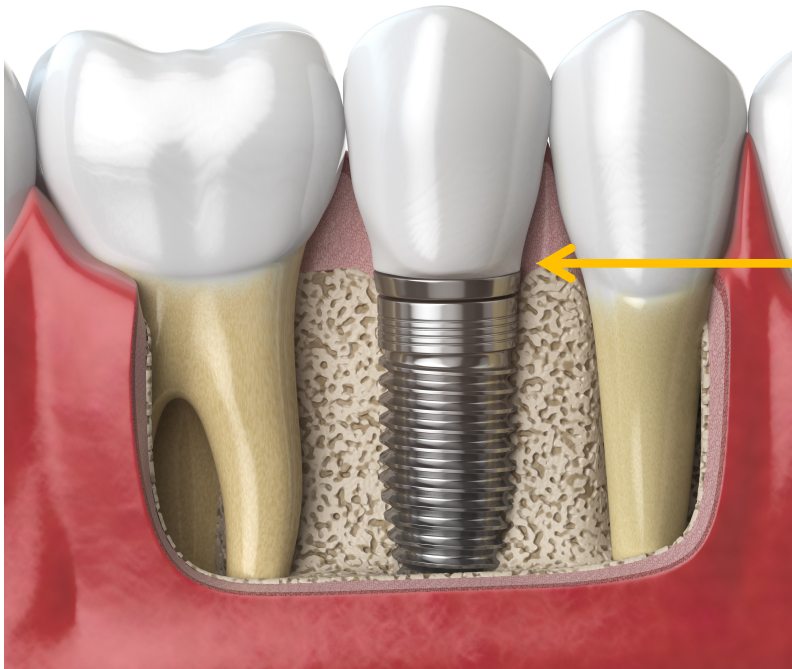
Healthy siblings

Children with periodontal EDS



WHAT IS PERI-IMPLANTITIS?

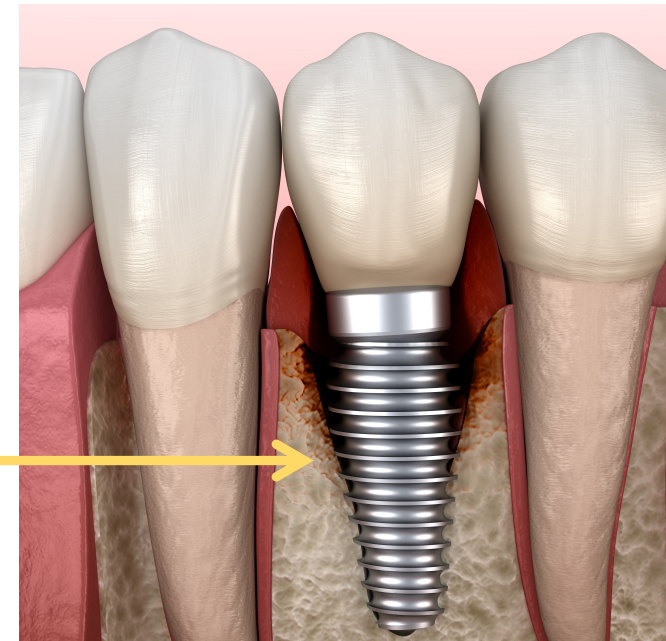
Healthy condition



Mild immune reaction

Peri-Implantitis

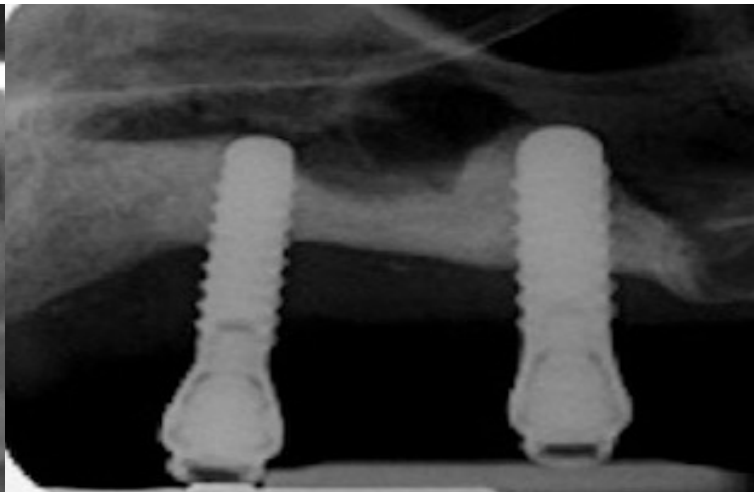
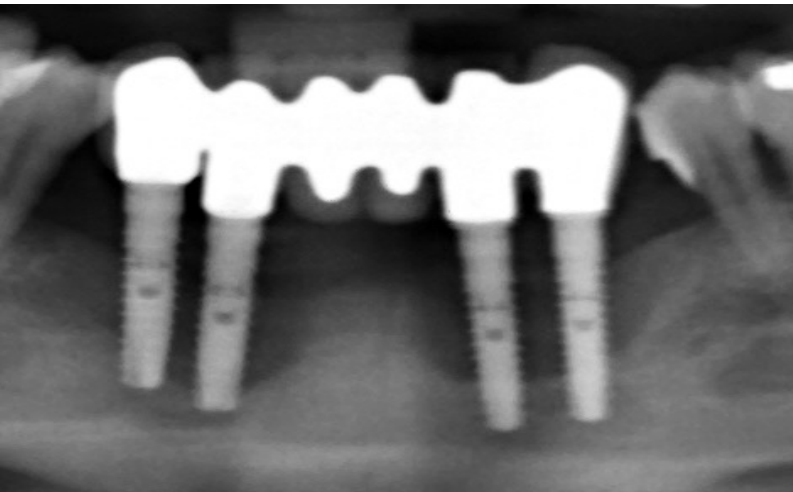
Implant-
supporting
bone



Inflammatory bone loss

High risk of peri-implant disease in periodontal EDS. A case series.

Rinner, Zschocke, Schossig, Gröbner, Strobl, Kapferer-Seebacher. Clin Oral Implants Res. 2018;29(11):1101-1106.



Three individuals included

There seems to be NO increased risk for implant loss with other EDS types
one study on five individuals with hypermobile or classical EDS

Jensen et al. 2012

Conclusions

All types of EDS

Resistance to local anesthetics

Periodontal EDS

Early severe periodontitis

Thin and fragile gums

Pulp stones

Increased risk of peri-implantitis


Classical EDS

Pulp stones

Shortened (hypoplastic) roots

Vascular EDS

Exceeding root length



**Striking lack of
scientific
evidence!**

Clinical studies on oral manifestations of various EDS types

Periodontal
disease

Enamel
defects

Root
deformities

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Temporomandibular
joint

Dental
anaesthetics

Implant
success