

Fédération Hospitalo-Universitaire AP-HP, Université de Paris, INSERM

DDS-ParisNet: Dental Diseases Network in Paris



Ariane Berdal

DE
DIE
IRE



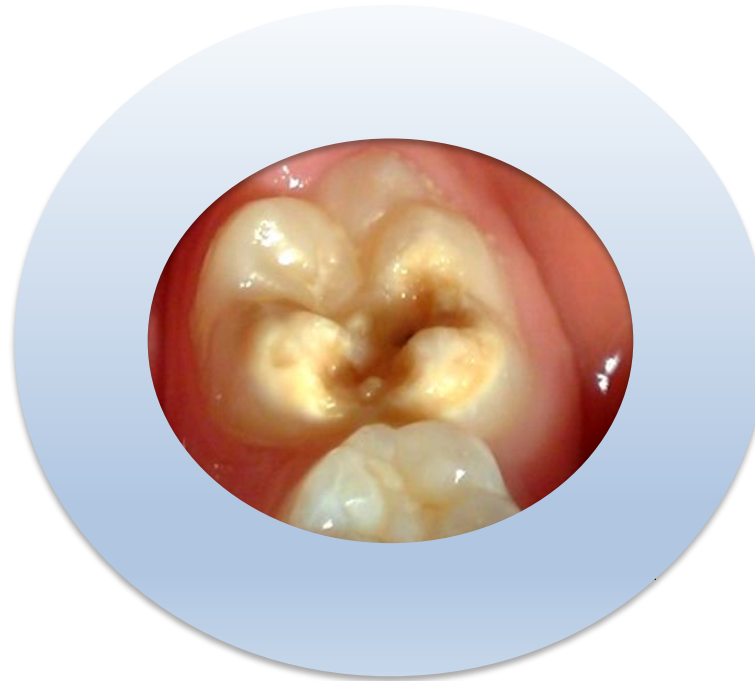
UNIVERSITÉ
PARIS
DESCARTES



aussein

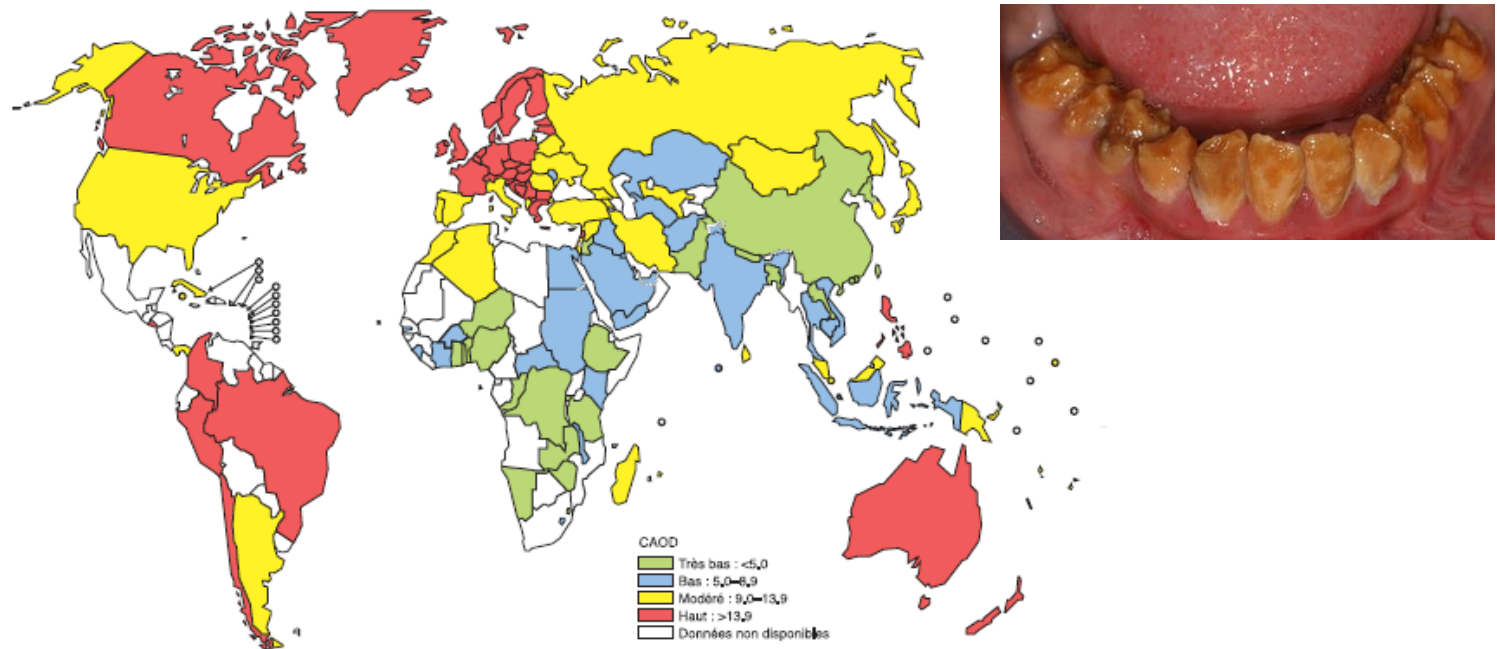


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PARIS
DESCARTES



DDS (Dental Diseases): *Part of the Global Burst of Diseases*

Figure 5. La carie dentaire (CAOD) dans le monde chez les enfants de 12 ans (3,4)



Worldwide : **3.5 billions people** – Untreated – Fragile populations

Worldwide economic impact : **US\$442 billions** (2010)

Altered Quality of Life: pain, affected mastication, phonation, psycho-social life ...

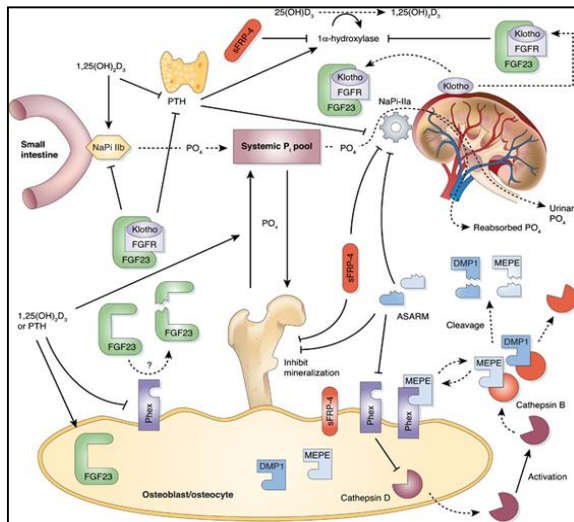
Co-Morbidity with obesity, diabetes, cardiovascular diseases ...

Individual Resistance to DDS ?

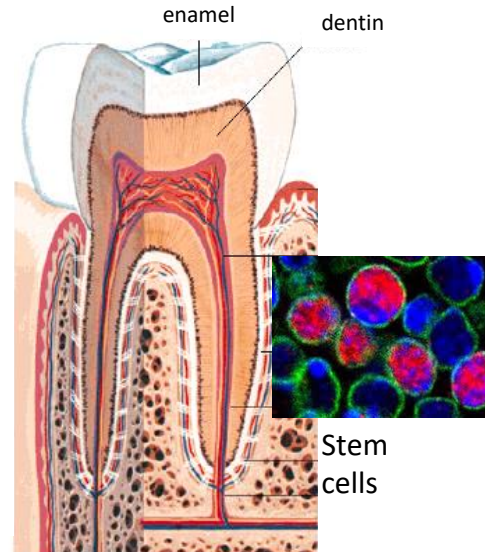
THE
LANCET

DDS Shared Mechanisms and individual disease susceptibility

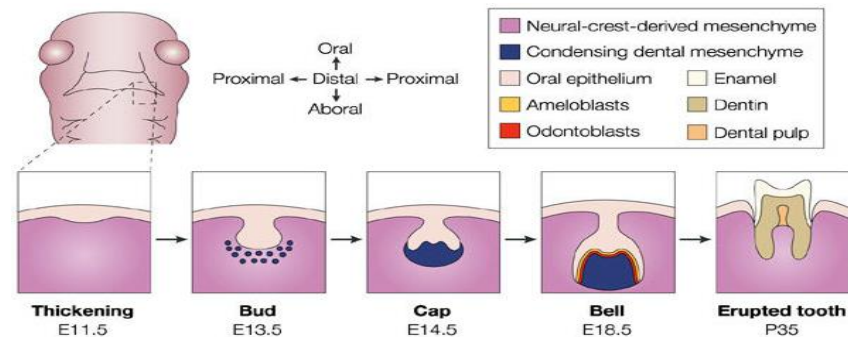
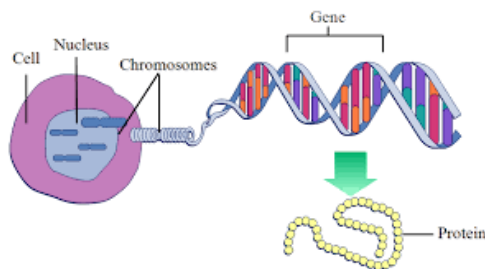
2. Mineral metabolism



3. Environmental challenges

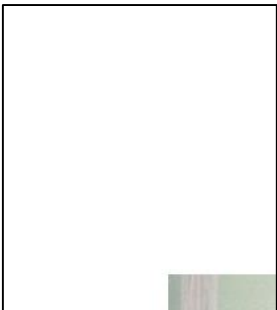


1. Constitutive genes - mutations - variants



DDS-ParisNet FHU Specific Objectives

- ✓ **Constitute cohorts:** rare and common DDS
- ✓ **Explore pathophysiology:** molecular cellular mechanisms of DDS
- ✓ **Implement therapy:** « toxics-free » devices and innovations for DDS
- ✓ **Establish clinical paths:** diagnosis and cares for patients with DDS
- ✓ **Develop societal networks:** patients associations, institutions, industries
- ✓ **Disseminate** the generated knowledge

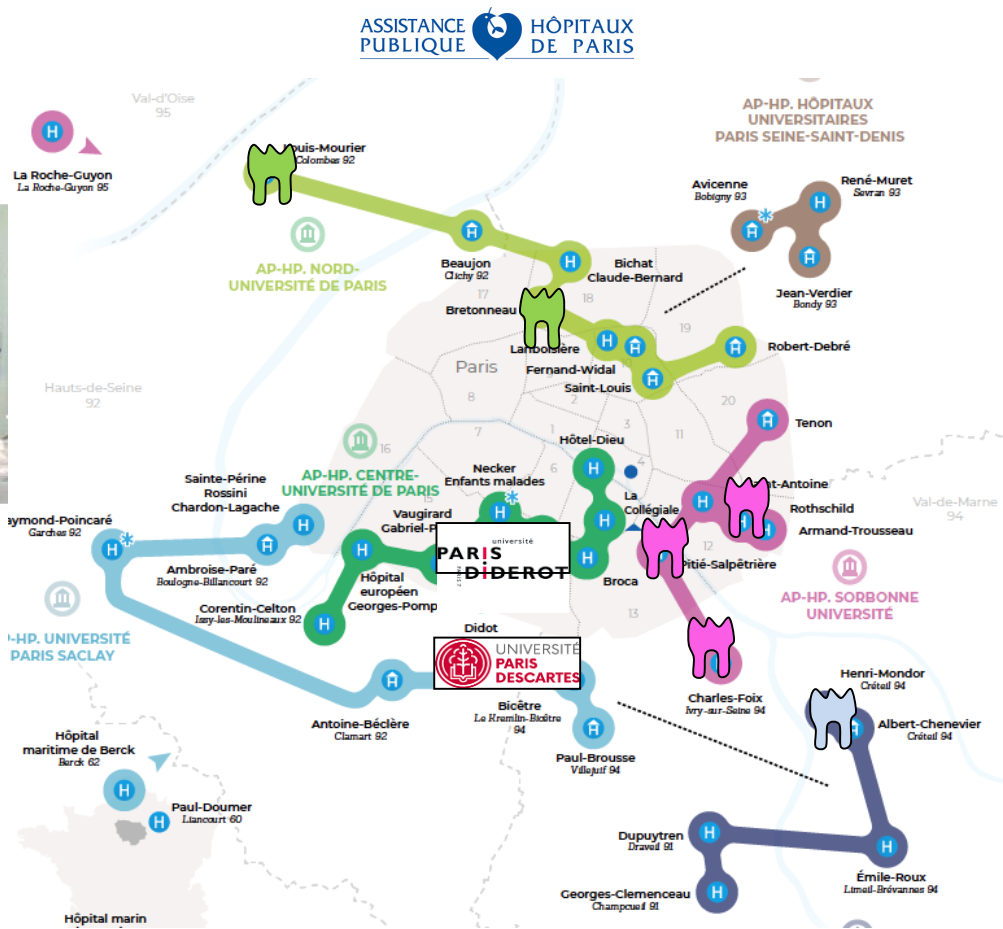


Dental Research

PRESENT DDS SITUATION

Dental Education

4
2
16
Fa
ou



2 Schools
1000 graduates
1000 post-graduates
Masters/PhDs
220 staff

Dental
Hospital



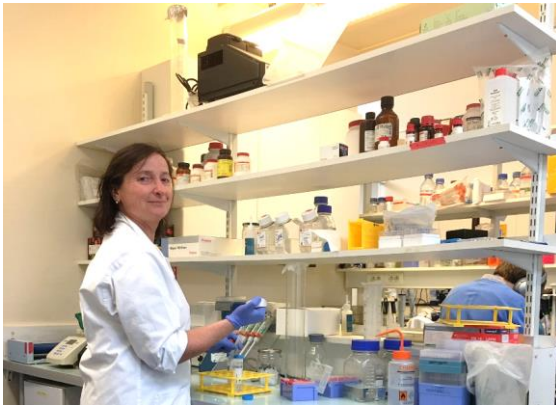
6 Clinical services



≈450 publications
between 2015-2018



2025 - A Top 1% European Dental Institute



FHU
DDS-Paris Net



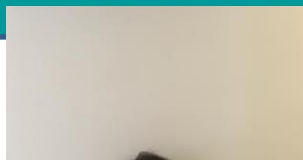
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DDS-ParisNet: Dental Diseases Network in Paris

WP management: Ariane Berdal and Catherine Chaussain



**WP1 Creating a DDS network
centered on the patient**
leaders: de la Dure Molla M,
Chaussain C, Gaucher C



**WP2 Generating translational
research on tooth genomics and
pathophysiology.**
leaders: Babajko S, Bardet C,
Dursun E



**WP3 Ensuring clinical
translation for diagnosis and
treatment of DDS**
leaders: Fournier B, Lenorcy E,
Biosse Duplan M, Viphane B



**WP4 Ensuring registries
and guidelines, education
and dissemination**
leaders: Friedlander L, Smail
Faugeron V, Gogly B



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DDS-ParisNet: Dental Diseases Network in Paris

WP management: Berdal A and Chaussain C

WP1 Creating a DDS
network centered on
the patient

WP2 Generating translational
research on tooth genomics and
pathophysiology.

WP3 Ensuring clinical
translation for diagnosis and
treatment of DDS

WP4 Ensuring registries and
guidelines, education and
dissemination of the data

Steering Committee
Coordinators
WP leaders



Septodont Company
Gilles Richard / Anne Salengro



Cohorts
Biobanks
Labs Core



Proposed SAB :

Marc McKee (McGill, Canada)
Peter Fratzl (Max Plank, Germany)
Ophir Klein (UCSF, USA)
Mary McDougall (UBC, Canada)
Catherine Boileau (Inserm, Paris)
Catherine Nabet (Inserm, Toulouse)
Alain Tedgui (Inserm, Paris)
Laurence Vicot (Inserm, St Etienne)
Pierre Weiss (Inserm, Nantes)

Patients associations
Pol Harvengt



DELIVERIES



Patient-centred projects



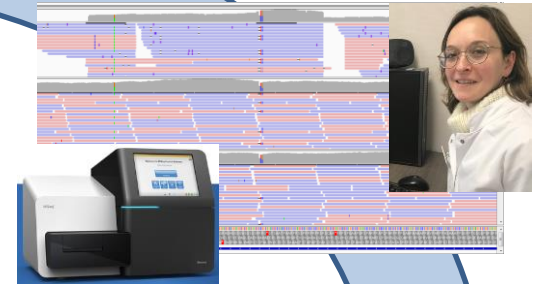
From diagnosis of *Amelogenesis Imperfecta* to patient circuitry and care



1. Clinical Diagnosis



2. Molecular Diagnosis



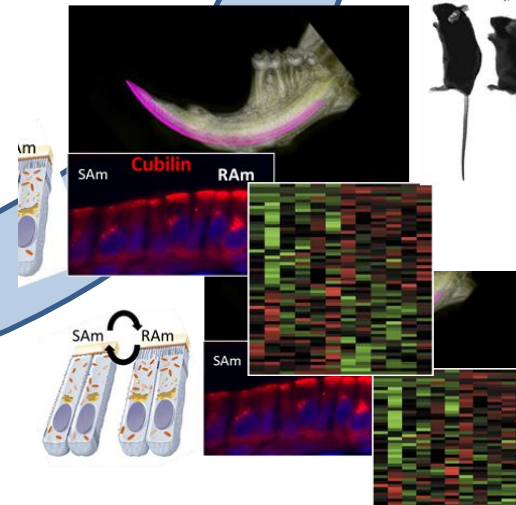
5. Dissemination Participative science



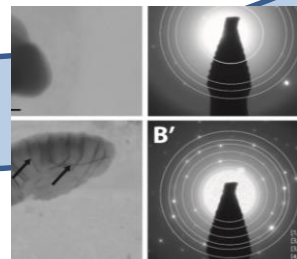
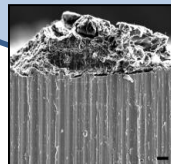
Les dents
Miroirs de notre santé ?

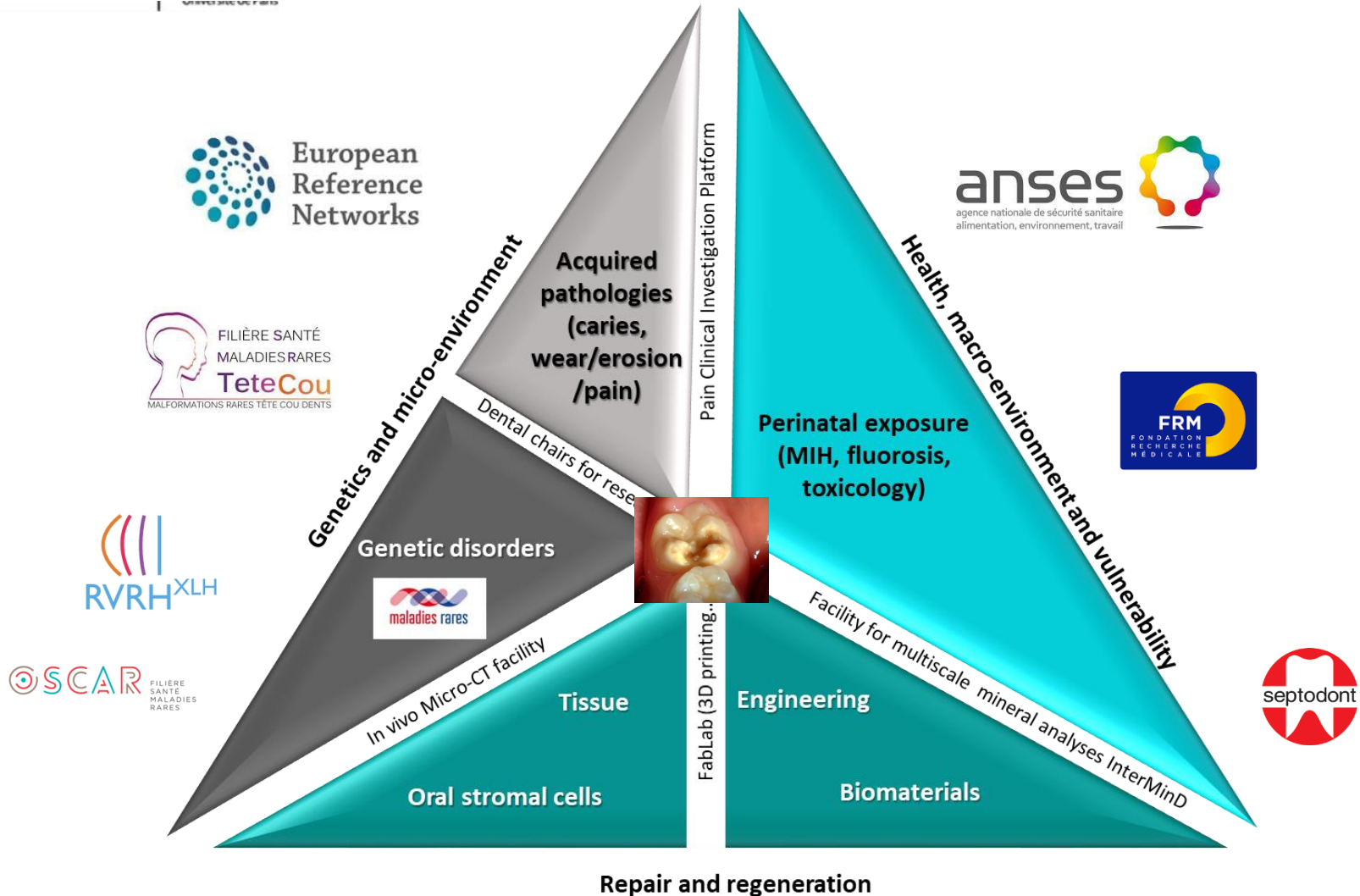
Inserm
Le magazine

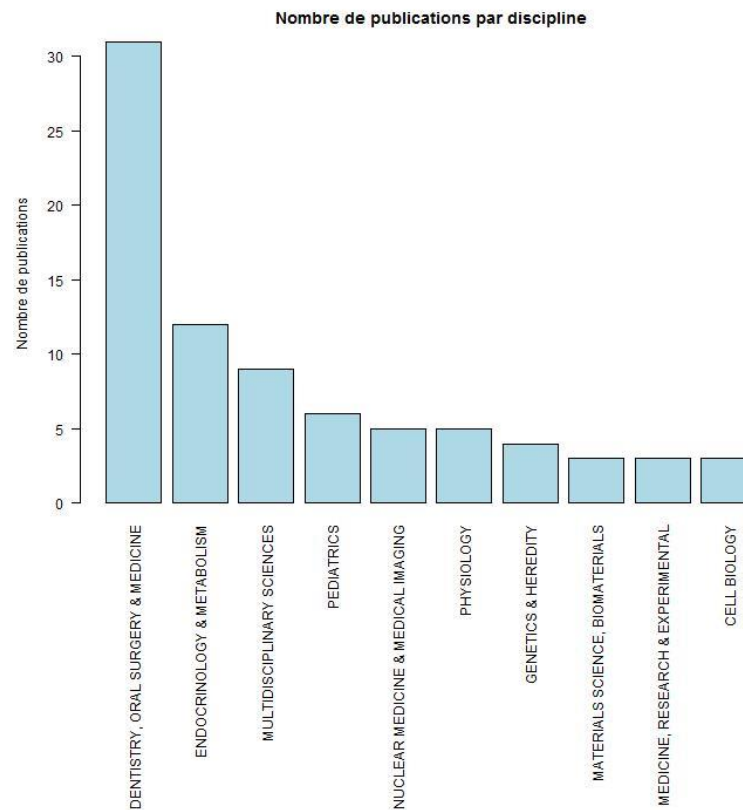
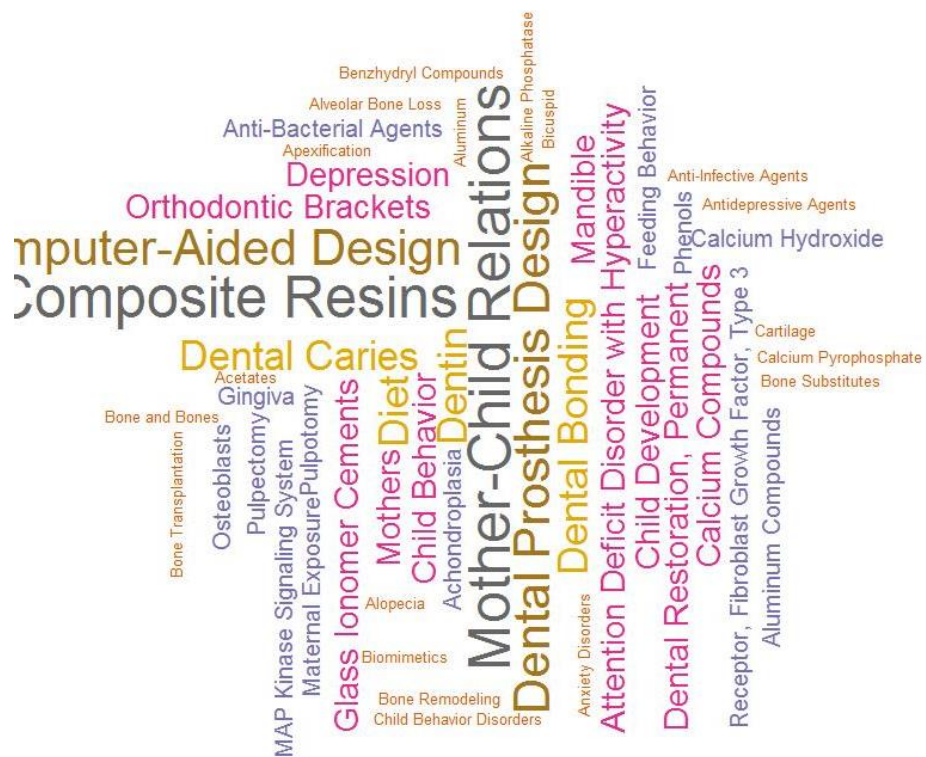
3. Investigation of the underlying mechanisms



4. Patient-centred « toxics-free » cares

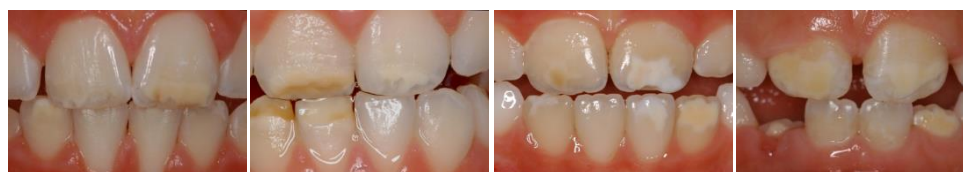






3. Environment: Endocrine Disruptor Chemicals

MIH - Molar Incisor Hypomineralization

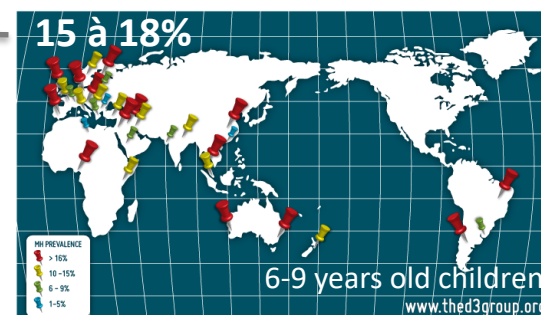


MIH - Score: 1AS

MIH - Score: 1AS

MIH - Score: 2b AS

MIH - Score: 3AS



Mineralization of permanent first molars and incisors



Environmental pollutants

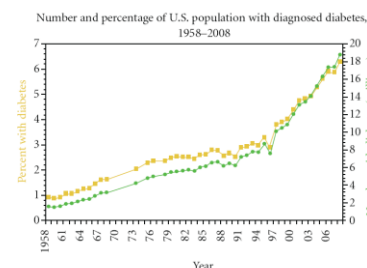
Endocrine Disruptor Chemicals EDCs

BPA

Anti-androgenic EDCs

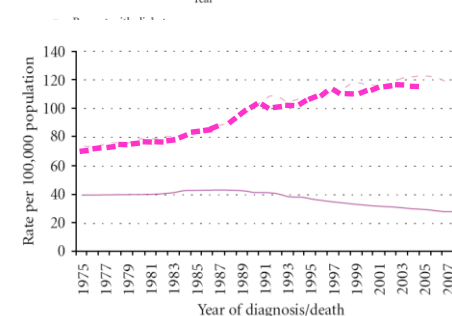
Phthalates

Fluoride ...



burst of
diseases

diabetes



?

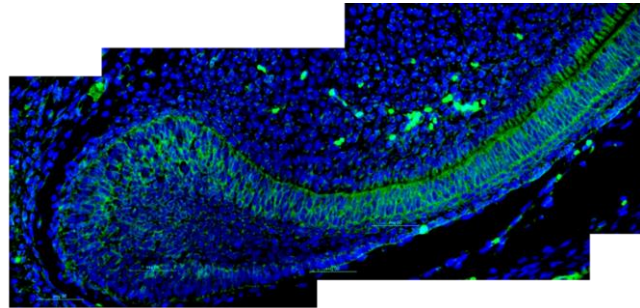
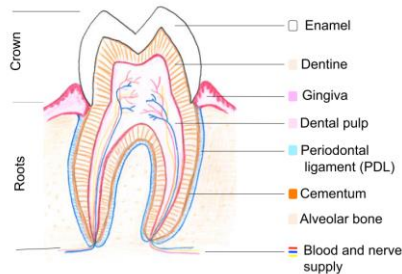
cancer

WHAT IS A TOOTH ?

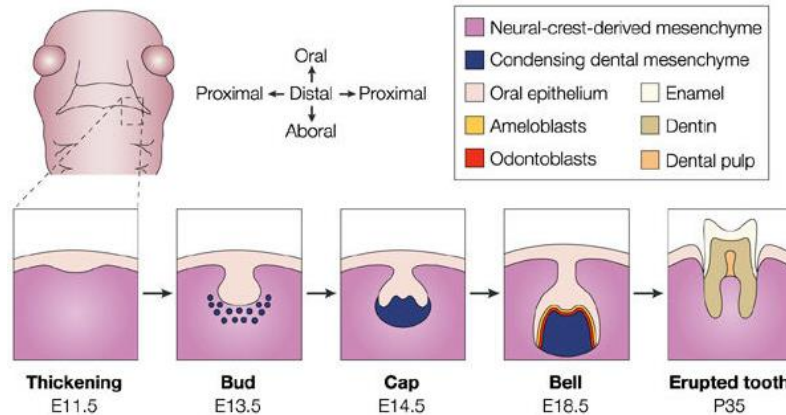
A **unique model** to study **Development:**
results from an **epithelial and mesenchymal crosstalk**

REVIEW

Paul T. Sharpe*

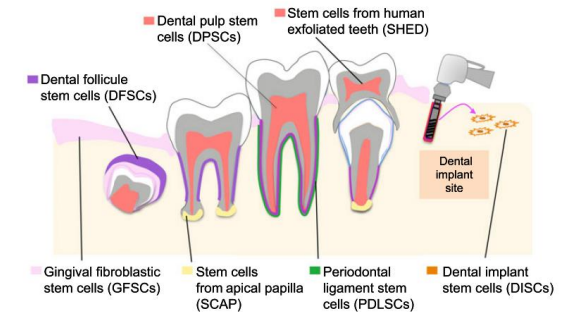


A complex organ with
several types of tissues
and several functions



REVIEW

Paul T. Sharpe*



A source of mesenchymal/stromal
stem cells derived from the neural
crests