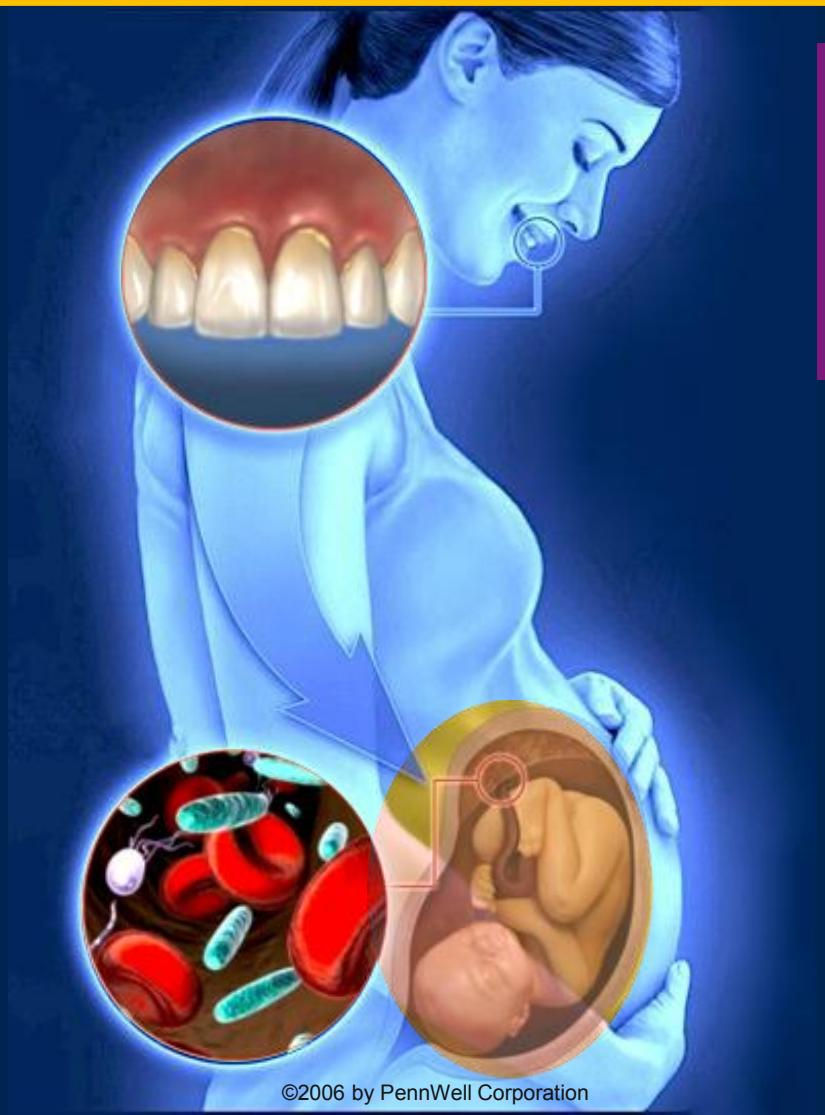
Maternal-Fetal Medicine and Perinatology Society of Turkey
X National Congress
October 27-30, 2016 Harbiye Military Museum, Istanbul/Turkey



oral health care and treatment of dental disorders in pregnancy

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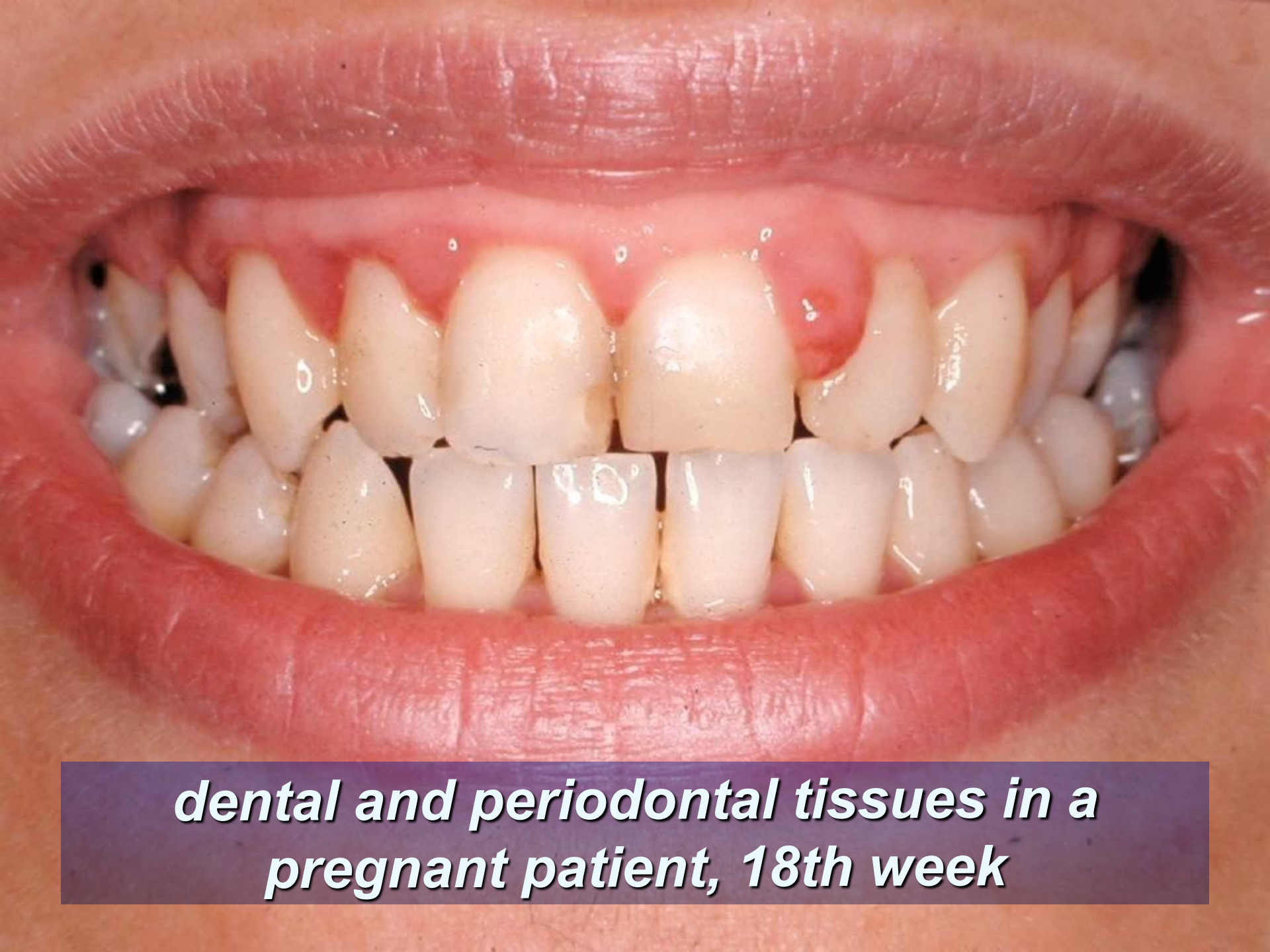
in recent years the relationship between oral conditions and diseases and pregnancy and newborn health has raised increasing attention in the scientific community

the main areas of interest for oral science

- **the vertical transmission of cariogenic bacteria and the prevention of caries in the newborn**
- **the onset and aggravation of gingival and periodontal disease in pregnancy**
- **the association of periodontal diseases with adverse pregnancy outcomes (PTB, LBW, IuFD)**

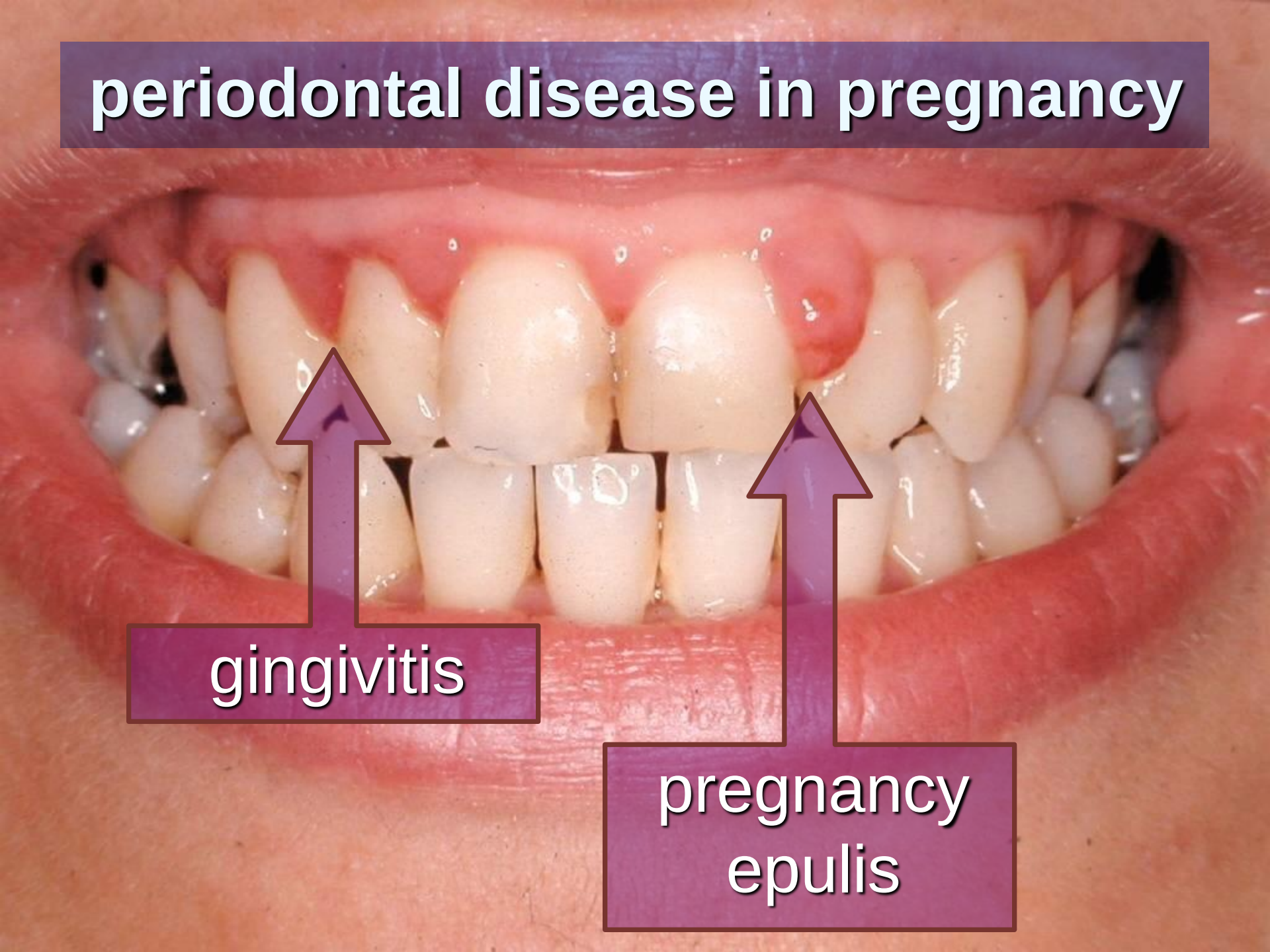


dental and periodontal tissues in a pregnant patient, 18th week

- during pregnancy hormonal and immunologic factors could lead to the onset or aggravation of periodontal diseases

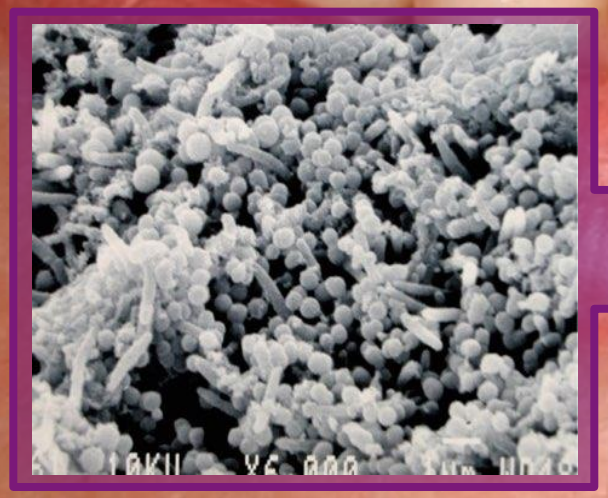
- the disease of gingiva are common in second and third trimester
- they develop after the 4th wk and rise to maximum after 32 wk

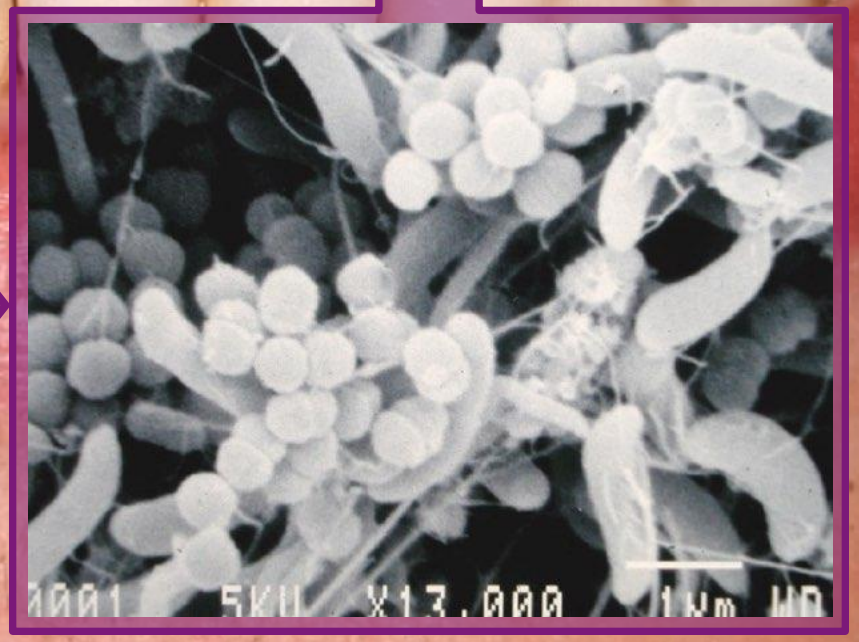
periodontal disease in pregnancy



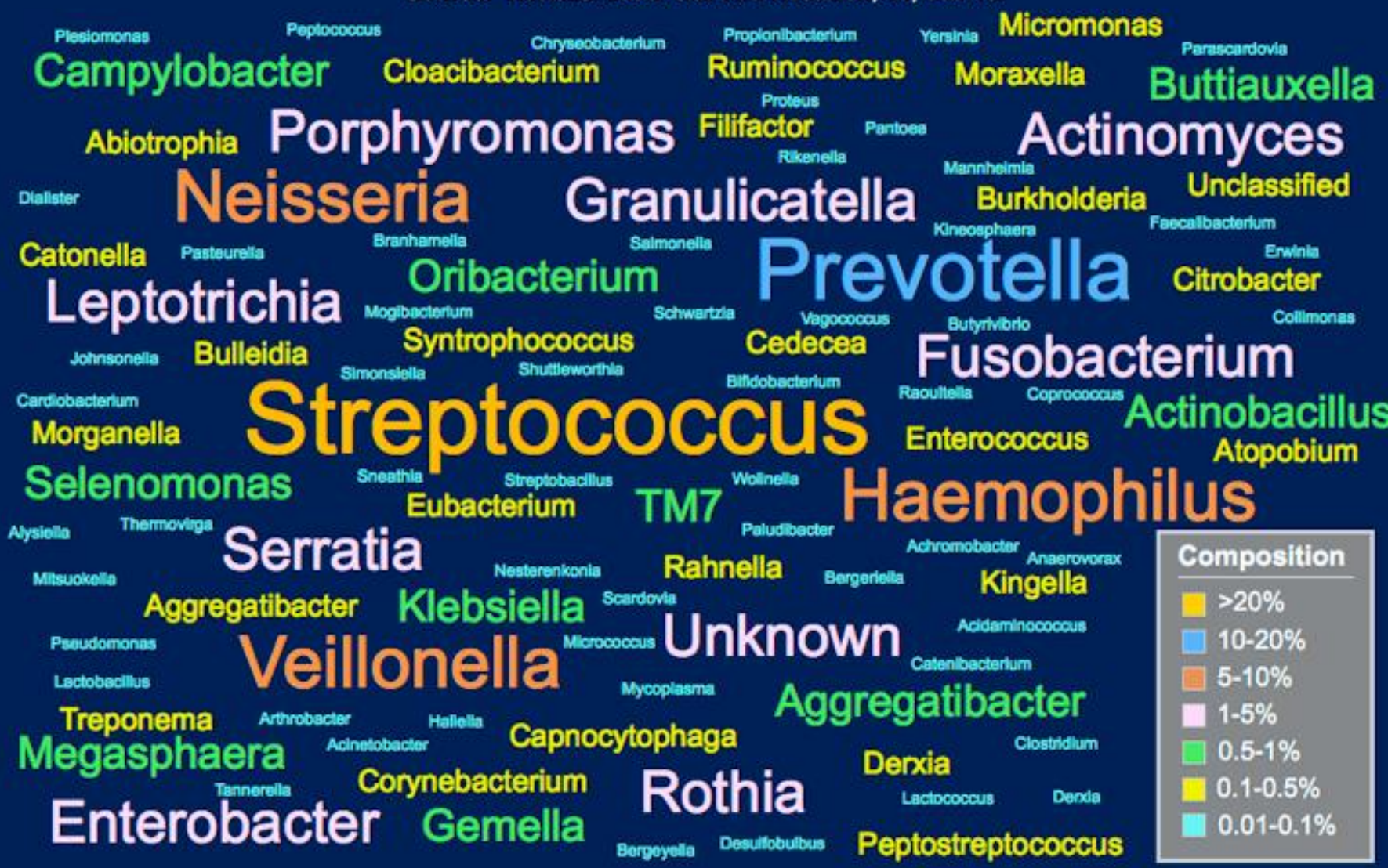
healthy periodontal biofilm

pathogenic periodontal biofilm

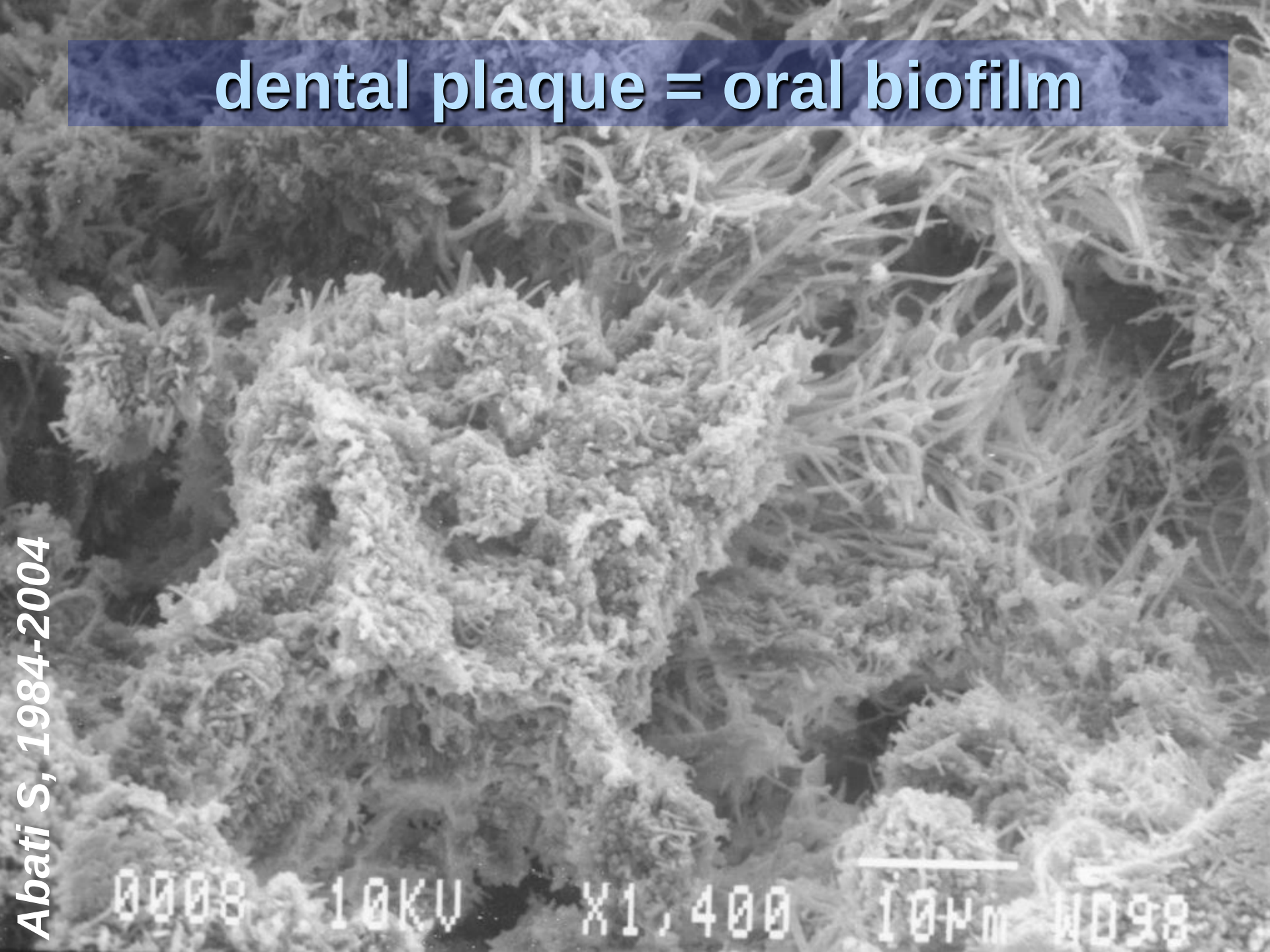




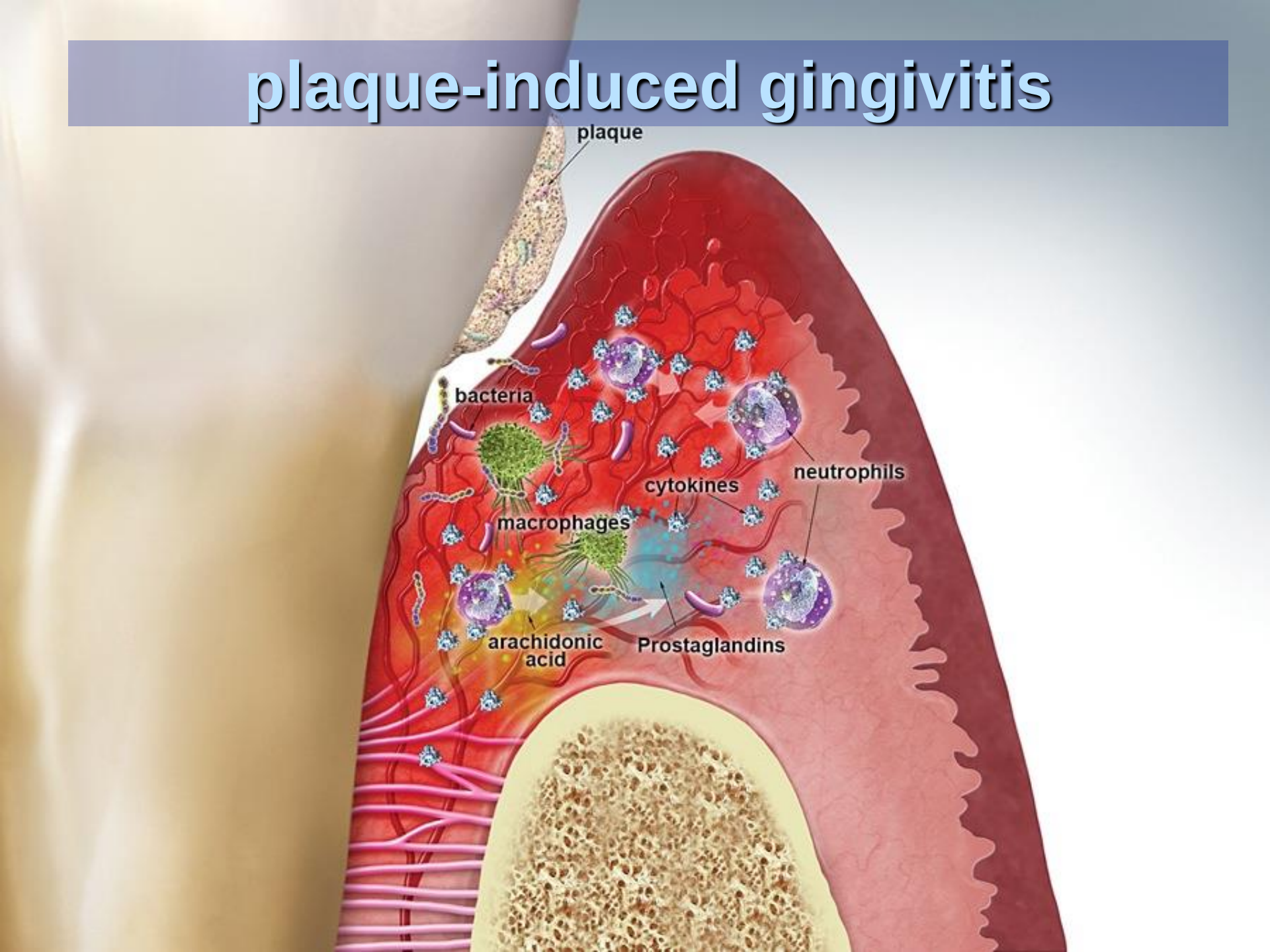
oral microbiome *word cloud*



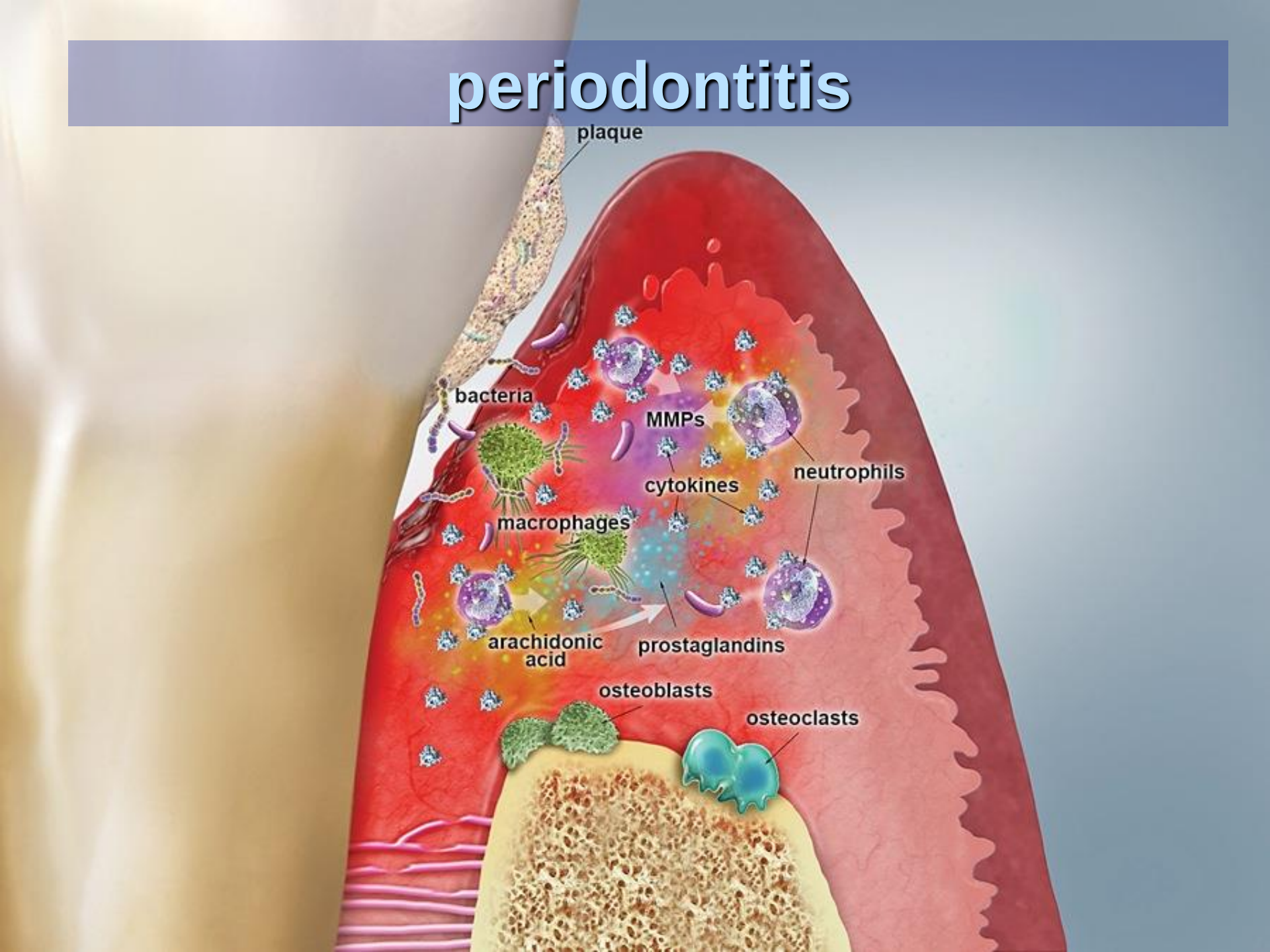
dental plaque = oral biofilm

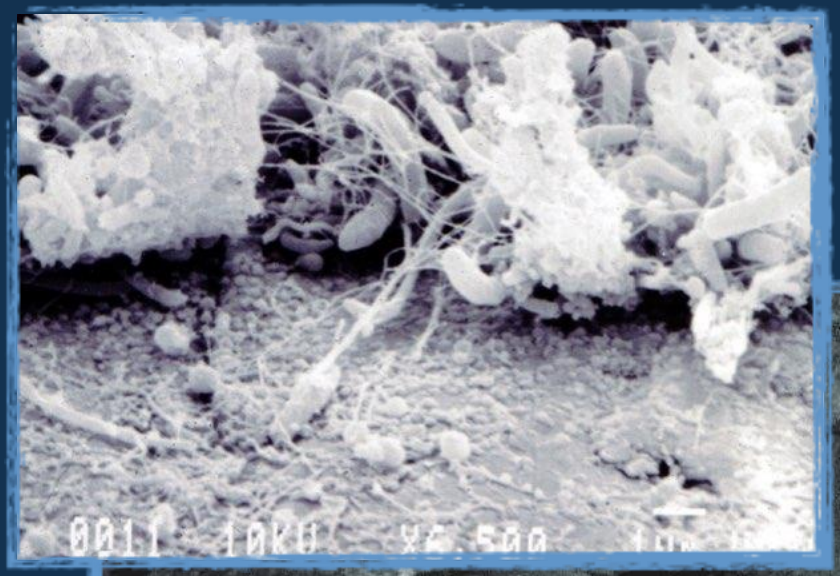


plaque-induced gingivitis

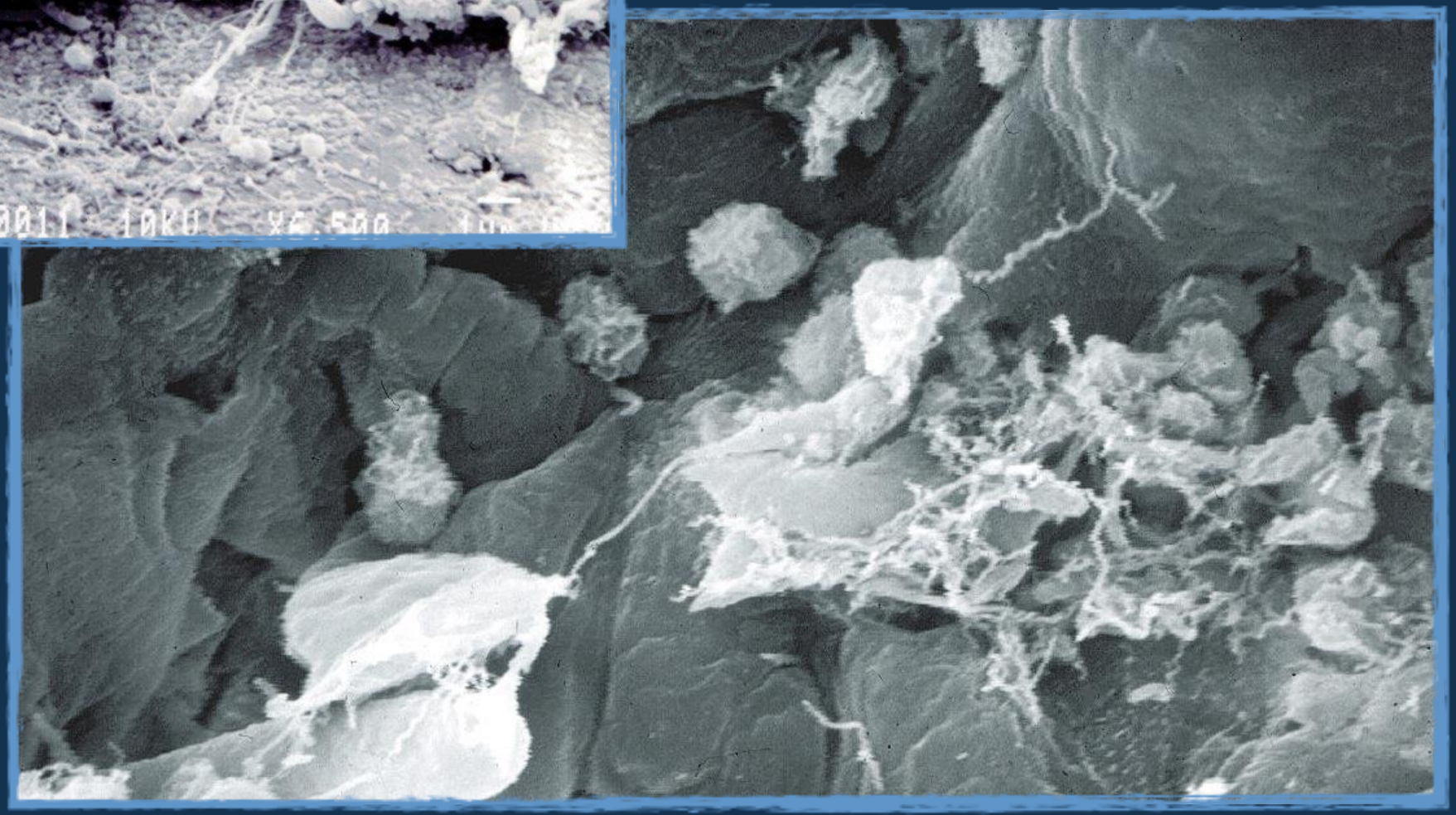


periodontitis





host-parasite interactions in diseased gingival sulcus



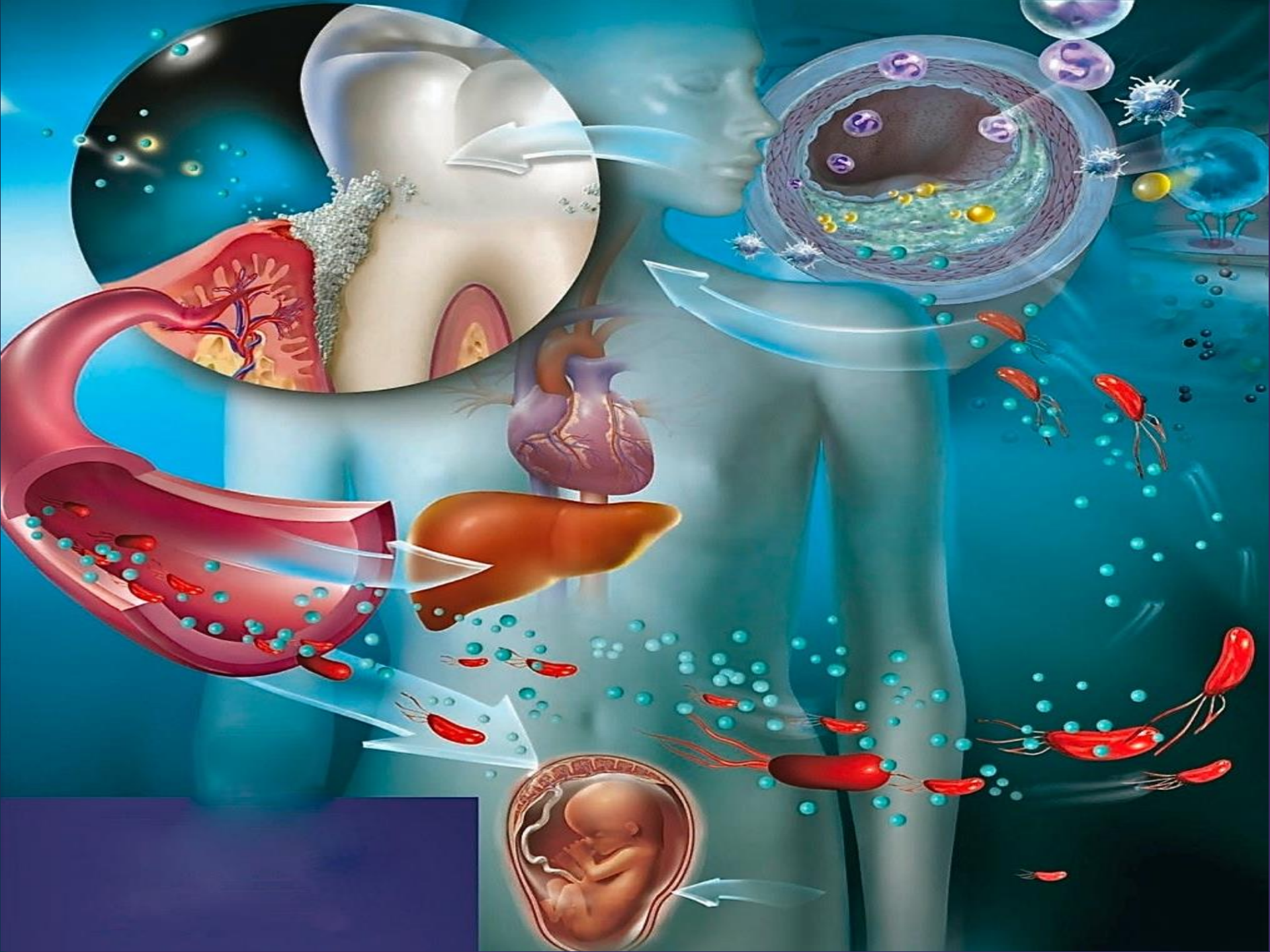
Abati S, 1984-2004

the activation of the neutrophil nicotinamide adenine dinucleotide phosphate-oxidase (NADPH oxidase) generates reactive oxygen species (ROS), followed by removal of ROS by intracellular antioxidant systems.


spontaneous a/o induced gingival bleeding
the main clinical sign of biofilm related gingival disease

bleeding from gingival disease

- this bleeding is not normal and signals ulceration between the tooth and gum
- in full-blown periodontal disease, the infected area around all 32 teeth becomes a huge ulcerated area, about *the size of the palm of your hand*
- these infected areas no longer have the natural mucosal barrier between the bacteria in dental plaque and the bloodstream
- bacteria and their product could enter the blood and travel to distant sites of our body



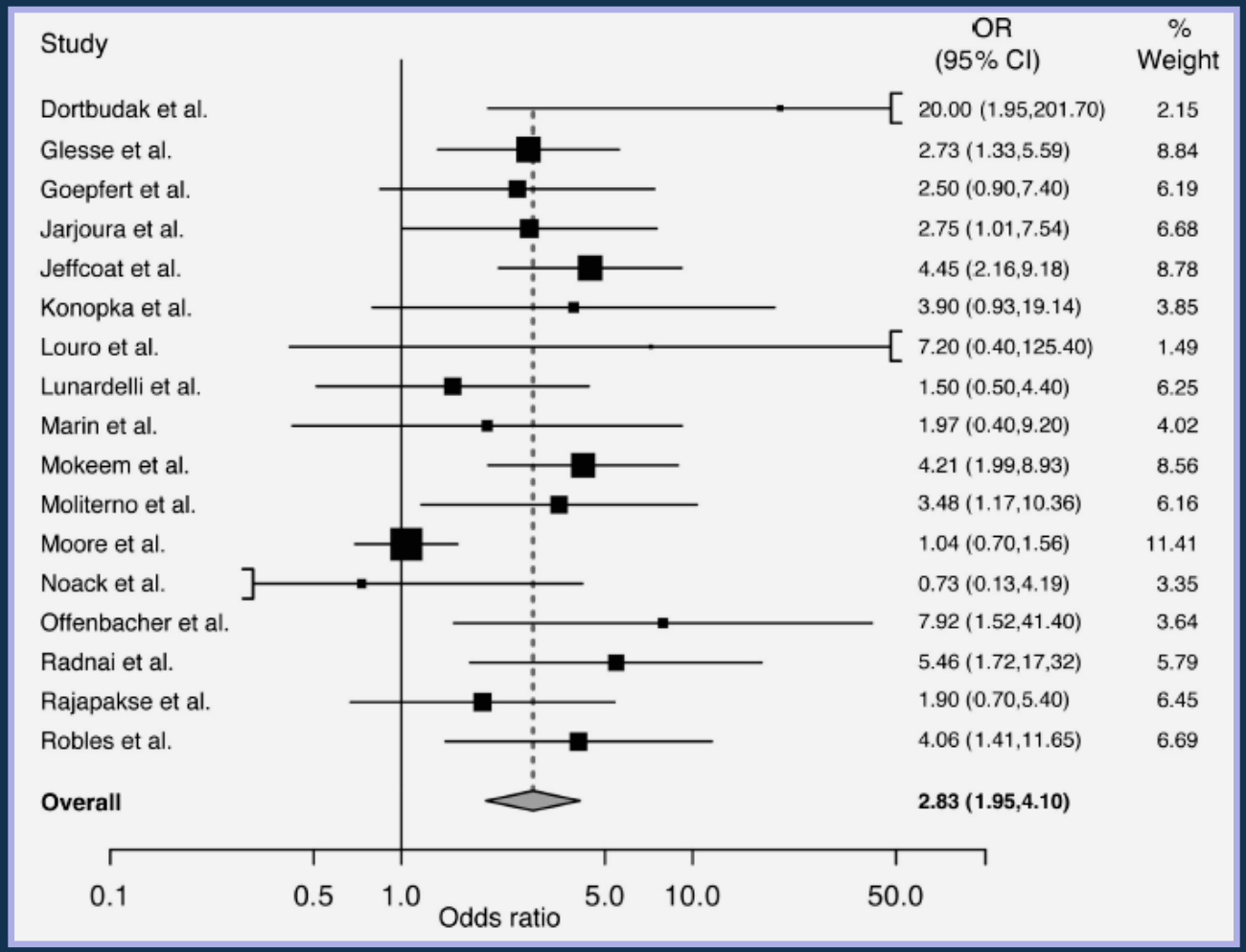
- since 30 years the relationship between oral infection and systemic inflammation has raised increasing attention in the scientific community
- in *OB/GYN field* growing evidence supports the concept that *gum infection may play a role in pregnancy complications*, possibly inducing miscarriage and premature birth as well as inhibiting the growth and development of the unborn child
- oral infection might be added to the list of many causes and possible risk factors for problems that can arise during pregnancy

association between periodontopatic bacteria, periodontal diseases and adverse pregnancy outcomes (miscarriage, PT/LBW, PD, IUGR, preclampsia, endouterine death)

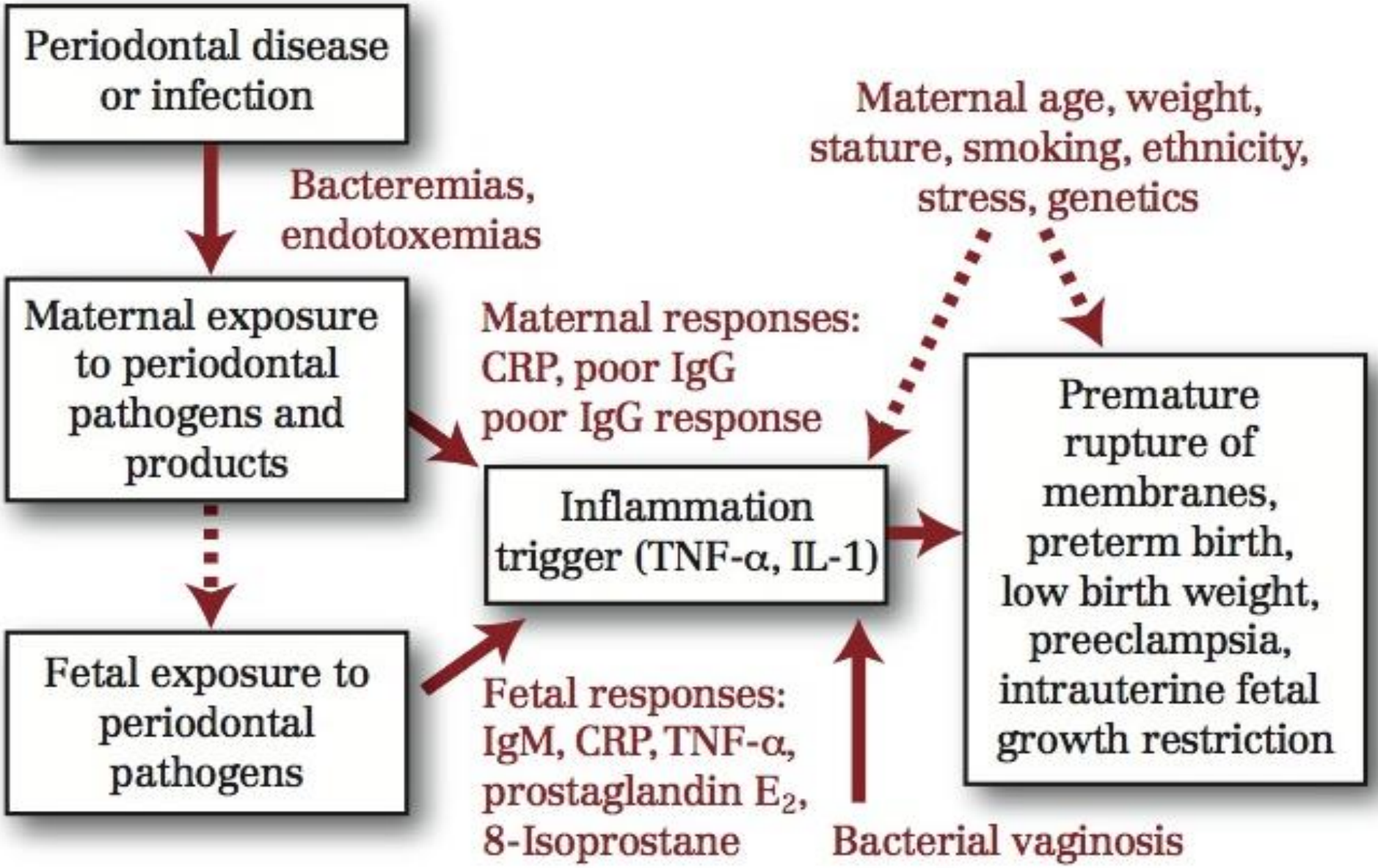
scientific evidences since ’80s

- animal and human studies
- associative studies
- cohort and case-control studies
- cross-sectional and longitudinal studies
- interventional studies

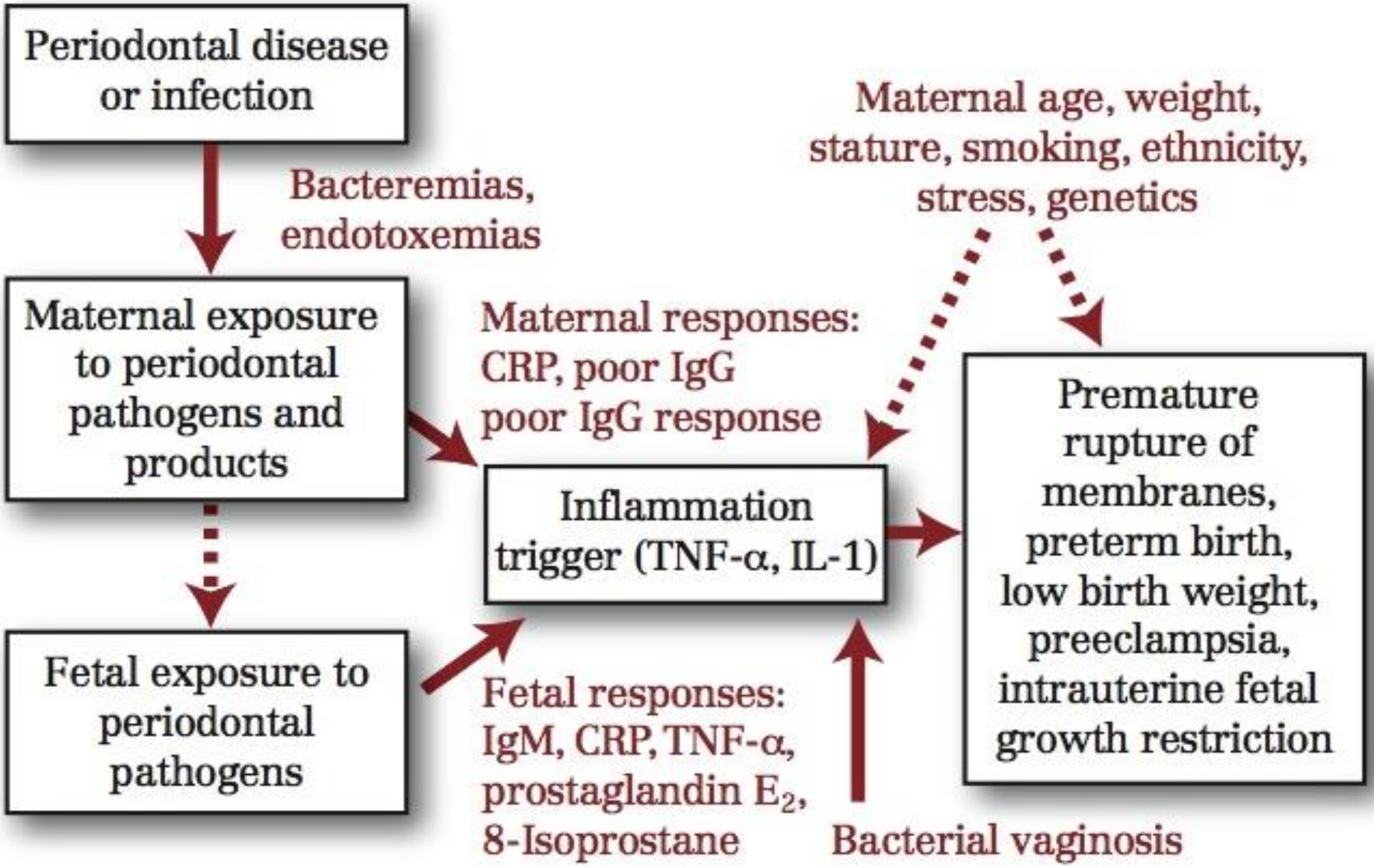
When oral bacteria in the mother's blood reaches the placenta and reaches the fetus, it triggers an immune and inflammatory response, stressing the unborn child; that baby's risk of being born early rises to 2.8 times that of an unexposed baby



Vergnes JN et al, 2007



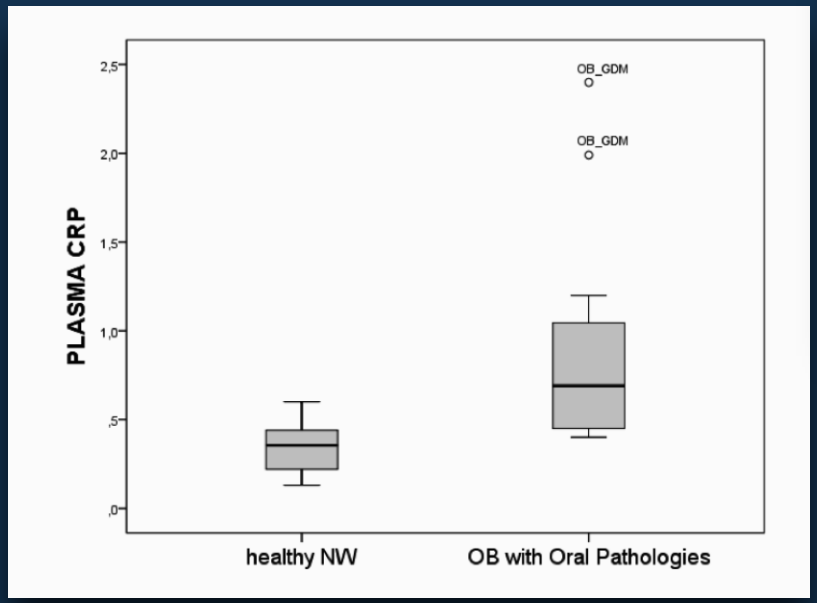
model for relationship between periodontal infection and adverse pregnancy outcomes

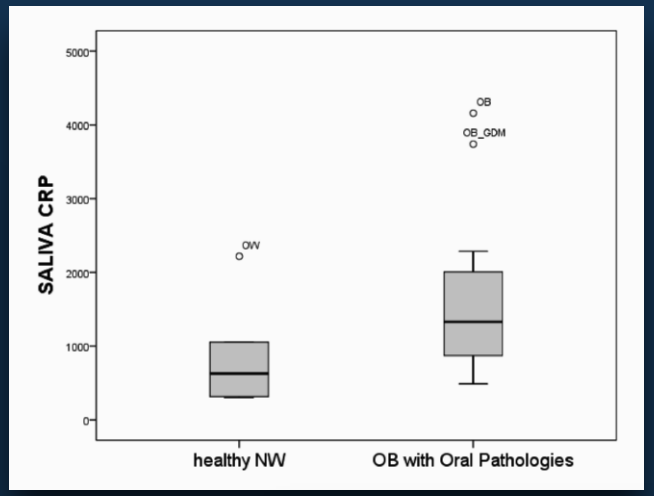


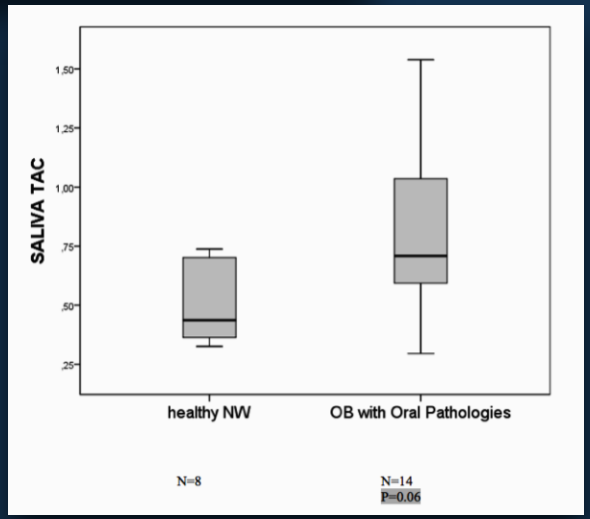
Cetin I et al. Pathogenic mechanisms linking periodontal diseases with adverse pregnancy outcomes. *Reprod Sci. 2012 Jun;19(6):633-41*

Mandò C, Abati S, Cetin I, et al. (2015-2016)

Salivary and systemic inflammatory markers in obese vs. normal weight pregnant patients with or without periodontal inflammation







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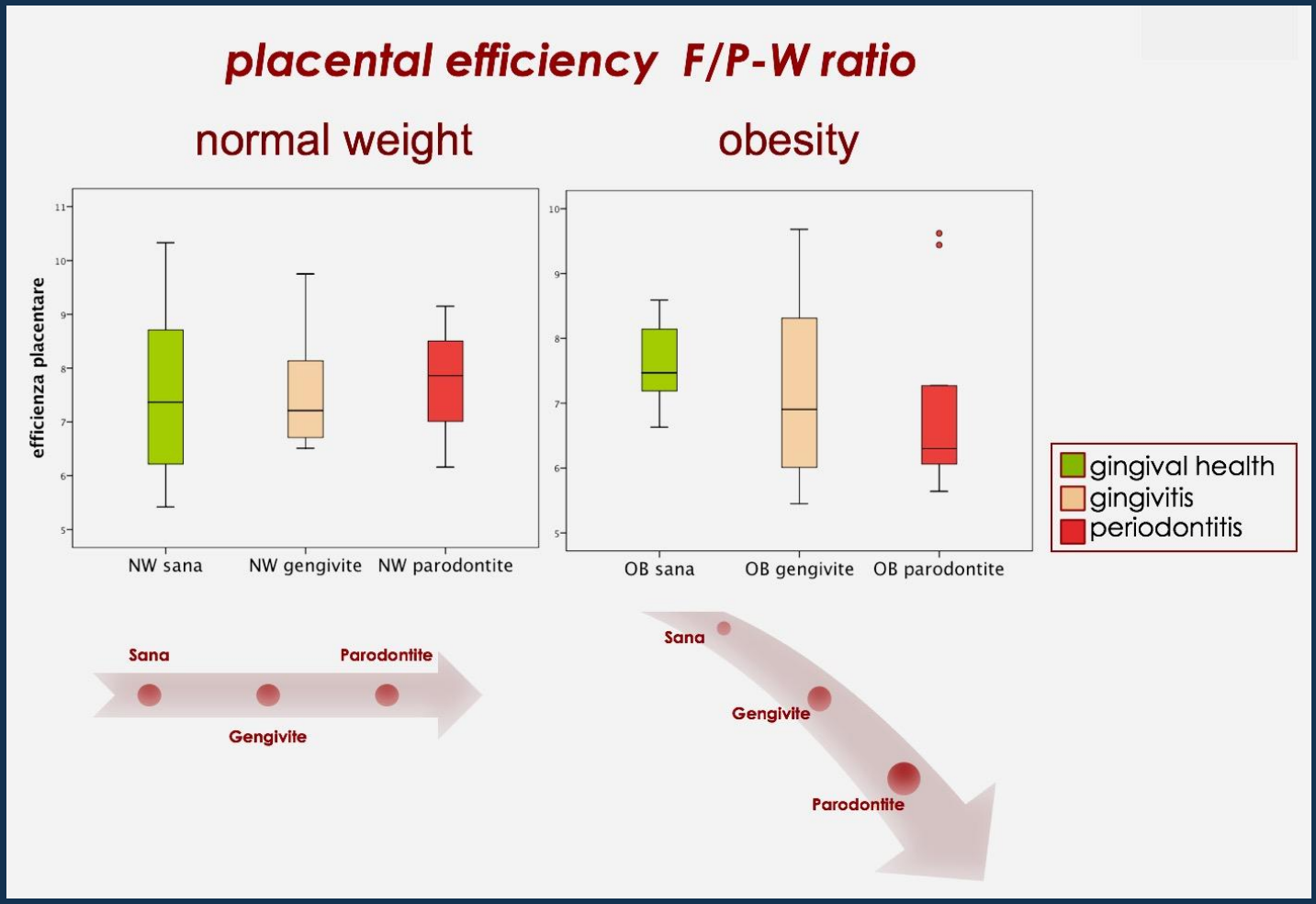

Arch Gynecol Obstet © Springer-Verlag 2011
DOI 10.1007/s00404-011-1916-8

Self-reported oral hygiene habits and periodontal symptoms among postpartum women

Alessandro Villa · Silvio Abati · Laura Strohmenger · Irene Cetin

Table 2 Logistic regression model of the association between periodontal disease and periodontal symptoms

	Total ($N = 409$) n (%)	Periodontal disease[a]		Odds ratio (95% CI)
		No ($N = 158$)	Yes ($N = 251$)	
Halitosis				
No	251 (61.4)	104 (41.4)	147 (58.6)	1.0
Yes	158 (38.6)	54 (34.2)	104 (65.8)	1.4 (0.9–2.1)
Gum bleeding				
No	119 (29.1)	49 (41.2)	70 (58.8)	1.0
Yes	290 (70.9)	109 (37.6)	181 (62.4)	1.2 (0.8–1.8)
Gum swelling				
No	331 (80.9)	135 (40.8)	196 (59.2)	1.0
Yes	78 (19.1)	23 (29.5)	55 (70.5)	1.7 (0.9–2.8)
Tooth mobility				
No	370 (90.5)	147 (39.7)	223 (60.3)	1.0
Yes	39 (9.5)	11 (28.2)	28 (71.8)	1.7 (0.8–3.5)

[a] Periodontal disease was defined as having at least 3 or more sites ≥4 mm CAL

S.Offenbacher in Scientific American special issue, 2006

WHAT EVERY WOMAN NEEDS TO KNOW

periodontal pathologies in pregnancy are preventable and treatable

pregnancy and oral health: facts

22-34%
of pregnant women consult a dentist during pregnancy

BUT ONLY

50%
of those women who need dental treatment actually receive the treatment they need

92%
of women have tooth decay

6%
of women experience gum disease

THE SOLUTION

visiting the dentist and receiving treatment for periodontal disease can reduce birth risks by as much as **28%**

THE PROBLEM

Periodontitis (Gum Disease) is associated with low birth weight and preterm birth

Moms with gum disease are

4 to 7

times more likely to deliver a premature baby with low-birth weight

12.3%
of all births in the U.S. are pre-term

guidance for prenatal oral prevention and care

- assess pregnant women's oral health status by the 12th week
- advice pregnant women about oral health care
- work in collaboration with oral health professionals, which should provide professional hygienic treatment and personalized oral hygiene instruction

dental care is safe and essential during pregnancy

- **diagnostic measures, including needed dental x-rays, scaling and root planing to control periodontal disease can be undertaken safely; dental treatments, including root-canal therapy and tooth extraction *can be undertaken safely***
- ***emergency care and treatments for acute oral infection* should be provided at any time during pregnancy**
- **a number of antibiotics are safe for use, avoid *metronidazole* and *tetracycline*; avoid *nsaids* and *aspirin* in third trimester**

dental care is safe and essential during pregnancy

INDICATIONS	RADIOGRAPHS	ANALGESICS (with FDA Category*)	LOCAL ANESTHETIC (with FDA Category*)	AMALGAM PLACEMENT OR REMOVAL	NITROUS OXIDE	ANESTHESIA	ANTIBIOTICS & ANTI-INFECTIVES (with FDA Category*)
Anytime During Pregnancy	Diagnostic x-rays are safe during pregnancy Use neck (thyroid collar) and abdomen shield	Acetaminophen (B) Meperidine (B) Morphine (B) Codeine (C) Acetaminophen + Codeine (C) Acetaminophen + Hydrocodone (C) e.g. Vicodin Acetaminophen + Oxycodone (C) e.g. Percocet	Lidocaine with epinephrine (2%) (B), considered safe during pregnancy Mepivacaine (3%) (C), use if benefit outweighs possible risk to fetus	No evidence that the type of mercury released from existing fillings harms the fetus Use rubber dam and high-speed evacuation to reduce mercury vapor inhalation	30% nitrous oxide can be used when topical or local anesthetics are inadequate Pregnant women require lower levels of nitrous oxide to achieve sedation		Penicillin (B) Amoxicillin (B) Cephalosporins (B) Clindamycin (B) Erythromycin not in estolate form (B) Quinolones (C) Clarithromycin (C) As prophylaxis for dental surgery: use same criteria for all people at risk for bacteremia
1st Trimester (1-13 WEEKS)	Spontaneous pregnancy loss occurs in 10-15% of all clinically-recognized pregnancies in the first trimester. Most losses are due to chromosome abnormalities. Yet, women may prefer to wait until the second trimester (14th week) for dental care.						AVOID: Metronidazole (B)
2nd Trimester (14-27 WEEKS)							
3rd Trimester (28-40 WEEKS)		NEVER USE NSAIDs e.g. Ibuprofen or Indomethacin					AVOID: Sulfonamides (C)

oral health and pregnancy: key points and messages

- pregnancy is not a reason to defer routine dental preventive care or treatment
- delay in necessary treatment could cause unforeseen harm to the mother and possibly to the fetus


thank you for your kind attention !!!
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