



Mother & Childcare

For professionals

# Oral Health During Pregnancy

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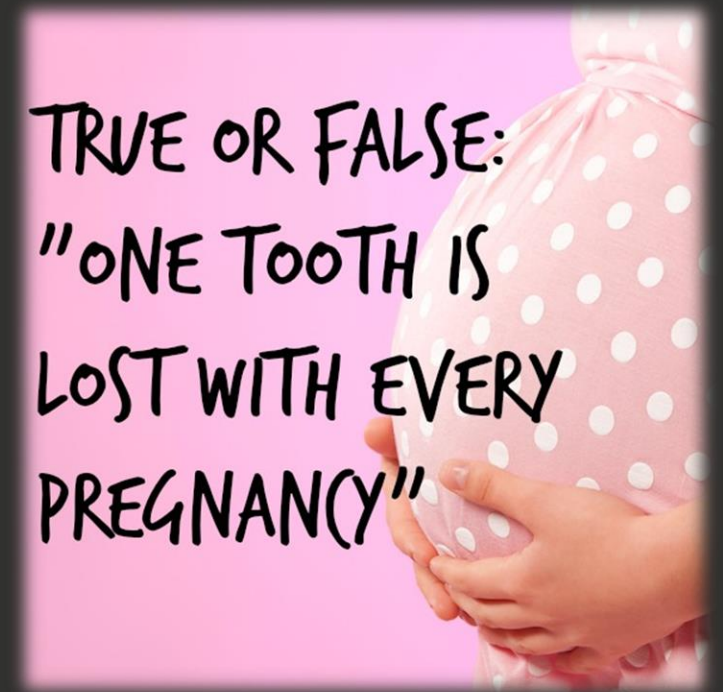


# Conflict of interest statement

- There is no conflict of interest for presenter relative to this lecture, including financial relationships

# Subjects

- ❖ What is gingivitis and periodontitis
- ❖ Pregnancy vs. gingivitis
- ❖ Pregnancy vs. periodontitis
- ❖ Periodontitis vs. pregnancy
- ❖ Postpartum care
- ❖ Summary



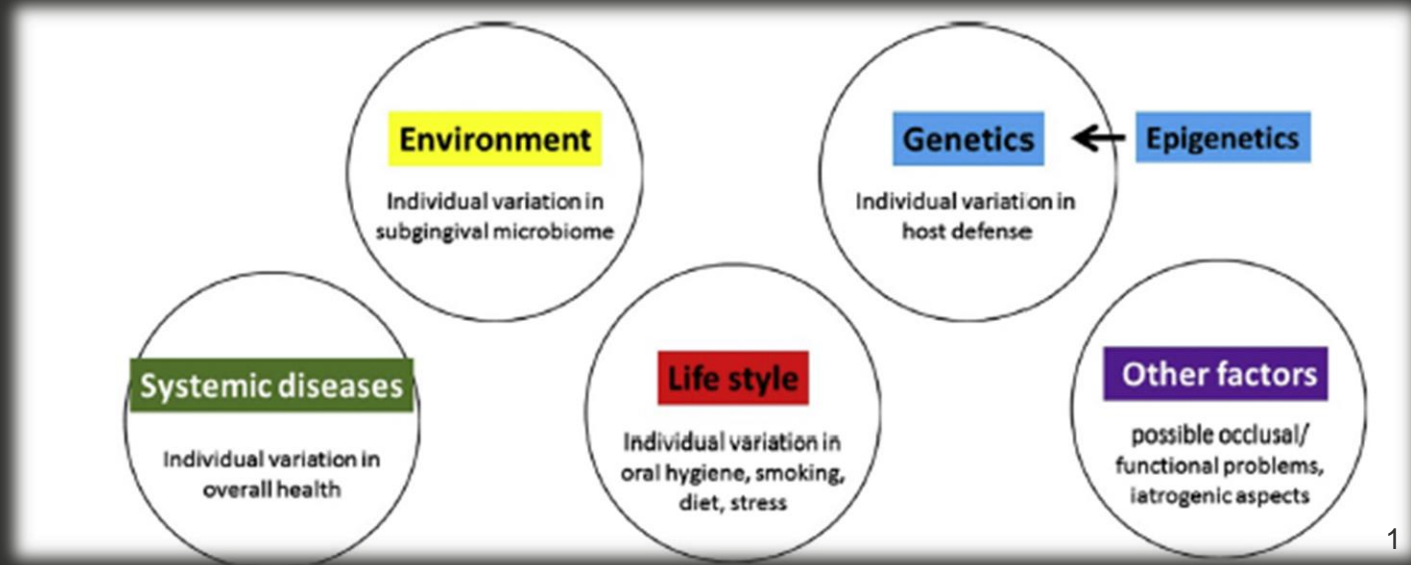
# Gingivitis



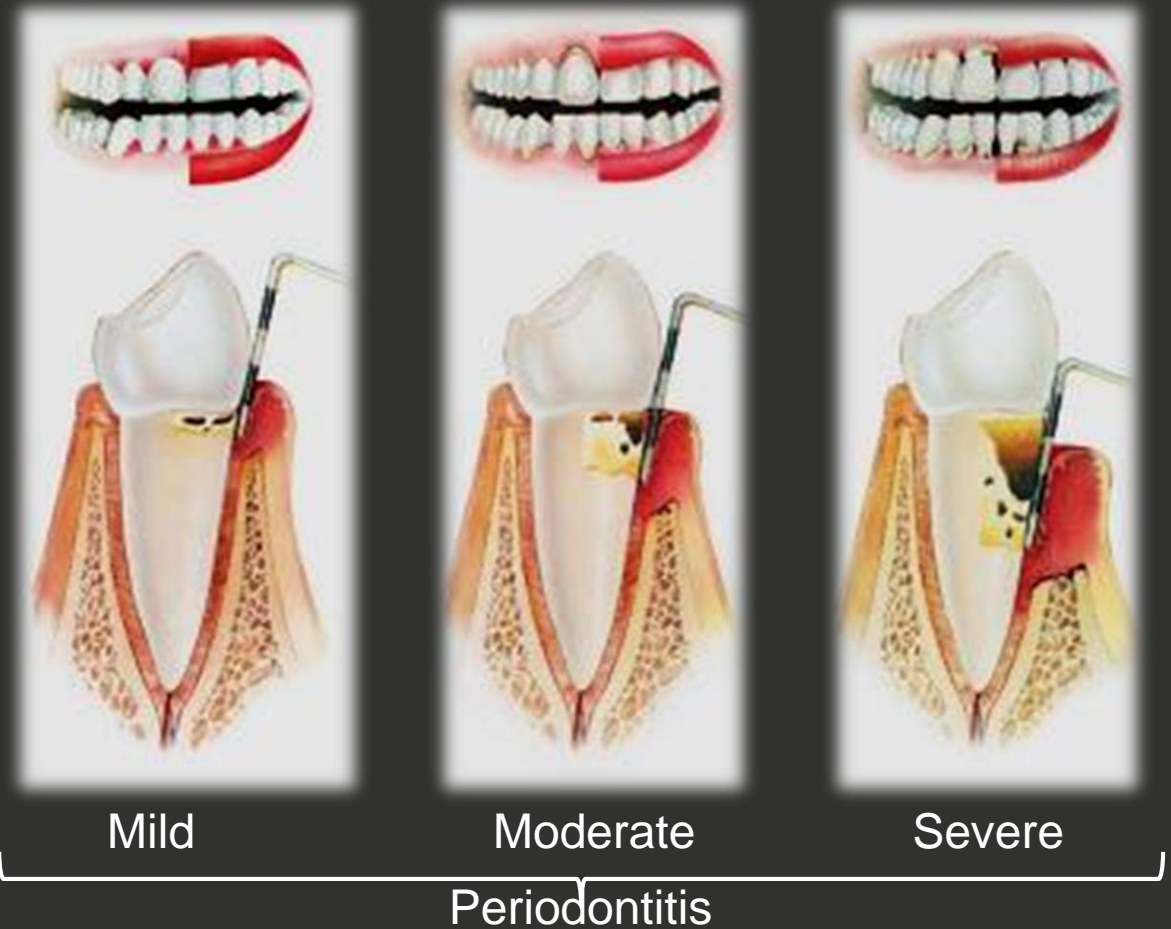
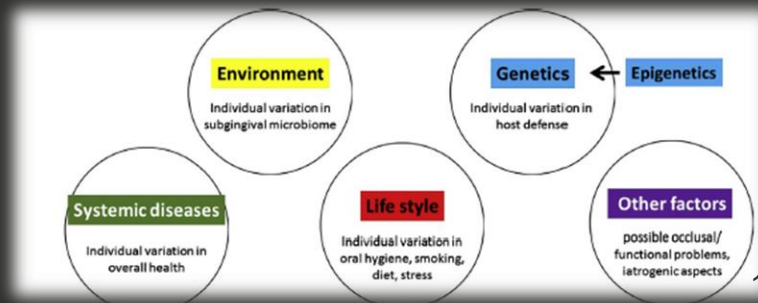
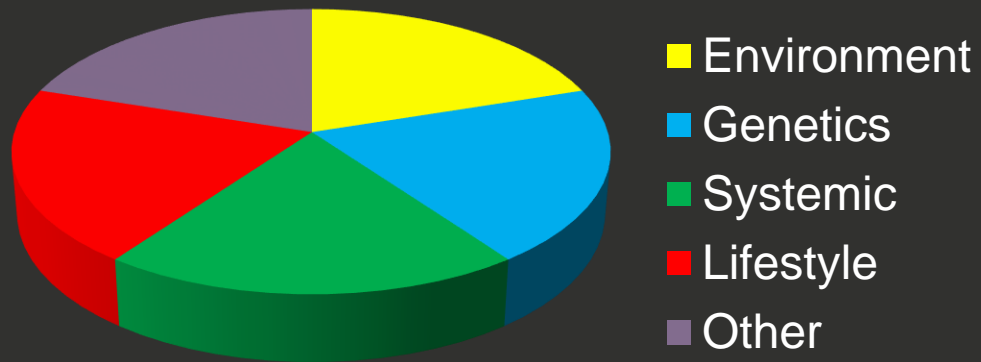
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Gingivitis



# Periodontitis



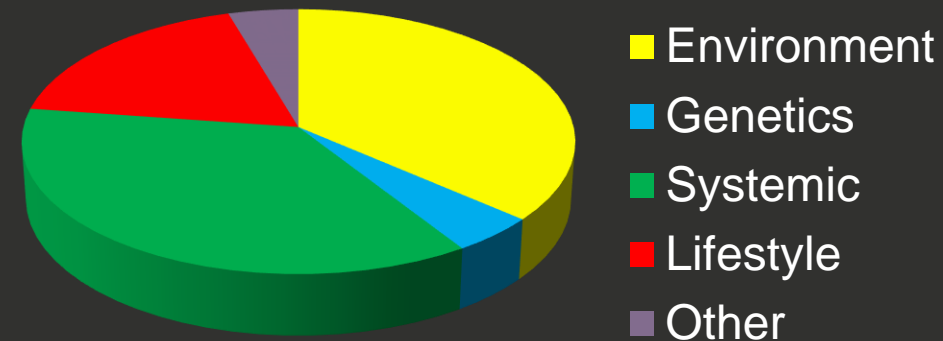
# Pregnancy vs. gingivitis

## ❖Pregnancy gingivitis

- Prevalence 30-100%<sup>2</sup>

## ❖Etiology:

- Dental plaque (if good oral hygiene no inflammation)<sup>3,4</sup>
- Exacerbation of inflammation by endogenous sex steroid hormones<sup>3,4</sup>
- Hypotheses<sup>2,4</sup>:
  - Increased vascularity
  - Cellular changes
  - Depression of maternal immune system
  - Changes in biofilm





# Pregnancy vs. gingivitis

## ❖Therapy:

- Preferable to prevent
- Regular check-ups
- Personalized oral hygiene program
- Regular plaque removal by a professional

## ❖Postpartum:

- Decrease in gingival inflammation
- Decrease in sites with probing pocket depth  $>3$  mm, but remains significantly higher than initial phase of pregnancy (8-10 weeks)<sup>5</sup>

# Pregnancy vs. gingivitis

## ❖ Pyogenic granuloma (Epulis Gravidarum)

### ❖ Etiology:

- Largely unknown
- Thought to be same as pregnancy gingivitis

### ❖ Therapy:

- Oral hygiene instructions and plaque removal by a professional
- Sometimes disappears after delivery when plaque is removed
- Surgical removal after delivery
- If functional problems during pregnancy → surgical removal
  - High chance of recurrence





# Pregnancy vs. periodontitis

- ❖ Prevalence of periodontitis during pregnancy: 5-20% (comparable to general population)
- ❖ During pregnancy
  - Pregnancy probably not an etiological factor
  - Progression of periodontitis may be affected
- ❖ Pregnancy gingivitis could play a role in acquiring periodontitis at a later stage
- ❖ Therapy same as non-pregnant women
  - Periodontal therapy has no adverse effects on pregnancy<sup>6</sup>

# Periodontitis vs. pregnancy

❖ Presence of periodontitis during pregnancy has a modest but independent association with:

- Preterm birth (<37 weeks gestation)<sup>7</sup>
- Low birth-weight (<2500 g)<sup>7</sup>
- Gestational diabetes<sup>8</sup>

❖ Limitation of studies:

- High variability in populations, recruitment, data recoding and analysis

# Periodontitis and complications in pregnancy: mechanisms<sup>9</sup>

## ❖ During pregnancy suppression of immune response:

- A shift from Th-1 to Th-2 response
  - Dampening of Th17 and increases  $T_{reg}$  cells
  - $T_{reg}$  cells play an important role in immune suppression
- Inflammation interferes with this shift:
  - More Th-1 response
  - Activation of macrophages, nitric oxide and  $TNF-\alpha$
  - Bacterial and fungal pathogens elicit Th-17 response
    - imbalance in Th-17 -  $T_{reg}$  cells proportions

# Periodontitis and complications in pregnancy: mechanisms

## ❖ Effect of pregnancy on oral microbiome:

- Progesterone and estradiol can be used by *P. intermedia* and *P. gingivalis* as a growth factor → shift in subgingival biofilm<sup>11</sup>
- Increase of other periodontal pathogen in subjects with periodontitis:
  - *A. actinomycetemcomitans* during pregnancy → associated with preterm birth<sup>12</sup>

## ❖ Placenta microbiome is more similar to oral microbiome than to genital tract<sup>10</sup>

## ❖ Oral bacterial can reach the maternal-fetal unit and cause alterations<sup>9</sup> (Causing different outcome is questionable)

## ❖ Associations of bacteria with preterm birth: presence of *P. gingivalis* antibody and higher expression of TLR-4 in placenta (induced by LPS)<sup>9</sup>

# Effect of Periodontal therapy on complications in pregnancy<sup>6</sup>

- ❖ Periodontal therapy not harmful for pregnancy
- ❖ Improvement in periodontal parameters
- ❖ No effect on pregnancy outcomes (preterm birth and low birth-weight)

# Postpartum care

## ❖Transmission of bacteria

- Periodontal as well as cariogenic bacteria
- Transmission via common parenting behavior: sharing spoon or licking pacifiers
  - Fewer bacteria in pregnant mothers → delay of transmission

## ❖Dental visits as early as possible (6 month - 1 year)

- Getting familiar with the environment
- Personalized oral care instructions





# Clinical recommendations

- ❖ Good oral hygiene
- ❖ Regular periodontal screening by dental professionals is important: before, during and after the pregnancy
- ❖ According to American College of Obstetricians and Gynecologists (2013):
  - Regular dental care for good oral and general health of the mother
  - Oral health care during pregnancy is safe and should be recommended
  - Improved oral health of the mother → decrease transmission of bacteria

# Summary

- ❖ High prevalence of pregnancy gingivitis
- ❖ Pregnancy can exacerbate periodontitis
- ❖ Periodontitis is associated with preterm birth and low birth-weight
- ❖ Periodontal therapy is safe during pregnancy and improves periodontal health of the mother
- ❖ Periodontal therapy has no effect on preterm birth and low birth-weight
- ❖ Transmission of oral bacteria from mother to baby
- ❖ Good oral hygiene and regular dental visits is recommended

# THE END



## Questions?