Antibiotici in odontoiatria

A scopo profilattico
Per prevenire una batteriemia nel corso di interventi sul cavo orale

A scopo terapeutico
Nelle infezioni del cavo orale

Gli antibiotici nelle infezioni del cavo orale

American Academy of Pediatric Dentistry (AAPD)

1. Oral Wound Management. Antibiotic therapy should be considered with oral wounds that are at an increased risk of bacterial contamination. Examples are: soft tissue lacerations, complicated crown fractures, severe tooth displacement, extensive gingivectomy, and severe ulcerations.
2. Pulpitis/apical periodontitis/draining sinus tract/localized intraoral swelling. If child has acute symptoms of pulpitis and the infection is contained within the pulpal tissue or the immediate surrounding tissue, treatment should be performed and an antibiotic should not be prescribed.
3. Acute facial swelling of dental origin. Facial swelling secondary to a dental infection should receive immediate dental attention. Treatment is usually either, extracting or treating the tooth with antibiotic coverage or antibiotic coverage for a few days to contain the spread of the infection and then treat the tooth.
4. Dental Trauma. Antibiotic to the root surface of an avulsed tooth is recommended to prevent resorption and increase rate of pulpal revascularization. Systemic antibiotics are unclear as to the necessity to use them with avulsions.
5. Pediatric periodontal diseases. In pediatric periodontal diseases associated with other systemic diseases such as nuetropenia, Papillon-LeFevre syndrome, and leukocyte adhesion deficiency, antibiotic therapy is indicated.
6. Viral diseases. The only indication to use antibiotics with a viral infection is if there is evidence of a secondary bacterial infection exists.

Table 2 Indications for antibiotics as an adjunct during endodontic therapies (references in the text)

Pulp/Periapical condition	Clinical and radiographic data	Antibiotics as adjunct
Symptomatic irreversible pulpitis	• Pain • No others symptoms and signs of infection	NO
Pulp necrosis	• Nonvital teeth • Widening of periodontal space	NO
Acute apical periodontitis	• Pain • Pain to percussion and biting • Widening of periodontal space	NO
Chronic apical abscess	• Teeth with sinus tract • Periapical radiolucency	NO
Acute apical abscess with no systemic involvement	• Localized fluctuant swellings	NO
Acute apical abscess in medically compromised patients	• Localized fluctuant swellings • Patient with systemic disease causing impaired immunologic function	YES
Acute apical abscess with systemic involvement	• Localized fluctuant swellings • Elevated body temperature (>38 °C) • Malaise • Lymphadenopathy • Trismus	YES
Progressive infections	• Rapid onset of severe infection (less than 24 h) • Cellulitis or a spreading infection • Osteomyelitis	YES
Persistent infections	• Chronic exudation, which is not resolved by regular intracanal procedures and medications	YES

Table 3 Indications for systemic antibiotics as adjuncts during the treatment of traumatic injuries of the teeth (references in the text)

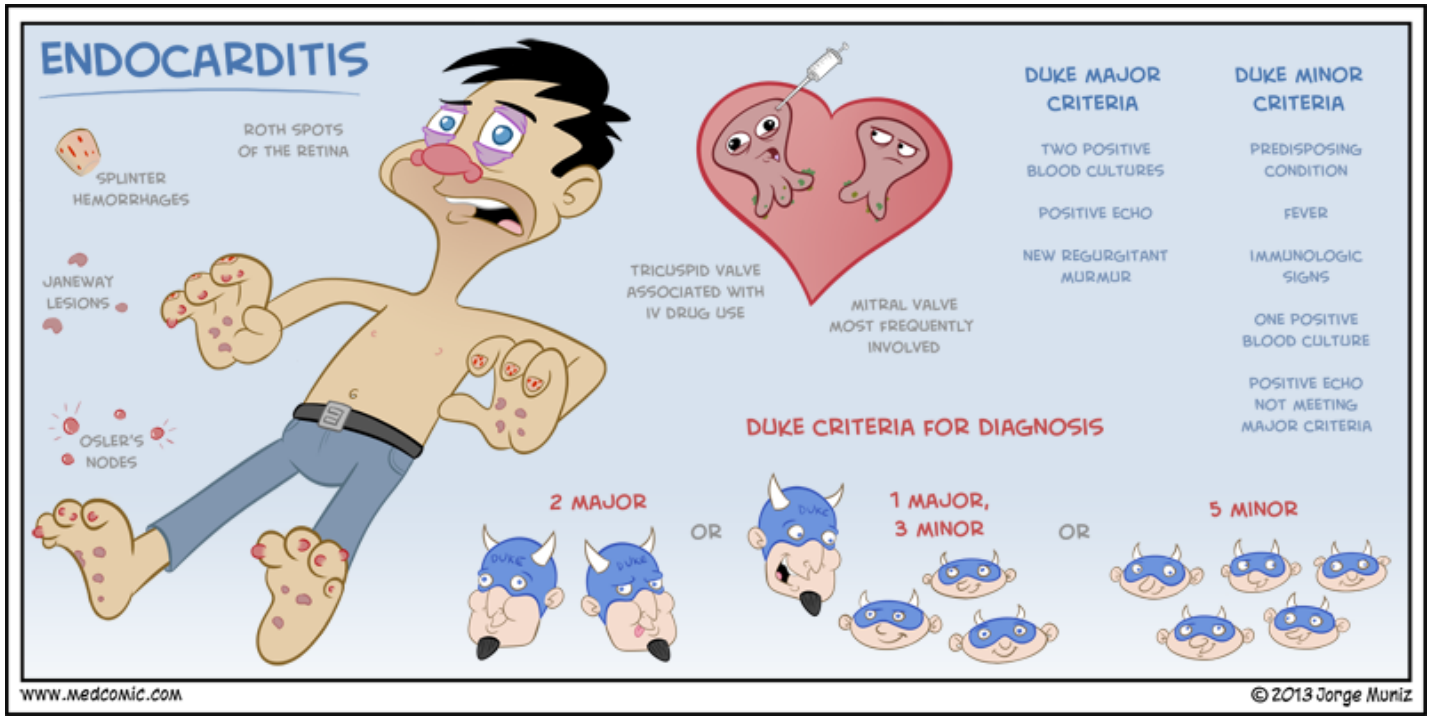
Traumatic injury	Systemic antibiotics as adjunct	Type of antibiotic
Tooth fracture	NO	–
Concussion, Subluxation	NO	–
Luxation injuries of permanent dentition	NO	–
Extrusion	NO	–

Profilassi antibiotica

- Per la maggior parte delle procedure chirurgiche odontoiatriche in pazienti non immunocompromessi, l'antibiotico profilassi non è indicata (Lavier et al. Aust Dent J 2005)
- Profilassi dell'endocardite

«Infective endocarditis is characterized by colonization or invasion of the heart valves or the mural endocardium by a microbe, leading to the formation of bulky, friable vegetations composed of thrombotic debris and organisms, often associated with destruction of the underlying cardiac tissues.»

Robbins and Cotran
Pathologic Basis of Disease (7° Edition)



LESIONE CARDIACA PREESISTENTE

BATTERIEMIA TRANSITORIA

DANNO ENDOTELIALE

TROMBO STERILE (endocardite trombotica non batterica)

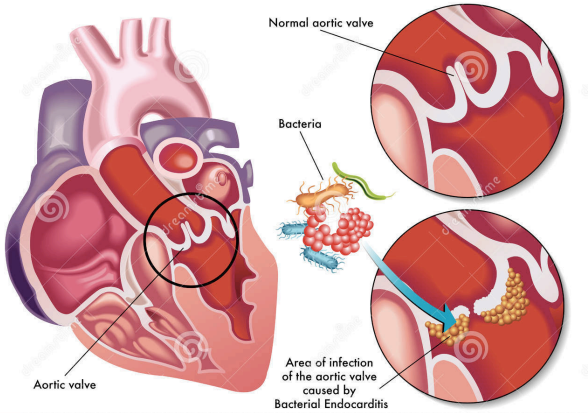
ADESIONE DEI BATTERI

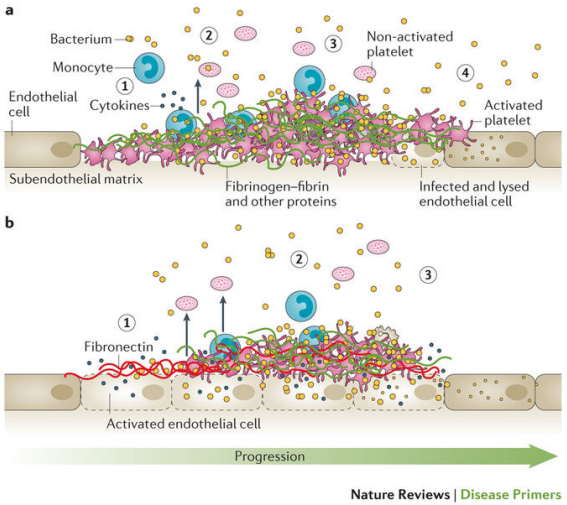
FORMAZIONE DI MICROCOLONIE BATTERICHE

VEGETAZIONE (endocardite batterica)

Effetti distruttivi locali

Embolizzazioni, infezioni focali, complicanze legate alla risposta dell'ospite





Batteriemia	0 – 25%	25 -50%	50 -80%
Procedure odontoiatriche	Scaling and root planing Profilassi perioodontale	Estrazione di un dente Chirurgia periodontale	Estrazioni multiple
Procedure di igiene orale	Spazzolarsi i denti	Scovolini interdentali Filo interdentale Irrigatore orale Masticazione	

Masticare il cibo e lavarsi i denti può causare batteriemia.

Profilassi dell'endocardite

Esclusivamente nei pazienti con patologie cardiache a rischio elevato di sviluppare endocardite:

- protesi valvolari cardiache,
- antecedente endocardite batterica,
- Portatori di cardiopatie congenite (cardiopatie cianogene non corrette, cardiopatie corrette completamente ma con impianto di materiale protesico per i primi 6 mesi dopo l'intervento, cardiopatie non corrette completamente dove la permanenza del difetto è contigua a materiale protesico)
- Portatori di trapianto cardiaco che sviluppino una valvulopatia.

Che si sottopongono a procedure odontoiatriche che prevedono manipolazione del tessuto gengivale o della regione periapicale dei denti, o perforazione della mucosa

Non richiedono profilassi: iniezioni anestetiche attraverso tessuti non infetti, radiografie dentali, applicazione di apparecchi ortodontici rimuovibili, estrazione di denti decidui, sanguinamento traumatico delle labbra o della mucosa orale.

AMA guidelines, updated May 14, 2013

La profilassi…..

- Deve essere diretta contro **uno specifico** microorganismo
- Il farmaco ideale dovrebbe essere:
  - Poco tossico
  - Poco costoso
  - Non dovrebbe indurre selezione di organismi resistenti
  - Non dovrebbe essere un farmaco essenziale dell' arsenale terapeutico

Profilassi dell'endocardite

Farmaco	Dosaggio
Procedure dentarie e sulle vie aeree superiori	
Amoxicillina	2 g 30-60 min prima della procedura
Nei pazienti allergici alle penicilline	
Azitromicina o claritromicina	500 mg 30-60 min prima della procedura

Management of patients with prosthetic joints undergoing dental procedures

Clinical Recommendation:

In general, for patients with prosthetic joint implants, prophylactic antibiotics are *not* recommended prior to dental procedures to prevent prosthetic joint infection.

For patients with a history of complications associated with their joint replacement surgery who are undergoing dental procedures that include gingival manipulation or mucosal incision, prophylactic antibiotics should only be considered after consultation with the patient and orthopedic surgeon.* To assess a patient's medical status, a complete health history is always recommended when making final decisions regarding the need for antibiotic prophylaxis.

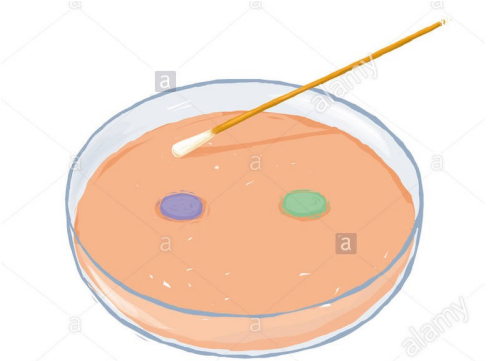
Clinical Reasoning for the Recommendation:

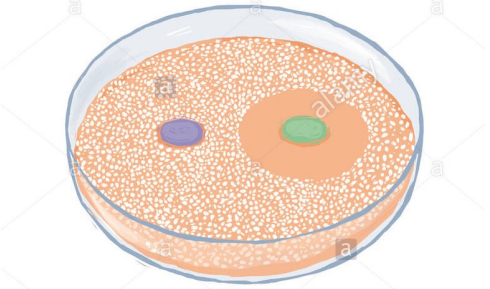
- There is evidence that dental procedures are not associated with prosthetic joint implant infections.
- There is evidence that antibiotics provided before oral care do not prevent prosthetic joint implant infections.
- There are potential harms of antibiotics including risk for anaphylaxis, antibiotic resistance, and opportunistic infections like *Clostridium difficile*.
- The benefits of antibiotic prophylaxis may not exceed the harms for most patients.
- The individual patient's circumstances and preferences should be considered when deciding whether to prescribe prophylactic antibiotics prior to dental procedures.

ADA Center for Evidence-Based Dentistry™

* In cases where antibiotics are deemed necessary, it is most appropriate that the orthopedic surgeon recommend the appropriate antibiotic regimen and when reasonable write the prescription.

Sollecito T, Abt E, Lockhart P, et al. The use of prophylactic antibiotics prior to dental procedures in patients with prosthetic joints: Evidence-based clinical practice guideline for dental practitioners — a report of the American Dental Association Council on Scientific Affairs. JADA. 2015;146(1):11-16.





- Terapia antibiotica mirata
  - Prelievo del materiale infetto
  - Coltura e identificazione del microorganismo
  - Antibiogramma
- Terapia antibiotica ragionata

Che antibiotico scegliere?

- Attivo sul patogeno
- Con caratteristiche farmacocinetiche favorevoli
- Poco tossico
- Poco allergenico
- Poco costoso

Colonizzazione del cavo orale

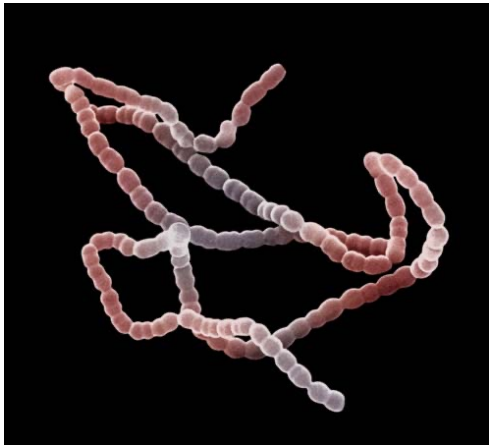
nascita

12 mesi

Età prescolare

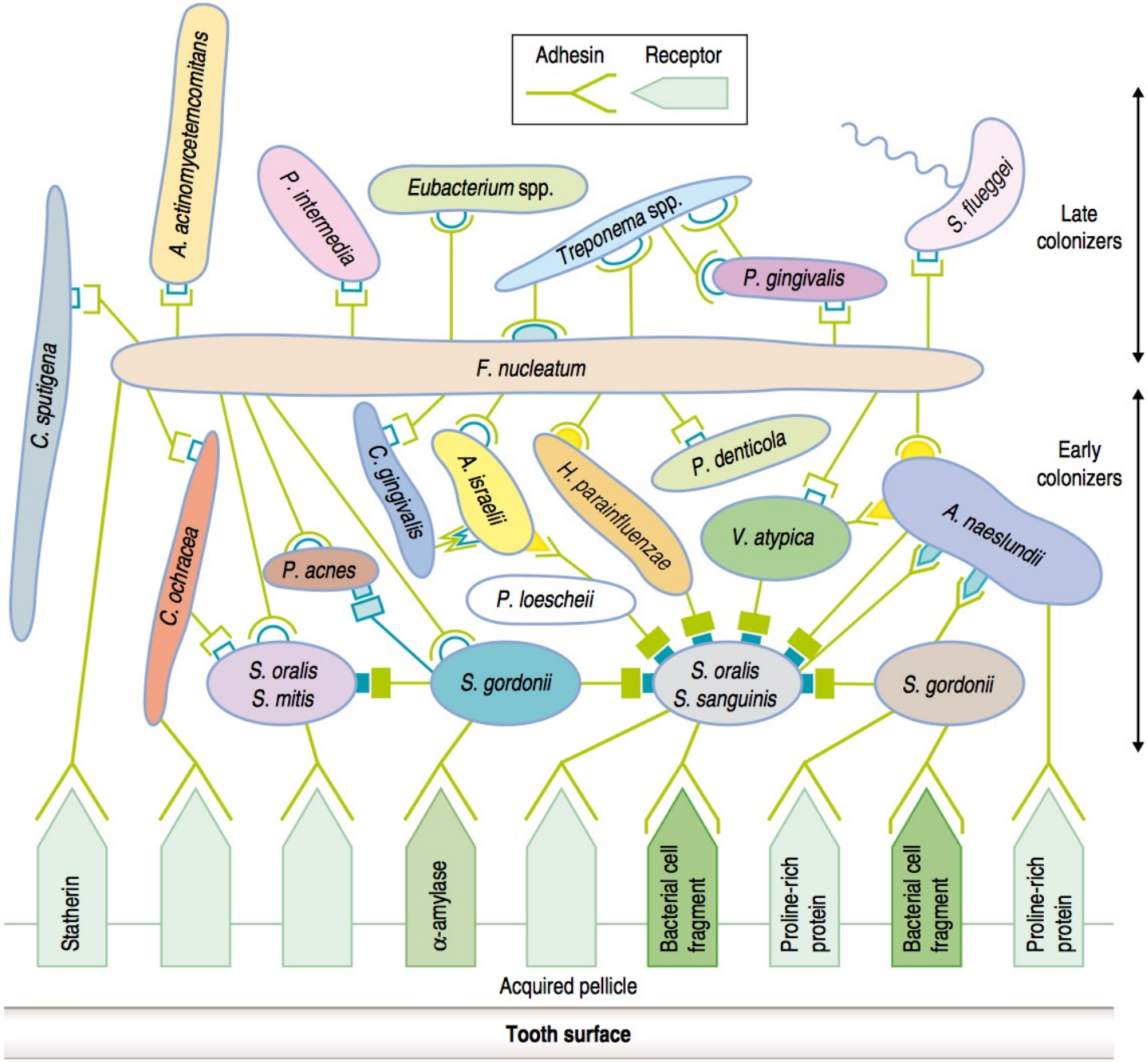
La cavità orale è sterile

Streptococcus salivarius
Streptococcus mutans
Streptococcus sanguis
Staphylococcus
Velionella
Actinomyces
Lactobacillus
Nocardia
Fusobacterium



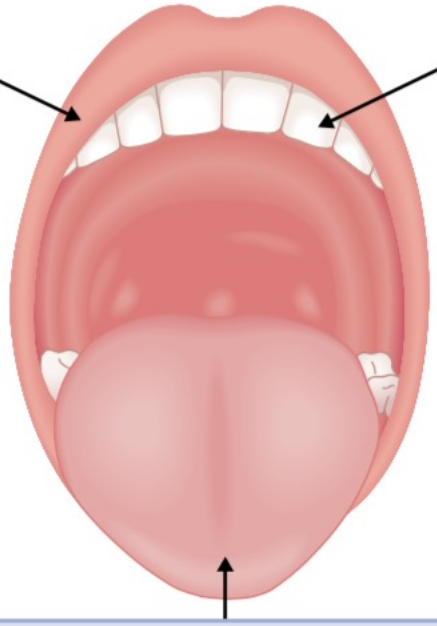
Streptococcus mutans

Flora batterica dell'adulto


Adhesin
Receptor
A. actinomycetemcomitans
P. intermedia
Eubacterium spp.
Treponema spp.
S. fluggei
P. gingivalis
C. sputigena
F. nucleatum
Late colonizers
Early colonizers
C. gingivalis
A. israelii
H. parainfluenzae
P. denticola
V. atypica
A. naeslundii
C. ochracea
P. acnes
P. loescheii
S. oralis
S. mitis
S. gordonii
S. oralis
S. sanguinis
S. gordonii
Statherin
α-amylase
Bacterial cell fragment
Proline-rich protein
Bacterial cell fragment
Proline-rich protein
Acquired pellicle
Tooth surface

Cheeks, lips, palate

- Desquamation
- Saliva is major influence
- Microflora has low diversity
- Facultative anaerobes
- *Streptococcus* spp. predominate
- Some periodontal pathogens persist by invading buccal cells

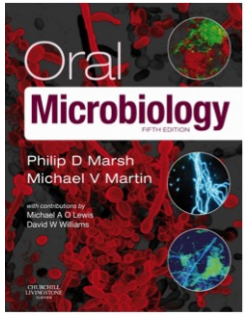


Teeth

- Non-shredding surface
- Stagnant sites: food impaction possible
- Diverse microflora; site variation
- Many obligate anaerobes
- Influenced by saliva and GCF
- *Streptococcus, Actinomyces, Veillonella, Fusobacterium, Prevotella, Treponema,* unculturable organisms

Tongue

- Highly papillated surface
- Some anaerobic sites
- Desquamation
- Diverse microflora
- Facultative and obligate anaerobes
- *Streptococcus, Actinomyces, Rothia, Neisseria,* some Gram negative anaerobes



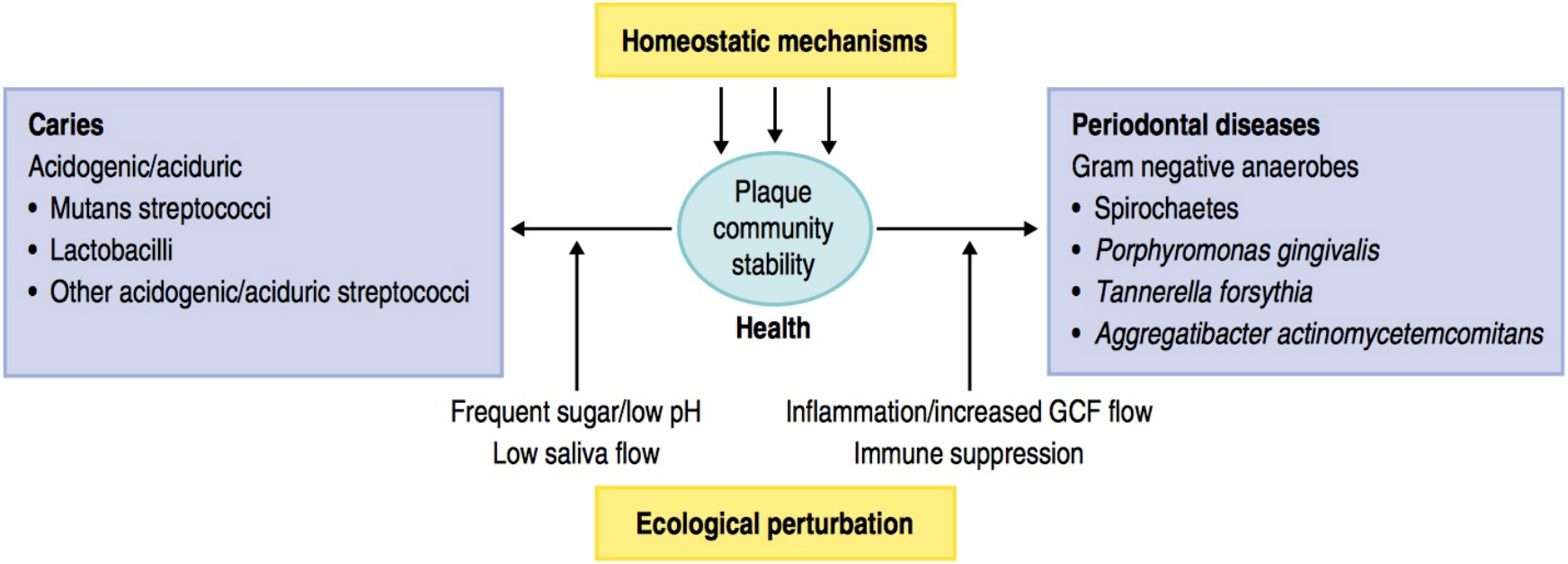
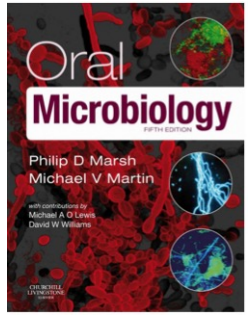


Fig. 6.1 Ecological shifts in the dental plaque microflora in health and disease.

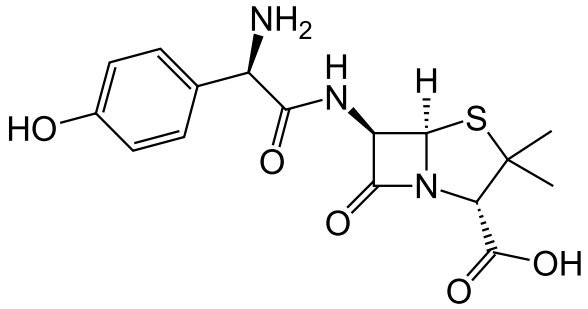


Gram-Positive	Gram-Negative	Anaerobes
Streptococcus sp., Group A,B,C,G		
Strep. pneumoniae		*Actinomyces*
Strep. milleri	*N. meningitidis*	*P. melaninogenica*
Enterococcus faecalis	*P. multocida*	*Clostridium* (not *C. difficile*)
Enterococcus faecium		*Peptostreptococcus* sp.
L. monocytogenes		

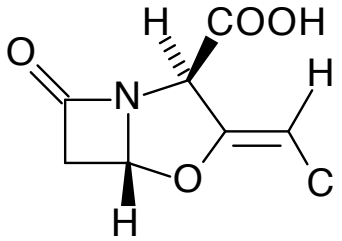
http://webedition.sanfordguide.com/sanford-guide-online/drug-information/antibacterial-agents/penicillins/amino-penicillins/amoxicillin

- Sono attivi sui principali germi causa di infezioni odontoiatriche:

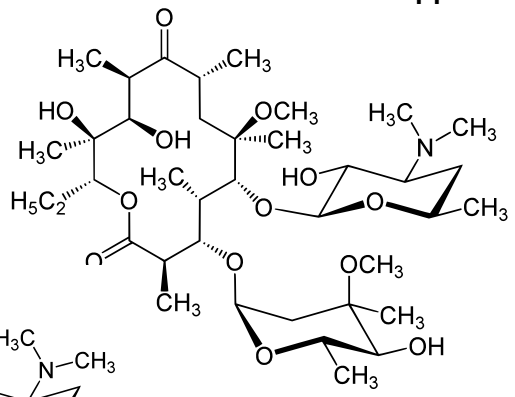
Amoxicillina



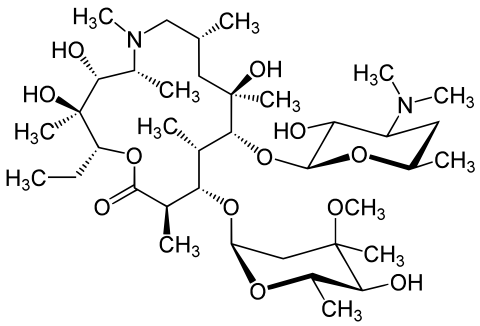
Amoxicillina + acido clavulanico



Claritromicina

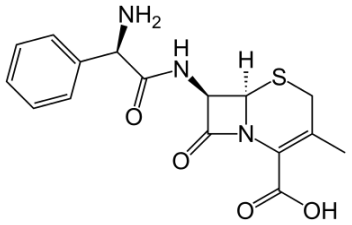


Azitromicina

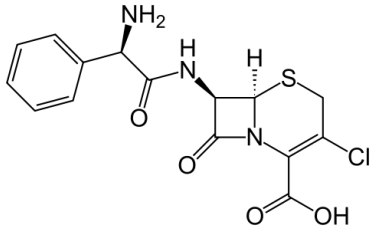


- Ma anche….

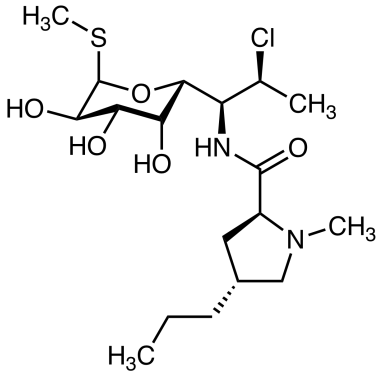
Cefalosporine di I generazione (cefalexina, Keforal)



Cefalosporine di II generazione (cefaclor, Panacef)



Clindamicina



Metronidazolo