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“…plaque represents a classic example of both a biofilm and a microbial community… displaying properties that are more than the sum of its constituent members.” (Marsh 2004)
... significance of microbial communities in biofilms:

Rupp, C., Stoodley, P., Wilson, S.
Biofilms

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- Trade (Nutrients, pH, redox etc)
- Construction (Outer organisms protect)
- Teamwork (Strength in numbers)
NOT plaque removal...but biofilm disruption!
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Meet Bug the builder

‘Cities’ of bacteria that talk to each other may revolutionise drugs. Jerome Burne

To you it's plaque — unappealing brown stuff that somehow builds up on your teeth despite the promises on your toothpaste. Once considered one of the lowliest forms of life, can build cities that have a level of sophistication that some human settlements can only dream of. A high resolution microscope would reveal your plaque to be a city made of slime with a variety of inhabitants, using a 'chatter' of chemical communication.
Treatment for Periodontitis?
Treatment for Periodontitis?

The Evidence:

Tuesday, 16 June 2009
Treatment for Periodontitis?

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...bacteria cause periodontal inflammation
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...bacteria live in biofilms

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The Inflammation Treatment Model

Tuesday, 16 June 2009
Treatment Models for Periodontitis

Inflammation Model

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Treatment Models for Periodontitis

Infection Model

... traditional treatment approach: remove calculus as a source of infection

Inflammation Model
Treatment Models for Periodontitis

Infection Model

... traditional treatment approach: remove calculus as a source of infection root plane ‘infected’ cementum

Inflammation Model
Treatment Models for Periodontitis

Infection Model

... traditional treatment approach:
remove calculus as a source of infection
root plane ‘infected’ cementum
remove ‘infected’ bone

Inflammation Model
Treatment Models for Periodontitis

**Infection Model**

... traditional treatment approach:
remove calculus as a source of infection
root plane ‘infected’ cementum
remove ‘infected’ bone
pocket surgery

**Inflammation Model**
Treatment Models for Periodontitis

Infection Model

... traditional treatment approach:
- remove calculus as a source of infection
- root plane ‘infected’ cementum
- remove ‘infected’ bone
- pocket surgery

Inflammation Model

... disrupt the biofilm
Treatment Models for Periodontitis

Infection Model

... traditional treatment approach:
- remove calculus as a source of infection
- root plane ‘infected’ cementum
- remove ‘infected’ bone
- pocket surgery

Inflammation Model

... disrupt the biofilm
... and what else?