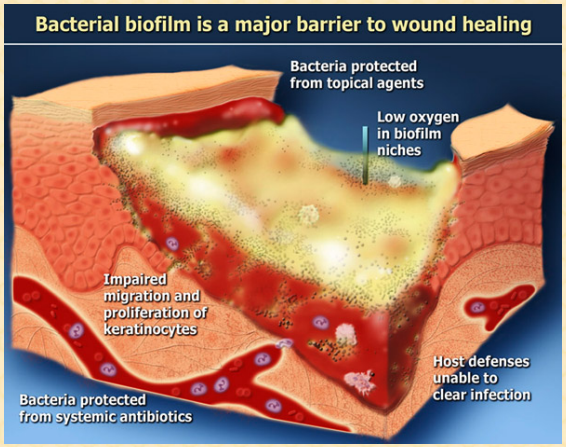
What is a Biofilm?

- Free-floating bacteria attach to a surface, e.g. the wound surface
- Attached bacteria produce a slimy extracellular substance: the Biofilm
- Within this Biofilm bacteria multiply and are protected against the environment
- Biofilms can propagate by the release of small clumps, that can form Biofilms elsewhere



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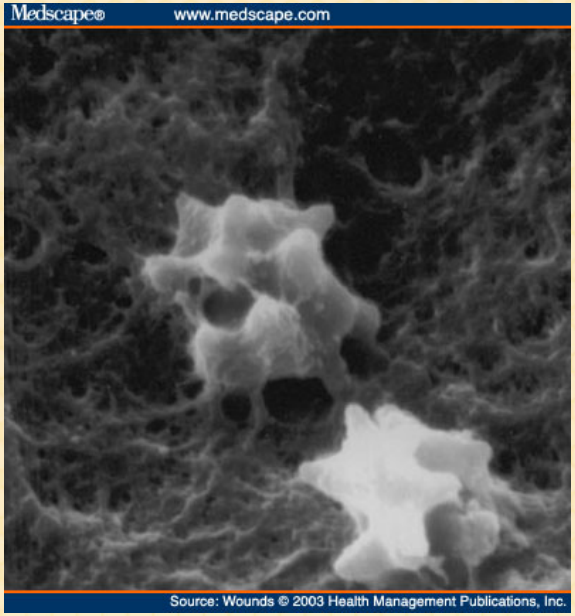
Properties of biofilms in a wound

- Predominant bacteria in Biofilms are S. aureus in combination with Pseudomonas and Coliforms
- Bacteria in Biofilms are up to 1000 x less sensitive to antibiotics
- 60% of chronic wounds are infected by Biofilms
- Biofilm bacteria continuously stimulate the production of pro-inflammatory cytokines in a wound, preventing healing of the wound

Effect of Revamil honey on Biofilms

- Honey prevents the attachment of bacteria to the wound surface*
- Continuous debridement of the wound, e.g. by honey dressings, can prevent growth of the Biofilm
- Honey stimulates the production of anti-inflammatory cytokines**



* ***Okhiria O.A., Henriques AFM, Burton NF and Cooper RA. Honey modulates biofilms of Pseudomonas aeruginosa in a time and dose related manner. Journal of ApiProduct and Apimedical Science 1 (1):6 – 10 (2009).***

Tonks AJ, Cooper RA, Jones KP, Blair S, Parton J and Tonks A. Honey stimulates inflammatory cytokine production from monocytes. Cytokine 21: 242-247 (2003)