Coagulase-negative Staphylococci (CNS)

Over 50 species of staphylococci make up the group known as coagulase-negative Staph, or CNS. Some common species include *S. chromogenes*, *S. haemolyticus*, *S. epidermidis*, *S. simulans*, and *S. sciuri*. These bacteria are Gram-positive, catalase-positive, and are differentiated from *Staph aureus* because they are considered minor environmental pathogens, making up only 5-10% of clinical mastitis cases. Note that although most *Staph* species in this category are truly coagulase-negative, some species are coagulase-positive and therefore additional testing may be needed to differentiate them from *Staph aureus*.

**Source / Transmission**
CNS species are commonly found on teat skin, nasal passages, milker’s hands and in the environment.

**Infection**
CNS are opportunistic mastitis pathogens, and are thought to cause infection in the absence of proper teat disinfection. CNS infections are mainly subclinical, and the few clinical cases are typically mild. Elevation in SCC due to CNS infection is usually no more than 500,000 cells/ml, with little or no impact on milk production.

However, recent research has suggested that some CNS species may be more pathogenic and cause a more significant reduction in milk yield. With advances in the ability to differentiate particular species within this category, we may learn that certain species are more pathogenic than previously thought.

While CNS are frequently isolated from milk samples, this does not necessarily mean that infection or inflammation is present in the udder. Since these organisms are part of the normal skin flora, they are commonly contaminants in milk samples. A CNS-positive culture result should be interpreted in light of clinical symptoms or SCC history.

**Treatment**
Many subclinical CNS infections are not treated because they are mild and of little economic significance to the dairy producer. There is also a high rate of spontaneous cure, meaning that many cases will resolve without treatment. However, treatment of clinical cases is indicated, particularly if there is evidence of persistent infection, such as an elevated somatic cell count in previous months. CNS are sensitive to most antibiotics, and short-duration therapy is usually effective. Infections present at the end of lactation will be cured by dry cow antimicrobial therapy.

**Control**
Proper use of pre- and post-milking teat disinfectant is sufficient to control CNS mastitis. Additionally, dry cow therapy is an effective control strategy.

**References**
http://www.milkquality.wisc.edu
http://www.nmconline.org/articles/coagnegbtm.htm