

## Prophylaxis of infections due to endoscopic examinations

According to RÖSCH (in Burkhart, Steuer: Infektionsprophylaxe im Krankenhaus) the risk of infection of a patient by endoscopic examinations can be attributed mainly to 2 basic routes:

1. Spreading of localised pathogens into pathogen-free or nearly pathogen-free organs
  2. Transference of pathogens as a result of insufficient disinfection of the instrument.
- While the first route of infection can be excluded by proper performing of the examination, the second route can only be excluded by proper disinfection of the instrument, which according to RÖSCH consists of 2 steps:

### 1. cleaning

### 2. disinfection

Cleaning is a substantial part of infection prophylaxis because it is the prerequisite of an efficient pathogen reduction. The contamination on the instrument, especially adhering protein compounds, protect pathogens from the attack of the disinfectant like a shield, while at the same time the contamination diminishes the efficacy of the active ingredients of disinfectants like aldehydes or quarternary substances by chemical reaction. Therefore it must be removed before the application of the disinfectant solution.

At this point **ENZY-CLEAN** intervenes by its two-step activity:

First step: **ENZY-CLEAN** breaks up the protecting shield of adhering protein compounds by enzymatic hydrolysis and

Second step: **ENZY-CLEAN** solubilizes the broken up contaminants by the action of nonionic detergents.

The enzymatic activity is highly specific and does not attack the material of the instrument.

By this process **ENZY-CLEAN** enables easy rinsing of contaminants and a reduction of existing pathogens by a factor of  $10^3$  to  $10^5$ .

Further mechanical cleaning measures are not necessary, especially the problematic brushing of the interior parts, which tends to drive the contaminants deeper into the instrument.

It remains to mention - and this is valid for both manual and machine-based cleaning of the endoscope- that efficient infection prophylaxis implicitly includes the drying of the instrument at the end of the disinfection procedure.

Residual water in the instrument will act as a nutrient solution for opportunistic pathogens like *Pseudomonas* species, which are able to re-contaminate the instrument within a short time.

If the complete drying of the instrument is not possible for any reason, it should be disinfected before re-use after storage times longer than 2 days.

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