General Sterilization Guidelines

The Near Holder is made of 316 Stainless Steel. It is designed with smooth contours to reduce the likelihood of contamination by tissue debris. It can be sterilized by any of the usual methods used for surgical instruments. Here are some general guidelines for sterilization in remote and resource limited settings.

1. Cleaning is an *essential* first step in any sterilization or disinfection process as organic matter can inactivate chemical sterilants and will prevent heat penetration.

2. Undiluted bleach or bleach in 1: 1 dilution (20,000-50,000 ppm) is a high level disinfectant which kills vegetative bacteria, all viruses, fungi and TB. The contact time needed is one hour and rinsing with sterile water should follow. However, it is corrosive to metal and *it is not effective against bacterial spores such as clostridia and so should not be considered a sterilant.*

3. 2% glutaraldehyde (Cidex) is a chemical sterilant that is not inactivated by organic matter. It is not corrosive to metal but is toxic and so must be used with gloves and in a well-ventilated area. Contact time for sterilization is 6-10 hours. Rinsing with sterile water is necessary. The solution will last for two (Cidex) to four weeks (Cidex Plus) after mixing so it can be useful to bring along on short projects but its expense limits long-term usefulness.

4. Steam sterilization (unwrapped) in an autoclave at 124^0C for 15 minutes will kill all organisms *including bacterial spores*. Longer cycle times will be necessary for wrapped instruments and higher-than-sea-level altitudes.

5. Steam sterilization in a pressure cooker with a 15lb weight will only achieve 121^0C so 30 minutes is needed for sterilization. You must wait for the steam to develop *before* putting on the weight. Longer cycle times will be necessary at higher-than-sea-level altitudes.

6. Dry heat sterilization in an oven is *not* as reliable as steam sterilization. Sample cycle times are 180^0C for 30 minutes, 170^0C for 1 hour, or 160^0C for 2 hours. The temperature must be reached *before* starting the timer. Thus, warming and cooling times can double the turn-around time.