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## Critical steps in instrument sterilization

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The more than 312.9 million surgical procedures occurring globally every year emphasizes the importance of proper instrument sterilization. After thorough cleaning, using automated or manual processes, instruments are ready for sterilization. Moist heat, in the form of steam under pressure is the least expensive and most widely used sterilization method for instruments that can withstand heat and moisture. Steam sterilization is also effective and safe for fabrics. However, heat-sensitive instruments require a lower temperature sterilization method such as ethylene oxide, hydrogen peroxide gas plasma or vaporized hydrogen peroxide. Although ethylene oxide has been in use since the 1950's, it is not currently used as often due to the long aeration time and the attendant safety requirements. For these reasons, many facilities in the United States favor either hydrogen peroxide gas plasma or vaporized hydrogen peroxide sterilization methods over ethylene oxide. Regardless of the type of sterilization method used, exact attention to loading, monitoring and unloading processes is necessary. Physical, chemical and biological monitoring methods must be used to ensure all required sterilization parameters are met. However, the chemical and biological monitors used must match the type of sterilizer. Loading and unloading the sterilizers are equally important to ensure the sterilant contacts all instrument surfaces. Whether a large or tabletop sterilizer is used, strict adherence to appropriate processes ensures instruments are safe for use on patients.

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