

Update on steam sterilisation and bench-top sterilisers (autoclaves)

HUGH O'CONNOR provides guidance on the types and uses of bench-top sterilisers.



A sample of the variety of autoclaves currently on the market.

Photographs courtesy of Promed

Introduction

Saturated steam under pressure, at the highest temperature compatible with the product, is the preferred method for the sterilisation of medical devices.

Steam sterilisation requires direct contact between dry saturated steam and all surfaces of the load at a specified temperature, pressure and time (134°C at 2.12 bar gauge for three minutes). Direct contact can be prevented by blood, mucous or tissue on load items and/or by the presence of air in the sterilising chamber. Therefore, it is critical that all instruments are thoroughly cleaned and air removed to enable steam penetration of the pack or lumen and sterilisation of the load.

In the absence of centralised sterilisation facilities, bench-top steam sterilisers (autoclaves) are often used in dental practice. Users must ensure that the equipment complies with safety requirements, is installed and maintained appropriately and is operated in accordance with the manufacturer's instructions. Users should be aware that it is not possible to ensure adequate steam penetration into wrapped or porous loads (fabrics, swabs, dressings) and instruments with lumens or cavities (e.g., hand pieces) unless there is an effective air removal system. Loads such as these cannot be sterilised unless they are processed in an autoclave equipped with an effective pre-sterilisation vacuum stage. Inadequate processing of instruments may also lead to the steriliser itself becoming a source of stored energy and is thus potentially dangerous if not correctly used and maintained.

The purpose of this article is to provide guidance on the types and uses of these autoclaves. This article consolidates advice from the Medical Devices agency and previous publications, as well as providing some further guidance and presenting it in a single document.

Most of the bench tops utilised by dentists for

dental device reprocessing are divided into two categories, which are covered by three main pieces of legislation: PREN 13060, db9804, and HTM 2010 series.

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