New DVD supports trachoma surgery training

Using a steam autoclave

The kerosene-burning steam-pressure autoclave (Figure 1) is widely available in trachoma endemic regions. If you use a different model of autoclave you must read and carefully follow the instructions.

Figure 1: Diagram of a kerosene-burning steam-pressure autoclave

You should use the autoclave in a clear area. Place the items to be sterilised on a clean table or shelf nearby.

Pour water (ideally, distilled or demineralised water) into the autoclave up to the level of the top of the tripod stand inside (1).

Load the drum with the items to be sterilised:
- All jointed instruments should be placed in the opened or unlocked position.
- Sharp edges must be protected by gauze or tubing to prevent dulling.
- The drum should not be packed tightly.

You must check the drum to ensure that the vents are open. Close the drum lid and lock the vent collar in the open position (2).

Place the drum in the autoclave and close the autoclave lid by rotating it (3).

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clockwise, until it locks into position. You must ensure the autoclave lid is correctly closed. If this is not done properly, the autoclave is extremely dangerous when being heated.
- Check both taps are closed and place the autoclave on a kerosene burner. Some autoclaves are designed to be heated using an electrical supply.

- After several minutes, the steam produced causes the pressure to rise in the autoclave. You can see this on the pressure gauge (3).
- When the pressure reaches 15 +/- 1 psi, steam will come out of the pressure valve. You must record the time at which this happens.
- Continue heating for a further 20–25 minutes. Turn off the heat source.
- Open the lower tap, which is the vacuum release tap. All the steam and water will then drain from the autoclave (4). As soon as the water stops draining, close the tap again and leave the autoclave for 5–10 minutes. A further vacuum develops in the autoclave, which will now dry the sterile contents.
- Then open the upper tap (5), which is the steam release tap, allowing all remaining steam to come out. The pressure gauge should now drop to zero psi.
- Only open the autoclave when the pressure is zero. Then remove the drum and immediately close the vents.

Safety
There are some crucial safety points that you must always follow when using an autoclave.
- You should be well trained in autoclave usage and you should be trained and tested periodically for proficiency in the operation of an autoclave. There is a danger of transmitting HIV, hepatitis viruses, or other infectious diseases if the surgical materials are not properly sterilised. There is also a danger of causing serious injury if the autoclave is not used correctly.
- Always ensure there is the correct amount of water in the autoclave before every use.
- You must not open the autoclave before the pressure reaches zero.
- Do not use an autoclave if parts are malfunctioning; for example, if the pressure does not rise and there is continual escape of steam.
- Do not use if you notice wear and tear on the lid gasket or notice leaky taps and valves.

These continuing professional development (CPD) Test Yourself questions are based on the contents of this issue. You can use the questions to test your own understanding; we hope that you will also discuss them with your colleagues and other members of the eye care team. The questions have been developed in association with the International Council of Ophthalmology (ICO) and are based on the style of the ICO Advanced Examination: www.icoexams.org/exams/advanced

1. Think about purchasing instruments and consumables. Which of the following statements are true, and which are false? (True False)

2. Think about instrument care and maintenance. Which of the following statements are true, and which are false? (True False)

3. Think about supplies management. Which of the following statements are true, and which are false? (True False)

4. Think about performing Schirmer’s test and about sharpening and adjusting surgical scissors. Which of the following are true and which are false? (True False)

ANSWERS


