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A pioneer to the utilization of autoclaves by Sonia Nathani

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Autoclaves are instruments that are used to eliminate or remove all forms of microbes including fungi, bacteria, and viruses. These equipments are widely used in microbiology, tattooing, dentistry, body piercing, mycology and chiropody. Dentists and doctors sterilize their equipments before using on humans.

There are number of technologies that are performed in the process of sterilization. These technologies include heating, chemical sterilization and ultra violet light. There are majority of autoclaves that function using some form of heat. They must maintain a temperature of at least 246 degrees for max 30 min to sterilize the equipment.

Heating is not always preferred for sterilization. In some cases it damages the materials. These materials can be plastics, fiber and rubber optics. Therefore, for sterilizing these materials, chemical sterilization is used, as these materials require external venting systems that are used to remove chemical agents from the sterilizer. Ultra violet Autoclaves produce a UV ray that creates a lethal effect on unwanted diseases. This effect destroys microbes like pathogens, bacteria, yeast, and protozoa.

Heating is considered as the most convenient form of sterilization. For instance, if we put a beef in a pan and roast it, it would become hard. But at the same time if we add water, you will notice that the meat that is hard will become tender. The temperature is same, the time is same but the result is different. Now if we add another factor of pressure, there would be a reduction of time and you will get a more tender and finished product. This process of adding pressure is carried out in a pressure cooker.

In the entire process of sterilization, time is extremely critical. It is very important to determine the appropriate time that is being required to sterilize and equipment. Apart from time, volume is also an extremely imperative factor that you should keep in mind while performing the entire process. Higher the volume, the more time it takes for sterilization. For instance, a 2l flask containing 1l of liquid takes longer to sterilize than a four 500ml flasks containing 250ml of liquid.

While using these equipments, it is extremely important to ensure safety. While running the autoclave it is very essential to make sure that it reaches the preferred pressure and temperature. Apart from setting the desired temperature, it is important that the personnel should wear proper equipment that can be heat resistant gloves, eye protection and a lab coat mostly when loading the autoclave.

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