

Elastomeric pumps are mechanical devices composed of an elastomeric balloon reservoir into which the drug to be infused is stored, a protective casing (used by some manufacturers), a flow controller and a wound catheter. In orthopaedics they are used to provide continuous local infiltration analgesia” Theodorides (2017).

Abstract:

Elastomeric pumps are mechanical devices composed of an elastomeric balloon reservoir into which the drug to be infused is stored, a protective casing (used by some manufacturers), a flow controller and a wound catheter. In orthopaedics they are used to provide continuous local infiltration analgesia. In this way patients rely less on other routes of analgesia and thus avoid their systemic side effects. Studies have shown good response to analgesia with these pumps for the first 24 hours but their benefit is not as clear at 48 and 72 hours.

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There are numerous factors that affect the flow rate of elastomeric pumps. Some are inherent to all elastomeric pumps such as: the pressure exerted by the elastomeric balloon, catheter size, the vertical height of the pump in relation to the wound, viscosity and partial filling. There are also other factors which vary according to the manufacturer such as: the optimal temperature to obtain the desired flow rate as this directly affects viscosity, the dialysate that the analgesic drug is mixed with (ie normal saline or 5% dextrose), and the storage conditions of the fluid to be infused. It is thus essential to follow the clinical guidelines provided by the manufacturer in order to obtain the desired flow rate.

Reference:

Theodorides, A.A. (2017) The role of elastomeric pumps in postoperative analgesia in



orthopaedics and factors affecting their flow rate. *Journal of Perioperative Practice*. 27(12), p.276-282.

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