

# Needleless Connectors

This is a guide for healthcare professionals working in home infusion therapy.

## ***What are needleless connectors?***

Needleless connectors are devices attached to a central venous catheter hub or extension tubing. They allow intermittent access to an intravenous system without requiring a needle. They ensure the system is a closed system.

Negative needleless connectors means that there is negative displacement at the catheter tip allowing blood reflux back into the catheter. To prevent blood reflux, clamp the catheter prior to finishing the flush so that fluid is flowing out of the catheter when it is clamped.

Positive needleless connectors have a small volume of fluid that is pushed through the catheter when a syringe is removed, leading to positive displacement of fluid out of the catheter. Clamp the catheter after finishing the flush and disconnecting the syringe.

Neutral needleless connectors do not have blood reflux into the catheter tip when a syringe is disconnected. Clamping after flushing is not needed.

Bidirectional needleless connectors have pressure-sensitive internal mechanisms preventing blood reflux into the catheter when the flow of an infusion is stopped. Clamping is not needed. They should be changed no more frequently than every 96 hours;<sup>1</sup> weekly is likely sufficient.

## ***What is the role of choice of needleless connector in preventing central line-associated bloodstream infections (CLABSI)?***

Needleless connectors were developed to prevent needlestick injuries. There is debate about how much role the choice of needleless connector may play in increasing the likelihood of CLABSIs.<sup>2</sup>

## ***Which needleless connectors may be helpful to avoid if trying to prevent CLABSI?***

It is likely preferable to avoid needle-free connectors with 3-way stopcocks as these may increase the risk of catheter infections.<sup>3</sup>

## ***Which needleless connectors may be helpful to use if trying to prevent CLABSI?***

Although not studied in clinical settings, silver-coated needleless connectors may be associated with reduced intraluminal communication, and could be an option in some patients.<sup>4,5</sup>



## Reference

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