

## A Semi-Automatic Mechanism Used in the Peritoneal Dialysis Connection

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**Abstract :** In addition to kidney transplant, renal replacement therapy involves hemodialysis and peritoneal dialysis (PD). PD possesses advantages such as maintaining stable physiological blood status and blood pressure, alleviating anemia, and improving mobility, which make it an ideal method for at-home dialysis treatment. However, potential danger still exists despite the numerous advantages of PD, particularly when patients require dialysis exchange four to five times a day, during which improper operation can easily lead to peritonitis. The process of draining and filling is called an exchange and takes about 30 to 40 minutes. Connecting the transfer set requires sterile technique. Transfer set may require a new cap each time that it disconnects from the bag after an exchange. There are many chances to get infection due to unsafe behavior (ex: hand tremor, poor eyesight and weakness, cap fall-down). The proposed semi-automatic connection mechanism used in the PD can greatly reduce infection chances. This light-weight connection device is portable. The device also does not require using throughout the entire process. It is capable of significantly improving quality of life. Therefore, it is very promising to adopt in home care application.

**Keywords :** automatic connection, catheter, glomerulonephritis, peritoneal dialysis

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