

The most common osmotic agent that allows for fluid removal via peritoneal dialysis is dextrose. Dextrose is biochemically identical to glucose. When higher strength concentrations need to be used for volume management a significant glucose dialysate/plasma concentration gradient is created which can result in glucose entering the body and leading to hyperglycemia. Similarly, if the patient is already hyperglycemic, using lower strength concentrations may cause water to move from the dialysate into the patient, especially if the dwell time is prolonged. This is called absorption.

As a rough guide 4g of dextrose is equivalent to 1 teaspoon of sugar.

The standard concentrations of PD solutions:

0.5% - dialysate bag with white ring pull - 10g dextrose/2L equivalent to blood sugar level of 27.8mmol/L

1.5% - dialysate bag with yellow ring pull - 30g dextrose/2L – equivalent to blood sugar level of 83.3mmol/L

2.5% - dialysate bag with green ring pull- 50g dextrose/2L – equivalent to blood sugar level of 139mmol/L

4.25% - dialysate bag with red ring pull - 70g dextrose/2L – equivalent to blood sugar level of 194.6mmol/L

Peritoneal dialysis can significantly impact glycemic control in people with diabetes. Diabetic PD patients are encouraged to check their capillary blood

glucose regularly and will often need up titration of oral hypoglycemics and/or insulin after commencing peritoneal dialysis. Glucose is best managed by the patient's endocrinologist/diabetic nurse educator or family practitioner; however, a diabetic patients blood sugar level should be assessed when presenting to a community facility.