

# Capsule Summary

## Balanced Crystalloids- A Metanalysis

Emerging evidence suggests that balanced crystalloids which are more balanced with respect to plasma might have some advantages over normal saline particularly with regards to the kidney function. A recently published meta-analysis summarised the evidence comparing different balanced crystalloid solutions

### Objective:

Comparing the different balanced crystalloid solutions and comparing the evidence

### Study Methodology:

- This meta-analysis included 24 randomised clinical trials
- Solutions which were compared included Plasmalyte, Ringer's Lactate, Ringerfundin, Hartmann's solution, Ringer's Bicarbonate, Sterofundin, Kabilyte, Normosol, and novel balanced solutions.
- Out of the 24 studies included, 16 were performed in the peri-operative setting, 6 in the intensive care unit, 1 in the emergency department and 1 in healthy volunteers

### Study Results:

There were 12 studies which compared plasmalyte with other balanced crystalloids (Hartmanns, Ringers Lactate, Sterofundin, Ringerfundin).

The findings were as follows on the different parameters:

- No important differences in post-infusion serum pH or potassium when comparing Plasmalyte with other balanced crystalloids.
- Insufficient data to examine the impact of different balanced crystalloids on patient-important outcomes such as mortality and length of hospitalisation

Parameters	Findings
Serum Chloride	Lower post- infusion serum chloride concentration with plasmalyte (mean difference, 0.83 mmol/L lower; 95% CI, 0.03–1.64 mmol/L lower, low certainty)
Base Excess	Higher post-infusion base excess with plasmalyte (mean difference, 0.65 mmol/L higher, 95% CI, 0.25–1.05 mmol/L higher, low certainty),
Serum Lactate	lower post-infusion serum lactate levels (mean difference, 0.46 mmol/L lower; 95% CI, 0.05–0.87 mmol/L lower, low certainty)

### Conclusion:

- Lower serum concentrations of chloride and lactate, and higher base excess were seen with plasmalyte compared with other balanced crystalloids.
- Certainty of evidence is low
- Large randomised controlled trials need to be carried out to determine the balanced crystalloid of choice in patients requiring fluid therapy.

### Information Source:

You can access the full article at <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC8133105/>

### Disclaimer

The information presented in this article is for informational and educational purposes only and does not substitute professional medical advice and consultation with healthcare professionals.