# ALBUMIN

## Indication
- Plasma or blood volume deficit or oncotic deficit from hypoproteinemia
- Volume expansion, therapeutic plasma exchange, haemolytic disease of the newborn, hypovolaemic shock, burns, hyperbilirubinemia

## Presentation
- 4% solution (2 g in 50 mL)
- 20% solution (2 g in 10 mL)

## Dosage
<table>
<thead>
<tr>
<th>Solution</th>
<th>Rate (mL/kg)</th>
</tr>
</thead>
<tbody>
<tr>
<td>4% albumin</td>
<td>10</td>
</tr>
<tr>
<td>20% albumin</td>
<td>2–5</td>
</tr>
</tbody>
</table>

If there is no loss from plasma, the dose (mL/kg) can be calculated as:

\[
5 \times (\text{increase in } g/L) \div \% \text{ albumin}
\]

## Special Considerations
- Distributed by Australian Red Cross Blood Service
- Contraindication:
  - Severe anaemia or cardiac failure
- Ensure prescribed strength is appropriate for indication [refer to Actions]
  - Use 20% albumin with caution in compromised babies
- Ensure adequate hydration during or after infusion of 20% albumin (may cause hypernatremia)
- Do not filter the infusion

## Administration
- Prime the infusion line and reduce total syringe volume to the prescribed dose
- On completion, disconnect syringe and infusion line
- Flush access port at same rate as infusion
- 4% albumin
  - IV infusion via syringe driver pump over 30–60 minutes
- 20% albumin
  - IV infusion via syringe driver pump of 6–8 hours

## Compatibility
- Fluids:
  - 5% glucose, 10% glucose, 0.9% sodium chloride

## Incompatibility
- PN and fat emulsion: co-infusion with albumin not recommended (evidence limited). If unavoidable, seek pharmacist advice first, filter infusion and flush before and after
- Fluids:
  - Amino acid solutions, fat emulsions, solutions containing alcohol, water for injection
- Y-site:
  - Drugs that bind to albumin (e.g., diazepam, phenytoin), midazolam, piperacillin-tazobactam, vancomycin, verapamil

## Interactions
- No data

## Stability
- Do not use if turbid or contains sediment (should appear slightly opalescent)
- 4% albumin
  - Store below 30°C (do not freeze). Protect from light
- 20% albumin
  - Store at 2–8 °C
### Side effects
- Circulatory: tachycardia\(^1\), hypotension\(^2\), overload
- Nervous: flushing\(^1\), fever\(^2\)
- Hypersensitivity reactions: rare in neonates. May present as apnoea, hypotension, bradycardia, erythema and rash (maculopapular rash, red purple plaques or urticarial type plaques\(^7-10\))

### Actions
- 4% albumin is iso-oncotic with human serum\(^6\)
  - In adequately hydrated patients, expands the circulating blood volume by an amount approximately equivalent to the volume infused\(^6\)
- 20% albumin is hypoosmotic and hyperoncotic compared with human serum\(^6\)
  - Supplies the oncotic equivalence of approximately four times its volume of human plasma\(^6\) (therefore caution with duration of administration)

### Abbreviations
- BP: blood pressure, IV: intravenous, PN: parenteral nutrition

### Keywords
- Albumin, human albumin, normal serum human albumin, hypoproteinemia, volume expander, oncotic pressure

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**The Queensland Clinical Guideline Neonatal Medicines** is integral to and should be read in conjunction with this monograph. Refer to the disclaimer. Destroy all printed copies of this monograph after use.

### References

### Document history

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<th>ID number</th>
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### QR code

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