Paracetamol
Paracetamol overdose is a common cause of hospital presentation and admission. Previous guidelines for the management of paracetamol overdose DID NOT

- provide uniformity in a treatment nomogram in Australasia
- deal with extended-release paracetamol
- reflect current clinical toxicology practice or poison centre recommendations.

In 2006 a panel of Australian and New Zealand toxicologists met to draft new consensus guidelines. Revised guidelines were released in 2007. A consensus statement was published in the Medical Journal of Australia in 2008 and summarized in a one page document prepared by industry.

The one page document (see page 2) provides information about treatment of paracetamol overdose including:

- administration of N-acetylcysteine
- a paracetamol treatment nomogram* (enlarged on page 3)
- management of acute single ingestions
- what to do when the nomogram does not apply.

Further Reading
Guidelines for the management of paracetamol overdose
Paracetamol Use PD2006_004

Recommended action by Area Health Services
- Forward to appropriate areas for information.
**General Information**

1. Paracetamol overdose is a significant cause of hospital admission, but severe liver injury is rare and even when it does occur the prognosis is usually good.

2. Daum paracetamol poisoning is rare and does not occur in patients treated with N-acetylcysteine (NAC) within 6 hours of acute ingestion.

3. Signs consistent with paracetamol poisoning include repeated vomiting, abdominal tenderness in the right upper quadrant or mental status changes.

4. Hypoglycaemia on presentation is very rare, but is important to consider in late presentations if fever has occurred.

5. Any patient should be considered to be at risk of severe liver injury if they have ingested paracetamol above the thresholds below (See Table 1).

**TABLE 1:** Thresholds: Potentially Hepatotoxic Paracetamol Overdosages

<table>
<thead>
<tr>
<th>Amount (mg/kg)</th>
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<tr>
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<td>150</td>
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</table>

**Paracetamol Treatment Nomogram**

- Treat all patients with serum paracetamol levels above the nomograph treatment line.
- If the patient has taken an overdose of paracetamol at two time intervals within the 8 hours, repeat the nomogram at the earliest of: (a) 8 hours post ingestion and (b) the patient’s last ingestion.

**Decontamination**

- No decontamination of any kind is indicated in paediatric patients.
- Decontamination using activated charcoal is indicated in adult patients if ALL of the following criteria are met:
  1. Presentation within 1 hour
  2. Cooperative patient
  3. Ingestion of greater than 10g or 200mg/kg of paracetamol (whichever is less)

**Management of Acute Single Ingestions**

**Decontamination**

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  2. Cooperative patient
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**What To Do When The Nomogram Does Not Apply**

- Unknown Time Of Paracetamol Ingestion
  - If there is a detectable paracetamol level with an unknown time of ingestion, commence NAC and treat the patient as per the end of the 8 hours scenario (i.e. e) at the Acute Ingestion Management Flow-Chart.

- Staggered Overdose
  - A staggered overdose comprises several ingestions over a period of less than 24 hours.
  - If the patient has taken an overdose of paracetamol at two time intervals within the 8 hours, repeat the nomogram at the earliest of (a) 8 hours post ingestion and (b) the patient’s last ingestion.

- Sustained-Release Paracetamol Preparations
  - If more than 10g or 200mg/kg (whichever is less) has been ingested commence NAC.
  - Measure serum paracetamol level at 4 or more hours post ingestion, then again 4 hours later the first level is below the nomogram line.
  - If the levels are below the nomogram line NAC may be discontinued.
  - If either level is above the nomogram line NAC should be continued and management followed according to the Acute Ingestion management Flow-Chart.

- Repeated Supratherapeutic Ingestion
  - If the patient has ingested sufficient doses to suggest risk of developing hepatic injury (See Table 1), manage as per the Repeated Supratherapeutic Ingestion Management Flow-Chart.

**Repeated Supratherapeutic Ingestion Management Flow-Chart**

- Does the patient meet the criteria for repeated supratherapeutic ingestion?
  - Yes: continue NAC and check ALT at 4-6 hours.
  - No: refer to original paracetamol overdose flow-chart.

**Management of Repeated Supratherapeutic Ingestion**

**Decontamination**

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Paracetamol Treatment Nomogram

- Treat ALL patients with serum paracetamol levels above the nomogram treatment line
- A single nomogram treatment line is recommended. This line has been lowered by 25% from standards lines to take into account:
  1. Potential for minor error estimating the time of ingestion
  2. Increased safety for all patients with potential risk factors
- Ensure that correct units are used (i.e., µmol/L or mg/L)

Adapted from Remock and Mathew