

Recommended Investigations for Patients with Suspected Acetaminophen Poisoning

For patients who have taken, or are suspected to have taken, an acetaminophen overdose, the following laboratory investigations are recommended.

As a general principle, the Poison Centre recommends that **bloodwork be obtained at 4 hours post-ingestion and every 12 hours thereafter**. Additional testing may be advised by the Poison Specialist on an as-needed basis.

From the perspective of the Poison Centre, acetaminophen is considered undetectable when the concentration is less than 66 µmol/L (10 mg/L).

Bloodwork on Presentation (for all suspected acetaminophen overdoses)

1. Acetaminophen concentration ([APAP]) at least 4 hours post-ingestion
2. Salicylate (ASA) level
3. Ethanol (EtOH) level, serum osmolality, and blood urea nitrogen (BUN) if clinically relevant
4. Venous blood gas (VBG), lactate, electrolytes, glucose, and creatinine
5. AST (if available) and ALT
6. PT/INR
7. Beta-hCG if appropriate

Additional Testing

Sustained Release Preparations or Co-Ingestants (opioid or anticholinergic)

- Repeat acetaminophen level every 4 hours until the level peaks, then every 12 hours until undetectable.

Patients receiving acetylcysteine (NAC)

- Repeat VBG, lactate, electrolytes, glucose, BUN, creatinine, AST, ALT, and PT/INR every 12 hours
- Repeat acetaminophen level every 12 hours until undetectable.

High Risk Cases (as determined by the Poison Centre)

- Lipase
- Phosphate (PO₄) if liver enzymes are elevated
- Repeat acetaminophen level, venous gases, lactate, electrolytes, glucose, BUN, creatinine, AST, ALT, and INR every 4 hours until the acetaminophen level peaks, then every 12 hours until undetectable.

