

March 29, 2023

Acetaminophen Overdose

Acetaminophen is the **most common cause** of drug-induced liver injury (DILI).

1 **Acetaminophen overdose can cause liver failure and death.**



Risk increases with heavy alcohol use.



Having more alcohol in your system means you can't take as much acetaminophen.

Most acetaminophen overdoses happen by accident.

The three most common reasons are:

- 1 Taking a **large dose** or **too many doses** of acetaminophen to control pain
- 2 Taking **2 or more products** that contain acetaminophen at the same time
- 3 Taking a high dose of an **opioid product** that also contains acetaminophen

2 **Know the recommended maximum dose***

*People who have liver disease or ≥ 3 alcoholic drinks a day should take even less.

Age	Maximum single dose	Maximum doses over 24 hours
Under 12 years	15mg/kg/dose	75mg/kg/24 hours
12 years and older	1,000mg/dose	4,000mg/24 hours

Read the label. Add the acetaminophen doses from ALL products being used.

Be careful.

Any amount of acetaminophen over the recommended amount puts you at risk.

Do not exceed recommended doses within **any** 24 hour period.

If you suspect an overdose, contact your **local poison centre**. (<https://info-poison.ca/>)

3 **Many products contain acetaminophen.**

- Pain and fever drugs (e.g., Tylenol®, Tempra®)
- Cough and cold drugs (e.g., Tylenol® Sinus, Sudafed® Head Cold + Sinus, Nyquil™ Cold & Flu)
- Muscle relaxants (e.g., Robaxacet®)
- Over-the-counter sleeping drugs (e.g., Tylenol® Nighttime)
- Prescription pain drugs (e.g., Percocet®, Tramacet®, Tylenol® No.3)



4 Management (for healthcare practitioners)

Signs and symptoms

Nausea, vomiting, stomach pain, sweating, diarrhea, irritability, loss of appetite

Upper right-side abdomen pain, dark urine, yellowing of the skin and eyes, tenderness

Blood in urine, easily bruising skin, low blood sugar, confusion, coma, **DEATH**

0 hrs (dose of acetaminophen) → 24 hrs → 72 hrs → 96+ hrs

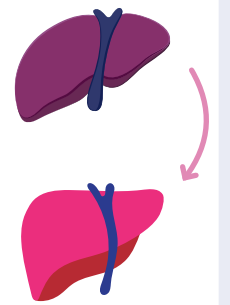
Treating acetaminophen overdose:¹

- **Activated charcoal:** within 4 hrs of overdose
- **N-acetylcysteine:** within 24 hrs of overdose
 - ✓ Ideally administered within 8 hrs of overdose.
 - ✓ Intravenous (IV) route *preferred*. IV and oral are similarly effective, but oral may be vomited before it is absorbed.
 - ✓ Dosing dependent on:
 - > Time since overdose
 - > Serum acetaminophen levels
 - > Immediate versus sustained release product
 - > Rumack-Matthew nomogram

<https://www.merckmanuals.com/en-ca/professional/multimedia/figure/rumack-matthew-nomogram-for-single-acute-acetaminophen-ingestions>

In severe cases,

liver transplant may be needed to prevent **death**.



In **some** cases, the liver heals with time.

Common drug products that contain acetaminophen:

Acetaminophen is also known as paracetamol in other countries like the United Kingdom and Australia.

■ = Prescription drugs

Tylenol®.....	Acetaminophen
Tylenol® Nighttime.....	Acetaminophen, diphenhydramine
Tylenol® No. 1, 2, 3.....	Acetaminophen, codeine, caffeine
Tylenol® No. 4.....	Acetaminophen, codeine
Percocet® and generics.....	Acetaminophen, oxycodone
Tramacet® and generics.....	Acetaminophen, tramadol
Robaxacet.....	Acetaminophen, methocarbamol
Tempra®.....	Acetaminophen
Sudafed® Head Cold + Sinus.....	Acetaminophen, pseudoephedrine
Nyquil™ Cold & Flu.....	Acetaminophen, phenylephrine, dextromethorphan
Mucinex® Multi-Action™.....	Acetaminophen, guaifenesin, phenylephrine
Midol®.....	Acetaminophen, pyrilamine, caffeine
NeoCitran Total Cold Night.....	Acetaminophen, phenylephrine, diphenhydramine
Panadol.....	Paracetamol, caffeine

Look for the label "Contains acetaminophen" on the front of drug products



¹ https://www.tylenolprofessional.com/sites/tylenol_hcp_us/files/acetaminophen_overdose_treatment_info.pdf