

# N-acetylcysteine (NAC)



## What is this medication used for?

N-acetylcysteine (NAC) is an over-the-counter supplement used for the treatment of acetaminophen overdose. While not approved by Health Canada for these uses, there is evidence to support the use of NAC in cannabis use disorder, irritability of autism spectrum disorder (ASD), obsessive-compulsive disorder (OCD), hair-pulling (trichotillomania) and skin-picking disorder. When the potential benefits outweigh risks, NAC may be prescribed “off-label” for children and adolescents. Learn more about off-label use:



<http://bit.ly/KMH-off-label-use>

## Tell your doctor or pharmacist if you:

- Have allergies or bad reactions to a medication
- Take or plan to take other prescription or non-prescription medications (especially blood thinners) including natural medicines. Some medications interact with NAC. Your doctor may adjust medication doses or monitor for side effects
- Have asthma or a history of breathing problems
- Miss a menstrual period, are pregnant, breast-feeding or planning a pregnancy
- Use alcohol or street drugs. Taking NAC together with certain substances may cause a bad reaction



## When will this medication start to work?

When used for acetaminophen overdose, the effects of NAC may begin to show within a few hours. However, it may take several weeks to a few months to see the benefit for other indications including cannabis use disorder, ASD, OCD, trichotillomania and skin picking.

Talk with your doctor if you feel that NAC has not been helpful or if side effects are too bothersome. Your doctor may recommend switching you to a different medication.



## Possible common or serious side effects:

Side effects may be more common when first starting a medication or after a dose increase. If any side effect concerns you, talk with your doctor, nurse or pharmacist.

- Stomach ache, nausea, vomiting, diarrhea, or heartburn
- Blurred vision or dry mouth
- Decrease in appetite
- Sulfur-like taste



**This medication is not addictive and you shouldn't stop taking it without talking to your doctor.**

## Contact your doctor immediately if you experience:

- Signs of an allergic reaction (rash, itching/swelling of the face, lips, or throat, difficulty breathing)
- Severe nausea, vomiting, or diarrhea that does not improve
- Chest tightness or wheezing
- Unusual swelling or fluid retention
- Coughing up blood, vomiting resembling coffee-grounds, black tarry stools or severe stomach pain



## How do I take this medication?

Take this medication as prescribed by your doctor. Typically, the NAC dose is individualized for each person and the medical condition it is treating. NAC is available in tablet, capsule, or liquid formulations. It can be taken with or without food. Take this medication at the same time(s) every day. Continue taking this medication as prescribed by your doctor, even if it has worked to reduce or stop your symptoms.



## What precautions should my doctor and I be aware of when taking this medication?

- If you are (or begin) taking any other prescriptions, over-the-counter medications, natural health products or supplements, check with your doctor or pharmacist to make sure there are no unsafe drug interactions.
- Attending counselling as recommended by your doctor increases the likelihood this medication will help you.



## What special instructions should I follow while using this medication?

Keep all your appointments with your doctor. Your doctor will monitor side effects and your response to this medication. Drink plenty of fluids to stay hydrated while taking NAC. Do not allow anyone else to use your medication.



## What should I do if I forget to take a dose of this medication?

If you forget to take a dose, take the missed dose as soon as you remember. However, if it is within 4 hours of your next scheduled dose, skip the missed dose and continue with your regular schedule. DO NOT double your next dose to try to 'catch up'.



## How do I store this medication?

Keep this medication in the original container, stored at room temperature away from moisture and heat and protected from light. Keep this medication out of reach and sight of children.



## How does this medication work?

NAC helps the liver detoxify harmful substances, and in the case of acetaminophen overdose, it prevents damage to liver cells by restoring glutathione, an antioxidant. Additionally, NAC has anti-inflammatory properties and helps regulate brain function by modulating the release of glutamate, contributing to its benefits in cannabis use disorder, irritability associated with autism spectrum disorder (ASD), obsessive-compulsive disorder (OCD), hair-pulling (trichotillomania) and skin-picking disorder.



## How well does this medication work in children and adolescents?

NAC is highly effective in treating acetaminophen overdose in children and adolescents. NAC has also shown promising results in reducing cravings for cannabis and improving cognition in youth who use cannabis. Additionally, NAC reduces irritability associated with autism spectrum disorder (ASD) and symptoms of obsessive-compulsive disorder (OCD), particularly when combined with other medications. For other uses, such as hair-pulling (trichotillomania) or skin-picking disorder, the evidence is still evolving but some studies suggest potential benefits. Based on its safety profile in children and adolescents, the potential benefits may outweigh the risks.



## How long should I take this medication for?

Your doctor will discuss how long you may need to take this medication, as the duration of NAC treatment depends on the condition being treated. For acetaminophen overdose, NAC is typically used for 24 hours or less. For other conditions, such as cannabis use disorder, irritability associated with autism spectrum disorder (ASD), obsessive-compulsive disorder (OCD) hair-pulling (trichotillomania) or skin-picking disorder, if NAC has been beneficial and well tolerated, your doctor may recommend continuing treatment, as ongoing use can help prevent symptoms from coming back. If you feel ready to stop taking this medication, you and your doctor can discuss the benefits and risks of stopping or continuing treatment.