

# SPORTS INJURY FACT SHEET

## ASTHMA AND THE ATHLETE

### What is asthma and Exercise-Induced Bronchoconstriction?

Asthma is a condition that causes narrowing and inflammation of the airways, making it harder to breathe. Common symptoms include coughing, wheezing, shortness of breath, and chest tightness. Many factors can trigger asthma symptoms, including exercise.

Exercise-induced bronchoconstriction (EIB) refers to asthma-like symptoms that occur during or after exercise, even in people without a formal asthma diagnosis. Exercise is the only trigger for EIB, which is the main difference between asthma and EIB. EIB is common in people with asthma.

Frequent EIB in people diagnosed with asthma suggests poor asthma control.

### What causes EIB in athletes?

The exact cause of exercise-induced bronchoconstriction (EIB) isn't completely clear. However, it likely happens when the protective lining of the airways gets damaged. Normally, this lining acts as a barrier, keeping out harmful particles like allergens.

But during intense exercise, especially when breathing in cold, dry air, this lining can become irritated or injured. This can cause the muscles around the airways to tighten and produce extra mucus, making it harder to breathe.

For swimmers, especially those who train in chlorinated pools, breathing in chlorine-related chemicals (called chloramines) from the air just above the water might also contribute to EIB.

Airway hyperresponsiveness (AHR) means the airways are more sensitive and can tighten easily. It's a common feature of asthma and can be triggered by things like exercise, cold air, or other irritants.

Athletes who have asthma usually experience this sensitivity all the time because their airways are inflamed. On the other hand, athletes with EIB may only have this reaction during or after exercise. Their symptoms don't always mean they have asthma.

### Risk Factors

- Sports that involve endurance, such as running, swimming and cycling
- Intense training
- Exposure to allergens or changes in weather
- Cold or polluted environments

### Signs and Symptoms

Both asthma and EIB can occur in sport and may present with similar signs and symptoms, including:

- Coughing
- Wheezing
- Shortness of breath
- Chest tightness
- Excess mucus

Symptoms of exercise-induced bronchoconstriction typically peak after, not during, exercise. Symptoms usually resolve spontaneously within approximately one hour.

### Day-to-day prevention

Exercise-induced symptoms in adults, adolescents and children can be prevented by taking a reliever 15 minutes before exercise. Options include salbutamol (e.g. two inhalations of 100 microg/actuation) or, in adults and adolescents, inhaled corticosteroid (ICS)-formoterol.

Patients who are prescribed ICS-formoterol as their anti-inflammatory reliever can take it before exercise, instead of taking salbutamol.

Excessive use of salbutamol (particularly in athletes who practice frequent training) can result in a diminished response, tolerance and loss of the bronchoprotective effect during exercise.

### How to manage asthma attacks

Athletes with asthma should have a Written Asthma Action Plan and access to their medication. Sports Trainers should know which athletes have asthma and be familiar with the signs and symptoms of an attack.

The most common asthma reliever inhaler, often called a blue puffer (e.g. salbutamol [Ventolin, Zempreon or Asmol]), helps open the airways.

It is important that correct inhaler technique is learned and regularly monitored. Pressurised metered dose inhalers should be used with a spacer if possible, to improve lung deposition and decrease the deposition in the mouth and throat.

### Steps for managing an asthma attack:

- Remove the athlete from activity and have them sit upright
- Assist the athlete in using their inhaler (with or without a spacer)
- Follow the 4x4x4 rule:
  - 1 puff of medication
  - 4 breaths
  - Repeat 4 times
  - Wait 4 minutes
- If there is no improvement, repeat the process
- If symptoms don't improve after two rounds, call an ambulance (000) and continue administering medication

Note: Only one puff of medication into the spacer at a time.

### Long-term asthma management

- Ensure the athlete has a current Written Asthma Action Plan
- Consult a GP for personalised treatment options
- Consider testing to confirm diagnosis

Inhaled corticosteroid (ICS)-containing inhalers are the mainstay for treatment of asthma. ICS-containing treatment can decrease the frequency and severity of exercise-induced bronchoconstriction in children and adults. However, ICS treatment may not eliminate exercise-induced symptoms for every person.

### EIB management

If an athlete shows symptoms of EIB, treat them the same way as you would an asthma attack. Sports Trainers should consider having spare inhalers in the first aid kit in case an athlete forgets theirs.

### Managing asthma in elite athletes

Elite athletes must be cautious with asthma medications (inhalers and oral medicines), as some may be restricted under anti-doping regulations. It's important to understand which medications and what dosages are permitted. Some athletes may need a Therapeutic Use Exemption (TUE) for specific medications.

Always check the current WADA Prohibited List, which is updated annually, and coordinate with the athlete's doctor when managing asthma at elite levels.

### Prevention

- Warm up thoroughly before exercise.
- Use a face mask or scarf to avoid cold air.
- Avoid exercising in polluted areas.
- Use a reliever (like salbutamol or budesonide-formoterol) before exercise, if advised by a doctor.
- Maintain good control of asthma.

### Always consult a trained professional

The information above is general in nature and is only intended to provide a summary of the subject matter covered. It is not a substitute for medical advice, and you should always consult a trained professional practising in the area of sports medicine in relation to any injury. You use or rely on the information in this fact sheet at your own risk, and no party involved in the production of this resource accepts any responsibility for the information contained within it or your use of that information.

### Need a sports medicine practitioner?

Visit SMA's *Find a Sports Doctor* [online directory](#) to connect with a qualified Sports Doctor near you.

### Looking for more information?

Sports Medicine Australia (SMA) is the peak national body for sports medicine, sports science and injury prevention education, dedicated to keeping Australians active, healthy and safe.

The SMA website is packed with practical resources, fact sheets and tools to support you, your team and your community to perform at their best while reducing the risk of injury.

You can explore nationally recognised training courses, including Provide First Aid and Provide Cardiopulmonary Resuscitation (CPR), as well as our industry-leading sideline support courses such as Sports Trainer Level 1 and 2, Introduction to Sports Taping, Introduction to Sports Massage and more.

[www.sma.org.au](http://www.sma.org.au)

### Further information - National Asthma Council Australia

National Asthma Council Australia. (2025). Australian Asthma Handbook, The National Guidelines for Health Professionals. (Version 3.0). Available at <https://www.astmahandbook.org.au/clinical-topics/exercise-and-asthma>

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