

Thunderstorm asthma

It seems reasonable to think that rain would relieve allergic rhinitis (hay fever) and asthma triggered by pollen, by washing pollen out of the air. However, rain from some thunderstorms can make some people's symptoms worse. Epidemics of thunderstorm asthma in Australia have occurred in Melbourne and Wagga Wagga.

Around 1 in 4 people with allergic rhinitis also have asthma

It is important to recognize that pollen can trigger asthma as well as hay fever symptoms. Many people with hay fever due to grass pollen allergy can get wheeze or chest tightness in the spring and summer season when they also have hay fever. This is likely to be asthma triggered by grass pollen allergy.

Grass pollen can be wind-blown for long distances

Grasses rely on the wind to distribute their pollen. A single hectare of ryegrass pasture, for example, will release hundreds of kilograms of pollen per season. The concentration of pollen will be highest nearest its source, but high speed winds can distribute pollen grains over long distances.

Intact pollen grains (generally 12-60 micrometre diameter) are usually trapped in the upper airways and do not reach the lungs. Other allergen carrying particles including atmospheric pollutants (as small as 0.1 micrometre diameter) can carry grass and tree pollen allergens. Unlike intact pollen, these smaller particles are capable of reaching the small airways of the lung and triggering asthma attacks.

Thunderstorms and weather changes can trigger asthma attacks

Thunderstorm asthma is thought to be triggered by massive loads of small pollen allergen particles being released into the air during some thunderstorms that have rapid changes in wind, temperature and humidity.

A single pollen grain contains up to 700 starch granules and some grass pollen allergens are located in these starch granules. When it rains or is humid, pollen grains can absorb moisture and burst open, releasing hundreds of small pollen allergen particles that can penetrate deep into the small airways of the lung.

Not everyone affected by Australian thunderstorm asthma epidemics has had thunderstorm asthma before. However, they have usually had severe hay fever and have been found to be allergic to ryegrass pollen.

It is important to note that:

- Not all thunderstorms, even on days with high pollen counts, trigger thunderstorm asthma
- Other weather factors are involved in thunderstorm asthma
- It is not only people with pollen allergy who may be affected by thunderstorm asthma
- Other allergens such as fungal spores, massive humidity and temperature changes over a short period can also affect some people with asthma and other respiratory diseases during a thunderstorm

Pollen asthma can be treated effectively

If you wheeze during Spring or have severe hay fever, see your doctor for appropriate advice.

If your asthma is triggered by pollens, and is worse in the spring and summer when hay fever is active, then it is important that you have a current asthma action plan and that you regularly use a preventer medication, especially during this time.

Allergen immunotherapy (desensitisation) reduces pollen allergy and has been shown to be beneficial for hay fever (allergic rhinitis) and allergic asthma.

What can I do to protect myself from thunderstorm asthma?

Firstly see your doctor to make sure that your hay fever due to grass pollen is well treated. Regular use of nasal corticosteroid sprays is more effective than antihistamine tablets for severe hay fever, and both treatments can be used together.

If you experience any symptoms of asthma such as chest tightness, wheeze, shortness of breath, cough, waking with breathing symptoms then see your doctor for assessment and get a plan to manage asthma.

You should have access to a preventer medication and make sure to use it every day, particularly if high pollen counts and or thunderstorms are predicted.

Thunderstorms are common in spring so if you have bad hay fever try to avoid being outside on high pollen days, particularly during windy days and thunderstorms.

Further information

Allergic Rhinitis: www.allergy.org.au/patients/allergic-rhinitis-hay-fever-and-sinusitis

AusPollen pollen monitoring network: www.pollenforecast.com.au

Sydney, Melbourne, Canberra and Brisbane pollen count websites and apps are available at:

www.sydneypollen.com.au

www.melbournepollen.com.au

www.canberrapollen.com.au

www.brisbanepollen.com.au

Asthma Australia: www.asthmaaustralia.org.au/

National Asthma Council: www.nationalasthma.org.au

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