



Cabin Air Quality Event

FAQs

What is a Cabin Air Quality Event (CAQE)?

Cabin pressurisation and air-conditioning generally uses a combination of recirculated air that is filtered, and 'bleed air' from the engines.

Cabin air needs to meet air quality standards (such as the American Society of Heating, Refrigerating, and Air-Conditioning Engineers ASHRAE), and extensive research has shown cabin air to be of high quality in normal operations.

Uncommon Cabin Air Quality Events (Commonly referred to as odour, smoke or fumes events) can occur when cabin air becomes odorous or (rarely) if it is contaminated e.g. by trace amounts of oil or hydraulic fluid or other agents from the engines or APU.

What are the procedures if there is a CAQE?

CAQEs can be minor odour events (e.g. from galleys, lavatories, passengers or extraneous sources), or more serious when the air contamination is persistent, causes symptoms (irritant) or causes illness (noxious).

For the more serious events, operating crew are trained to take a conservative approach, and this may result in an air turn-back, or the precautionary donning of oxygen masks and/or smoke hoods.

For detectable smoke and/or fumes, a Smoke and Fumes Protocol should be followed during flight and then upon landing. This protocol may involve operating crew, engineers, safety and health personnel and management in a coordinated assessment.

Technical investigations should always be conducted to find the source of the smoke/fumes/odours and correct it. Engineering and other improvements are constantly being sought to reduce the likelihood of these events.

What are the possible Health Effects of a CAQE?

In most CAQEs there is no impact on crew or passengers and all that is noticed is an unusual smell.

In some events, crew and/ or passengers experience symptoms. Affected aircrew are generally interviewed by safety and/or medical personnel and given appropriate advice. Health effects are usually short lived and resolve over hours-to-days. These can include Irritation of the eyes, nose, mouth or throat, shortness-of-breath, headache, nausea and abdominal discomfort and tiredness.

It is important to note that the nose and eyes are extremely sensitive organs and can detect and react to substances that are present at lower-than-micro-concentration levels. Irritant symptoms are our body's way of warning us of low level exposures so that we can take corrective actions. Irritation does not mean that someone will become ill. An analogy is our eyes response to cutting onions. We can become extremely irritated by this colourless substance but there is no health effect.

What is 'Aerotoxic Syndrome'?

Some crew who have been involved in CAQEs do subsequently experience ongoing ill health and may link their symptoms to the exposure, however the research to date has not established any causative link.

The risk to the longer-term health of crew involved in such events is a controversial issue and whilst research on the subject needs to continue, there is much misinformation in popular media and online that is not scientifically based.

Aerotoxic syndrome is not a medically or scientifically recognised diagnosis, and there are no scientifically valid tests or treatments. The label of *aerotoxic syndrome* is unhelpful, and it's important for treating medical practitioners to accurately diagnose and treat the known medical effects of smoke/fumes exposures.

Being involved in a CAQE event can be a stressful and not surprisingly, can create anxiety in some crew. Reading information from lobby groups or being told that you will become sick can worsen this anxiety and some susceptible crew members may actually feel unwell because of these anxieties. It is important to receive factual based information so that no harm is done from these well-meaning and concerned groups and individuals.

What can I do if I suspect that I've been exposed or affected in a CAQE?

- Follow procedures from the relevant operating manuals
- Be conscious of other crew and/or passengers who may have been exposed
- Relay any symptoms you have to your on-board manager and/or ground manager
- Seek clear medical direction around your symptoms
- Actively seek reassurance for any concerns or uncertainties. If available, contact your company Medical Services or designated physicians if you would like to discuss any health concerns.
- Ensure early medical assessment for symptoms that aren't mild or that don't resolve quickly by themselves
- Follow your company procedures if you feel too unwell to work

Where Can I Get More Information?

Here are some internationally recognised resources –

- IATA Guidance – Cabin Air Quality Event

<https://www.iata.org/whatwedo/safety/health/Documents/guidance-medical-response-cabin-air-events.pdf>

- AsMA – Health Effects of Contaminants in Aircraft Cabin Air

<https://www.asma.org/asma/media/asma/Travel-Publications/Air-contamination-health-effects-report-v2-7-Apr2014.pdf>

- ASAM Position Paper on Aircraft Cabin Air Quality Events

https://www.asam.org.au/sites/asam.org.au/files/documents/aircraft_cabin_air_quality_position_paper.pdf

- CASA - Contamination of aircraft cabin air by bleed air – a review of the evidence

<https://www.casa.gov.au/file/82021/download?token=gh4Wxle2>

- CDC – Aircrew Safety and Health

<https://www.cdc.gov/niosh/topics/aircrew/cabinairquality.html>

- CAA UK – Cabin Air Quality

<https://www.caa.co.uk/Passengers/Before-you-fly/Am-I-fit-to-fly/Health-information-for-passengers/Cabin-air-quality/>

- EASA studies

<https://www.easa.europa.eu/document-library/research-projects/easarepresea20144>

<https://www.easa.europa.eu/document-library/research-projects/easarepresea20152>

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