

## DDRC Healthcare – looking at things slightly differently... Asthma



Compiled by the DDRC Healthcare research department

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This presentation has been put together by DDRC Healthcare. It focuses on a basic understanding of asthma together with the guidelines for divers with asthma.

This lecture is not intended to be an in depth medical lecture, but merely a “basics lecture” to enable divers to better understand the condition, and to ensure that divers know the guidelines regarding diving and asthma, and where to source the relevant authoritative report.

# **Asthma and Diving**

## **What is Asthma?**

One of the most common medical conditions

Affects over 5 million people in the UK

About 250,000 are severely affected



So what is asthma?

Asthma affects some 5 million people in the UK, with 250,000 people severely affected, requiring frequent visits to their GP and/or hospital.

# Asthma and Diving

## What is asthma?

Caused by contact with something that irritates the airways

This is called an asthma trigger:

Animals, air pollutants, colds & viral infections, emotions exercise, food, hormones, house-dust mites, medicines, moulds & fungi, pollen, sex, smoking, weather



Asthma is generally caused by something that irritates or aggravates the airways – these irritants are called “triggers”. These may be any of the triggers on this list, and not all asthma sufferers will be susceptible to all triggers.

We frequently hear about people having problems around animals and dust mites, or by exercise or cold – so different people have different triggers.

# Asthma and Diving

## What is asthma?

The “trigger” causes the following to happen:

Muscles around the walls of the airways tighten

Airways become narrower

Lining of airways becomes inflamed and starts to swell

Mucus or phlegm can build up, further narrowing airways

The reactions cause the airways to become narrower and irritated  
- making it difficult to breath and leading to symptoms of asthma



The trigger causes the muscles around the walls of the airways to tighten, causing restriction of the airways. This in turn makes the airways become inflamed and swell. There may also be a build up of mucus or phlegm, and this will make the airways even narrower. All these things happening make it harder and harder to breath.

# Asthma and Diving

## What is asthma?

The symptoms:

- Coughing
- Wheezing
- Shortness of breath
- Tightness in the chest

The symptoms differ from one person to the other,  
not everyone will have all the symptoms



Difficulty in breathing causes the symptoms of coughing, wheezing, shortness of breath, and/or tightness feeling in the chest.

Obviously, not everyone has all the symptoms – the symptoms will differ from one person to the other.

# Asthma and Diving

## What is asthma?

There is no cure for asthma

It is a lifelong condition, an asthma attack can occur unexpectedly

Most people control their asthma with medications

These may include – relievers, or preventer inhalers, steroids, spacers, or nebulisers

Medications enable an asthma sufferer to get on with their daily normal life



Asthma is not curable, but it *is* controllable. This is usually with medications which again will vary from person to person, depending on the severity, frequency, and trigger factor.

# Asthma and Diving

## What is asthma?

Can I go diving if I have asthma?

The lung – pulmonary circulation is a major role in preventing DCI

Pulmonary problems are associated with increased DCI risk

DCI *incident* data due to asthma – is difficult to substantiate - but

Cold, exercise and emotional asthma triggers are a contraindication for diving



So – with a simple understanding of what asthma is – the next question to ask is, can I go diving if I have asthma?

A healthy pair of lungs is a very important requirement of “fit to dive”. However it is difficult to define the DCI risk in relation to asthma – many of the quoted DCI rates per 1000 dives are estimated, and identifying any exact health cause of the DCI incident is nearly impossible.

But the three asthma triggers of cold, exercise and emotion are of great importance when considering if a diver is fit to dive.

# Asthma and Diving

## What is asthma?

Can I go diving if I have asthma?

There has been a huge amount of debate between the dive training organisations, the medical fraternity, and even between countries regarding whether it is safe for people with asthma to dive – because of this controversy...

In 2003 a UK working party was established – “ the British Thoracic Society Fitness to Dive Group” - to formulate national recommendations for assessing respiratory fitness to dive



Because it is so difficult to understand the risks of diving with asthma, due to the problems of so little usable data, there has been a vast amount of argument and disagreement over the years as to the guidelines for fit to dive with asthma. Differences have even extended to debate between countries.

So, in 2003 it was decided that a sub group of the British Thoracic Society Standards of Care Committee would be formed to draw up guidelines to assess respiratory fitness to dive.

# **Asthma and Diving**

## **What is asthma?**

The group produced a set of guidelines

<http://www.brit-thoracic.org.uk/guidelines/diving-guideline.aspx>



This eleven page document can be down-loaded from this website and should be used by the diver's medical advisor.

# **Asthma and Diving**

## **The guidelines**

Five headings:

The diving environment

Potential risks to diving

Assessment of respiratory fitness to dive

Recommendations on specific respiratory conditions

Long term effects of diving on the lung



The guidelines are divided roughly into five sections which are too numerous to detail in this presentation. However under potential risks to diving it stresses that assuming the diver with asthma is passed as fit to dive then consideration should be given to the following.....

# Asthma and Diving

## The guidelines

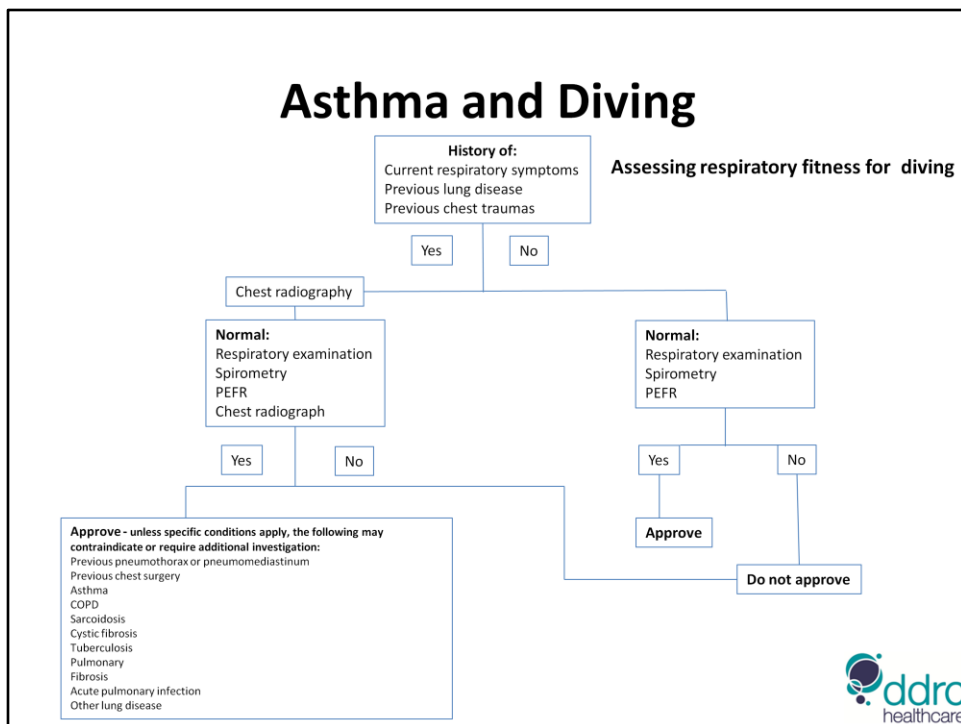
### Potential risks to diving

- Swimming in strong currents
- Rescuing a buddy in an emergency
- Diving is associated with lung rupture
- The gas breathed by the diver may be very cold
- Good buoyancy control is essential



Swimming in strong currents, rescuing a buddy in an emergency, remembering that diving is a sport associated with lung rupture, the gas breathed by the diver may be very cold, and good buoyancy control is essential.

You don't want to be swimming in a strong current, trying to rescue your buddy, and breathing really cold gas if your asthma triggers are exercise and/or cold!



The document also gives a pathway or algorithm for respiratory fitness to dive, showing the medical examinations needed for approval to dive – and these are further expanded in the full eleven pages of the BTS guidelines.

# Asthma and Diving

## The bottom line

The UK Sport Diving Medical Committee medical standards

Asthmatics may dive if they have allergic asthma, but *not if they have cold, exercise or emotion induced asthma*

All asthmatics should be managed in accordance with British Thoracic Society Guidelines

Only well-controlled asthmatics may dive

An asthmatic should not dive if he/she has needed a therapeutic bronchodilator in the last 48 hours or has had any other chest symptoms

[http://www.uksdmc.co.uk/index.php?option=com\\_content&view=article&id=8:asthma&catid=4:respiratory&Itemid=2](http://www.uksdmc.co.uk/index.php?option=com_content&view=article&id=8:asthma&catid=4:respiratory&Itemid=2)



The UK Sport Diving Medical Committee medical standards state that an asthmatic who suffers from cold, exercise or emotion induced asthma should *not* be passed fit to dive. The UKSDMC also reinforces that all asthmatics should be managed in accordance with the BTS guidelines.

Asthmatics should also have a good control of their asthma, and should not dive if he/she has needed a therapeutic bronchodilator in the last 48 hours before diving, or they have any other chest symptoms.

The full UKSDMC guidelines can be found at [www.uksdmc.co.uk](http://www.uksdmc.co.uk).

# Who and What is DDRC Healthcare?

Not for profit charitable organisation  
Founded over 30 years ago  
Emergency recompression  
Fitness to dive advice  
Medicals  
Education  
Research  
Hyperbaric oxygen therapies



DDRC Healthcare would like to thank you for using this presentation and hope that you have found it informative. If so, please tell your diving friends about us, the work we do, and the services we provide.

All our diving research relies on funding from our charitable status, so we would appreciate you, or your club/school, making a donation for the use of this presentation, if you feel able.

Thank you so much!

DDRC Healthcare is a registered charity (No 279652)