

## Asthma and the competitive swimmer

### Introduction

One in seven children and one in 25 adults in Great Britain have asthma and the number is growing. Thus every swim squad or club will have a number of asthmatics and it is important for coaches and club officials to have at least a basic knowledge of the condition.

Asthma is a disorder of the small airways of the lungs which become sensitive to certain triggers which lead to them narrowing down when they become inflamed. This results in the child or adult becoming wheezy, short of breath or having a cough. The underlying cause is partly genetic and partly environmental.

The triggers can vary from patient to patient but often includes colds and viral infections, pollens and moulds, pets, dust, tobacco smoke, emotion and stress, cold air and some medications, such as aspirin. Unfortunately for swimmers, chlorine, used to clean swimming pool water, may be a trigger in some asthmatics. Some people's airways narrow down during exercise. This is known as exercise-induced asthma (or E.I.A.) and typically comes on after 5-10 minutes of a training session.

However, swimming is a sport at which asthmatics can and often do excel, as the warm, moist air of the indoor pool doesn't trigger an attack. A number of the current British team have asthma and at least six Olympic Gold medallists in the aquatic events have been suffers of the condition.

### How is it diagnosed?

It is possible to measure how quickly someone can expel air from his or her lungs by using a simple hand-held air flow meter. This is known as a 'peak flow' test and is a measure of the narrowing of the lung's airways. There are predicted peak flow levels for an individual's sex, age and height. Diagnosis is confirmed if, after exercise or treatment by inhaler, there is a 15% change to the person's optimum or predicted peak flow. Peak flow diaries can be very helpful so that people can detect variations themselves by carrying out regular peak flow tests.

### Declaration

Once asthma has been diagnosed a treatment has been started, it is **mandatory** that athletes attending British Swimming national events i.e. National Age Groups, British Swimming championships, British Water Polo Semi finals/finals (excluding master events), declare this to the A.S.A together with the details of the medication that they are taking. This is essential to avoid falling foul of Doping Control regulations. The notification must be done on an annual basis. Any subsequent changes in medication should also be notified.

*Remember: it is your responsibility to keep the ASA informed.*

### How is the condition managed?

Modern management of asthma is a shared care process with the patient taking some responsibility for their condition in conjunction with their general practitioner. Nurse-led asthma clinics now occur at most G.P. surgeries and these help to maintain good control, check inhaler technique and monitor progress.

The peak flow meter, which every asthmatic should have, is the cornerstone of management. This measures the performance of the lungs and, if charted, gives a clear idea of how well controlled the asthma is. Each asthma sufferer should know what his or her peak flow should be and have a self-management plan for when the condition deteriorates.

### Types of treatment

There are two types of medication to treat asthma – relievers and preventers. Both are inhalers and they are colour coded to help identification.

1. *Relievers* – These inhalers are colour coded blue e.g. salbutamol (*Ventolin*). They work to open up the airways are also known as bronchodilators (or beta 2 agonists).

These are mostly used after symptoms appear but sometimes give brief protection against triggers such as exercise if they are taken before they appear. It is important NOT to exceed the maximum dose of 2 puffs four times daily, except in an emergency, as high level may trigger a positive Doping Control test.

2. *Preventers* – if taken regularly these can prevent an asthma attack occurring. They protect the lining of the airways and make them less likely to narrow when triggered.

There are two main types: -

Steroid based inhalers – colour coded brown – e.g. beclomethasone (*Becotide*)

Cell membrane stabilisers – colour coded white – e.g. sodium cromoglycate (*Intal*)

These should NOT be used for treating an acute attack, as they don't bring immediate relief. They can take up to 14 days to be fully effective when taken regularly. Sodium cromoglycate can be helpful if there is a strong allergic component to the asthma. Other long acting inhalers and oral tablets form a second line treatment if the above do not adequately control the condition.

### **The Step Care approach to treatment**

The current treatment of asthma follows guidelines as laid down by the British Thoracic Association. They take the form of a step care plan, now known as the British Guidelines for the Management of Asthma. This involves stepping up the level of treatment until satisfactory control is achieved. It is important not to over treat and stepping down is as important if the asthma is well controlled.

#### *Step 1.*

Use an inhaled short acting bronchodilator (such as salbutamol) for symptom relief up to once or twice daily. If you need more than this move to step 2.

#### *Step 2.*

Use an inhaled short acting bronchodilator for symptom relief plus regular low dose inhaled steroid twice daily (such as beclomethasone) or in some cases the preventer sodium cromoglycate.

#### *Step 3.*

Use an inhaled short acting bronchodilator for symptom relief plus regular high dose inhaled steroid via large volume spacer or low dose oral steroids or a long acting bronchodilator

For patients who present more of a management problem, two higher steps are available. It is also worthwhile all asthma sufferers having the flu vaccine.

### **What drugs are legal/ illegal?**

The reliever inhalers such as salbutamol (*Ventolin*) and terbutaline (*Bricanyl*) are permitted substances under ASA and FINA law as are the common steroid preventer inhalers such as beclomethasone (*Becotide*), budesonide (*Pulmicort*) and fluticasone (*Flixotide*).

The preventer inhaler sodium cromoglycate (*Intal*) can be used legally, as can the more recently introduced oral leukotrine antagonists e.g. montelukast (*Singulair*) and the longer lasting bronchodilator inhaler salmeterol (*Serevent*).

Swimmers on International and Domestic Squads will require an Abbreviated Therapeutic Use Exemption in order to take these medications.

However, for the competitive swimmer salbutamol tablets are NOT permitted and the older inhalers (although very rarely used these days) such as isoprenaline, ephedrine, orciprenaline are banned.

Sometimes a short course of oral corticosteroid drugs is necessary to bring the asthma under control. If this is the case the swimmer **must not** compete until at least two weeks after the course has finished or they may test positive if subjected to Doping Control. For those in International and Domestic Squads a Standard Therapeutic Use Exemption is required before taking this medication.

The reason why declaration of asthma is essential is that the beta agonists and steroids drugs may enhance performance (by stimulatory and anabolic effects on the body) if used by an athlete without asthma.

When tested at doping control you must declare the asthma medication you are taking. Never let another swimmer use your inhaler for fun.

### **How do you know if the asthma is not well controlled?**

Measuring the peak flow is one of the best ways of determining good control. Detection of a lower than normal level, or a declining level, should prompt an active review of treatment. The swimmer may complain of nighttime cough or wheezing or may have to get out of a training session due to wheeziness, cough or shortness of breath.

### **When should the swimmer take their inhaler relative to training or an event?**

The reliever inhalers should be taken, if necessary, between 15 and 30 minutes before training or competition to allow maximum time to work properly. One to two puffs are particularly useful in those patients who suffer from exercise induced asthma.

The swimmer should NOT keep getting in and out of the water for a quick puff of their inhaler. Coaches should actively discourage this habit. This usually means that the asthma is not well controlled and the treatment needs to be reviewed.

However, the swimmer's 'rescue' inhaler should be readily at hand if needed. Swimmers should never share inhalers.

### **What to do if a swimmer has an asthmatic attack in the water.**

The swimmer concerned should be removed immediately from the water. The swimmer should be reassured and calmed, encouraged not to hyperventilate and given one to two puffs of their usual reliever inhaler.

If there is no response after 5 minutes, this can be repeated.

If, after this has been done and the swimmer is still distressed, unduly short of breath, has a rapid pulse or becoming blue around the lips (cyanosed), medical help should be sort urgently and, if necessary, an ambulance called. Oxygen can be given if available whilst awaiting help.

### **Useful information**

Asthma UK offer advice and publications. They are based at Summit House, 70 Wilson Street, London EC2A 2DB. Tel 020 7786 4900 [www.asthma.or.uk](http://www.asthma.or.uk) You can talk with an asthma nurse specialist on 08457 010203.

Peak flow charts and self-management plans are available through G.P. surgeries and peak flow meters can be obtained on prescription.

The Drug Information Database, supported by UK Sport, allows you to search for your medications if you are worried that you might be taking a banned substance. [www.didglobal.com](http://www.didglobal.com)