



# **THERAPEUTIC EDUCATION FOR PATIENTS WITH ASTHMA**

**ADULTS AND ADOLESCENTS**

**JUNE 2001**

**Guidelines Department**

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## FOREWORD

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The amount of information being published in the field of medicine is constantly increasing, and new technologies are rapidly being developed for the prevention, diagnosis and treatment of disease. It has become increasingly difficult for practitioners to assimilate all the information arising from the scientific literature, summarize it and incorporate it into their everyday practice.

The National Agency for Accreditation and Evaluation in Health (ANAES), the successor to the National Agency for Medical Evaluation (ANDEM), has the specific mission of promoting evaluation in the domain of techniques and patient management approaches, particularly the development of professional guidelines. This in turn contributes to a better understanding of the mechanisms linking evaluation, quality improvement and harmonization of the health system.

Professional guidelines have been defined as “proposals developed methodically to help practitioners and patients find the most appropriate form of care in a specific clinical situation”. Their main aim is to provide practitioners with a summary of the scientific evidence available and the opinion of experts on a subject of clinical practice. They are an aid to decision-making insofar as they define what is appropriate, what is not, what is no longer appropriate, and what remains uncertain or controversial.

The professional guidelines contained in this document were produced by a multidisciplinary group of health professionals, using an explicit method published by ANAES in a document entitled “Clinical Practice Guidelines – Method to be used in France – 1999”.

The production and implementation of practice guidelines contributes to improving the quality of care given to patients and to a better use of resources. ANAES does not set out to be prescriptive but rather to respond to the concerns of professionals who are trying to base their clinical decisions on the most rigorous and objective basis possible.

Professor Yves MATILLON  
Executive Director, ANAES

These guidelines were produced at the request of the French Social Security funds and of the French National Health Executive. They were produced under the aegis of the National Agency for Accreditation and Evaluation in Health (ANAES) in cooperation with representatives from the following organizations:

- *Association française de rééducation et d'évaluation en kinésithérapie;*
- *Association pour la promotion de l'expertise et de la recherche en soins infirmiers;*
- *Collège national des généralistes enseignants;*
- *Comité français d'éducation pour la santé;*
- *Société de formation thérapeutique du généraliste;*
- *Société française d'allergologie;*
- *Société française des infirmiers en soins intensifs;*
- *Société française de médecine générale;*
- *Société de pneumologie de langue française.*

The method used is described in the guide “Clinical Practice Guidelines – Method to be used in France – 1999”, published by ANAES.

The report was coordinated by Anne-Françoise Pauchet-Traversat, under the supervision of Dr. Patrice Dosquet, head of the Guidelines Department.

Documentary research was coordinated by Emmanuelle Blondet with the help of Maud Lefèvre, under the supervision of Rabia Bazi.

Secretarial services were provided by Marie-Laure Turlet.

The National Agency for Accreditation and Evaluation in Health would like to thank the members of the Steering Committee, the Working Group, the Peer Review Group and the members of the Scientific Council, who took part in this project.

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## GENERAL METHOD FOR PRODUCING GUIDELINES

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At ANAES, clinical practice guidelines are drawn up by a working group of professionals after a critical appraisal of the scientific literature. The draft guidelines are submitted to a peer review group for comments before being validated by the ANAES Scientific Council.

### *1. Retrieval of the literature*

A systematic literature search of the COCHRANE, EMBASE, HealthSTAR, MEDLINE and PASCAL databases is carried out to identify clinical practice guidelines, consensus conferences, articles on medical decision-making and literature reviews and meta-analyses (over a period of 10 years) on the subject. This search is completed by a search for articles (in French or English) on relevant clinical trials. Other databases are searched if necessary.

Reference lists obtained by the automated searches are completed by a manual search for recent articles in relevant periodicals, by references cited in retrieved articles, by articles provided by members of the working and peer review groups, and by an online search for recent abstracts and review articles (over the last year).

Relevant decrees, orders and circulars from the Ministry of Health are consulted. The grey literature (i.e. publications not indexed in official catalogues or in the usual information distribution circuits) is obtained from learned societies, via the Internet or by other methods.

### *2. Constitution of the working group and peer review group*

Learned societies are asked to suggest possible participants for the working and peer review groups. For these guidelines on patient education for asthmatics, ANAES formed a working group of 17 members from various specialties. The group was balanced in terms of type of practice (specialists and non-specialists in university or general hospitals, independent specialists and general practitioners) and geographical distribution (regions of France). The working group is led by a chairperson (who chairs the meetings and collates comments) in association with a project leader (who produces the report for discussion by the working group on the basis of the critical appraisal of the literature). A representative from ANAES assists the group, ensuring that the working method is consistent with the principles of evidence-based medicine and acts in an advisory capacity to the project leader.

### *3. Critical appraisal of the literature and drafting of guidelines*

The project leader assesses the methodological quality and level of scientific evidence of the scientific literature and drafts a report, with the help of the ANAES representative. Articles are classified into categories according to levels of scientific

evidence, using specific charts drawn up by ANAES that set out the criteria to be met for each level of evidence.

The working group proposes guidelines as follows:

- a *grade A guideline* is based on scientific evidence established by trials of a high level of evidence, e.g. randomised controlled trials of high power and free of major bias, and/or meta-analyses of randomised controlled trials or decision analyses based on properly conducted studies;
- a *grade B guideline* is based on presumption of a scientific foundation derived from studies of an intermediate level of evidence, e.g. randomised controlled trials of low power, well-conducted non-randomised controlled trials or cohort studies;
- a *grade C guideline* is based on studies of a lower level of evidence, e.g. case-control studies or case series.

In the absence of scientific evidence, the proposed guidelines are based on *agreement among professionals* in the working group, after they have taken account of the comments made by the members of the peer review group. Lack of scientific evidence does not mean that the guidelines are not relevant and useful but that further studies should be carried out, if possible.

#### *4. Role of the peer review group*

The peer review group consists of over 50 professionals with expertise in the activity sectors covered by the guidelines. They are consulted by post. They comment on the readability, feasibility and applicability of the guidelines and on the supporting draft report prepared by the project leader and discussed by the working group. The comments of the members of the peer review group are forwarded to the working group who make appropriate changes to the guidelines and report.

#### *5. Validation of the guidelines*

The final document consists of the clinical practice guidelines and a report, with references, supporting the statements in the guidelines. It is submitted to the ANAES Scientific Council for validation.

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## CONTENT

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### **WHY?**

Structured patient education (written treatment plan, assessment of symptoms and/or measurement of peak expiratory flow (PEF)) is more effective than just providing information. Patients are taught to manage their own treatment. Their progress in learning requires regular monitoring.

### **FOR WHICH PATIENTS?**

Patient education should be offered at an early stage to all asthmatics, adults and adolescents after an educational assessment, and should be reinforced over time.

Particular attention should be paid to patients with severe or poorly controlled asthma and to patients at risk of severe acute asthma.

### **BY WHOM?**

Professionals who become involved in patient education at various levels, whether located in the same care establishment or not, are: general practitioners and specialists; nurses; physiotherapists (physical therapists); pharmacists; psychologists; social workers; environmental advisors or technicians.

The supporting role of the patient's family members and others close to the patient is very important, particularly for adolescents.

### **WHERE?**

Patient education should be offered during consultations, during hospitalisation, or in specific centres or care networks.

### **PATIENT EDUCATION IS AN INTEGRAL PART OF CARE**

Every meeting with an asthmatic should be an opportunity to maintain, reinforce or lead the patient to acquire new knowledge, skills and types of behaviour.

Educational sessions are an opportunity to:

- evaluate the asthma with the patient (control and severity);
- ensure good control and compliance with treatment;
- obtain good environmental control;
- maintain physical activity.

### **APPROACH TO PATIENT EDUCATION: 4 stages**

1. Tailor patient education to each asthmatic by means of an educational assessment. Five questions to describe the patient, their needs and their expectations: what do they have? What do they do? What do they know? Who are they? What are their plans?
2. Agree with the patient on the skills they can most usefully acquire (safety, autonomy).
3. Suggest structured educational activities to the patient over time as part of a programme, such as oral information reinforced by written information, learning how to manage their asthma themselves, practical skills, psychosocial support.
4. Evaluate the successes and problems the patient has in applying these strategies in their everyday life.

### **FOLLOW-UP OF EDUCATION**

During education sessions, follow-up should include:

- assessing the skills that have been acquired, skills to be maintained and skills to be reinforced;
- progress in using an inhaler;
- problems experienced by the patient in managing their own treatment;
- how the patient's asthma affects their everyday life;
- maintenance of scheduled educational sessions and the benefit of scheduling further sessions.

### **MEDICAL FOLLOW-UP**

During scheduled medical appointments, follow-up should include:

- assessment of the asthma (control and severity);
- adjustment of basic treatment;
- adjustment of the action plan;
- control of the patient's environment and giving up smoking;
- frequency of occurrence of exacerbations, use of emergency services, unscheduled visits to the doctor, admission to hospital, stays in intensive care, absence from work or school.

A summary of the data concerning a patient, that has been collated by the doctor or a team member and that has been sent to health professionals dealing with the patient, should be given to the patient.



**Examples of intellectual<sup>1</sup>, practical<sup>2</sup> and verbal<sup>3</sup> skills described in terms of the patient's capacity to develop them**

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**Assessment of asthma and understanding of the disease**

Be aware of symptoms that indicate a change in lung function leading to an asthma attack.

- Recognize warning signs of exacerbation of asthma
- Interpret breathing problems

Measure PEF correctly

Express feelings and experience of the disease and its treatment

React by deciding to call a doctor in good time, using defined criteria for deterioration of lung function

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**Drug therapy**

Explain the action of drugs, if necessary in relation to the mechanisms of asthma

- Differentiate between the action of long-term therapy and quick-relief therapy for an acute attack
- Differentiate between inflammation of the bronchi and bronchospasm

Use a standard metered-dose aerosol correctly (with spacer if appropriate) or an automatic device or dry powder inhaler

Interpret the PEF value recorded and the symptoms experienced to decide which of the three treatment self-management zones (green, orange, red) is applicable

- Record PEF results, events, and the situation in which asthma attacks occur in a diary

Adjust treatment, taking account of the written treatment plan defined with the doctor, in the event of exacerbation

Adjust treatment in relation to the risks present in the personal and social environment, and during a change of environment

Explain the disease to relatives and friends, and explain what to do during an asthma attack

Select useful information on the disease and its treatment (journals, magazines, Internet)

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**Control of the environment**

Act on the presence of trigger factors in the domestic environment, social and working life

- Identify the presence of allergens in the environment
- Identify asthma-triggering situations in order to take preventive action

Adapt everyday and leisure activities according to air pollution

Draw up a plan to give up smoking with the help of the doctor

- Recognize the harmful effects of tobacco smoke on lung function
- Restrict the number of cigarettes smoked and occasions for smoking

Act on the environment to reduce the risks related to passive exposure to tobacco smoke

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**Physical exercise**

Do physical exercise in relation to exercise tolerance

- Recognize that there are no contraindications to any physical activity, except for the legal contraindication to deep-sea diving

Improve exercise tolerance (physiotherapy sessions)

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<sup>1</sup> Knowledge, interpretation of information, problem solving, decision taking, development of a critical attitude.

<sup>2</sup> Technical skill.

<sup>3</sup> Capacity for communicating information about their state of health.

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## GUIDELINES

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### I. INTRODUCTION

Several studies have shown that many patients with asthma do not comply with the treatments that they have been prescribed. It is important not only that they should take their medicines, but that they, their family and friends should acquire a better understanding of the mechanisms underlying asthma and of the effects of treatments. Patient education should be an integral part of treatment and should take account of the patient's perception of their disease and their symptoms and of their aspirations in life.

Therapeutic patient education is defined as helping patients *acquire or maintain the competencies they need to manage as well as possible their lives with a chronic disease. It is an integral and a continuing part of patient care. It comprises organized activities, including psychosocial support, designed to make patients aware of and informed about their disease, so that they (and their families) understand their disease and their treatment, collaborate with each other and take responsibility for their own care as a means of maintaining or improving their quality of life* (Therapeutic patient education, WHO 1998).

Currently, the development of therapeutic patient education is a public health priority in France. A national action programme (2002-2005) has been set up, the present guidelines have been commissioned, and therapeutic patient education has been included as a procedure in the new French codes and classification system (nomenclature of the CNAMTS<sup>4</sup>).

Educational strategies have been little described and are fairly diverse, particularly with regard to the skills that patients need to acquire, educational content and techniques, and the professionals involved. Nevertheless, professionals seem to agree on general principles and objectives. Structured patient education for asthmatics includes a written treatment plan, assessment of symptoms and/or measurement of peak expiratory flow (PEF), and regular monitoring. It has been introduced only recently.

Published studies report follow-up periods of only up to a year. However, the efficacy of educational programmes has to be measured over the long-term. Aspects that are not just biomedical need to be taken into account. The acquisition of skills and capacity for action by asthmatics depend on the educational programme, on how it is implemented, and how it is experienced. It also depends on individual patient factors that are not identified by an assessment of educational needs and which require long-term monitoring of patients.

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<sup>4</sup> CNAMTS (*Caisse Nationale d'Assurance Maladie des Travailleurs Salariés*): National Health insurance fund for salaried workers

## **1. Subject of the guidelines**

These guidelines concern patient education for adult and adolescent asthmatics.

Asthma is a common chronic disease which occurs at any age and affects everyday life, school and work. Children and young adults are the most affected. The disease may take various forms (types of symptom, frequency of attacks and exacerbations) and can be reversed with treatment. However, patients have to comply with their treatment and develop the skills they need to manage the disease on an everyday basis. Education about their treatment helps them acquire and maintain these skills. Structured patient education is therefore an integral part of the management of asthmatics.

## **2. Patients concerned**

These guidelines concern adults and adolescents. Occupational asthma has not been addressed.

## **3. Professionals concerned**

The guidelines are intended for professionals who manage asthmatics, i.e. general practitioners, specialists, nurses, physiotherapists, pharmacists, psychologists, social workers, environmental advisors and technicians.

## **II. BENEFIT OF PATIENT EDUCATION IN THE MANAGEMENT OF ASTHMA**

Patient education has been shown to be effective when judged against a number of endpoints concerning control of asthma, particularly admissions to hospital, use of emergency services and unscheduled visits to a doctor (grade A).

Structured patient education (written treatment plan, assessment of symptoms and/or measurement of peak expiratory flow (PEF) by the patient) is more effective than just providing information to the patient. The patient must learn to manage their treatment. Education requires regular monitoring by a doctor during scheduled visits (grade A).

## **III. PLACE OF PATIENT EDUCATION IN THE MANAGEMENT OF ASTHMA**

### **1. Education is for all patients with asthma**

Education should be offered at an early stage to all asthmatics and should be reinforced during follow-up. Particular attention should be given to patients who have inadequate control of their asthma. The educational scheme is structured after assessment of each patient's educational needs according to their potential to learn and their personal plans.

### **2. Education involves those close to the patient**

The patient's family and close friends are concerned and may be involved in treatment. It is essential that they understand the patient's situation and problems. Their supporting role is important, particularly for adolescents.

### **3. Patient education is an integral part of care**

Patient education is centred on the asthmatic. Every meeting with an asthmatic should be an opportunity to maintain and reinforce skills, or lead them to acquire new skills. The patient's understanding of the aims of managing their disease is a necessary part of preventing complications and maintaining quality of life. Patient education involves cooperative management of decisions by patient and carer. The carer suggests which skills need to be developed and how, and negotiates with the patient.

The professionals involved in patient education are:

- general practitioners and specialists;
- nurses;
- physiotherapists;
- pharmacists;
- psychologists;
- social workers;
- environmental advisors or technicians.
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Patient education may be offered during visits, during hospital stays or in specific centres or care networks. It requires an interdisciplinary approach among a number of professionals, and may involve professionals not located in the same care establishment. The professionals build a relationship which includes listening to patients and taking account of their needs, emotions, and experience and ideas about the disease and its treatment. Information given to the patient must be consistent. Psychosocial support reinforces patient education, by encouraging asthmatics to adopt positive behaviours.

#### **3.1. *Assessment of the asthma***

It is important to take account of

- control of asthma (rapid changes in symptoms and bronchial obstruction)
- severity of asthma (relatively constant over time).

Treatment depends on severity and is adjusted according to the degree of control expected and achieved.

Optimum control can be defined as no respiratory symptoms, no unscheduled visits to a doctor or use of care, and normal lung function. Control is assessed from changes during the previous 15 to 30 days. Factors to be taken into account are short- and long-lasting symptoms (frequency and intensity), degree of bronchial obstruction, and use of medication, particularly use of beta 2-receptor agonists (*Table 1*). Table 1 reflects strong and widespread agreement among professionals on a national and international scale.

Severity of asthma is assessed over 6 months to 1 year on the basis of symptoms, admissions to hospital, bronchial obstruction and use of medication. It can be defined prospectively by the amount of medication (daily dose of inhaled corticosteroids) needed to obtain optimum or satisfactory control.

*At this stage, the patient should have been taught the following skills:*

- detecting symptoms that lead up to an asthma attack;
- measuring PEF correctly;
- knowing when it is necessary to call a doctor (using defined criteria for deterioration in lung function);
- expressing their feelings and experience about the disease and treatment.

### **3.2. Drug therapy**

The aim of drug therapy is to achieve optimum control of asthma, i.e. to reduce symptoms including night-time symptoms, to prevent asthma attacks and exacerbations, and to minimize drug side-effects and restrictions on everyday life including exercise.

Treatment can be summarized as follows<sup>5</sup>:

- treatment of an attack: rapid- and short-acting inhaled beta 2-receptor agonists;
- treatment of exacerbation: rapid- and short-acting beta 2-receptor agonists and systemic glucocorticoids;
- long-term treatment: inhaled glucocorticoids ± long-acting beta 2-receptor agonists, with leukotriene receptor antagonists and/or theophylline if necessary, and, in some cases, cromoglycate and nedocromil.

Long-term treatment should be adjusted according to asthma severity level and symptom control. When optimum control (no symptoms and stable bronchial obstruction) is achieved for longer than three months, treatment should be downgraded one step (grade B). If control is poor, treatment should be intensified (grade B).

Patients should be given a written treatment plan, with explanations, telling them what to do if their lung function deteriorates (exacerbation), i.e. change their treatment, call a doctor, or call the emergency services (grade A). The plan should specify how to adjust treatment in relation to symptoms and/or observed *versus* personal best PEF value. Symptom assessment can be used instead of PEF if there are problems in carrying out the measurement, particularly in certain elderly patients (grade B). Patients may keep a record of symptoms or PEF values in a diary, every morning and evening before taking their medicine, and particularly when they feel there has been a change in lung function.

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<sup>5</sup> This document does not seek to assess treatment; the guidelines are based on international guidelines, based on high levels of evidence (grade A).

A three-zone system to help with decision-making (green zone: all clear; orange zone: caution; red zone: medical alert) may be proposed to patients to help them regain control of their asthma. Symptoms are controlled and an acute asthma attack is prevented by implementing a treatment plan tailored to each patient and agreed in advance with the doctor. It should not be confused with the stepwise approach based on level of severity, which takes account of changes in asthma over extended periods, and which is the doctor's resort.

Management of rhinitis (which is present in more than 80% of asthmatics) should be combined with management of asthma. Treatment is based on antihistamines as required for intermittent forms, and inhaled local corticosteroids for persistent forms, combined, if indicated, with specific immunotherapy (or hyposensitisation).

- At this stage, the patient should have been taught the following skills:
- understanding the action of their medication, if necessary in relation to the mechanisms of asthma;
- using a standard metered-dose inhaler correctly (with a spacer if necessary), or an automatic device or dry powder inhaler;
- interpreting their PEF value and symptoms in order to find which is their treatment self-management zone;
- adjusting their treatment in the event of exacerbation by using the written treatment plan defined with a doctor;
- adjusting their treatment in relation to the risks present in their personal environment, social environment and during a change of situation;
- explaining the disease and what to do during an attack to those around them;
- selecting useful information on the disease and its treatment (journals, magazines, Internet).

### **3.3. *Controlling the patient's environment***

As the benefit of allergen-removing measures has not been clearly established, these measures should be tailored to the individual according to the allergens in question, the patient's socioeconomic resources and their wishes (grade C).

A link between the level of air pollution and asthmatic signs and symptoms has been established. The ozone directive specifies that the population should be informed and advice given to sensitive individuals as soon as half the alert level has been exceeded. Asthmatics can then be advised to limit their physical exertion.

In asthmatics, smoking makes it difficult to control the disease. Passive smoking aggravates symptoms. The smoking behaviour of adolescents seems to be influenced by that of those around them (family, peers, teachers). Adolescents should be advised not to smoke because of the known local pro-inflammatory action of the irritant substances in smoke. Giving up smoking should be discussed regularly with the patient, and particularly with adolescents.

At this stage, the patient should have been taught the following skills:

- dealing with asthma-triggering factors in their domestic, social and working life;

- adapting their everyday activities and leisure activities according to air pollution;
- drawing up a plan, with their doctor, to give up smoking;
- acting on their environment to reduce the risks related to passive exposure to tobacco smoke.

### **3.4. Physical exercise**

Physical exercise is not contraindicated in asthmatic patients, except for deep-sea diving in an autonomous diving suit. Regular exercise seems to improve self-esteem and increase self-confidence, particularly in adolescents. If exercise tolerance is limited, a physiotherapist can help the patient to resume physical activity (grade B).

At this stage, the patient should have been taught the following skills:

- doing physical exercise in relation to their exercise tolerance;
- improving their exercise tolerance.

## **IV. APPROACH TO EDUCATION OF PATIENTS WITH ASTHMA**

### **1. Education should be tailored to each patient**

Patient education should be tailored to the individual after an in-depth assessment of factors likely to facilitate or hinder education and of the patient's centres of interest. This information helps the carer guide the learning strategy and highlight aspects which should be prioritised during the education.

Although patient education is an integral part of care, it has its own separate approach. Tailoring education to the individual patient assumes the need for:

- an assessment of educational needs;
- a contract for education with the patient as partner;
- structured educational activities;
- an assessment of the patient's skills.

### **2. Assessment of educational needs**

The initial step is an assessment of the patient's educational needs which are defined over time and help establish the skills to be acquired. The skills should be ranked by importance and level of acceptance by the patient. Information is collected during a structured interview about the patient's personality, knowledge of asthma, requirements, potential, motivation in getting to know about and manage the disease, lifestyle, and personal and work plans. This list is not restrictive. The main areas of the assessment are shown in *Table 2*.

The educational assessment can be carried out during the first consultation and completed during patient education. It should be re-evaluated at each meeting with the patient.

It is recommended that particular attention be paid to patients with severe or poorly controlled asthma (irrespective of its severity), and to patients at risk of serious acute asthma. Usually these are patients who have previously been admitted to an intensive care unit and who have been intubated, or patients who are frequently admitted to the emergency department.

It is important that adolescents should have an opportunity of meeting healthcare professionals without their parents being present. The adolescent should be invited to give their opinion on how they manage their asthma and how it affects their lives. As careers are chosen during adolescence, it is useful for adolescents to be told if the career they plan to adopt is likely to expose them to potentially irritant or allergenic agents.

### **3. The educational contract: a partnership**

The assessment of educational needs leads to a definition of the skills the patient must acquire, and these skills are listed in the educational contract. Coordination between healthcare professionals is needed in drawing up a consistent educational strategy for each patient.

The skills consist of knowledge, actions or behaviours that asthmatics have to master in order to manage their treatment and prevent the onset of complications, while maintaining or improving their quality of life. The skills to be acquired are predominantly:

- intellectual (knowledge, interpretation of information, problem-solving, decision-taking, development of a critical mind);
- practical (technical ability);
- communication with others (ability to communicate information about their state of health).

Safety skills designed to ensure that the patient's life is not put in danger are essential.

Other specific skills based on individual requirements can be negotiated with the patient.

A list of skills is given in *Table 3* as an example.

The educational contract specifies the skills the patient must acquire throughout their education and must be negotiated between the healthcare professional and the patient in order to reach an agreement. It is desirable that the educational contract should be written down and given to the patient as a reference document. It commits the carer to implementing the methods needed for the patient to develop and acquire skills.

### **4. Putting patient education into practice**

Educational activities may include the following: building awareness, providing written and oral information, teaching how to manage the disease, drawing up a treatment plan, and assessing skills.



Putting patient education into practice needs teaching techniques. It is best to choose techniques which encourage interactivity. They allow the carer to assess and reinforce the patient's knowledge and behaviours throughout their education. By taking the patients' experience into account, the carer can provide them with new knowledge, new approaches and an opportunity to try them out at the end of education sessions.

Teaching techniques should be selected according to the type of skills the patient needs to acquire, and the patient's preferences. As an example, the most suitable techniques with regard to the skills to be developed are shown in *Table 3*.

The use of varied teaching techniques makes it easier for the patient to acquire skills by reinforcing their motivation (grade B). Patient education can alternate between individual and group sessions, with periods of self-education.

Written information can be used to complement oral information. It is useful when it encourages patients to ask questions, both of themselves and of others. It must be concise, clear and understandable by the majority of patients, as must be the content of audiovisual materials. However, the quality of all these teaching aids as a means of helping the patient acquire the skills for which they were chosen needs to be verified.

In an ideal situation, educational activities should be planned on a basis of gradual progress, and a number of education sessions may be required before a new skill is acquired. The frequency of sessions and their content depends on the patient's educational requirements and their ability to transfer skills acquired into their everyday life. In the current state of knowledge, it is not possible to propose a specific frequency or optimum duration of educational sessions.

## **5. Assessment of the patient's skills**

The assessment should be seen as an act of communication between the healthcare professional and the patient, irrespective of when or where it takes place.

The relevance of education will depend on how accurately the educational assessment has assessed the skills that the asthmatic needs to acquire.

There are two levels of assessment:

### — *Assessment during education sessions*

Assessment is part of learning and takes place during education sessions. By appropriately tailored questioning, the assessment makes the patient aware of their successes, problems and mistakes. It develops in patients the ability of self-assessment, which enables them to undertake spontaneous learning activities.

An assessment makes it possible to check whether all the skills described in the education contract have been acquired and to infer whether they have been

transferred into the patient's everyday life. It provides information about the usefulness of keeping to scheduled education sessions or whether to schedule further sessions, and how often. Key questions to guide the assessment are proposed as an example in Table 4. A more complete approach comparing the skills to be developed, learning techniques and appropriate assessment methods is given in Table 3.

— *Assessment during medical follow-up*

Every scheduled visit is an opportunity to assess the asthma with the patient (control and severity), to adjust long-term treatment and the treatment plan in the event of exacerbation, to verify self-management of treatment (ability to assess symptoms and measure peak flow) and management of inhalation techniques, and to identify problems experienced by the patient. The problems of tobacco smoke and control of the patient's environment should also be approached. Appropriate psychosocial support should be offered to patients so that solutions to their problems can be worked out with them.

Not only skills acquired and transferred into everyday life are recorded and reinforced, but indicators of the long-term efficacy of patient education - such as frequency of exacerbations, visits to emergency departments, unscheduled visits to the doctor because of asthma attacks, hospitalisations, stays in intensive care, and absence from work or school - are identified and analysed.

## **V. CONSISTENT INFORMATION FOR CONTINUITY OF CARE**

It is recommended that patients should have a summary of the information about them, at various stages of their education. This includes the approach to treatment, the results of the assessment of educational needs, and the list of skills which they are about to acquire and how they will be assessed. It is recommended that the summary should be produced by the doctor or one of the members of the team and sent to the professionals concerned.

It is proposed that the patient file should contain a written record of actions by healthcare professionals involved in the education, together with a written summary. Each professional involved in educating the patient should be able to access this information and add to it in order to encourage continuity of care. An example of the main headings of the patient education record for monitoring an asthmatic is given in *Table 5*.

## **VI. CONCLUSION – FUTURE ACTION**

Future development of patient education in asthma should be based on implementing the guidelines. This means finding strategies for their distribution and appropriation, and for training and assessment.

An information campaign that uses various channels of distribution is needed to make professionals aware of these guidelines.

There is a need to encourage the incorporation of the concepts and methods of patient education into the practice of healthcare professionals, through training.

Giving healthcare professionals a feeling of control over the educational process by encouraging appropriation of the guidelines is important, as is the creation of conditions conducive to durable educational programmes.

Individual performance assessment focusing on the patients' skills, capacity for action and state of health, should be completed by an assessment of the quality of the educational programme as a whole, i.e. measuring its effects and consequences in terms of morbidity, mortality, psychosocial consequences, quality-of-life and patient satisfaction. Such measures will reveal how the educational programme was implemented, understood, accepted and experienced.

The lines of research identified during the preparation of these guidelines could be oriented towards educational programmes and asthmatics themselves.

Published studies reporting the results of educational programmes should describe in detail the objectives of the programme, and give details of the population concerned, interventions, educational methods, professionals involved, measurement of results and endpoints, and duration of follow-up.

An inventory of the features of educational programmes and of the choice and quality of teaching techniques could be used to keep professionals informed of what has been tried and tested, to build on results, and to study suitability for different care settings.

Operational methods helping to understand how asthmatics react to the various aspects of management of asthma on a daily basis need to be studied.

New approaches for encouraging asthmatic patients to comply with their management need to be found.

**Table 1.** Asthma control criteria according to the Canadian guidelines<sup>6</sup>

<b>Criterion</b>	<b>Frequency or value</b>
Daytime symptoms	Less than four days/week
Night-time symptoms	Less than one night/week
Physical activity	Normal
Exacerbations	Mild, infrequent
Absenteeism from work, school or college	None
Use of beta <sub>2</sub> -agonists	Fewer than four doses/week
First-second expiratory volume or peak expiratory flow (PEF)	85% of personal best or greater
Variability in PEF	Less than 15% diurnal variability

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<sup>6</sup> Boulet LP et al. Canadian asthma consensus report. Can Med Assoc J 1999;161 (Suppl 11): S1-61.

**Table 2.** Main dimensions of the educational assessment (adapted by d'Ivernois & Gagnayre (1995)<sup>7</sup> from Green's model (1980)<sup>8</sup>)

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- **Biomedical dimension of the disease: what does the patient have?**
    - Duration of asthma, its course and severity
    - Additional health problems which are important for the patient
    - Frequency of hospitalisation and reasons for it
  
  - **Socioprofessional dimension: what does the patient do?**
    - Everyday life, leisure activities
    - Profession, work
    - Lifestyle
    - Social and family environment
  
  - **Cognitive dimension: what do patients know about their illness? How do they feel about the disease, treatment, the consequences for themselves and those around them? What does the patient believe?**
    - Previous knowledge of the disease
    - Beliefs, ideas, notions
    - Mechanisms of the disease
    - Trigger factors for asthma attacks
    - Role and mode of action of medicines
    - Efficacy of treatment
    - Usefulness of education
  
  - **Psychological and emotional dimension: who is the patient?**
    - Stage in the process of acceptance of the disease (initial shock, denial, rebellion, negotiation, depression and finally acceptance)
    - Place of stress
    - Reactions when faced with a crisis
    - Attitudes
  
  - **Patient's plans: what are the patient's plans?**
    - Identifying the first goal
    - Presenting the goal as something that can be achieved through education
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<sup>7</sup> d'Ivernois J, Gagnayre R. Apprendre à éduquer le patient. Paris:Vigot;1995.

<sup>8</sup> Green LW. What is quality in patient education and how do we assess it? Springer Ser Health Care Soc 1980;4:137-56.

**Table 3.** Skills, teaching techniques, learning conditions and assessment tools (agreement among professionals)

Skills to be acquired by the patient	Teaching techniques	Learning conditions	Assessment tools
<i>Assessment of asthma and understanding of the disease</i>			
Be aware of symptoms that indicate change in lung function leading to an asthma attack <ul style="list-style-type: none"> <li>• Recognize warning signs of exacerbation of asthma</li> <li>• Interpret breathing problems</li> </ul>	Case study Explaining aloud (the patient describes their last asthma attack)	Individual or group Individual	Clinical case history with MCQ* Progress test
Measure PEF correctly	Breathing workshop: breathing in, breathing out	Individual or group	Patient diary combined with explaining aloud
Express feelings and experience of the disease and its treatment	Key words, round table	Individual or group	Oral discussion
React by deciding to call a doctor in good time using defined criteria for deterioration of lung function	Discussion	Individual	Short open questions Progress test

\* MCQ: multiple choice questions

**Table 3 (continued).** Skills, teaching techniques, learning conditions and assessment tools (agreement among professionals)

Skills to be acquired by the patient	Teaching techniques	Learning conditions	Assessment tools
<b><i>Drug therapy</i></b>			
Explain the action of drugs, if necessary, in relation to the mechanisms of asthma <ul style="list-style-type: none"> <li>• Differentiate between the action of long-term therapy and quick-relief therapy for an acute attack</li> <li>• Differentiate between inflammation of the bronchi and bronchospasm</li> </ul>	Illustrated folder combined with interactive presentation Game with straws	Individual or group	Short open questions with diagram to be captioned Diary Clinical case history MCQ or Progress test
Use a standard metered-dose aerosol correctly (with spacer if appropriate) or automatic device or dry powder inhaler	Demonstration by patient combined with explaining aloud Demonstration and use by the patient	Individual or group	Diary combined with explanation given aloud
Interpret the PEF value recorded and the symptoms experienced to decide which of the three treatment self-management zones (green, orange or red) is applicable	Case study or explaining aloud	Individual or group	Barrows cards
Record PEF results, events, and the situation in which asthma attacks occur in the diary	Simulation: analyse a diary	Individual	Oral discussion
Adjust treatment, taking account of the written treatment plan defined with the doctor, in the event of exacerbation	Case study	Individual	Barrows card or progress test
Adjust treatment in relation to the risks present in the personal and social environment, and during a change of environment	Eliminate asthma triggers	Individual or group	Clinical case history MCQ
Explain the disease to relatives and friends and what to do during an asthma attack	Role play	Individual or group	Attitude chart
Select useful information on the disease and its treatment (journals, magazines, Internet)	Make documentary resources available to the patient	Self-education	Oral questions

**Table 3 (continued).** Skills, teaching techniques, learning conditions and assessment tools (agreement among professionals)

<b>Skills to be acquired by the patient</b>	<b>Teaching techniques</b>	<b>Learning conditions</b>	<b>Assessment tools</b>
<b><i>Control of the environment</i></b>			
Act on the presence of trigger factors in the domestic environment, social and working life <ul style="list-style-type: none"> <li>Identify the presence of allergens in the environment</li> <li>Identify asthma-triggering situations in order to take preventive action</li> </ul>	Interactive presentation Case study	Individual or group	Clinical case history MCQ or true-false questions or Barrows cards
Adapt everyday and leisure activities according to air pollution	Round table or individual discussion	Individual or group	Oral questions or Clinical case history MCQ, true-false questions
Draw up a plan to give up smoking with the help of the doctor <ul style="list-style-type: none"> <li>Recognize the harmful effects of tobacco smoke on lung function</li> <li>Restrict the number of cigarettes smoked and occasions for smoking</li> </ul>	Interactive presentation Case study	Individual or group	Clinical case history MCQ or Barrows cards
Act on the environment to reduce the risks related to passive exposure to tobacco smoke	Round table discussion	Group	Oral questions
<b><i>Physical exercise</i></b>			
Do physical exercise in relation to exercise tolerance			
Recognize that there are no contraindications to any physical activity, except for the legal contraindication of deep-sea diving	Round table or individual discussion	Individual or group	Oral questions or clinical case history MCQ
Improve exercise tolerance (physiotherapy sessions)	Exercise training	Individual	Diary



**Table 4.** Examples of key questions that can be used during educational sessions to assess changes in the patient's attitude

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Awareness of the problem	What do you know about ...?
Experimentation	What are you going to try to do differently?
Application in everyday life	How are you going to go about it? What problems do you anticipate?
Interpretation of an event	What was this episode like for you?
Maintenance of behaviours	How could you keep up this behaviour?
Quality of life	Which of your family, social, working and leisure activities have you had to reduce or give up? What do you want to do that your asthma stops you doing?

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**Table 5.** Main headings of the educational assessment dossier for monitoring an asthmatic

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Patient's identity (surname, first name, date of birth, mastery of language)  
Type of asthma and treatment

**Areas of the assessment of educational needs**

- Personality
- Personal and work plans
- Knowledge about the disease
- Work constraints, i.e. job, risk situations
- Patient's ability to act, i.e. potential for learning, motivation, centres of interest
- Lifestyle, i.e. family and close friends, resources in terms of people, physical activity
- Smoking, i.e. habitual or occasional smoker, attempts at giving up, passive smoking

*ã Make an educational assessment in a few lines*

**Definition of skills to be developed by the patient**

- Evaluation of their asthma and knowledge of their disease
- Planning of their drug therapy
- Practising inhalation techniques
- Control of their environment and planning to give up smoking
- Practice of physical exercise

**Putting patient education into practice**

- Planning of educational sessions, i.e. skills tackled, duration, frequency, teaching methods
- Individual sessions, collective sessions and self-education

**Educational follow-up**

- Evaluation of skills acquired, to be maintained and to be reinforced
- Development of practice of inhalation techniques
- Problems of self-management by the patient
- Experience of the disease in everyday life
- Maintenance of planned educational sessions and usefulness of planning further sessions

**Medical follow-up**

- Evaluation of asthma (control and severity)
  - Adjustment of long-term treatment
  - Adjustment of action plan
  - Control of their environment and giving up smoking
  - Frequency of exacerbations, use of emergency services, unplanned consultations, admissions to hospital, stays in intensive care, absence from work or studies
-