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The home care of children with asthma

Asthma is one of the most common chronic diseases in the world. It is a chronic inflammation at the airway, which causes frequently repeated acute attack. Asthma is mainly related to genetic conditions, external allergens and environmental stimuli. If asthma is under well control, it will be benefit for long-term outcome. Also, children will have fair growth and development. To prevent asthma attack has three principles : to avoid allergens, to avoid aggravated factors and appropriate drug treatment. When you find that children have recurrent cough, shortness of breath, or hard to say any words, you will be nervous at that moment. So, we will tell you below: risks of asthma attack, the characteristics of asthma, common induced factors, the severity of asthma and home care.



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All information above has been reviewed by pediatric specialists
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I. What can cause asthma?

Genetic conditions, external allergens and environmental stimuli are three main factors which would cause asthma.

II. Characteristics of asthma :

1. Asthma is a chronic respiratory disease.
2. It will cause bronchial inflammation which making airway to be narrowing. It exists a certain degree of inflammation even though there is no symptoms.
3. Appropriate treatment can reduce symptoms and inflammation.

III. Common asthma-induced factors :

1. Respiratory tract infection.
2. Allergens (including dust, pollen, animals fur).
3. Stimulants (such as tobacco smoke, sprays, cleaning products).
4. Exercise.

IV. How to do for home care :

1. To record the frequency and severity of symptoms (cough, shortness of breath or wheezing). Use a peak flow meter (Figure 1), as testing the peak expiratory flow rate, to monitor lung function. Measure steps as following:
 - (1). The patient stands and holds the flow meter horizontally.
 - (2). Return the indicator to zero (by swing it).
 - (3). Cover the blowing site by mouth tightly and you must to instantly forced-blowing (to avoid air leakage from the nose or mouth). You must to perform three times every measurement twice daily and record the height one. Each time must be performed from 30 seconds to a minute.

- (4). Record the measurements at the least twice a day (Once in the morning while awaking and once in the evening, which should be performed by interval 10-12 hours).
- (5). After using it, you must to clean the mouth-bite site.
- (6). If you have to use the bronchial dilators, you need to measure while using before and after.

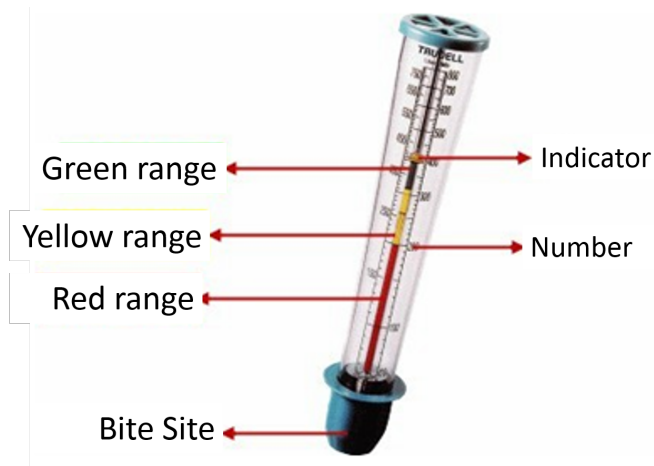


Figure 1, peak flow meter

Color	Means
Green	It means well lung function. This region means well-control asthma without symptoms. The patients should keep current medicine and activity.
Yellow	It means a sign of asthma attack. This means some stenosis of airway which causes breathing hardly, and the severity and frequency of asthma progressed. The patient must to discuss with doctors to change or increase asthmatic medication precautions.
Red	It means stenosis of airway. This means severe symptoms and the patient needs to treat immediately. The inhaled drugs will prescribe after evaluating by doctors. It will be fatal if delay to treat.

2. To encourage your children to exercise, asthmatic action plan must to include preventive methods and treatments of motor-related symptoms.
 - (1).Parents must to communicate with the sport teachers. If the child has wheezing, they must to stop exercise right now.
 - (2).To avoid exercise under dry and cold weather. The child must to arrange warm-up exercise before any exercise.
 - (3).To select the type of exercise which is suitable for asthmatic students. In principle, it must to be able intermittently to rest. The swimming is a first choice.
 - (4).If it is necessary, inhaled short-acting bronchodilators before exercise.
 - (5).While asthma attacking, the patient must to immediately stop exercise and use short-acting bronchodilator 2 to 4 puffs every 15 to 20 minutes, total 3 times.
 - (6).Frequent exercise-induced asthmatic patient must to be adjusted treatment plan by the doctor.

3. Recommendations of Environment at Home :
 - (1).To reduce contact allergens. For example, don't let pets sleep in the children's room.
 - (2).The blankets must to be cleaned in 55 °C water every week.
To prevent to use duvets at home. To use vacuum cleaner to clean environment at home. Air conditioner and air filter must to be clean or replace the filters regularly.
 - (3).Do not use carpets and thick curtains. Plastic, wood or cortex material is the best furniture.
 - (4).To remove your decorations, villi toys and potted plants. To avoid to contact with pets.

- (5). Use dehumidifier to control the relative humidity between 50-60% which can reduce allergens, such as dust mites and mold.
- (6). Use the air purifier to filter the smell and second hand smoke. Clean up the allergens at home.
4. For Patients with poor control, it is necessary to carefully consider drinking ice water because it can induce asthma.
5. No smoking is important. To avoid fragrance, mosquito coils and spray insecticide agents. To close windows while air pollution or flowers in full bloom season.
6. Pay attention to warm yourself while the temperature is ups and downs.
7. Decrease to go out public places and wear a mask if necessary.

V. Conclusion :

The allergic children should be given appropriate environmental improvement and complete home care as soon as possible. If the asthma can be well treated and controlled, it will help the long-term prognosis and allow the children to have normal growth and development.

VI. Reference :

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- Conrad, L. A., Cabana, M. D., & Rastogi, D. (2021). Defining pediatric asthma: Phenotypes to endotypes and beyond. *Pediatric Research*, 90(1), 45-51. <http://doi.org/10.1007/s12098-021-04069-w>.

Let's take a test to confirm that you have a thorough understanding.

1. Choose suitable types of exercise for asthmatic children, preferably activities that allow for intermittent rest. Before exercising, a 15-minute warm-up or stretching routine is recommended.
 YES NO Not sure

2. For asthmatic children at home, avoid using carpets and heavy curtains. It's preferable to have furniture made of plastic, wood, or leather.
 YES NO Not sure

3. Asthmatic children can spend more time in enclosed public spaces without the need to wear masks.
 YES NO Not sure

4. For asthmatic children at home, use a vacuum cleaner for cleaning, and regularly clean or replace the filters in air conditioners and air purifiers.
 YES NO Not sure

5. In the event of an asthma attack during exercise in asthmatic children, the activity should be stopped immediately. Administer 2 to 4 inhalations of a short-acting bronchodilator promptly, and if necessary, repeat every 15 to 20 minutes, up to a total of 3 times.
 YES NO Not sure