

Holistic Approaches to Asthma

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March - April 2003

Asthma is a common word in many households. A growing number of children live on beta-2 agonists, steroids and anti-leukotriene medications that treat the acute and chronic symptoms of asthma. These medications have helped save many lives. However, these medicines, unfortunately, do not cure the asthmatic condition. They merely serve to quiet the visible expression of symptoms.

Medicines do not influence the factors that generate the imbalances in the body causing the onset of wheezing. The imbalances that trigger the symptoms of asthma persist despite the use of medication and the relief of symptoms. These imbalances arise mostly from problems within the child's immune system. The key to treatment lies in the evaluation of the underlying factors that contribute to the development and expression of asthma symptoms. The goal is to assess the imbalances and address their causes.

Asthma is defined as a reversible, chronic, obstructive, airway disease. On clinical exam, a child with asthma is found to be wheezing and coughing. Often there is difficulty breathing, labored breathing, poor air movement, shortness of breath and irritability. Occasionally, a child may be pale or have blue lips. In the worst case scenario there is somnolence or coma. However, the lungs are rarely involved. Rather, the smooth muscles of the affected airways are in spasm and there is swelling and inflammation of the lining of the airways.

An important segment of our immune system is found in the lining of the airways. Significant portions of the immune system are found in the linings of the digestive tract, the skin and the nervous system, including the brain. The body obtains its major protection against the outside world from the proper functioning of these four areas of the immune system. All parts of the immune system are in constant communication with each other. An acute asthma episode is triggered by a challenge to the immune system at one, several or all four of these areas of the body.

In a healthy child, when the immune system is stressed, chemicals are released that produce inflammation. These chemicals are made by immune cells that migrate to the site(s) where the body is challenged. Redness, heat or fever, swelling, tenderness and loss of function are the five signs and symptoms of inflammation that are clinically present, either singularly or in combination. By the end of the inflammatory process another group of immune cells begins to produce chemicals that have anti-inflammatory properties. These anti-inflammatory chemicals aid in quieting the area of inflammation. As a result, the symptoms of inflammation begin to resolve. The body, in the ideal situation, is genetically programmed to heal itself.

The resolution of symptoms during an inflammatory response is dependent on the delicate balance between the production and activation of pro-inflammatory and anti-inflammatory immune chemicals. An acute episode of asthma occurs when this delicate balance is tested.

Thus, asthma is a condition of acute and chronic inflammation. The goal of treatment is to evaluate any one of a number of contributing factors in a child's environment that can produce a state of inflammation. Perfumes, smoke, pollen, volatile chemicals, exhaust fumes, pollution, animal dander, metals, dust and mold are some of the inhalants that can adversely affect the immune response in the linings of the airways and trigger an episode of wheezing. Dairy, soy, nuts, sugars, dehydration, processed flours and grains, processed fats, fried oils, nutritional deficiencies, food dyes, chemicals, preservatives and additives, metals, soda, junk food, fast foods and certain prescription drugs and over the counter medicines can instigate an inflammatory response in many parts of the body especially in the airways of children who are prone to wheezing.

Emotional stressors such as fear, anger, anxiety, worry and grief can both acutely or chronically stimulate an inflammatory response in the nervous system leading to an immune response in the airways of children with asthma. Even extreme emotional outbursts, positive or negative, along with exercise, can bring about a state of inflammation. Birth and head trauma along with other traumas to a child's body can cause an impairment of blood flow, lymph flow and nerve supply to and from the muscles of the chest wall and the smooth muscles of the lining of the airways. This dynamic can compromise a child's ability to breathe efficiently and maximize air exchange in as many airways as possible.

The parasympathetic and sympathetic branches of the autonomic nervous system regulate the state of contraction and relaxation of the smooth muscles of the lining of the airways,

respectively. When both branches of the autonomic nervous system are in balance, the smooth muscles do not spasm. Some children with asthma can develop bronchospasm when there is over stimulation of the parasympathetic branch and/or a weakness in the sympathetic stimulation of these airway smooth muscles. Any one of the above contributing environmental factors-respiratory irritants, ingested materials, physical and emotional nervous system traumas and stressors-can influence the over or under stimulation of the parasympathetic and sympathetic branches of the autonomic nervous system, respectively, leading to the onset of bronchospasm in children with asthma.

Prostaglandins, leukotrienes and cytokines are the major immune chemicals that function in the body to produce pro and anti-inflammatory responses. The ingredients that make up the building blocks for these chemicals come directly from the diet. Most of these chemicals are made up of polyunsaturated fats in the omega-6 and omega-3 fatty acid family and from complex oligosaccharides (sugars) that are fundamental to the proper function of every one of our cells, especially the immune cells. These fats and sugars are essential in our diet and cannot be manufactured in the body. Many vitamins and minerals are needed to help stabilize the structure of fats and sugars in cell membranes and aid in their production, release and function.

When a child with asthma consumes an overabundance of omega-6 fatty acids and simple sugars, which favor the production of proinflammatory immune chemicals, and/or consumes an insufficient amount of omega-3 fatty acids and complex sugars, which favor the production of anti-inflammatory immune chemicals, the stage is set for the development of wheezing with swelling and inflammation of the airways. The trigger(s) that cause the body's immune cells to release these pro-inflammatory chemicals during an acute asthmatic episode may come from any one of the contributing factors mentioned above-respiratory irritants, ingested materials and physical or emotional traumas and stresses to the nervous system.

There was great enthusiasm when the anti-leukotriene medications (e.g., Singulair) came out on the market. It was seen as a major breakthrough for children with chronic inflammatory conditions like asthma and inflammatory bowel disease since we knew that these children had high circulating levels of pro-inflammatory leukotrienes. Leukotrienes are some of the most potent inflammatory agents in the body. Prescribers of these medications hoped for a reduction in the symptoms of inflammation in these children. In reality, the medicine does nothing to stop the body from producing the leukotrienes. So what happens to these pro-inflammatory leukotrienes? They continue to circulate in the body. The inflammatory

response persists in spite of an alleviation of symptoms. Many children with asthma do not need these medicines to block the action of the pro-inflammatory leukotrienes. A simple change in their diet will reduce leukotriene production altogether.

A diet of mostly nutrient empty processed foods with a deficiency of important vitamins and minerals, an abundance of simple sugars and an excess of unhealthy fats favors the production and release of pro-inflammatory chemicals and weakens the anti-inflammatory response. A diet high in simple sugars causes insulin levels to remain high or fluctuate in very high and low ranges. These types of insulin responses stimulate the release of pro-inflammatory prostaglandins, leukotrienes and cytokines which weakens the production of their anti-inflammatory counterparts as well.

Holistic Approaches:

Recognize, understand, reduce and eliminate contributing factors:

1) Clean up the environment reducing exposure to known respiratory irritants. Continue to look for other possible airborne irritants that are not very obvious.

2) Teach older children to take full, proper breaths. Have them sit or stand in an upright position in a calm environment. Ask them to inhale through the nose and feel their diaphragm pushing down towards their feet while the abdomen relaxes, pushes out from their bodies and fills like a balloon. Make sure the shoulders and chest wall are still and not part of the respiratory effort. Ask them to feel their chest wall filling with air after their abdomen expands.

On the exhale, have them reverse the process letting the air exit through the mouth, allowing the abdomen to return to its normal position bringing the belly button back towards the spine. Encourage them to practice this type of breathing at all times, especially during more stressful encounters, until it becomes second nature. Yoga, hypnosis and meditation are several tools to help children with asthma improve their breathing.

3) Clean up the diet by removing unhealthy fats. These include partially hydrogenated oils, margarine, vegetable shortening, cooking oils such as corn, vegetable, safflower and sunflower oils and fried foods and oils. These oils are found in supermarket and bakery packaged foods and used in restaurants for cooking and frying. Read labels.

Use olive oil, organic butter, ghee, grape seed oil, coconut oil and cold pressed oils for cooking and flavoring. I do not recommend flax seed oil for children as a source of omega-3 fatty acids. There is scientific evidence that the oil is not processed in the body to help promote anti-inflammatory responses due to weak enzyme systems in children. If children are unwilling to eat fish and sea vegetables for their omega-3 intake, there are good tasting cod liver oil preparations made by Carlson Labs and Nordic Naturals. (3,5,8)

4) Clean up the diet by removing simple sugars and regulate insulin levels. These sugars include glucose, sucrose, fructose and lactose and processed white flours. These sugars are ubiquitous in cereals, juices, cookies, cake, candy, pastries, soda, soft drinks, shakes, snack bars, milk, cheese, ice cream, bread, pasta, crackers and, um, snack and fast foods. (5, 7,8, 9)

5) Sugar, like salt, is dehydrating to the body. Dehydration increases histamine levels. Histamine is another pro-inflammatory chemical that can worsen asthma. Water helps reduce histamine levels. Sixty-seven to seventy percent of a child's body is made up of water. Make sure children with >asthma drink water as their main beverage and keep them well-hydrated. I have personally watched a wheezing child improve using hydration as a main part of her treatment. (1, 2)

6) Clean up the dyes, preservatives, food colorings, artificial sweeteners and additives found in most foods listed in numbers 3 & 4 above and in many prescription drugs, antibiotics and over the counter medicines. Several of these chemicals are known to interfere with important enzymes needed for production of pro- and anti-inflammatory immune chemicals

7) Encourage a diet of whole, fresh, simple foods including vegetables, legumes, nuts, seeds, meat, chicken, fish, eggs, whole grains, sprouted breads and some fruit. Flavor foods with fresh culinary herbs and spices. Depending on factors specific to the individual child, some children with asthma will improve on a diet of non-starchy vegetables, meat, chicken, fish and eggs, nuts and seeds and fats with small amounts of grains, legumes, starchy vegetables, sugars and fruit.

Others will improve on starchy vegetables, legumes, whole grains and fruit with small amounts of non-starchy vegetables, animal proteins and fatty foods. (6, 8) Processed foods and beverages taste good yet they have little to no nutritional value. As a mainstay in the diet, they can be harmful to a child's health, especially for a child with a chronic inflammatory condition like asthma.

8) Relieve tension on the autonomic nervous system. The best way to do this is through evaluation and care by a doctor of chiropractic, osteopathathy or a cranial sacral therapist. Some children, whose asthma is more related to an imbalance in their autonomic nervous system rather than a problem with their diets, will respond better to these types of treatments. The diet changes will still be of benefit nonetheless.

9) Avoid Motrin and other non-steroidal anti-inflammatory medications. In a subset of children with asthma, these medications will increase the production of pro-inflammatory leukotrienes. 10) Address stressors that may affect the emotional state of the child. Increased peer pressure, academic pressure, over stimulation, over scheduling, problems in the home, inability to express emotions such as fear, anger, anxiety, worry and grief with build up of these emotions, exposure to violence, anger or fighting, and feelings of smothering and suffocation are some of the concomitant stressors that serve as triggers for children with asthma.

References:

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