Asthma and Treatment by Chiropractic: Using Adjusting and Nutrition

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Abstract:

This literature review will target the subject of asthma. The first fundamental part of this paper is to properly explain what asthma is and the role of chiropractic treatment in the management of the condition. Asthma is a chronic obstructive pulmonary disease (COPD) and also an inflammatory disease. The inflammation will cause the surrounding musculature to tighten and the lining of the lungs to swell. This is caused by the increase in mucus production and airway hyper-responsiveness. This disease is multifactorial in natural. Genetics, allergies, environment, infection, emotion, and nutrition all play a role in the frequency and severity of this disease.

Keywords: Asthma and Chiropractic

Introduction:

Exacerbations are a common cause of morbidity and mortality in asthmatic patients. An exacerbation of COPD (AECOPD) is defined as an event in the natural course of the disease characterized by a change in the patient's baseline dyspnea, cough, and/or sputum that is beyond normal day-to-day variations and is acute in onset (Gaude). When an asthmatic patient has chronic inflammation of the airway with several exacerbations in a short amount of time, the lungs go through a process known as remodeling. This remodeling changes the shape, size, and physiology of the lungs. More will be discussed later in this paper.

These chronic obstructive pulmonary disorders affect many people in the United States and around the world. COPD in the USA annually accounts for 16,000,367 office visits, 500,000 hospitalizations and $18 billion in direct healthcare costs. Currently, an estimated 20% of the population worldwide is suffering from some form of allergic disorder with a prevalence that continues to rise (Gaude). For example, the prevalence of childhood asthma in the USA increased by 50% from 1980 to 2000. Among children up to 4 years of age, asthma has increased 160%. Approximately 0.5-1% of the US population is affected by peanut allergy and the incidence has doubled in the past decade (Xiu-Min Li). Society cannot allow this to continue and must find ways to reverse this trend.

Chiropractic practitioners look at this problem and try to find a holistic treatment. Although chiropractic is a large field, the treatment will be narrowed to adjusting, acupuncture, and nutrition. The term "adjusting" refers to specific manual manipulation of the spine using only the hands. These adjustments were given to any area of improper mechanics in the spine. In the research papers that will be referenced all adjustments were given by chiropractors. The

nutritional aspect of the studies was performed using herbs and nutritional supplementation. Herbs and supplements used in each study will be detailed. All of these treatments fall within the scope of practice in most states.

Discussion:

One of the hardest parts of asthma is diagnosing the problem. The difficulty lies in the ability to differentiate from exercise induced asthma, bronchitis, acute bronchitis, bronchiectasis, pulmonary embolism, and congestive heart failure. These diseases have several similar symptoms such as dyspnea, chest tightness, cough, muscle tightness around the rib cage, restlessness, and pallor. Any individual with these symptoms should be examined by a physician.

The diagnosis of asthma is accomplished through listening to the lungs and lung functional tests. While listening to the lungs one should pay attention to wheezing, high-pitched whistles sound when exhaling. Wheezing is one of the main signs of asthma. After the lung auscultation is complete, the doctor will need to perform lung functioning tests. Spirometry, exhaled nitric oxide, and a methacoline challenge are the three lung function tests that are used for the diagnosis of asthma. The most important test is spirometry. This test will measure a patient's FVC (forced vital capacity), FEV-1 (forced expired volume in one second), and PEF (Peak expiratory flow). Forced vital capacity measures the amount of the air the patient can inhale and exhale. The FEV-1 will measure the amount of air the patient can exhale within one second. The FEV-1is a crucial measurement for an asthmatic. When an individual has asthma the FEV-1 will be lower and take longer to get all of the air out of the lungs. The methacholine challenge is used more often to determine the severity of the asthma of the individual. The test progressively increases the dose of methacholine, an irritant of the airways that causes

obstruction, until the patients FEV-1 falls below a certain level. The concentration at which the patients FEV-1 level drops below the line determines the severity of asthma. The PEF will measure how quickly the patient can exhale. When a patient does have an asthma attack, this number will drop as well. Since the disease is obstructive, when the patient has an asthma attack, it blocks the release of gases from the lungs.

Immune Response

The body has a very unique system used to protect itself from diseases and allergens. On one hand the body uses T-helper 1 cells to subdue and regulate the immune system. On the other hand Th2 cells produce interferons that cause the inflammation and mucus production in the lungs. We notice a shift from T-helper 1 (Th1) to T-helper 2 (Th2) during an asthma attack. The shift from Th1 to Th2 produces more cytokines including interleukin-4 (IL-4), IL-5, IL-6, IL-9, IL-10, and IL-13, which recruits mast cells, eosinophils, basophils, and B-cells. All of these cells are responsible for immunity, inflammation, and allergic reaction. The other part of the CD4 cells is the Th1 cells, which produces interferon gamma (IFN-y) and interleukin-2 (IL-2), both of which are involved in delayed hypersensitivity responses and cellular immune response. IL-2 is also produced for the immune response. IFN-y is a cytokine that is critical for innate and immunity against viral and bacterial viruses. Mast cells play a large role in lowering the production of IFN-y. This is where the pieces of the asthma puzzle are put together (Alan).

When substances enter the body and are recognized as foreign by the lymphocytes, the T cell receptor will stimulate the secretion of IL-2. These interactions will stimulate growth and differentiation of the antigen-selected cytotoxic T cells. This allows the body to have a "memory" of the foreign body and is now better to protect itself. IL-2 is also used by the body to

stimulate the thymus for maturation of the T cell development. When the T cells leave the thymus they are known as T Regs. These T-Regs function to prevent other T cells from reacting against other antigens, which could result in autoimmunity. The way T Regs can do this is by limiting the production of IL-2. This means that IL-2 is able to differentiate between self and foreign body, which allows the immune system to be unique from everything else.

This will focus more on the Th2 cells and what reactions it produces. As already discussed, asthma is an inflammatory disease that will cause local tissue to swell and increase mucus production causing the person to struggle when breathing. The inflammatory process is complex and needs attention to understand the treatments that have been proposed to work. The underlying process that pushes the asthma inflammatory process is the down regulation of CD4 T-cell immune response. Antigen-specific IgE is also responsible for irritation of an allergic response in asthma. On mast cells is where the IgE cross link with the antigens. These mast cells will burst and release histamines and leukotriene's which will amplify the inflammatory response. That inflammatory response will cause damage to local tissue and attract other lymphocytes (Coyle).

Interleukin (IL-4) produced by Th2 cells stimulate IgE production in B cells. These leukocytes can also switch cytotoxic CD8 cells from their normal production of IFN-y to IL-4 and IL-5, furthering the inflammatory process. (Alan L. Miller, ND) IL-5, on the other hand, stimulates eosinophil differentiation and mobilization to the mast cell. These two interleukins are produced by B cells (IL-4 is also produced by Th2 cells) and they attach to the mast cells, where these cells burst and spread histamine and other interleukins. IL-10 will also enhance the growth and differentiation of mast cells. This differentiation of mast cells will also cause the inhibition of IFN-y. Histamine also stimulates mucus production and bronchoconstriction quickly. When

histamine is released, it will cause other mast cells and leukotrienes to make and release more leukotrienes that will further enhance the inflammatory process. This is a feed forward system. Most people at this point will need a rescue inhaler or a breathing treatment to stop and reverse this process.

Lung Remodeling

When an asthmatic has an attack the tissues are damaged and must heal. The body is very capable to handle the task, but with asthma the patient does not have only one attack. These patients can have several attacks within a short span of hours and days. At this point the body cannot keep up with the healing process, because the lung tissue keeps getting irritated. Now the body must protect the lungs. It makes a choice of survival over function. This process involves thickening of the airway walls as a result of subepithelial fibrosis, myocyte hyperplasia and hypertrophy, myofibroblast hyperplasia, epithelial hypertrophy, and mucus gland and goblet cell hyperplasia. The basement membrane is thickened, and there is desquamation of epithelium (Tattersfield). The sites of airway remodeling include the epithelium and basal membrane, airway smooth muscle, mucous glands, extracellular matrix, and small and large vessels (McParland).

One part of the remodeling is the smooth muscles. The smooth muscle undergoes both hypertrophy and hyperplasia. This is one of only a few places in the entire body where this can take place. So research states that there may be a 3 to 4 fold increase in muscle volume on asthmatic airways by comparison to normal subjects (Hogg). In some patients the muscle may occupy up to 20% of the bronchial wall. However, while an increase in smooth muscle in the major bronchi has been reported in the asthmatic patients, an increased smooth muscle thickness

was found in the peripheral airways (Dunnill, Saetta, Carroll). It is interesting that in a study of asthmatic patients who died from other causes, no hypertrophy or hyperplasia was noted (Sobonya). In most patients the increase in muscle mass was notably pronounced in large bronchi, but some patients had increased muscle mass which involved the entire airway tree including bronchioles (Ebina). As bronchoconstriction occurs, there is a marked increase in airway resistance, and studies of human lungs have shown that the smooth muscle in asthmatic airways need to be shortened by only 40% of its resting length to completely occlude the airway lumen (James). The lungs also show that resistance, particularly in the small airways, tends to reach a plateau in normal airways, where it increases progressively in asthma because of airway closure (James, Wiggs). These observations are also consistent when normal subjects perform a bronchial challenge. Their FEV-1 does reduce but it plateaus just as the calculations predicted. However, in asthmatic patients, FEV-1 decreases, but there is no plateau.

Increase in mucous production can obstruct these patients with asthma as well as the smooth muscle. Mucous glands are distributed throughout the cartilaginous airways in the lungs. Hypertrophy of the submucosal gland mass is thought to contribute to the excessive mucus produced in fatal asthma. The glands up make up higher proportion of the submucosa infatal asthma compared with normal subjects (Carroll, Dunnill). The increase in the number of epithelial goblet cells also contributes to the excess of mucus secretion into the lumen and the secretions present in large airways may be aspirated to smaller airways (Aikawa). Over 50% of the airways may be occluded by mucus during a fatal attack of asthma (Saetta). The greater mucous viscosity may significantly reduce mucociliary clearance. Large and small airways become plugged with secretions and inflammatory exudate which are so viscid that patients are

poorly responsive to high-dose inhaled bronchodilators, and the mucus may need to be removed by bronchoscopy and lavage (Reid).

Pain Signaling

Understanding the process of inflammation and how it affects the body is key to learning how nutrition can help patients with asthma. The spine also plays a role in asthma that most individuals overlook. The central nervous system is the most important system in the entire body. It controls everything in the human body, receiving and sending messages that the individual does not even realize is taking place. When there is a problem with the body, the brain can receive a nociceptive (pain) signal. This lets the individual know that something is wrong with the body. This signal can come from muscles, bone, and organs. When this electrical signal starts, it is sent through peripheral nerves and eventually arrives at the spinal cord.

When these signals are sent to the spinal cord there are chemicals released to continue the signal up to the brain. At this point of the paper the author needs to show the reader how chronic irritation of the lungs relates to the spinal cord. In asthmatics the lungs become irritated and send a signal to the brain so that the individual is aware of the problem. This is done through the nociception pain fibers in the body. This signal originates from the lungs and moves through the peripheral nerves to the spinal cord. When pain is the signal that needs to be sent to the brain, chemicals such as substance P, glutamate, and bradykinin are released in the spinal cord. For acute pain signals there are limited amounts of these chemicals and the body can deal with them. Those substances are pro-inflammatory and can irritate the spinal cord itself. Asthmatics, on the other hand, have chronic irritation and the signal is sent to the brain constantly. This means that

those chemicals are constantly being released in the spinal cord, and the spinal cord becomes irritated.

This is where everything is going to come together for the story of asthma and the adjustment. At the level of the spinal cord where the nerves from the lungs come in, there are also nerves from other parts of the body. In the case of the lung level, which is around the sixth and seventh cervical levels, some nerves from the upper body also come into the same levels of the spine. What this means is that when an asthmatic experiences chronic asthma, the irritation in the spinal cord will affect those nerves as well. This theory is known as central sensitization. It means that when an organ is affected and releases many chemicals in the spinal cord, it can affect other organs or muscles in the body that are innervated by the same level in the spinal cord. These processes are known as visceral somatic reactions. You might ask yourself why a problem with the lungs would cause a muscle spam or some pain in the lower neck. A good example of this is a heart attack. When an individual is having or about to have a heart attack, where does the person have pain? The pain is down the left arm and into the jaw. The reason is because of the chemicals released in the spinal cord can irritate the surrounding nervous tissue.

Chiropractic Adjustment

When a patient receives a chiropractic adjustment, that adjustment stimulates what are known as mechanoreceptors. These receptors send their information to the cortex where it is interpreted. During the adjustment there is also stimulation of "A" fibers. These fibers deal with the patient's proprioception mechanism. "A" fibers can have a dampening affect on pain in the spinal cord. "As these "A" fibers enter the cord, they are known to release an inhibiting neurotransmitter (GABA) at the cord level which actually reduces the conduction along pain

fibers entering the cord as well as along the receiving tracts (spinothalamic) (Christy).” The “A” fibers stimulate the periaqueductal gray area of the brain which will send signals back down into the cord and it to will release GABA at that cord level. An easy way to see this process at work would be to recognize a common reaction when one is injured. The first thing one does is to rub the injured site. This rubbing stimulates the mechanoreceptors and proprioceptors to send their signal to the brain. It just so happens that their signal is much faster than a pain signal. The “A” fibers signal gets to the brain first and overrides the pain signal. That is why when one rubs an area that is hurt, the pain decreases.

In treating asthmatic patients, the purpose of chiropractic spinal manipulative therapy (high velocity, low amplitude) is to increase the motion of the thoracic cage, mobilize the ribs, enhance arterial supply and lymphatic return, and to affect nervous system activity. This is all done in the hopes of reducing the symptomatology of the patient.

There is little research done on the chiropractic adjustment and how it affects an asthmatic. One of the reasons for this is that giving people mock adjustments is very difficult to do. It has been shown that people may get better just by using touch alone as opposed to a chiropractic adjustment. This can be a reason why the double blind study results are a little different in these studies. All of the papers read for this paper were peer-reviewed journals. The results from eight studies indicate that chiropractic care showed improvements in subjective measures, and to a lesser degree, objective findings.

The author will explain that it is not the intent of this paper to say that either the chiropractic adjustment or the nutritional support will replace rescue medication for asthma. That being said, the reader must understand that in all of the studies asthmatics were being treated

with medication and had chiropractic adjustments added to the treatment. The focus of this paper is to study how patients' symptoms are affected by chiropractic, not the overall lung function. This does not mean that lung function was not assessed. One must understand that when a patient is already taking B-agonist medication, the lungs are functioning as well as they can. The chiropractic adjustment is used to reduce the inflammatory process and increase the movement of the thoracic spine which will increase the movements of the ribs. This will make it easier for the patient to breathe. This is why most of these patients claim subjective relief versus objective relief. These studies were subjected to a checklist called the Down's and Black checklist. This checklist is used to measure the quality of the studies that met the selection criteria assessed by the authors using a 27-item scoring checklist. The scoring checklist is considered valid and reliable for assessing randomized and nonrandomized studies. The system was modified to allow the scoring of nonrandomized studies.

Research Articles

The articles used in this paper had scores ranging from 7 up to 22. Three out of the four studies received a 20 or better. The maximum points that could be reached were 27. A study performed by Balon conducted a randomized controlled trial on 91 children aged 7-16 who had continuing symptoms of asthma despite medical treatment. Subjects were randomly assigned to receive either active or simulated chiropractic manipulation for four months. Peak expiratory flow was measured from a change in base line. Of 91 children, 80 had outcome data that could be evaluated. Small increases in both treatment groups were noted, with no statistically significant difference between the groups with reference to change in baseline measurements. Asthma symptoms and use of B-agonists decreased and quality of life increased in both groups (Balon). Another study performed by Graham and Pistolese conducted a self-reported

impairment study on 81 children aged 1-17 before and after a two month period of chiropractic care. Significant reduction (improvement on the modified Oswestry rating scale) was reported for 90.1% of subjects after 60 days of chiropractic treatment. Significant decreases in impairment ratings were reported for both sexes (Graham RL). Bronfort conducted a prospective clinical case series and observer blinded randomized control trial on 36 patients aged 6-17 with mild and moderate persistent asthma. Patients were randomly assigned to receive either active spinal manipulation or sham spinal manipulation. At the conclusion of the 12-week intervention, lung function tests and patient-rated day and night-time symptoms showed little or no change. A 20% reduction in B-bronchodilator use was seen, quality of life scores increased 10 to 28%, and asthma severity rating showed a 39% reduction (Brontfort). Nielson conducted a randomized patient and observer blinded cross-over trial on 31 patients aged 18-44 suffering from chronic asthma. Patients were randomized to receive either active chiropractic spinal manipulative treatment or sham spinal manipulative treatment two times per week for four weeks. No clinically important or statistically significant differences were found between active and sham manipulations on forced expiratory volume, use of inhaled bronchodilators, patient-rated asthma severity, and non-specific bronchial reactivity. Nonspecific bronchial hyperreactivity improved by 36% and patient-rated asthma severity decreased by 34%.

This paper is trying to prove that chiropractic adjustments can help with asthmatic symptoms and not the overall lung function. These studies support the claim that the author is making. The problem with these studies is that the groups were comparing the adjustment group from a sham adjusting group. They never state how the sham adjustments were performed. If the sham adjustment was a thrust into a certain area with no cavitation, this does not define a sham adjustment. The simple act of putting a force into the spine will activate some mechanoreceptors

in the area. These mechanoreceptors are faster than nociceptors and can override the signal to the brain. This would be the reason for both groups reporting improvements subjectively. Children in the study referred to in the articles were able to experience a decrease in their medication use. Positive clinical changes were seen in a number of subjects leading to the conclusion that spinal manipulative therapy may be sought as an adjunct to medical management. Another very important observation to note during these studies is that not one patient reported to experience any worsening symptoms or injuries while under care. The author believes that even though the objective findings are not "clinically significant," there is good support for co-manage of these patients. Even if the patient only decreases some medication by a little and feels slightly better. Helping the patient is the main goal. Another goal should be to get the patient as well as possible and to need as little support from medication to go about their daily lives. Patients, no matter how good they feel, should always have the relief medication with them. There is no cure for this disease, and patients should be taught what things they need to stay away from and how severe this disease really is.

Food Allergies

As already discussed, the main reason asthma attacks occur is inflammation in the airways, along with mucus production and smooth muscle tightening. Individuals with asthma have a higher risk of food allergies than those without asthma (Branum, Sicherer). These food allergies allow for inflammation when these types of food are ingested. The study performed by Branum and Lukacs measured IgE levels for 15 inhalant allergens. This is important because the IgE is also responsible for pro-inflammation in the lungs. Allergic sensitization was common among the participants: 16.8% were sensitive to at least one food; 41.3%, to at least one inhalant allergen; and 13.9%, to at least one food and one inhalant allergen. By age, the highest

prevalence was 28%, in 1-5 year olds, and there was a steady decline with age. There was also clinical peanut allergy prevalent in 6-19 years olds. A mixture of peanut and shrimp allergy were most prevalent in adults age 20-59, and shrimp allergy was highest in adults 60+ years. As asthma increased in persistence and severity, the prevalences of food sensitization and FA (food allergy) significantly increased. They also found an association of likely FA with current asthma and emergency room visits for asthma. For the first time in a US nationally representative sample, specific serum IgE levels were used to quantify allergic sensitization to common foods. This is important because clinical studies have demonstrated that higher food-specific IgE levels indicate a greater likelihood of clinical FA. This study also demonstrated that black male children having FA were 4.4 times higher than others in the general population. Childhood is well recognized as the time when food allergies, especially to milk and eggs, are more prevalent. "In our study, the link between FA and asthma appeared especially strong. There was increased prevalence of all food sensitization and FA risk categories in those with diagnosed asthma, as well as increased prevalence and likelihood of FA in those with current asthma. Indeed, the odds of asthmatics with FA experiencing a recent severe asthma attack were 6.9 times higher than those without FA (Andrew)."

However, bronchial hyperreactivity and asthma worsening can be induced, in the absence of immediate bronchospasm, by the ingestion of small amounts of food allergens in sensitized individuals (Zwetchkenbaum). FA has been recently found to be the major risk factor for severe asthma and life-threatening asthma episodes. Several smaller studies have identified food sensitization as a significant risk factor for severe asthma (Berns). Nevertheless, these findings raise awareness that FA may be contributing to severe asthma episodes. This means that children should be checked for food allergies if they have any asthma like symptoms. The test is

performed by injecting some of the suspected allergens into the skin on the back. Hyperreactivity to the food is noted by using a black marker to circle the area of the skin the allergen has been placed. If the marker line expands, then the individual has an allergy to that food. When the allergen has been identified, the patient should take the pro-cautions to avoid that food or foods.

Herbal Supplementation

After the patient knows what foods to avoid it is time to talk about what foods and herbs they should take. Xiu-Min Li states that "In the last 2-3 years there are more controlled studies of TCM herbal products used for the treatment of allergic asthma. There have been several publications that TCM herbal formulas are safe and produced some levels of efficacy. Some herbal formulas also showed beneficial immunomodulatory effects. Several preclinical studies demonstrated that the food allergy herbal formula-2 was effective in protecting against peanut anaphylaxis in animal models." Since these herbal therapies are considered safe and effective by patients, every health care provider dealing with asthma needs to be educated about these therapies. Then there might be better discussions about the implications of using these therapies and potentially improving allergy and asthma treatments. One of the treatments that have recently researched was the use of ASHMI (Anti-asthma herbal medicine intervention) herbs. It was reported the first double-blind, randomized, placebo-controlled trial investigating the efficacy and tolerability of an anti-asthma herbal medicine intervention. This study was compared to oral prednisone therapy in 91 patients 18-60 years of age with moderate-to-severe asthma. Subjects in the ASHMI group received oral ASHMI capsules (4 capsules- .3g/capsule) and placebo tablets similar in appearance to prednisone. Subjects in the prednisone group received oral prednisone tablets (20mg in the morning) and ASHMI placebo capsules for four weeks (Xiu-Min Li). This study found the following; lung function (FEV1 and peak expiratory

flow values) was significantly improved in both ASHMI (P< 0.001) and prednisone (P< 0.001) groups. The improvement was slightly but significantly greater in the prednisone group. Both ASHMI and prednisone decreased peripheral blood eosinophils, serum IgE, and Th2 cytokines (IL-5 and IL-13) levels. This should sound familiar from earlier in the paper. Inhibition was greater in the prednisone group; however, unlike prednisone which suppressed IFN-y secretion, ASHMI increased IFN-y secretion (Wen MC). IFN-y is secreted by Th-1 cells which lower the inflammatory response in the human body. An additional unique finding was that prednisone decreased serum cortisol levels while ASHMI treatment group had normal cortisol levels (Who).

In another study subjects were randomly assigned to receive standard inhaled corticosteroid treatment plus ASHMI as complimentary therapy or inhaled corticosteroid treatment plus placebo. The results showed that ASHMI was safe and well tolerated in children. As expected, both standard and ASHMI plus standard groups significantly improved FEV1. However, symptom scores were greater in the ASHMI plus standard group than in the standard group alone. ASHMI plus standard group showed significantly greater reduction in serum total IgE and serum eosinophil cationic protein, but higher serum IFN-y levels after 3 months of treatment as compared to the standard therapy (Xiu-Min Li). As a side note, a study performed by Chang compared to effectiveness of herbs that differ only in their preparation. One group of herbs was milled down into a powder and the other was boiled. The herbs were used on 120 patients ages 5-20. The answer was very clear. The herbs that were milled into a powder improved pulmonary lung function and lowered IgE levels as compared to the placebo group. However, the herbs that had been boiled, there was no change from the placebo group (Chang).

This next study has to deal with peanut and multiple food allergies. Food Allergy Herbal Formula-2 (FAHF-2) is a group of 9 herbs derived from 11 herbs. FAHF-2 completely blocked

peanut induced anaphylaxis when administered intragastrically during the development of peanut hypersensitivity or after peanut hypersensitivity was fully established (Srivastava, Qu C). It has also been shown that multiple food allergies are more common than single food allergies (Simpson). This study showed that FAHF-2 provided complete protection from anaphylaxis to oral challenge with every allergen. FAHF-2 was able to do this by suppressing histamine release and reduce serum IgE. The herbs also showed protective effect was associated with up regulation of Th1 and down- regulation of Th2 cytokines. They also reduced peanut stimulated IL-5 production and increased IFN-y production (Ko J).

Conclusion:

All of these studies focus on the chemistry of the human body. The herbs worked because they lowered the pro-inflammatory chemicals and increased the cells produced by Th1. It seems that the Th1 shift toTh2 profoundly causes asthmatic symptoms. The treatment for asthma seems to revolve around inflammation and how to get rid of it.

The studies showed mixed results about chiropractic treatment in conjunction with medication. The objective findings, FEV-1 and overall lung functions, improved little. Subjective findings, on the other hand, showed that patients felt better, needed less medication, and the symptoms were less severe. The results might have been a little different. Even though the studies said that the improvements were not “clinically significant” that does not mean chiropractic care should not be used.

Nutrition received much better results. This could be due to the fact that the patients were not on medication while taking the herbs. The double blind studies that were performed proved that the herbs were a safe and effective way of treating asthma. The herbs that were used worked

about as well as prednisone. They also displayed no side effects that the patient's reported. This seems to be the first thing that needs to be tried when a child is diagnosed with asthma. Since the children are very susceptible to food allergies and inhaled allergies. These foods will fight the inflammatory process and help the patient deal with asthma.

Overall both of these proposed treatments should be considered and medication added as needed. Every person with asthma should carry a rescue inhaler. Asthma is not curable and can strike at anytime regardless of the precautions taken. This paper was written to show that medicine and alternative ideas need to work together, because neither holds the "silver bullet" answer. Diseases like asthma are very complex and have many pieces to the treatment puzzle. Doctors should explore other treatment options to the confusing, non curable diseases. Special thanks go to Dr. Christy for talking about asthma with such passion that lit the fire for this paper.

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