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Love Your Skin

Insights and Strategies for Difficult Skin Conditions

Seasonal Allergies
Alleviating Symptoms

Food Introduction
and Children's Allergies

Inflammatory Skin Conditions
An Interview with Holistic Dermatologist Dr. Alan Dattner, MD

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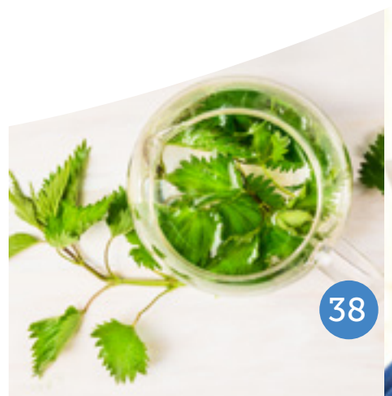
COLUMNS



LETTER FROM THE DOCTOR

Tina Beaudoin, ND
Senior Medical Educator

Welcome to the June issue of the Element! Immune balance and skin health are the clinical topics featured in this issue, timed to give you some additional resources in your tool bags as pollen counts rise and we start wearing shorts and short sleeves again.

In our feature article by Lisa Murray, RDN, LD, you will get a bird's-eye clinical view of common skin complaints as well as learn some new tidbits, including how microscopic arachnids make up part of our fascial epidermal ecosystem. Oh my! Dr. Jaclyn Chasse wrote an interesting article discussing the change in recommendations around what age to start introducing food to children and how perhaps later is not better anymore if you're hoping to avoid/reduce food allergies.

Switching gears to seasonal allergies, be sure to check out the common side effects of the most popular OTC drugs as well as the gentler interventions that also work at giving patients effective hay fever relief. Lastly, for all you mechanism of action geeks (me too), don't miss Dr. Meredith Murray's spotlight on *Urtica dioica*!

I want to close with a big "thank you!" for being an integrative practitioner and all that you do!

Warm regards,

Tina Beaudoin, ND

FDA STATEMENT

The information provided in this publication is the opinion of the authors based upon the latest evidence available. We hope that this issue provides health care practitioners with useful information to apply in their clinical practices. As with all scientific information on dietary supplements, the statements made within this issue are not reviewed, verified or approved by the FDA.

*These statements have not been evaluated by the Food and Drug Administration. These products are not intended to diagnose, treat, cure or prevent any disease.

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FEATURE ARTICLE

Love Your Skin

Insights and Strategies for Difficult Skin Conditions

By Lisa Murray, RDN, LD

Eczema, psoriasis and rosacea are common skin conditions, yet very difficult (and at times impossible) to resolve. The problem lies in the fact that sometimes we just cannot discover and/or eradicate the root problem. Also, the longer those changes within the skin have persisted, the more difficult they are to normalize. For decades, we have known about the role of toxins, both endogenous and exogenous, in the development of these skin disorders and research on genetic factors is providing new insight. Food allergies, and even just poor digestion, play a significant role in many cases. The use of food enzymes and in some cases, the addition of HCL, have resulted in improvement where diet changes have made little difference. The role of the liver, in helping detoxify or remove offending substances, is also an important component of treatment. My own personal clinical observation of the conventional medical approach of using immune suppressing steroid creams usually only forces the body to seek out and find a new area to use as its "toxin elimination field" (kind of like a leach field, pardon the analogy), whereby these toxins irritate the skin and alert the immune system to begin its cascade there as well. In the case of eczema, we call this the "atopic march", which may often include the onset of allergic rhinitis, using the nasal membranes and mucus as elimination vehicles.

The Immune System Component

Skin provides protection from foreign invaders in several ways. Apart from the physical barrier, there are specialized cells of the immune system throughout the layers of the skin. The chain reaction of events triggered by whatever the skin decides is a foreign invader causes alterations in the structure and function of the layers of the skin. The protective function of the epidermis is partially lost and as it opens to release its burden from the inside out, it becomes vulnerable to penetration of harmful substances and organisms from the outside in. This can additionally lead to irritation or infection from the penetration of many things that would normally be kept out by intact skin and the immune cascade continues.

Eczema (Atopic Dermatitis)

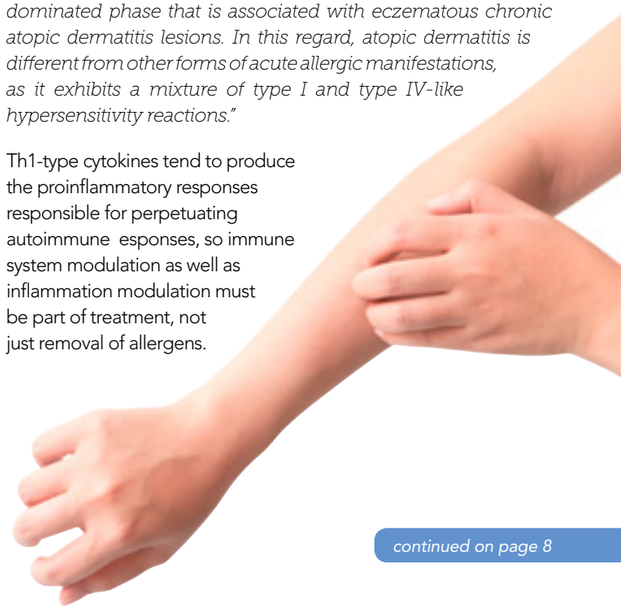
Eczema, also known as atopic dermatitis (AD), occurs when "foreign" substances on or in the skin cause an "allergic" immune response. We know it to be an allergic response because blood testing will normally show increased levels of IgE antibodies as well as certain white blood cells. Detailed examination of the skin, as well as other indirect tests, show that the immune system is highly active in all forms of eczema. These features indicate that eczema is not only something that goes on within the layers of the skin, but is part of a systemic process of immune system activity. Patients with AD have higher rates of allergies than the general population and AD is highly associated with allergic rhinitis. The triggers for eczema can be endogenous from food or inhaled allergens or exogenous from contact with an irritant or allergen. Patients with atopic dermatitis often have sensitization against a variety of environmental allergens. AD is a complex condition with a strong genetic component and the relationship between allergy being a cause and/or an exacerbating factor of AD is still debated. A strong association with the mutation of the filaggrin gene has raised recent interest in the role of skin barrier impairment in the development of AD. Filaggrin (filament aggregating protein) is a filament-associated protein that binds to keratin fibers in epithelial cells. Research has reported two common European mutations to the filaggrin gene that predispose to eczema and secondary allergic diseases.[1]

Exposure to microbes can play a role in the development of eczema because bacteria or yeast can be allergens or irritants. A 2013 study at the University of Michigan[2] discovered that a toxin, a molecule called delta toxin produced by the bacteria *Staphylococcus aureus*, causes the skin to react producing an eczema-like rash. But other strains of staph that did not carry the gene for delta toxin did not produce the rash. As we know, staph is a common bacteria on human skin and occasionally causes infection, but this leads us to wonder: How many different types of normal skin bacteria can produce toxins to which some people will react?

In AD there are two phases to the immune response: acute and chronic. The first phase is a type 1 hypersensitivity response, characterized by elevated levels of IgE antibodies. The IgE antibodies bind to mast cells in the skin, resulting in degranulation and secretion of histamine, leukotrienes and prostaglandins. The resulting vasodilation and increased permeability lead to inflammation of the skin in the affected area. That is the acute stage. But then there is a second stage. A review article published in *Current Opinion in Allergy and Clinical Immunology,* 2004[3] states:

"The initial phase with acute lesions is predominated by T helper cell type 2 (Th2) cytokines followed by a second Th1-dominated phase that is associated with eczematous chronic atopic dermatitis lesions. In this regard, atopic dermatitis is different from other forms of acute allergic manifestations, as it exhibits a mixture of type I and type IV-like hypersensitivity reactions."

Th1-type cytokines tend to produce the proinflammatory responses responsible for perpetuating autoimmune esponses, so immune system modulation as well as inflammation modulation must be part of treatment, not just removal of allergens.



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Psoriasis

Psoriasis is an inflammatory skin disorder with excessive hyperproliferation of skin cells. The skin cells accumulate faster than they can be shed, resulting in patches of red thickened skin, covered with silvery scales. Immune dysregulation plays a central role and many factors that affect the immune system such as stress, medications, allergies, illness, infection and inadequate nutrition also affect the onset or severity of psoriasis symptoms. Psoriasis has various triggers but most well known is skin injury or trauma. People with psoriasis often develop it after an assault to the skin—as simple as a scratch, an irritation, a sunburn or repeated pressure. Psoriasis is basically an immune response targeted to a localized area. It seems like the body keeps trying to repair the skin by continuing to create new cells, layer upon layer. Long considered an autoimmune disorder, one in which the body is attacking its own tissues, autoantigen triggers have been unknown until recently. Research findings indicate that our body's own antimicrobial peptides can trigger psoriasis. While they play a key role in protecting injured skin and providing an important defense against harmful bacteria, research has found that the antimicrobial peptide, LL37, can be an autoantigen. According to findings, LL37 triggers an immune cell response in at least 46% of people with psoriasis—and up to 75% of those with moderate-to-severe disease.[4] While antimicrobial peptides are proinflammatory, their expression is modulated by vitamin D.[5] This well explains why psoriasis improves when exposed to sunlight and why UV light therapy is an effective method of treatment. Adequate vitamin D supplementation may produce similar results, especially as part of a protocol to support healthy immune response.

"Consuming avocados, flax seed oil and a wide variety of seeds and nuts daily along with more fish are often new concepts to many patients as well as an important part of treatment for inflammatory skin disorders."





Rosacea

Rosacea is a common skin condition that causes redness and visible blood vessels in your face and may also produce small red bumps. Characterized by inflammation of blood vessels, redness, histological changes and vascular degeneration of the facial skin, exposure to the weather and damage by wind or sun is implicated in its genesis. Many believe that rosacea may be a vascular disorder because of its association with flushing, redness and visible blood vessels. Rosacea has been linked to low stomach acid and infection by H. pylori, but recent studies have shown that H. pylori was no more common in patients with rosacea than in those without. Still, rosacea often improves with antibiotic therapy. A more recent finding is that people suffering from rosacea tend to have more Demodex mites on their face. Instead of 1 or 2 per square centimetre of skin, the number rises to 10 to 20. What are demodex? These are microscopic arachnids that are part of our facial epidermal ecosystem. Everyone has them and attempts to eradicate them completely do fail, because we pass them to each other. Demodex are thought to consume sebum and increases in sebum production may cause a population boom which causes irritation in the face. Why? Because when a mite dies, they release bacteria and toxins which can cause irritation and inflammation.[6] Again, another reason why antibiotic therapy reduces the symptoms of rosacea. While there are many theories, the underlying causes of rosacea have yet to be scientifically proven.

The Inflammation Component

Eczema, psoriasis and rosacea are all inflammatory conditions. Natural therapeutic foundations for treating inflammatory skin conditions are largely the same as for any inflammatory condition. Choosing interventions, which will help modulate both the immune component and the inflammation component, reduces inappropriate hyperactivity while allowing for normal responses. From both research and clinical outcomes, adequate intake of essential fatty acids and their proper balance is important. Omega-6 PUFAs have a particular role in the structural integrity and barrier function of the skin. Research on the clinical application of essential fatty acid supplements for eczema have had mixed results. Some people respond better to omega-6 fatty acids like linoleic acid from sunflower, flax or evening primrose oil, while others may respond well to fish oil.[7] Like always, it really comes down to each person's diet; what they're eating and not eating and how they metabolize their nutrients.

In any case, a practitioner can't go wrong by taking the wholistic approach of recommending an anti-inflammatory diet: reducing/eliminating pro-inflammatory foods while increasing overall intake of EFA from a wide variety of healthy fats. Consider liberal use of olive oil on vegetables and salads and for sautéing; while avocado and coconut oils are excellent for higher heat cooking. Consuming avocados, flax seed oil and a wide variety of seeds and nuts daily along with more fish are often new concepts to many patients as well as an important part of treatment for inflammatory skin disorders. Turmeric or curcumin can provide important underlying inflammation modulation, while reishi mushroom can help provide immune system modulation.[8]

Basic Nutrient Needs of the Skin

The nutritional needs of healing skin need to be supported during any treatment process for optimal results. Vitamin C is necessary for the proper development of collagen and skin tissue. Zinc is antimicrobial and antioxidant, supporting the immune system within the skin, controlling inflammation and regulating cell production and turnover. With up to six times more of the mineral in the top epidermis layer of your skin than is found in the lower layers, zinc is critical for healthy skin, but deficiency is common around the globe. Zinc plays a role in DNA synthesis, cell division, protein synthesis and in promoting the proper structure of proteins and cell membranes. Zinc-dependent enzymes are involved in the conversion of essential fatty acids to anti-inflammatory prostaglandins. It's also necessary to produce gastric HCL. Vitamin A influences the physiology of the skin by promoting epidermal differentiation and modulating dermal growth factors. Vitamin E is an important antioxidant in the skin and anti-inflammatory as well. Vitamin E interferes in inflammation signaling, preventing inflammatory damage by decreasing inflammatory prostaglandin synthesis, interleukin production and the induction of cyclooxygenase-2 (COX-2).[9] Vitamin A and E seem to work better in tandem than either one alone[10], suggesting an important synergy that allows vitamin A to be more effective at lower doses. And finally, we come to vitamin D. Keratinocytes, the primary cell type in the epidermis, possess the enzymes needed to convert vitamin D to its active form: 1,25-dihydroxyvitamin D3, which functions locally to regulate the epidermal proliferation and differentiation.[11] Also, the active form of vitamin D functions as a steroid hormone, which decreases inflammation as well as modulates the immune response.

One Success Story

Many years ago, I worked with a patient in her early 40s who complained of severe scalp psoriasis which she said started at about age 14, so she had the condition for about 30 years. Somewhat better in the summer and terribly bad in the winter (she always lived in a cold northern climate), she had generally very dry skin and follicular hyperkeratosis—signs of nutritional deficiencies of essential fatty acids, vitamin A, vitamin E and B-complex vitamins. Over the years prior, she tried whatever types of elimination diets that were reported to help. She eliminated meat, nightshade vegetables, dairy, gluten and grains for months at a time with no change to her condition. I recommended a repletion regimen of vitamin D, vitamin A, vitamin C, fish oil (or cod liver oil), a robust multivitamin with plenty of zinc, vitamin E and B-vitamins, along with a reishi mushroom formula.

I asked her to make five dietary changes: 1.) to eat fish at least four times a week, 2.) consume both cooked and raw greens every day, in addition to her usual lunch and dinner vegetables, 3.) consume a quarter cup of nuts and seeds daily, 4.) use only olive oil for cooking and salads, 5.) eliminate sugar. Her psoriasis and other skin problems gradually improved and within a year, she was psoriasis free.

Chemical Reactivity

However, her psoriasis came back. Away from home, she purchased some hair products at a drugstore, which irritated her scalp and triggered her psoriasis. She then realized that the drugstore shampoo she used as a teenager as well as many other chemicals in her hair products over the years could have been contributing to her condition all along. The reason I remember this so clearly is because we often overlook the obvious: everyday chemicals present in our bath, skin, hair and body "care" products and in dish and laundry detergents are irritants that commonly cause skin reactions! Some of these chemicals are extremely toxic and it's no wonder why our skin would rebel. The immune response, after all, is there to protect us from "bad stuff"! We all have differing genetic programming when it comes to chemical and toxin tolerance or reactivity, but nutrient deficiencies can predispose individuals to poor barrier integrity. Ensuring that your patients change to all natural skin care products is an easy and in my opinion, most important first step to: 1.) remove offending

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irritants and 2.) support the process of healing. Liquid body soaps and shampoos that contain only gentle natural ingredients are usually less irritating to sensitive skin and reduce toxin and allergen exposure for a majority of people.

The Integrative Approach Works

The nutritional foundations integrative practitioners offer to patients will usually greatly improve and often eliminate their skin problems. Many patients (and practitioners!) compliant with integrative natural treatment for a completely different health issue may often find their skin issues resolve over time as well.

Here are the basics:

1. Identification and avoidance of known, suspected or potential allergens
2. Ongoing detoxification and liver support
3. Improving both diet and digestion
4. Repletion of nutrient deficiencies integral to healthy skin
5. The use of supplements which calm and support healthy, normalized inflammation and immune responses
6. Changing to all natural hair, skin and household cleaning products to reduce chemical irritants
7. Stress reduction and hormonal balance

It's important that patients understand that whether it takes six months or five years, staying the course with diet and lifestyle changes and continued focus on improving their overall health will eventually lead to success!

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Food Introduction and Children's Allergies

by Jaclyn Chasse, ND

If your practice includes any children, you have probably heard parents' questions about when and how to introduce food to their infant and how their decision impacts the child's potential for food allergies. Their concern is not unfounded. Over the last decade, the incidence of food allergy in children has increased from 1% to 10% worldwide.[1] In the US, the prevalence of food allergy is reported to have increased by 18% between 1993 and 2006.[2] With the rise in allergies and atopic illness (eczema, allergies and asthma) in children, parents naturally want to do whatever they can to lessen the risk that these conditions will affect their children.

Over the last decade, recommendations have shifted away from delayed food introduction based upon newly published research. In the past, most pediatric groups and experts, across integrative and conventional medicine, recommended delaying foods such as cow's milk until age 1, eggs until 2 years, and peanuts and seafood until age 3. It was believed that early exposure to potentially allergenic foods in the intestines could cause sensitization for the child and leave them at an increased risk of allergy.[3] At the time, it was believed, more theoretically, that because the infant's gut mucosal barrier was immature, that the early introduction of foods could trigger sensitivities. Interestingly, a similar theory was applied to topical allergens as well as inhaled allergens, although outside the scope of this article. 2012 World Health Organization recommendations proposed exclusive breastfeeding for the first six months in order to prevent allergic diseases in children.[4]

This perspective has begun to shift, and now the leading thoughts are that early exposure may actually improve tolerance to the proteins through regulatory T-cell pathways.[5] Part of this concern arose because although the above recommendations were enacted (delayed food introduction), there was still an increase in incidence of food allergy and allergic disease in children. (Note: There can obviously be several other factors which come into play in this observed trend, including quality of food, co-administration of gut-harming pesticides in foods, the role of intestinal flora in immune tolerance and early exposures to compounds which can harm this flora balance, among many others.) That being said, the emerging evidence seems to suggest that earlier exposure can be beneficial, as it stimulates early immune tolerance mechanisms in the mucosal surface of the infant's gut.

Research from Scandinavian countries show that early consumption of fish was associated with lower incidence of allergies in children. In studies in Norway and Sweden, lower levels of eczema and asthma were reported in both high-risk and low-risk children given fish before 9 months of age compared to children where introduction was delayed beyond 1 year. It was also observed in these studies that the greater the dose and the earlier that fish was introduced into the diet, the greater the protection observed.[6,7] This could be related to early exposure to fish protein allergens and could also be related to positive impacts of exposure to polyunsaturated fatty acids in fish early on. Further research would be required to discern between the nutritional benefit and the immunological tolerance benefit.

Peanut allergies can be a particularly scary allergen, as the reaction is often anaphylactic and can be triggered even by airborne exposure. An interesting study published in the *Journal of Allergy and Clinical Immunology* shared the report that Jewish children in the UK had a 10-fold higher prevalence of peanut allergy than Jewish children raised in Israel. There were no differences in the cohorts in regards to genetics, social class, atopy or the peanut allergenicity—the differences were attributed to the fact that children in Israel are exposed to peanuts from an early age, whereas in the UK, typical delayed introduction was applied.[8]

These reactions may be dependent on the type of food. A new review published in *Acta Paediatrica* this February by Mermiri et al summarized data that showed that early exposure (after 3 months) to allergenic foods in previously breastfed infants (compared to infants exclusively breastfed through 6 months) had a lower overall incidence of food allergies with eggs and peanuts, but not with cow's milk, white fish, sesame seeds and wheat.[9] Additionally, the same review commented that data shows that diversity of complementary foods in the first year of life can reduce the risk of atopic dermatitis while less food diversity during the first year of life might be linked to a higher risk of developing asthma and allergies in childhood.

The Why Behind Early Exposure and Immune Tolerance

Unfortunately, we don't have good human studies to support a full understanding of the immune process surrounding early exposure to foods and immune tolerance. Much of the data to date is coming out of in vitro studies, with further studies pending. There seem to be several factors at play, however. First, many of the foods which were commonly avoided in early childhood (fish, eggs, etc.) contain nutrients which have anti-inflammatory qualities (including EPA and DHA fatty acids, phosphatidyl choline, glutathione precursors and more) which could assist with immune balancing from a nutritional perspective. There are likely additional antigen-driven responses. It is believed that early exposure to allergenic foods may trigger an immune response much like immunotherapy (at least with some foods).

Nutritional Factors

In addition to early exposure to allergenic foods, other factors have been evaluated regarding their influence on childhood atopic disease. One randomized controlled trial showed that mothers who consumed polyunsaturated fatty acids during pregnancy and lactation had offspring with a lower incidence of food allergies, allergies and immunoglobulin E (IgE) associated eczema in the first year of life.[10] Another review published in 2011 showed that mother's antioxidant status during pregnancy and their children's consumption of antioxidants protected against the development of allergies and atopic illness.[11]

Conclusion

The American Academy of Allergy, Asthma, and Immunology has recommended that mothers not be on any avoidance diets during pregnancy and lactation (assuming no child reactions to foods through breastmilk) and has recommended that infants be breastfeed for a minimum of four months, with food introduction beginning between 4 and 6 months of age. Other agencies across Europe have issued guidance which is substantially similar. While this guidance may be in conflict with guidance shared when we learned food introduction techniques in school, the current scientific evidence seems to support this recommendation.

Breastfeeding should be prioritized for infants whenever possible and research shows that adding antioxidants and fatty acids to children's diets at the time of food introduction is beneficial, through diverse diets. While every child-mother pair must be considered individually, we hope that this guidance allows you to update your general thinking on food allergy and atopic disease in children.

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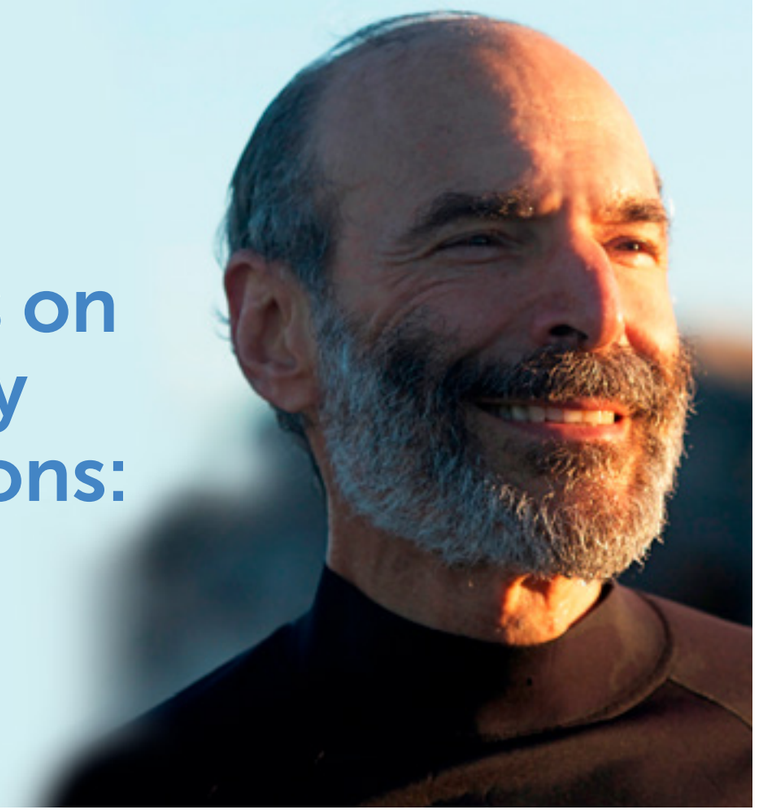


New Insights on Inflammatory Skin Conditions:

An Interview with Holistic Dermatologist Dr. Alan Dattner, MD

by Lisa Murray, RDN, LD

Emerson Ecologics customer Dr. Alan Dattner, MD, is a board-certified dermatologist, immunologist and a pioneer in the field of holistic dermatology. Dr. Dattner practices in New York and his book *Radiant Skin From the Inside Out*, published in 2015, won the Indifab Award for best independent Alternative Medicine book in 2015. We contacted Dr. Dattner to discuss his views and insights on some of the persistent inflammatory skin conditions that are often difficult to treat and resolve: rosacea, eczema and psoriasis.

Lisa Murray: Dr. Dattner, in your view, what if anything might these conditions have in common?

Dr. Dattner: What they have in common is inflammation as a key part of the mechanism of disease, and they all in my view have some degree of relationship to issues in the gut, related to leaky gut, allergens, inflammatory molecules and toxins entering into Peyers patches and into the blood.

Lisa Murray: What has changed in the last decade in how you approach these conditions?

Dr. Dattner: What's changed is more understanding about the lack of antimicrobial peptides in patients with Atopic dermatitis, commonly known as eczema. This allows development of secondary infection in skin areas that have been scratched open, which in turn stimulates more inflammation, scratching and itching.

In rosacea, my observation with anti-Demodex treatment is that especially in those people with increased Demodex found on skin scraping and examination, there is a tendency for specific treatment to improve the condition. Rosacea occurs at the upper end of the gastro-intestinal "tube", involving especially gastric digestion, and involves sensitivities of the mouth and sinus areas. It sometimes is related to Demodex, the mites that live in the skin follicles which may cause inflammation, and these Demodex also have a bacteria living within them that have been suspected of further contributing to the inflammation they cause. Vascular factors causing dilation of the capillaries on the face further lead to redness and can be affected by being in wind, cold and sun, or drinking excessive hot drinks, coffee or alcohol.

Psoriasis, which is when the skin overgrows and thickens locally, is a distant cousin to seborrhea—and it can be localized to microorganisms that live in the skin, like yeast. It involves T-cell related immunity, not an immediate antibody response, as you can see by all the biologicals aimed at its treatment. Strep A can be a cause in certain HLA types, especially within certain genetically related groups of people. But there is a whole set of different allergens which can bring this on, which people can develop a sensitivity to. Also, actual tissue injury is a trigger—pressure on the knees or elbows is commonly a trigger. Running and falling on a knee can start new lesions, known to dermatologists as the isomorphic response. Also, people can get psoriasis in areas damaged by sunburn.

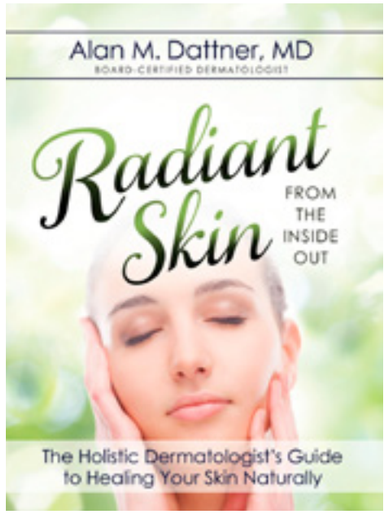
And eczema is really about barrier defects, so that water loss is greater, causing the skin to dry out often as a result of defects in the molecule Filaggrin, which when normal is important in the skin vapor barrier. Inflammation plays a role, but (unlike psoriasis) there is no proliferative effect. Still, because of the thickening and scaling it's sometimes hard to call the difference.

Lisa Murray: What new insights have you gained about these conditions after so many years of research and clinical practice?

Dr. Dattner: I have an answer to that and it's in my book *Radiant Skin from the Inside Out*. It describes my perspective, starting with my years of immunology research. I've been in several different laboratories, including the Dermatology Branch of the National Cancer Institute, and the work that we did demonstrated how cross reactivity works—that the recognition of a foreign material, an antigen to set off a response is unique to an individual's own HLA (human leukocyte antigen) characteristics and to the tissue as well. So what was puzzling before as to why one eczema patient would break out from eating oranges but another would not, is in part explained by their exposures, what they are unable to break down and their HLA type. Because the immune system sees the complex of the foreign material and their HLA antigen together, what is actually seen by one's immune system is uniquely different for each individual.

Lisa Murray: Well, that explains a whole lot doesn't it?

Dr. Dattner: Yeah, it explains a whole lot about individual unique response right there. Two people received Nobel prizes for studies related to the research we did because it's such an important understanding. And so you know, when somebody is reading the Internet blogs and says, "I got better because I stopped eating kumquats", you don't have enough information to know if stopping kumquats is going to make a difference for you. And this concept is so far from common knowledge of physicians and individuals. Still, 40 years later after we made our discoveries people are still banging around in the one-hit hypothesis of one food-one disease and not understanding the other factors involved. So, this is where a lot of confusion comes in and where our additional level of sophistication is crucial to finding what to remove to heal an individual's inflammatory skin disorder.



Lisa Murray: Do you have a particular dietary and lifestyle modification program which you recommend that is similar for all these conditions or is there significant variation to your recommendations?

Dr. Dattner: Well, being human, we have a whole bunch of in-common likes and wants, and one of those is we like sweets. The other thing is that our culture loves to sell us things that support our addictions and cravings, such as of sweets and fried foods. So, making the changes away from those things is a very important part of what I suggest. I use supplementation in addressing all of those issues. There are a whole series of common problems, so some of the general categories of what I do are very similar, like fixing digestion. But what I use to do it may be different in different individuals. One person may need an enzyme that breaks down gluten and another needs one that breaks down meat. So yes, there are some things in common with what I do in the foundation, like cutting down on high fructose corn syrup, which would save billions of dollars for our healthcare system. Differences in disease processes, allergen and toxic exposure and genetics require different programs for different people. It's not just a simple answer, but it's about trying to get the right balance, sequencing the changes you make, being very diligent at times and having leeway at others. So that's the foundation.

Lisa Murray: So you don't start with a certain elimination diet for example?

Dr. Dattner: No, I don't start with exactly the same diet. I start with a relatively similar diet for everyone, which is then modified according to various things I find by history, by physical exam, by muscle testing, by Chinese diagnosis, for each individual and then I branch out and address the "sore thumbs"—addressing the specifics with them, whether emotional, habits, diet or supplements that are needed beyond what is initially found.

What people have to know is that there is this desire for simplicity. But I just have to say that a number of things out in there in the blogosphere cause so much trouble for people because they don't understand, for example, that there are people out there using apple cider vinegar or kombucha (to cure their skin issue), but these people may be sensitive to yeast on the one hand and getting it from what they think is therapeutic.

One of the big issues in natural treatment is that most people spend many years developing these conditions and so they come in wanting to be cured in a month. Usually there is no treatment that will work that quickly and it can take many months for things to clear up.

Dr. Alan Dattner's Holistic Dermatology and Integrative Medicine offices are located in Manhattan and New Rochelle, New York. His website is www.holisticdermatology.com

His book *Radiant Skin From the Inside Out* is available from Amazon.com. The audio version was released in April, 2017.

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Seasonal **Allergies**

Alleviating Symptoms Through Practical Means

Histamine Metabolism

by Tina Beaudoin, ND

When I was growing up, seasonal allergies only seemed to affect a small amount of individuals and even then, it appeared to be a minor nuisance with some mildly itchy eyes and sneezing. However, more and more of the population experience seasonal allergies and report that the symptoms are much more than a mild inconvenience. According to the CDC, over 19 million adults and six million children in America were diagnosed with hay fever in 2014. The percent of the population affected by seasonal allergies continues to steadily rise as urban living, pollution and climate change exacerbate symptoms. As more people move into cities, they are exposed to increased levels of air pollution, which aggravates respiration and increases their allergic reaction. Combine this with high stress levels (which stimulates histamine release) and the patient experiences an even greater exacerbation of symptoms. It's also worth noting that dehydration and hypoglycemia[1] also result in enhanced histamine release, another great reason to stay hydrated and keep your blood sugar stable!

Seasonal allergies are the result of an inaccurate immune system that is mistakenly reacting to what should be experienced as harmless airborne substances, namely pollens. When people with hay fever come into contact with certain pollens (from trees, grasses or weeds) or even mold spores, their mast cells release histamine and other inflammatory cytokines into the blood stream, which then leads to watery, itchy eyes, running and/or stuffy nose, sneezing, sore throat and itching of the throat or ears.

1) Educate Patients on Therapeutic Options

There are numerous pharmaceutical and nutraceutical options for patients to choose from when it comes to seasonal allergies and it's important to know the benefits and drawbacks of each option. Antihistamines are the most common conventional treatment for hay fever, which work by binding and blocking the activity H1 receptors in the body. Antihistamines do not block the release of histamine nor facilitate the metabolism or break down of histamine. There are first generation antihistamines, which cross the blood brain barrier and are sedating and have the following adverse effect profile: seizures (rare), nausea, vomiting, dry mouth, epigastric distress, thrombocytopenia and agranulocytosis. Benadryl (diphenhydramine) and chlotrimeton (chlorpheniramine) are popular brand name first generation antihistamines, noting that these drugs are contraindicated with CNS depressants and MAO inhibitors. In 2015, the *Journal of the American Medical Association* published a study that found diphenhydramine (Benadryl, Nytol, Sominex, Theraflu, Triaminic Allergy, etc.) use significantly increased the risk for dementia in older adults.[2]

Claritin (loratidine), Clarinex (desloratadine), Zyrtec (cetirizine) and Allegra (fexofenadine) are common second generation antihistamines that do not cross blood brain barrier and are generally non-sedating. Desloratadine has the following common adverse reaction profile: headaches 14%, irritability 12%, diarrhea 15-20%, upper respiratory tract infection 11-21%, cough 11% and fever 12-17%. Cetirizine has the following common adverse reactions: drowsiness 14%, headache 11-14% and insomnia 9%. The lists of contraindications and drug interactions with each antihistamine are quite long and should be reviewed for patients on multi-pharma combinations.

2) Reduce Risk Factors and Aggravations

Decrease antigen exposure in your bedroom:

- Encase pillows, comforters, mattresses and box springs in zippered, allergen impermeable, dust-proof casings.
- Avoid purchasing foam rubber pillows and mattresses as they are more likely to harbor molds. Avoid memory foam as it is highly allergenic.
- Wash blankets, sheets, pillowcases and mattress pads every week in hot water! Use hypoallergenic/ additive free detergent. Hot water kills dust mites. Cold or warm water does not. Put all pillows in dryer for 30 minutes weekly to kill dust mites.
- Keep closet doors in bedroom closed and wet dust furniture in bedrooms weekly
- Avoid common dust collectors, such as cloth wall hangings, stuffed animals and piles of clothing in bedroom.
- Install a high-quality HEPA air purifier to remove airborne allergen particles, molds, animal dander and pollutants. Austin Air HealthMate is a great option for the bedroom and IQ Air filters for living areas.
- Change filters on a heating system every season: 3M Ultra Allergen 1 is readily available and a good option.
- Do not keep clothes that have been dry cleaned in a bedroom.
- Avoid mothballs, furniture polishes and air fresheners. Substitute non-toxic, environmentally friendly alternatives for chemical-based products.

3) Bring on Supportive Therapeutics to Calm Immune Response

Bioflavonoids

Bioflavonoids are great antioxidants that help stabilize mast cells that inhibit release of histamine:

Quercetin: Effective mast cell inhibitor, inhibiting the release of histamine, interleukin-8 (IL-8) and tumor necrosis factor (TNF), and inhibiting the formation of prostaglandin D2.[3] Dose: 1-3 grams, 2-3 times daily.

Hesperdin Methyl-Chalcone (HMC): Tends to have better oral absorption and is very helpful in acute situations as part of combination formulas. Dose: 200-600 mg/day in divided doses.

Nettle leaf: Antagonist and negative agonist activity against the H1 receptor and the inhibition of mast cell tryptase (preventing degranulation and release of a host of proinflammatory mediators) that cause the symptoms of hay fevers. It also inhibits prostaglandin formation through inhibition of Cyclooxygenase-1 (COX-1), Cyclooxygenase-2 (COX-2) and Hematopoietic Prostaglandin D(2) synthase (HPGDS) and central enzymes in pro-inflammatory pathways.[4]

Omega-3's

EPA and DHA are great long-term interventions for supporting a healthy inflammatory response rather than the exaggerated, prolonged response we see in hay fever. Ideally should be started 2-3 months prior to allergy season.

Vitamin C

Vitamin C supplementation has been shown to inhibit the release of histamine. Vitamin C depletion has been correlated with histaminemia and elevated serum histamine levels.[5,6] There is limited research that looks at the effects of vitamin C on hay fever and while it is not a primary therapeutic for allergies, it is often helpful in combination formulas that include the aforementioned flavonoids. In addition, vitamin C is a common deficiency with more than 40% of teenagers and adults in the US not getting

continued on page 22

 continued from page 21

enough of this essential vitamin in their diet. Dose: 500-3,000mg/day in divided doses.

B Vitamins and Minerals

B vitamins and minerals are essential to the metabolism or breakdown of histamine, specifically B1, B6, B5, B12 and folate as well as magnesium, copper and vitamin C. Note that the first step in the primary histamine metabolism pathway involves methylation and if your patient is a poor methylator, this could impede the breakdown of histamine and increase their symptoms. Make sure you patients are at least replete in these nutrients and increase and decrease dosing based on acute and maintenance dosing needs.

Additional Options

Homeopathics: While this writer does not have expertise in this area of therapeutics, it is worth mentioning that there are a variety of effective homeopathic combinations. There are also homeopathic desensitization treatment options to consider, known as sublingual immunotherapy (SLIT) or subcutaneous immunotherapy(SCIT).

Support Optimal Digestive Function: As the majority of immune system is found in the digestive tract, include a thorough evaluation of GI function and treat accordingly. A low histamine diet will also decrease the total histamine burden.

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4. Roschek B Jr1, Fink RC, McMichael M, Alberte RS. Nettle extract (Urtica dioica) affects key receptors and enzymes associated with allergic rhinitis. Phytother Res. 2009 Jul;23(7):920-6.

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6. Shaik-Dasthagirisaheb YB et al. Role of vitamins D, E and C in immunity and inflammation. J Biol Regul Homeost Agents. 2013 Apr-Jun;27(2):291-5.

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RESEARCH UPDATE

by Alan Gaby, MD

Reviewed by: Alan Gaby, MD

Author: Paydary K, et al

Reference: N-acetylcysteine augmentation therapy for moderate-to-severe obsessive-compulsive disorder: randomized, double-blind, placebo-controlled trial. J Clin Pharm Ther 2016;41:214-219.

Design: Randomized, double-blind, placebo-controlled trial.

Participants: Forty-four patients (mean age: 33 years) with moderate-to-severe obsessive-compulsive disorder (OCD).

Study Medication and Dosage: N-acetylcysteine (NAC; 2,000 mg per day) or placebo for 10 weeks. All patients received 200 mg per day of fluvoxamine (a selective serotonin-reuptake inhibitor).

Primary Outcome Measure: Scores on scales that measure the severity of OCD.

Key Findings: Compared with placebo, NAC significantly improved the mean total score on the Yale-Brown Obsessive-Compulsive Scale (Y-BOCS) ($p = 0.01$) and the mean score on the Y-BOCS obsession subscale ($p = 0.01$).

Practice Implications: Hyperactivity of glutamatergic neurotransmission has been implicated in the pathogenesis of OCD. NAC is believed to reduce glutamatergic activity. In previous case reports and double-blind trials, NAC was beneficial in the treatment of OCD, including patients with trichotillomania (hair-pulling disorder) and compulsive skin picking. The results of the present study demonstrate that NAC is beneficial as an adjunct to fluvoxamine in the treatment of moderate-to-severe OCD.

Reviewed by: Alan Gaby, MD

Author: Obeid R, et al

Reference: Folic acid causes higher prevalence of detectable unmetabolized folic acid in serum than B-complex: a randomized trial. Eur J Nutr 2016;55:1021-1028.

Design: Randomized single-blind trial.

Participants: Fifty-eight elderly individuals (mean age: 82 years).

Study Medication and Dosage: Folic acid alone (400 µg per day) or folic acid plus vitamin B_6 (pyridoxine; 8 mg per day) and vitamin B_{12} (10 µg per day) for a median duration of 23 days.

Primary Outcome Measure: The serum concentration of unmetabolized folic acid.

Key Findings: After supplementation, the median concentration of unmetabolized folic acid was significantly lower by 72% in the group receiving all three B vitamins than in those receiving folic acid alone (0.17 vs. 0.61 nmol/L; $p = 0.001$). The proportion of individuals who had an unmetabolized folic acid concentration of 0.21 nmol/L or greater was lower in the group receiving all three B vitamins than in those receiving folic acid alone (33% vs. 76%; p value not stated).

Practice Implications: Unmetabolized folic acid is frequently present in the serum of people taking folic acid supplements and in elderly people receiving folic acid-fortified foods or supplements. Concerns have been raised that unmetabolized folic acid could have deleterious effects on health. Specifically, some have argued that unmetabolized folic acid could increase the risk of developing cancer. For this and other reasons, it has been suggested that folic acid should no longer be used as a supplement, and some manufacturers have replaced folic acid in multivitamin products with its biologically active form, 5-methyltetrahydrofolate (5-MTHF).

However, research on folic acid and cancer is conflicting, ranging from a protective effect to no effect to an adverse effect. Moreover, there is no clear evidence of any safety difference (cancer risk or otherwise) between unmetabolized folic acid and folic acid that has been metabolized to its biologically active form. The results of the present study suggest that efficient metabolism of folic acid depends on the presence of adequate amounts of other B vitamins. The clinical significance of this finding remains to be determined.

As I have argued elsewhere, routinely substituting folic acid with 5-MTHF, particularly in multiple-micronutrient products, is not supported by the available scientific evidence.[1]

1. Gaby AR. Which supplement should we use: folic acid or methylfolate? www.doctorgaby.com, in the section on Articles.

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Product code: J80043

Nettle: How it Helps Reduce Allergy Symptoms

by Meredith Murray, ND

Nettle *(Urtica dioica)* is a familiar and loved nourishing herb amongst herbalists and natural practitioners alike. Nettle leaves are specifically admired and utilized for their beneficial effects on symptoms of allergic rhinitis. It was only recently that the specific compounds associated with its anti-allergenic activity were fully identified.

Surprisingly, the ancient use of nettle was mainly for helping arthritic joints. Instead of being dosed orally, the fresh herb was actually flailed against the limbs to increase circulation in a method known as "urtication". It was documented that Roman soldiers utilized fresh nettles in this way to increase warmth in their extremities while in colder climates.[1]

For many years, it was hypothesized that the reason nettle was effective for allergies and allergic rhinitis was due to its anti-inflammatory effects. A double-blind, placebo controlled trial conducted in 1990 showed that 300 mg of freeze-dried nettle daily was reported by patients as being more efficacious for resolving allergy symptoms than their traditional medication.[2] However, this was a small study and further research is worth conducting.

The in vitro studies that were conducted on nettle extracts recently identified the aspects of nettle which explain its similar effect to conventional allergy medication. The main actions are: H1 inhibition, mast cell tryptase inhibition, COX-1/COX-2 inhibition and hematopoietic prostaglandin D2 synthase inhibition (HPGDS).[3] The H1-receptor antagonism and negative agonist action prevents histamine from binding to its receptor, blocking a cascade that results in histamine release, and ultimately preventing allergic symptoms.

As most of the active constituents identified in nettle do not cross the blood brain barrier and likely act on peripheral receptors, it therefore would be unlikely to cause drowsiness. This may make nettle a more attractive option than OTC medications like diphenhydramine (another H1-antagonist), which cross the blood brain barrier and do have sedative effects. Components of nettle were also revealed to effectively inhibit mast cell tryptase, which would block degranulation of mast-cells and stop pro-inflammatory mediators that cause allergy symptoms. Nettle also has COX-1 and COX-2 inhibitory activity as well as HPGDS activity. This activity blocks upstream processes of proinflammatory pathways and formation of prostaglandins involved in causing allergy symptoms.

Another study demonstrated that the following bioactive components—adenine, synephrine, osthole and nicotinamide—are the ones crucial to the anti-inflammatory and anti-allergenic processes mentioned above. These compounds can be detected in serum and urine after consuming a nettle lozenge (200mg)[4], indicating their absorption and excretion. As these compounds are all related to improving inflammatory disorders, their discovery in urine and serum after a dose of nettle supports the use of nettle for relieving allergy symptoms associated with inflammation.

It is a lovely occurrence when traditional wisdom is supported through modern science, especially when it reflects what is seen in clinical practice: a wonderful plant that can safely help relieve hay fever symptoms.

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