



## Allergic Contact Dermatitis: **An Inflammatory Skin Condition Affecting Adults and Children Alike**

*Sharon E. Jacob, M.D. and Lauren Tashman, B.S.*

The classic presentation of allergic contact dermatitis is a red, itchy, edematous skin, sometimes including bumps and blisters<sup>5</sup>.

The rash is often in the location of the allergen exposure.

The skin is the largest organ of the body, accounting for about fifteen percent of our body weight<sup>1</sup>. While many believe its role is merely as an external covering, the functions of the skin are far more complex. The skin consists of three main layers – the epidermis (the outermost layer that we can see), the dermis, and the hypodermis, each with their own function. It is the epidermis which creates a barrier to and protects from pathogens (dirt, bacteria, chemicals, etc.) of the outside world. This highly specialized layer contains Langerhans cells, whose role is to capture an offending agent, also called an antigen, and educate our body's immune system so that this antigen can be recognized in the future<sup>1</sup>.

The response of the immune system determines if, when, and how, the antigen will be cleared. The usual response is what is known as dermatitis, or inflammation of the skin. Contact dermatitis is inflammation of the skin due to direct contact with an antigen or irritant<sup>2</sup>. It affects an estimated seventy-two million United States residents, costing an



*Sharon E. Jacob, M.D.*

astonishing \$1.9 billion per year<sup>3</sup>. There are three main types of contact dermatitis, namely irritant, urticarial, and allergic.

Irritant contact dermatitis accounts for 80% of all cases of contact dermatitis, and occurs when caustic chemicals, such as acids, directly damage certain cells of the epidermis, and invite inflammation without involvement of the immune system<sup>4</sup>. Contact urticaria is seen in only 0.5% of cases of contact dermatitis, but can lead to a severe (anaphylactoid-type) reaction, mediated by the immune system<sup>4</sup>.

Allergic contact dermatitis comprises the remaining 20% of cases, and is mediated by a unique response of the immune system known as Type IV T-cell mediated hypersensitivity reaction. The basis for this dermatitis is the reaction from repeated exposure to an inciting agent. Following the first exposure, the immune system produces special cells, called memory T-cells, whose job it is to act against the antigen if the body is re-exposed. The process of developing these T-cells is known as sensitization.

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ISDI office at the address above.**Mission**

The goal of the Inflammatory Skin Disease Institute (ISDI) is to promote public awareness and enhanced treatment of inflammatory skin diseases through education, research, and patient advocacy.

# Director's Message



Fall is in the air – it's time to enjoy the colorful foliage, the holiday season and cooler temperatures. Many of us welcome the fall/winter cooler

season, however for the 1 out of 3 people in the U.S. who suffer from inflammatory skin disease these changes can be difficult. The Inflammatory Skin Disease Institute continues to provide education, awareness and support which may lead to a better understanding of skin

disorders. As Director of the Inflammatory Skin Disease Institute, I challenge you to join us in the awareness campaign and contact your congressperson and ask them to support House Bill 652 and lets continue December as Inflammatory Skin Disease Awareness Month.

Happy Fall to All,

LaDonna Williams  
Executive Director  
ISDI

## Letter to the Editor:

Dear Editor:

I suffer from skin disease, specifically psoriasis. This condition has plagued me for years and I am proud that December has been identified as Inflammatory Skin Disease Awareness Month. It is unfortunate that so many individuals are completely unaware of the many difficulties associates with skin disease.

Skin disease is painful, both physically and mentally. The mental anguish associated with skin disease can be devastating. The embarrassment of answering all of the probing questions simply takes a toll. It is unfortunate that so few people lack the manners pertaining to the disease within social environments. I still today remember a golfer asking what was all over my body as I approached the golf course. I had dry, scaly patches and large scabs on my elbows, and up and down my legs. Imagine how degrading one must feel playing in a golf tournament with 90 degree temperatures in long pants just to avoid the questions. Truly, this is a situation that I wish upon no one. The physical pain can be difficult as well. Joint pain, skin irritation, fingernail and toenail discomfort...the list goes on.

I have been lucky to have found a wonderful dermatologist that has helped me investigate a number of medications, until I found one that works fairly well. Unfortunately, it is difficult to get insurance approval and is very expensive – over \$1,200 for a monthly refill of which I still have to pay for out of pocket. I find that the monetary cost is worth it physically and mentally. Continued medical research is required for more medications like this.

I would like to thank ISDI for their continued dedication for this worthy cause. As a sufferer of skin disease, I am thankful for any and all awareness to better educate the public to the issues associated with this difficult disease. Skin disease is not to be taken lightly, period.

D.T.



Upon subsequent exposures to the antigen, these T-cells are called into action, leading to inflammation. This second phase (when re-exposure to the antigen occurs) of the immune response is known as elicitation, and results in dermatitis<sup>5</sup>.

Allergic contact dermatitis is currently estimated to affect as much as 20% of the pediatric population<sup>5</sup>. Children as young as six months of age have been found to have developed an allergy to contact antigens. The two most studied allergens include nickel (from metal objects) and urushiol (from plants in the *Toxicodendron* genus, such as poison ivy). Yet, there are many more common allergens in the pediatric group, including fragrances, preservative chemicals (such as formaldehyde), topical antibiotics (such as neomycin and bacitracin), and rubber additive chemicals<sup>5</sup> and new allergens are continuing to be found to be more relevant.

The classic presentation of allergic contact dermatitis is a red, itchy, edematous skin, sometimes including bumps and blisters<sup>5</sup>. The rash is often in the location of the allergen exposure. For example, nickel is commonly found in earrings, and in button snaps on blue jeans. Thus, eruptions may appear on earlobes, or in the infra-umbilical area. Allergens from the textiles in clothing will tend to present in areas that rub against the skin, such as under the arms, in the creases of the elbows and legs, and in the inner thigh, genitals, and buttocks. Cosmetic and fragrance-related allergens will tend to present in the facial region and on the neck<sup>5</sup>. Cocamidopropyl betaine allergies from "no tears" shampoo usually present on the head, neck, and back of the hands (the areas of highest exposure).

The best way to treat allergic contact dermatitis is to avoid the causative antigens-allergens. This practice is often difficult, as certain allergens are common to many products, and their derivatives, also potential allergens, may be unknown.

An area where label-reading may be misleading is in the fragrance department. Fragrances are the most common cause of contact allergy to cosmetics, and the second-most common cause of allergic contact dermatitis<sup>6</sup>. In children, baby care products are also a significant source for fragrance sensitization. Infants and children may also encounter fragrances in foods (such as tomatoes), oral hygiene products (such as toothpaste), and through exposure to fragrances the parents are wearing. In addition, if fragrance-based chemicals are added for purposes other than enhancing the smell of a product, the product may still be labeled as "fragrance-free", further complicating the



difficulty of avoidance. Some products are labeled, "unscented", leading consumers to believe that they do not contain a fragrance/scent. These products may contain fragrance-based chemicals to eliminate or mask odor<sup>6</sup>. It is important that consumers be educated on how to read ingredient lists.

Avoiding products containing allergens, and finding substitutes for such items can be a rather difficult task. Fortunately, programs are underway to help patients and their parents find success. One example is the Contact Allergen Replacement Database (C.A.R.D.), developed by the American Contact Dermatitis Society<sup>5</sup>. This program allows member physicians to generate customized allergen-free product lists for their patients.

Aside from the mental demands of having to record and avoid items containing allergens, allergic contact dermatitis can be emotionally difficult as well, especially for children. Children may have to avoid their favorite foods, clothing, or fragrances, which may cause great distress, especially to the very young, who may not understand the underlying logic. In addition, children may be mocked by their peers, affecting their self-esteem, or succumb to peer pressure and suffer rather itchy and visually unpleasant consequences.

Numerous substances are known to cause allergic contact dermatitis, and more are being discovered everyday.

Children presenting with rashes of unknown origin should visit their dermatologist, for if they have allergic contact dermatitis, unveiling and avoiding the inciting allergen is the way to prevent additional outbreaks, and remain dermatitis-free.

Dr. Sharon E. Jacob is the Director of the Contact Dermatitis Clinic at the University of Miami-Miller School of Medicine.

Lauren Tashman is a fourth year medical student at the University of Miami-Miller School of Medicine and mentee of Dr. Jacob.

<sup>1</sup> <http://en.wikipedia.org/wiki/Skin>

<sup>2</sup> <http://www.emedicine.com/emerg/topic131.htm>

<sup>3</sup> Dermatolg World. Most prevalent skin diseases impact millions of Americans: burden of skin disease study finds several disease diseases to be quite common. 1:24, May 2005.

<sup>4</sup> Jacob SE and Steele T. Contact Dermatitis and Workforce Economics. Semin Cutan Med Surg. 2006 Jun;25(2):105-9.

<sup>5</sup> Militello G, Jacob SE, and Crawford GH. Allergic contact dermatitis is children. Curr Opin Pede, 2006 18: 385-390.

<sup>6</sup> Jacob SE and Amado A. Fragrance Mix. Skin and Aging. 2006 Apr:16-18, 22.



## Welcome: Dr. Judith Williams

The Inflammatory Skin Disease Institute is pleased to welcome our newest member to the Scientific Advisory Board, Dr. Judith Williams. It is an honor to have Dr. Judith Williams who is certified in pediatrics and dermatology. Dr. Williams graduated from Pennsylvania State University – College of Medicine. Her internship and residency training included Ohio State University School of Medicine;

Columbus Children's Hospital, Columbus, Ohio; and Pennsylvania State University College of Medicine. Dr. Williams practices at the Children's Hospital of the King's Daughters in Norfolk, Virginia.

## ANNOUNCING

Inflammatory  
Skin Disease  
Institute's  
4th Annual  
Conference

"Living with  
Inflammatory  
Skin Disease – the  
Undue Burden"

SATURDAY,  
DECEMBER 2, 2006  
NORFOLK, VIRGINIA

Topics to be covered:  
eczema, contact dermatitis,  
psoriasis, acne, rosacea.

## Get Involved...

Increase skin disease awareness by calling your congressperson and request that they support House Resolution 652, which names December as Inflammatory Skin Disease Awareness Month.

## Announcing our newest brochure: The FAQs About Psoriasis



[www.isdionline.org](http://www.isdionline.org)

If you haven't had the opportunity to check out our new website, [www.isdionline.org](http://www.isdionline.org), you will find a lot of useful information. Check out the "links" page. These are also sites containing useful, up-to-date information about inflammatory skin diseases and treatments.

**NeoStrata Company sells skin care products. If you purchase any products from NeoStrata be sure to use this code: ISDI1000. ISDI will get \$1 for every item purchased.**

## Isotretinoin Manufacturers Announce Good News for Acne Patients

Removal of 23-day lockout period starts for patients not of childbearing potential October 2006.

An update set to occur October 6 will eliminate the 23-day lockout period for males and females not of child bearing potential. Therefore, these patients will be able to begin a new 7-day window immediately after the preceding 7-day window has expired. Unfortunately, this update does not apply to female patients of child-bearing potential. That update is scheduled to occur next year.

## Request for Submission 2007 Patient Art Exhibit

The Society for Investigative Dermatology (SID) will serve as host for the fifth annual Patient Art Exhibit in collaboration with the Coalition of Skin Diseases. Next year's exhibit will be held at the SID annual meeting in Los Angeles, CA, from May 9-12, 2007.

If you are interested in submitting a piece of art for the exhibit, please contact Becky Minnillo at the SID office by phone: 216.579.9340, or email [minnillo@sidnet.org](mailto:minnillo@sidnet.org). More information will be available closer to the time of the meeting.

You can view images from past exhibits on the SID website at:  
[http://www.sidnet.org/Patient\\_Art\\_Exhibit\\_pi.asp](http://www.sidnet.org/Patient_Art_Exhibit_pi.asp)





## Tasteless Comments

If you are a person with a skin disease, or the parent of a child with a skin disease, you have undoubtedly been faced with those rude, crude, and even well meaning people asking "those questions."

Do you have any snappy comebacks that you want so much to say, or actually have said? Send us your responses and you might see yours in print.

**Editor's Note:** The purpose of this section is three-fold: 1) it is an opportunity educate and make the public aware of the disorder; 2) it lets society know it is not appropriate to stare and ask hurtful questions, and 3) it is an opportunity to let off steam with a touch of humor, allowing us to laugh.

## Allergic Contact Dermatitis Can Affect Us All

"Tasteless Comments is presented a little differently in this issue. ISDI is sharing a poem written by Lauren Tashman.

Parents, parents, please be advised,

A new skin condition is on the rise,  
It not only affects you grown up adults,  
But we children also suffer from its insults.

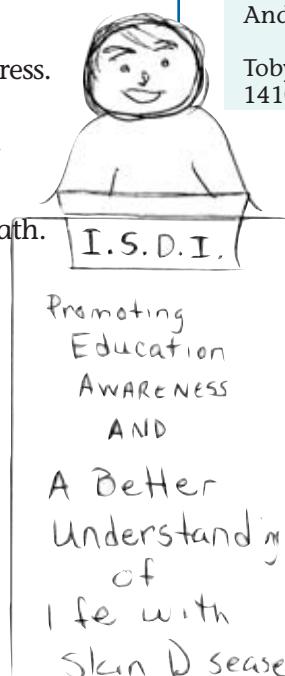
We'll itch and scratch throughout the day.  
We won't be able to go out and play.  
Please take us to the skin doctor in a hurry  
To ease our itching and our worry.

The doctor will do a skin patch test,  
And will give us medicine to ease our distress.  
Once our tests results return,  
The cause of our discomfort we will learn.

Many things can cause our rash,  
Like those in shampoo and soap in our bath.  
We may have to avoid some of our favorite stuff,  
But we can do it, because we are tough.  
So mom and dad please hear our call,  
Allergic Contact Dermatitis can affect us all.

But seeing our doctor and following directions,  
Can offer us the best protection.

By Lauren Tashman  
MS IV- Miller School of Medicine



## PENPALS

Reach out to others and share challenges and triumphs in dealing with your disease. Patients often look to others in similar situations to discuss treatments, feelings, etc. The following readers have asked for their names to be presented as possible pen pals. If you are looking for support from someone who has the same disease as you, contact any of the readers listed below. Also, to be added to the list, send your name, address, phone, and/or e-mail to ISDI, P.O. Box 1074, Newport News, VA 23601 or ExDirISDI@aol.com.

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# how can I HELP?

Yes! I would like to help support the  
Inflammatory Skin Disease Institute (ISDI).

Name \_\_\_\_\_  
Address \_\_\_\_\_  
City \_\_\_\_\_ State \_\_\_\_\_ Zip \_\_\_\_\_  
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By donating to ISDI you will help us provide a ray of hope to people with inflammatory skin disease. An ISDI Information subscription is given to all donors.

\$25     \$50     \$100     Other \$ \_\_\_\_\_

Completed form and payment may be sent to: **Inflammatory Skin Disease Institute (ISDI)** P.O. Box 1074, Newport News, VA 23601

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