Ichthyosis Focus

F.I.R.S.T.

Vol. 22, No. 1 | A Quartely Journal for Friends of F.I.R.S.T. | Spring 2003

Recent Advances in Molecular Genetics of Ichthyosis

By Gabriele Richard, M.D.

Ichthyoses and related disorders represent a group of more than 28 distinct disorders with different modes of inheritance and different causes, as outlined in the Spring 2002 issue of the *Ichthyosis Focus,* "How Much Do You Know About Ichthyosis." All these disorders primarily affect the outermost layer of the skin, the epidermis, and can be summarized as disorders of cornification. The epidermis provides our barrier to the environment. It is a highly specialized epithelium designed to protect the human body from water loss and physical, chemical, and mechanical insults. In order to establish and constantly maintain this barrier, the epidermal cells, known as keratinocytes, undergo a complex, highly organized, and tightly controlled process of changes leading to cornification. During this process, cells migrate to the surface, where they form the horny or cornified layer and ultimately are cast off. The human body sheds approximately 2 billion cells during the course of a day. Under normal conditions, cell proliferation and desquamation are in equilibrium. Any external or internal condition that disturbs this balance is bound to impair the barrier function of the skin, eventually resulting in disease. As indicated by the name 'ichthyosis,' that stems from a Greek root meaning fish, these disorders often are characterized by scaling of the skin. Visible scales are produced by shedding of clumps of 100 to 500 or more cells that stick together. Scaling is usually associated with thickening of the cornified layer, called 'hyperkeratosis,' due to an increased number of cells produced by the epidermis, a delay in cell shedding, or as in most circumstances, a combination of both mechanisms.

In the last decade, enormous progress has been made in deciphering the molecular causes of inherited skin disorders. Genetic research uncovered over 120 different genes, which, when altered, disturb the normal structure and/or function of the skin and result in disease. Among them are 18 genes causing generalized ichthyosis, 19 genes implicated in palmoplantar keratoderma (the thickening of palms and soles), 4 genes linked to erythrokeratoderma (usually characterized by localized redness and thickening of skin), and 9 genes associated with other disorders such as Darier disease and Hailey-Hailey disease. This article highlights some of the most recent advances in genetic research of autosomal recessive ichthyoses, which already has considerably enhanced our understanding of the disease mechanisms and laid the foundation for molecular diagnoses and future development of new treatment modalities.

Autosomal recessive ichthyoses occur in approximately 1 in 100,000 to 1 in 300,000 individuals. Both genders are affected equally. Most autosomal recessive ichthyoses have been observed worldwide without ethnic clustering, although they are more common in populations with a high degree of blood relations (consanguinity). One of the best-known types is **L**amellar **I**chthyosis (LI), which manifests at birth. Babies are usually born encased in a tight, shiny covering of hardened skin called collodion membrane. After shedding, large, dark-brown scales develop over the entire body. The facial skin is tight and may pull eyelids and lips outward (ectropion and eclabion), which can result in secondary damage to the outer parts of the eyes. Other problems include reduced or absent sweating and heat intolerance as well as skin infections and scarring hair loss. The major gene responsible for LI, *TGM1,* is located on the long arm of chromosome 14 and determines the production of an enzyme called **t**rans**g**luta**m**inase-**1**. As many as 50% of LI patients carry a small change in the DNA code (mutations) in each of the 2 gene copies of *TGM1*. These mutations lead to reduced or absent enzyme production or diminished enzyme activity. To date, over 50 different mutations have been identified. One mutation (designated 2526A->G) appears to be common among individuals of Northern European descent and likely originates from a German ancestor (founder

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2003 Membership Renewal

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See page 12 for details.

Ichthyosis Focus

Vol. 22, No. 1
Spring 2003

Ichthyosis Focus is published quarterly by the Foundation for Ichthyosis & Related Skin Types

Requests to reprint information contained in Ichthyosis Focus should be directed to the editor.

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The Foundation for Ichthyosis & Related Skin Types is a 501 (c) 3 charitable organization supported by public and private donations. All contributions to the Foundation are tax deductible to the full extent of the law.

The editor invites your correspondence. We welcome your comments, observations and suggestions. Please send your letters to Ichthyosis Focus at the address listed above.

Correspondence Corner

Dear Members:

I am Danny Vaughn, from Roberta, Georgia. I am interested in speaking to others in my area who have ichthyosis, particularly CIE. If you are interested in corresponding with me, you can reach me at:

P.O. Box 748
Roberta, GA 31078
478-825-1340

I am looking forward to hearing from you.

Danny Vaughn
Roberta, GA

Dear Jean, and Ladies and Gentleman of F.I.R.S.T.:

I am 46 years old and have Ichthyosis Vulgaris. For many years I had no clue as to how to deal with this situation. I tried all the creams, ointments, and lotions to no avail. I thought I was destined to a life of severely dry skin, discomfort and embarrassment. Then quite a few years ago, I discovered a product that completely changed my life. The product was *Clairol Herbal Essence Shampoo for Normal Hair for Balanced Cleaning and Conditioning* (that is exactly how the label reads from top to bottom). I have no idea why, but this product eliminated all the flaking and scaling from my scalp, forehead, nose, ears, cheeks, neck, chest, arms, and legs, virtually my entire body! I don't know if when I rinsed my hair in the shower it rinsed over the rest of my body, but with continued use I was a free man. NO DRYNESS, PERIOD!!! As long as I used that product, my skin (and my life) was as normal as someone that did not have ichthyosis. Then one day I went to re-stock my supply of this product and found out that it was discontinued. (I used to buy 20-30 bottles at a time). Sure enough, after I completely ran out of the product, my skin problems returned as mean and as nasty as ever! I thought to myself if one shampoo and conditioner worked for me than surely there must be another one out there that would work also.

After months of trying different products, I found one that worked almost as well (*White Rain Plus Revitalizing Formula Shampoo and Conditioner).* But that too was discontinued after several years. Another search led me to another 2-in-1 shampoo and conditioner (*Loreal Vita Vive Daily Care for Normal Hair 2-in1 Multi-Vitamin Shampoo & Conditioner)* that worked almost as well as the original, but it also has been discontinued. And I have yet to find another product that works as well.

I have tried calling and writing all the companies that made these products but they do not seem interested in helping. I have no idea why these three products worked out of all the ones I tried, but I do know this: There is an ingredient or combination of ingredients in these 2-in-1 shampoo conditioners that stop this disease and its dryness in its tracks! With any one of these products my life was normal and happy and my ichthyosis was not a problem. Without these products my life is a nightmare. I know these products helped me, and I have to believe there is something in them that will help others with similar problems. I beg of you to please help me, and others like me. Thank you very much for taking the time to read this long letter. I will do anything I can to help you help us.

Sincerely dedicated to help,

Tom McClune
Salamanca, NY

Foundation Resources

Resource Fact Sheets
A new fact sheet on the topic of "Itching" has been added to the Foundation's resource fact sheet series. The resource fact sheets are designed to offer helpful hints about issues related to ichthyosis. "Itching" offers very comprehensive information on the troublesome issue of the itch associated with several forms of ichthyosis. Other topics available are:

- Ear Wax and Scale
- Overheating
- Retinoids
- Scalp Scale

The resource fact sheets are available to all Foundation members. Simply go to our website, www.scalyskin.org, to order your complimentary copy. Please provide your name, address, phone number, and name of the resource sheet you are requesting. The office staff will send it immediately. Or call Maureen in the national office, 1-800-545-3286, or use info@scalyskin.org, and provide the same information. Other topics will be added to the resource fact sheet series. Please let us know if you have a suggestion for a topic.

International Support

The Ichthyosis Support Network regularly hears from individuals overseas who are looking for support in their local areas. Several countries do host ichthyosis support groups, although most do not. In order to better serve our international members, the Ichthyosis Support Network will develop *Support Contact Lists* in countries where we have a significant membership but there is no formal local organization for the ichthyoses.

We are starting with our friends in Australia and New Zealand, by compiling a list of our members to share with other members and anyone who may contact the Foundation from those countries in the future. Members who submit their name to this list will be giving permission for their contact information to be shared with others. Members can choose how much personal information they wish to share; however, address, phone number, or email address are required.

If you live in Australia or New Zealand and would like to be a resource for someone else with ichthyosis in your area of the world, please contact Maureen in the foundation office, 650 N. Cannon Ave., Suite 17, Lansdale, PA, 19446, 1-800-545-3286, or at info@scalyskin.org.

A current list of the international ichthyosis groups is available from the foundation office. ✻

Senior's Speaking

Seniors Speaking *is a new column devoted to the needs and experiences of our members who are 55 and older. Please direct comments, suggestions or contributions to this column to the Foundation office by calling 1-800-545-3286, or email us at info@scalyskin.org.*

Dear Readers:

I have finally found relief from my severe itching with a product prescribed by my doctor. Triamcinolone Acetonide Cream (USP – 0.1%), manufactured by Alpharama, contains a high level of hydrocortisone. I have ichthyosis vulgaris, and this product offers me the most relief I have ever had for this problem.

George Powell
Mobile, AL

Medical Editor's Note: Some individuals with ichthyosis vulgaris also experience atopic dermatitis. Red, itchy patches of skin characterize dermatitis. For more information on the itching associated with ichthyosis, request the Foundation's resource fact sheet on Itching.

Dear Friends:

I am a 68 year-old grandfather. I have lived all my life with ichthyosis. It was not until my grandson was three years old (he has the condition) and his pediatrician told my daughter to try

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a German ancestor (founder effect). It leads to the making of incorrect, nonfunctional transglutaminase-1. The enzyme is essential for forming the horny layers of the skin. Transglutaminase-1 normally functions as super glue that cross-links numerous structural proteins in the epidermis facilitating the collapse of cells to cornified remnants. However, it is also necessary for attaching epidermis-specific fats (lipids) to this protein envelope. The diminished or absent transglutaminase-1 activity in patients with LI seriously disturbs the complex process of cornification and results in scaling. Comparisons of patients with and without detectable *TGM1* mutations revealed that *TGM1* defects are most commonly associated with 'classical' LI, although some patients with mild to moderate redness or white, gray and smaller scales carry *TGM1* defects. The etiology of LI in patients without *TGM1* mutations remains elusive. Two other genes have been mapped to chromosomes 2q33-q35 and 19p12-q12, respectively, but their identity and functions of the corresponding proteins are still unknown.

The clinical features of LI widely overlap with non-bullous **C**ongenital **I**chthyosiform **E**rythroderma (CIE), another autosomal recessive ichthyosis. Most affected individuals are born with a collodion membrane, which subsequently evolves into generalized scaling and redness of the skin. In contrast to 'classic' LI, scales are usually white, fine and powdery, although they may become larger and darker on the lower legs. Extensive thickening of the skin of the palms and soles is also a common feature of CIE. In the vast majority of families, CIE is inherited as an autosomal recessive trait, although autosomal dominant inheritance has been occasionally observed. Similar to LI, CIE can have several different causes. A small group of patients, especially those with less intense redness of the skin, carry inactivating mutations in *TGM1* as discussed above. Other patients originating from the Mediterranean basin were found to harbor mutations in one of two functionally related genes, ALOXE3 and ALOX12B, both located on the short arm of chromosome 17. These genes produce 2 enzymes belonging to the lipoxygenase family that are involved in the metabolism of skin fats (lipids), such as polyunsaturated fatty acids, phospholipids and triglycerides. The reported mutations result in loss or inactivation of the enzymes. Although the specific functions of each enzyme are still unknown, they are assumed to operate jointly in a common metabolic pathway crucial for maintaining the lipid barrier of the epidermis. In the future it will be necessary to determine if ALOXE3 and ALOX12B mutations play a role in CIE patients of other geographic and ethnic backgrounds or if other genes might be involved. Until then, the underlying genetic basis of CIE in most patients awaits identification.

Sjögren-**L**arsson **S**yndrome (SLS) is an autosomal recessive disorder characterized by congenital ichthyosis, spasticity, and mental retardation. At birth, the skin may show varying degrees of redness and scaling with accentuated skin markings. While the redness subsides over time, thickening and scaling of the skin tend to worsen, especially on the abdomen, in large skin folds and on palms and soles. In contrast to many other ichthyoses, the skin is very itchy. During early childhood neurological problems, such as stiffness of arms and/or legs and difficulties with walking, develop. Another characteristic sign are glistening white dots in the back of the eyes. The involvement of the central nervous system slowly progresses and results in developmental delay, speech defects, severe mental retardation and a host of other problems. SLS is caused by deleterious mutations in the gene *FALDH* on the short arm of chromosome 17. The gene produces another enzyme involved in lipid metabolism, **F**atty **Al**dehyde **De**h**h**ydrogenase. This enzyme is part of a pathway that produces fatty acids, which are important for the making of epidermal lipids as well as the degradation of certain phospholipids in the brain. The majority of the more than 50 different mutations detected in the SLS gene are unique to each family. Nevertheless, research revealed a few mutations that are common among individuals of Northern European and Middle Eastern origin. This knowledge can be very helpful for a fast molecular diagnosis based on DNA tests. Other specific and reliable diagnostic tests are the measurement of enzyme activity and the detection of elevated free fatty alcohols in cultured skin cells (fibroblasts) or the blood.

A final example is Comèl-**N**ether**t**on **S**yndrome (NTS). This autosomal recessive ichthyosis is associated with hair abnormalities (bamboo hair, alopecia) as well as abnormalities of the immune system, including elevated levels of immunoglobulin E in the blood, susceptibility to skin and respiratory tract infections and allergic reactions. A recent study revealed that almost 1 in 5 of all babies born with generalized red and scaly skin have NTS. In the newborn period, affected children may suffer from fluid and electrolyte imbalances, failure to gain weight and thrive, and life-threatening infections. Later, the skin disorder in NTS either remains generalized closely resembling CIE, or change into scaling, itchy plaques with prominent borders. The latter variant is named 'ichthyosis linearis circumflexa'. Despite these clinical differences, both variants are caused by recessive mutations in the gene *SPINK5* on the long arm of chromosome 5. This relatively large gene contains the genetic blue print for producing an inhibitor of protein-degrading enzymes named LEKTI (**L**ympho-**E**pithelial **K**azal-**T**ype **I**nhibitor). Over 50 mutations of different types and location have been detected so far, 65 percent of which result in the complete loss of LEKTI enzyme due to disrupted transcription from DNA into protein, while the remainder are thought to compromise enzyme function. A few mutations seem to be more common among Turkish or Arab populations, but similar to LI, most families carry unique mutations. The LEKTI enzyme is expressed in the skin, mucous membranes, tonsils and thymus, and when needed, can be quickly cleaved into 15 active domains that suppress enzymes like trypsin. The specific biological targets of LEKTI in human tissues, however, are currently unknown. In principal, loss of LEKTI will lead to uncontrolled and prolonged activity of destructive, protein-degrading enzymes. In the skin, this process disturbs the delicate balance between lipid-processing enzymes and hastens disintegration and shedding of the horny cells, thus severely disrupting the barrier function. In addition, the skin and mucous membranes lose protection against invading microorganisms and inflammation, which further contributes to the disease.

As illustrated with these five examples, molecular genetic research of the ichthyoses has been incredibly successful in unveiling the underlying defects of numerous single gene disorders, although the list of disease genes is far from complete. Often the question is asked: 'What can modern genetics do for us?' The previous sections aimed to demon-

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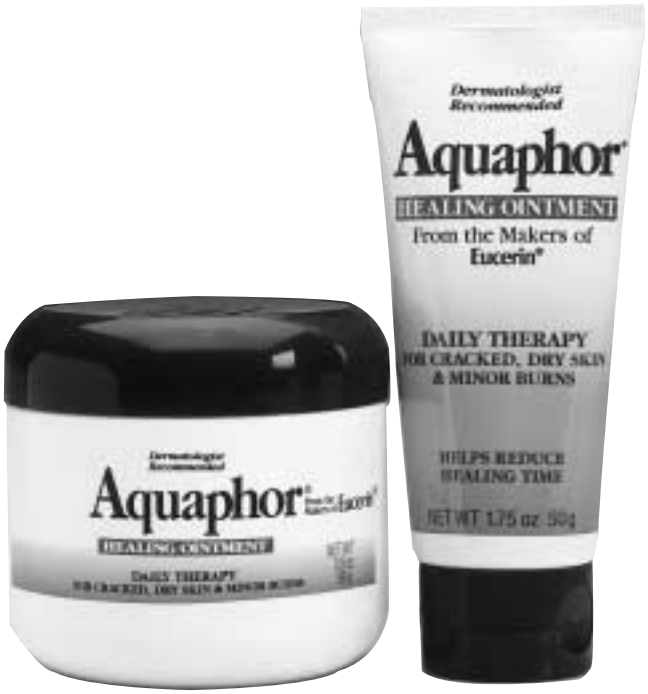
"In general, the goal in taking care of ichthyosis is to hydrate (moisturize) the skin, hold in the moisture, and keep scale thickness to a minimum."*

***Foundation for Ichthyosis & Related Skin Types, http://www.scalyskin.org**



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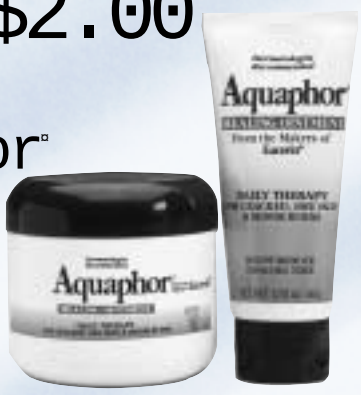

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strate how gene discovery and molecular biological research have advanced our insight into the different mechanisms leading to disturbed cornification and skin barrier function. It is now possible to categorize ichthyoses not only based on their clinical symptoms but also based on the underlying genetic defects. This new information also provides an invaluable basis, from which the biological consequences of mutations and the pathways of disease can be explored in detail, such as the lipid metabolism of the skin. Knowledge of the genes and mechanisms of disease will be crucial for conquering the next great challenge of developing new therapeutic approaches specifically tailored to these disorders. Animal models of human ichthyoses are being developed, such as mice deficient for transglutaminase-1, which exhibit a skin disorder similar to LI with impaired barrier function leading to water loss and abnormal absorption through the skin. Such models allow the systematic evaluation of the functions of specific epidermal proteins as well as testing of new therapeutic modalities. In parallel, several approaches are being explored to replace the lost enzyme activity of transglutaminase-1 or LEKTI in the epidermis or to deliver normal gene copies directly to the skin. While much more work, time and money will be needed to develop practicable and effective new treatments, molecular genetics has paved the way for these developments.

One of the immediate benefits of genetic research, however, is the development of molecular tests to confirm a clinical diagnosis, allow prenatal or presymptomatic testing, determine the risk of disease for members of families and improve genetic counseling. Establishing or ruling out a clinical diagnosis can be especially helpful in those types of ichthyoses, in which scaling of the skin occurs before the onset of other organ manifestations, as in neutral lipid storage disease or SLS. In other disorders, such as Netherton syndrome, severe health problems may develop soon after birth and during infancy, while diagnostic clinical features or laboratory results will not be available until later. Thus molecular testing can help to recognize the correct diagnosis and to make predictions about the course and progression of disease. Nevertheless, since since the treatment of most ichthyoses is still limited to easing symptoms, the outcome of molecular testing often has little immediate impact on the treatment of patients treatment of patients with an inherited ichthyosis.

Knowing exactly which DNA mutations cause the disorder in a patient or family also offers the possibility of testing a baby before it is born (prenatal testing) or determining the carrier status of family members. Reliable and early prenatal molecular testing has been well established for some disorders with severe and sometimes fatal outcomes, such as NTS and SLS, and can be performed using chorionic villus sampling as well as amniocentesis. In LI and CIE, DNA-based testing can replace difficult and invasive fetal skin biopsies, but currently remains limited to detecting disease-causing mutations in *TGM1*.

Biological material for molecular testing can be relatively easy to obtain. Most tests are performed from DNA, which is extracted from a small venous blood sample or buccal swabs. For screening of large genes, such as *TGM1*, or if DNA mutations alter the size of the DNA transcript, it might be necessary to extract messenger RNA from a small skin biopsy. In addition, certain biochemical assays (for example in SLS) or the detection of a protein deficiency in the skin (for example, loss of transglutaminase-1 in LI) requires a skin biopsy.

Most ichthyoses are caused by distinct DNA mutations that are specific to the affected individual or family. Finding these changes is often costly and labor intensive. Therefore, these specialized tests are only performed in very few research and commercial laboratories worldwide. Multiple different methods and strategies have been developed to identify DNA mutations, each of which has its advantages and limitations. Direct sequencing of the DNA sequence of a gene is the most sensitive but often also the most costly approach. Depending on the nature and location of mutations, it is possible to identify up to 95% of all disease-causing mutations. Faster and less expensive methods, such as heteroduplex analysis, are often used to screen large genes for unknown mutations. The gene is divided into multiple overlapping fragments, which are a million times multiplied by a method called **p**olymerase **c**hain **r**eaction (PCR), and analyzed for differences in the DNA sequence. Once aDNA change is suspected in such a gene fragment, the exact mutation will be determined by DNA sequencing.

Despite the great advances in technology and molecular testing, the widespread application of diagnostic testing is curbed by a number of limitations. For some disorders, tests might not be currently available. Many disorders, including LI and CIE, are caused by mutations in more than one gene and not all of these genes have yet been identified. Before testing, there are no clinical or biochemical signs that would allow predicting if a patient carries mutations in *TGM1* or in another gene. Another problem already mentioned is the fact that no assay is sensitive enough to detect all mutations. Depending on the nature of the tests performed, approximately 5% to 20% of mutations might be missed, and this number might be even higher in certain disorders, such as Darier disease and Hailey-Hailey disease. For all single gene disorders there are exceptions to the rules of traditional Mendelian inheritance, which complicate or defy test interpretations. Examples are reduced gene expression leading to differences between the genotype (mutation detected) and the phenotype (no signs of disease), and genetic mosaicism, in which case some cells of the body carry a mutation while others do not. Finally, moral and ethical considerations especially for prenatal testing or testing of individuals before they show symptoms of disease (presymptomatic testing) should also be mentioned here. To evaluate availability, options and limitations of DNA-based testing, seeking genetic counseling by trained professionals in medical genetics is advisable.

In summary, striking progress has been made in our understanding of the ichthyoses on a molecular level. Molecular genetic testing has become available for a number of ichthyoses and may aid and complement the clinical diagnosis, although multiple limitations require careful consideration. Research now faces the next challenge of developing effective treatments for affected individuals. ✻

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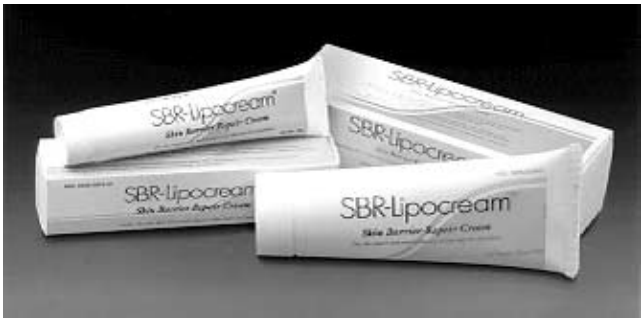

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Annual Report Fiscal Year 2002

Executive Director's Report

Dear Members and Friends:

The Foundation for Ichthyosis & Related Skin Types is twenty-two years old and stronger than ever! I am inspired by our progress as we enter our third decade of helping the ichthyosis community. Due to generous contributions from our members and corporate partners, we continue to maintain strong financial stability. As always, our mission is dedicated to providing support, information, education, and advocacy for affected individuals and their families, and supporting research into causes, treatment, and cures for the ichthyoses. During these challenging fiscal times, I am very proud to present the Foundation's Annual Report for the fiscal year ending September 30, 2002.

Jean

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Annual Report Fiscal Year 2002

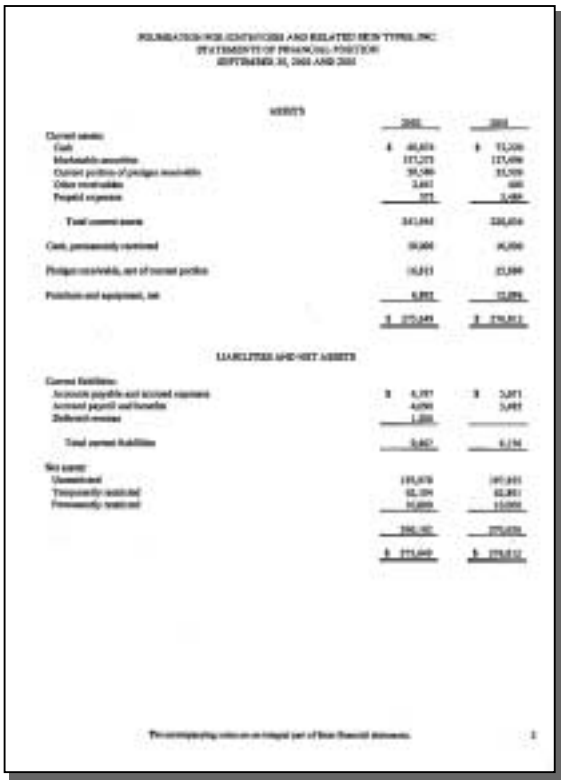
Chief Financial Officer's Report

Dear Members and Friends:

Fiscal Year 2002 began October 1, 2001, just weeks after the terrible and unforgettable events of September 11. These events had a direct effect on our finances, as they did for many non-profit organizations. Contributions were down significantly from fiscal year 2001. The current economic climate has had a slight negative effect on the Foundation. The primary objective of the Foundation's conservative investment policy is to preserve and protect its assets. However, during fiscal year 2002, the Foundation's net assets decreased slightly, from $271,000 to $266,000. These losses are minimal when considered in light of the overall economic environment.

In spite of these difficulties, fiscal year 2002 included many accomplishments. In March 2002, the Foundation's board of directors approved a five-year strategic plan that focuses the Foundation's efforts on the issues that you, our members, have told us are important, such as research funding, programs, and services. Thanks to referrals from current members, dermatologists, and the Foundation's website, membership increased by 34% during 2002. Our physician referral list also increased, by over 300%. The Ichthyosis Support Network, funded by Beiersdorf, now includes 163 volunteer peer counselors. Over 225 members attended the bi-annual family conference in Seattle, Washington, last July. Seven families received direct financial assistance through the Jane Bukaty Membership Fund. The Foundation continues to be an important source of support for families affected by ichthyosis, by providing information, advocating for rare disease legislation, and supporting research into the causes and cures of ichthyosis.

The Foundation is fortunate to have a highly dedicated and hard-working staff making the most of your donations and identifying alternate sources of funding. For example, in January, we introduced new Honor and Memorial cards that allow members to recognize important events in the lives of their family and friends through a donation to the Foundation. In May, a new educational brochure was introduced, thanks to the generosity of Felton Design and Clare Printing. In July, members from all over the world traveled to Seattle, Washington, to learn, meet other families who have been affected by ichthyosis, and have fun. With the support of more than twenty corporate sponsors and donors, costs for the conference were kept low while the number and quality of sessions was at an all-time high.



I appreciate the opportunity to serve all of you and hope that you are as proud of the Foundation's achievements as I am. I also hope that you will continue to be generous in your support of the valuable work the Foundation does. In 2003, we are embarking on a major fundraising campaign to increase the monies available for ichthyosis-related research, a major issue identified during the strategic planning process. Any donations, large or small, will help us to achieve our ultimate goal of finding a cure.

Sincerely,
Elizabeth A. Gray
CFO, Board of Directors.

* *This Statement of Financial Position is excerpted from the Foundation's audited financial statements as of September 30, 2002. A complete copy of the audited financial statements and the independent auditors' report are available and can be obtained by calling the national office at 215-631-1411, or 1-800-545-3286*

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Annual Membership Renewal

For the past several years, our Membership Renewal Campaign has been sent to you in a separate mailing. This year's renewal request is being sent to you in a different way. To make better use of our resources, I have included the 2003 renewal request in this newsletter. You are receiving this newsletter because our records currently include *you as a member*. What better way to remind you of your responsibility to renew your membership than through one of our most valuable services?

Please take a moment to make sure you are taking full advantage of the many benefits of membership:

- ***Ichthyosis Focus, our quarterly newsletter that provides the most current information on treatments, research, and advice.***
- ***Access to physicians who specialize in the treatment of ichthyosis.***
- ***Participation in the Ichthyosis Support Network (ISN), connecting individuals and families with other affected members.***
- ***Invitations to participate on the ISN Exchange, an email list serve for members of the ISN.***
- ***Invitations to regional meetings and national conferences. Our next national conference is scheduled for July 1 - 4, 2004 in Kansas City, MO.***
- ***Samples of skin care products from pharmaceutical companies.***
- ***A comprehensive listing of more than 50 products that may aid in your skin care.***
- ***Discounts on several skin care products.***
- ***Access to the "Members Only" section of our website, www.scalyskin.org.***
- ***The comfort of knowing you belong to a special group of committed people who are devoted to helping individuals and families affected by ichthyosis.***

Babies are born every day with some form of ichthyosis. Having a place to turn for advice, support, and reliable information is invaluable and can make all the difference in the world. Words cannot describe how grateful people are to learn that our Foundation exists to help them through their life's journey with ichthyosis. It is the support of our membership that enables these important services to continue.

Renew your membership today! Simply complete the envelope (inserted between the pages of this newsletter) and send your donation to the office. Our membership brings strength, hope, and force to the Foundation. I am proud to represent such a wonderful, caring group of people.

Sincerely,

Jean R. Pickford
Executive Director

Ichthyosis Vulgaris Survey

Dear Friends:

The following survey is designed to help our medical advisors understand the issues that are common to our members with ichthyosis vulgaris. As we have noted before, some of our members with vulgaris report that they experience overheating. However, the medical community does not recognize overheating as a hallmark of the disease. If you have ichthyosis vulgaris, please fill out the following survey and return it to the Foundation. We want to hear from you even if you have not experienced overheating as a symptom of your disease. You may return the survey along with your membership renewal in the envelope provided, or send it to the Foundation for Ichthyosis, 650 N. Cannon Avenue, Suite 17, Lansdale, PA, 19446, Attention: Survey.

Name_____

Address_____

Phone Number_____ Email address_____

Date of Birth_____ Country of Birth_____

Diagnosis Ichthyosis Vulgaris ❑ Other ❑ Unknown ❑

Year diagnosed?_____ How old were you at the time?_____ Age when your skin symptoms first appeared?_____

Name and address of the doctor who gave you your diagnosis:

_____

_____

How was your diagnosis made? What tests did your doctor do? Skin biopsy? ❑ Electron microscopy? ❑

Do you have a written report from your doctor confirming the test results and your diagnosis? Yes ❑ No ❑

Do you experience overheating with your ichthyosis vulgaris? Yes ❑ No ❑

What month of the year are you most likely to experience overheating?_____

What hour of the day are you most likely to experience overheating?_____

What activities are most likely to cause you to overheat? (Please list all that may apply: walking, gardening, sports, indoor chores, outdoor chores, etc.)_____

_____

What physical symptoms do you experience when you are overheating?

❑ Feeling warm	❑ Muscle cramps	❑ Thirst	❑ Nausea or vomiting
❑ Increased sweating	❑ Difficulty concentrating	❑ Feeling tired	❑ Skin rash
❑ Shortness of breath	❑ Passing out	❑ Dizziness	❑ Not sweating at all

❑ Other: _____

Ichthyosis Vulgaris Survey

Have you ever been taken to the emergency room or hospitalized for heat exhaustion or heat stroke? ❑ Yes ❑ No

If yes, what year did this happen and for how long were you in the emergency room or hospital?_____

_____

Please describe how your skin looked when your disease first appeared. Include which areas of your body were affected (e.g. scalp, legs, chest, etc.) and if any parts of your body appeared to have thicker than normal skin.

_____

_____

What does your disease look like now? _____

_____

What areas of your body are currently affected by your disease?

❑ Scalp	❑ Chest	❑ Arms	❑ Lines on palms of hands increased (hyperlinear)	❑ Eczema or atopic dermatitis (red, itchy patches of skin)
❑ Face (front)	❑ Back (uper & shoulders)	❑ Legs	❑ Lines on soles of feet increased (hyperlinear)	
❑ Face (sides)	❑ Back (lower)	❑ Hands (cracked or chapped)	❑ Scales small	❑ Keratosis pilaris (red scaly bumps in the hair follicles on the sides of the arms
❑ Neck	❑ Stomach	❑ Feet (cracked or chapped)	❑ Scales large	

Has your disease improved with age?_____ Gotten worse?_____ Remained the same?_____

Do you or any members of your family have any allergies? Yes ❑ No ❑

If so, to what?_____

Do you or any members of your family have asthma? Yes ❑ No ❑

Do you or any members of your family have eczema? Yes ❑ No ❑

Please list all the skin care products and medications you use in caring for your skin. Include how many time a day you use each.

_____

_____

_____

Please tell us anything else you would like to share about your disease._____

_____

_____

_____

_____

_____

Senior's Speaking

continued from page 3

AmLactin 12% Moisturizing Cream that I found help for my skin. I tried all my life to find creams, oils, etc., that would actually help my condition. The summer heat of the North would help from July to September, then it would return. This is the only product that has helped. It does such a good job that, if I apply it twice a day, it will absolutely control this condition.

If there had been such a product when I was young, it would have saved me many embarrassing moments, such as gym class in high school. I am only sorry that I was 65 years old before it came along. It is available at Wal-Mart and other drug stores. You do not need a prescription, but it is usually kept behind the counter, so you will have to ask for it. It will take about a week of application before you will see a change. Also, it is odorless.

Edmund E. Smith
Hilton, NY

Dear Friends:

I spent my childhood wearing long-sleeved white blouses, as I had no idea why I had dry, itchy, scaly skin. Occasionally, I was called "alligator skin." It wasn't until after I was married that I went to a dermatologist who put a name to my condition. He said, " You have ichthyosis. You are born with it; you will live with it; you will die with it." He gave me quite a few tips on what to do, along with a bag full of lotions and creams to experiment with. He also advised me not to go from doctor to doctor and spend a lot of money because there was no cure. Years ago, the only lotion I had used smelled very medicinal, and it did not work that well. We are fortunate to have so many products on the market these days, and an organization, F.I.R.S.T., so we know we are not alone. Two products that I found helpful are "She Butter Shea It Isn't So" from Bath and Body Works, and their Body Cream, which comes in various fragrances.

I'd like to issue a word of warning about heat exhaustion. I have had it twice now, so I am very cautious about overheating. I have grown more susceptible as I age. Beware – the sun is not your friend.

Carolynn Petersen
Wauwatosa, WI

NIAMS Day 2003

Jean Pickford, Executive Director, and Maureen Tierney, Program Director, traveled to Washington, D.C., for NIAMS Day 2003 on March 10 and 11. This two-day event brings together patient advocate groups who benefit from research sponsored by the National Institute of Arthritis, Musculoskeletal and Skin Disease (NIAMS) branch of the National Institutes of Health. (NIH).

Jean and Maureen met with Dr. Stephen Katz, NIAMS Director, and other members of the Coalition of Skin Diseases. Dr. Katz updated the group on the Institute's recent activities and its current focus on clinical research, and some other initiatives:

- Improving the coordination and support between other institutes for multi-symptom diseases.
- Improving the methodology of measuring patient awareness in prevention strategies, lifestyle behavior and the workplace environment in relationship to skin disease.
- Sponsorship of a meeting to analyze the burden of skin disease.
- Partnerships with several large disease groups for research studies.
- Meetings to discuss the surge of immunomodulation drugs.

- Continuation of the loan repayment program to encourage young investigators to choose research as a career path.
- Providing training grants to young investigators, in partnership with the Herzog Foundation.
- Providing valuable resources for the dissemination of information on musculoskeletal and skin diseases.

Members of the NIAMS Coalition then broke into small groups and visited our area representatives in Congress and their Senators. Our purpose was to stress the importance of increasing the NIH budget, particularly NIAMS, in 2004. Over the past five years, Congress has successfully fulfilled its plan to double the NIH budget. Although it is not realistic to expect such generous increases in the future, it is important to keep yearly increases substantial. The funding must continue in order to capitalize on the research advances of the past few years, or we risk the loss of new and innovative theories.

We thank the American College of Rheumatology for coordinating NIAMS Day and scheduling our appointments with the Representatives' and Senators' staffers.

Please help us to minimize our printing costs. Call us at 1-800-545-3286 if you do not wish to receive any future issues of *Ichthyosis Focus.* **Help F.I.R.S.T. reduce its postage costs – would you be willing to accept the Focus Newsletter via e-mail? Let us know.**

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