Natalie's Wish

Dear Friends and Family

As the holidays draw close, our family has so much to be thankful for. 2005 has been a year of hope and scientific progress. Our annual Natalie's Wish fundraiser event was an extraordinary success because of you. We are continually amazed and eternally grateful for the generosity you have all displayed.

Natalie recently had an eye appointment at the National Institutes of Health in Bethesda, Maryland. As many of you know, Cystinosis affects every organ in the body and the disease is progressive. The kidneys and the eyes are the first and most severely impacted by the disease. Natalie's appointment included taking pictures of her eyes. The exam revealed that Natalie's corneas were covered with cystine crystals. In several areas of her cornea, the crystals are so concentrated they form tiny clusters. Accumulation of the cystine crystals cause photophobia and pain similar to the feeling of having sand in your eyes.

Prior to this exam, Natalie's corneal crystals could only be seen with a slit-lamp. Now, there are so many crystals that they can be seen using a flashlight. Although the news was not good, there are eye drops available that over time, dissolve the corneal crystals. Without treatment, damage to the eyes is significant and can include blindness. The eye drops are not FDA approved yet, but we are hopeful that they will be soon.

To be effective, the eye drops need to be refrigerated and they must be taken every waking hour for the rest of her life. We have just begun the protocol and although Natalie has not felt comfortable administering the eye drops herself, she has kept us on schedule – diligently reminding us every hour of every day that it is time to take the drops. It is a lot for a 14-year-old to handle but she does not complain. She is thankful there is a treatment to rid her eyes of the crystals and to relieve her of the pain and discomfort she frequently feels.

Less than four years ago, research in the area of Cystinosis was minimal and multi-year scientific studies were only a dream. Today you have significantly changed the course of Cystinosis research. Your generosity has allowed the talented doctors and researchers in the area of Cystinosis to initiate novel research studies and to advance their research efforts. We are moving closer to our mission of finding a cure for Cystinosis and its complications.

When your child's future is uncertain, hope, community and prayer sustain you. You have helped sustain us. Natalie made a wish more than three years ago and you are helping her realize her dream.

On behalf of our family and all of the families who suffer from Cystinosis, thank you for providing us with the greatest gift of all – hope.

Natalie's Wish Fundraiser
Wow! What a Night!

On June 2, 2005 more than 325 people attended the fourth annual event. Our guest speaker, best-selling author and journalist, Morton Kondracke, talked about the need for funding research for rare and complicated diseases and disorders. We watched in amazement as our first annual live auction raised $98,000 for Cystinosis research. Then during our Fund-A-Cure segment we again were astonished as over $290,000 was donated for Cystinosis research.

Save the Date

Thursday, June 1, 2006

Fifth Annual Natalie's Wish Fundraiser

New Research Grants

Because of your generous support we are able to fund $825,000 for six new research studies this year, making the Cystinosis Research Foundation the largest non-profit fund provider of Cystinosis Research in the world.

A more detailed update will be provided in our February, 2006 newsletter.

Corinne Antignac, MD, PhD

Hospital Necker-Enfants Maades, Paris, France

Dr. Antignac was awarded a one-year grant. The aim of the study is to characterize intracellular trafficking of cystinosin and its potential role in lysosomal fusion. This study will allow a better understanding of the mechanisms involved in cell trafficking of cystinosin and more generally of multimembrane spanning lysosomal protein and ultimately might identify a new role for cystinosin.

Ranjan Dohil, MD, *Division of Pediatric Gastroenterology and Hepatology, University of California, San Diego, School of Medicine*

Dr. Dohil was awarded a two-year grant to study the pharmacokinetic evaluation of cysteamine bitartrate and cystamine. His study is designed to evaluate how the drug is absorbed into the blood stream and how much is metabolized by the liver. The results of this study will help assess whether cystamine could be used as an alternative to the current drug Cystagon™ thus reducing the gastrointestinal side effects of the current drug.

Update: Results from Dr. Dohil's last CRF-funded study suggest that a **controlled-release cysteamine therapy is possible**. Dr. Dohil's next proposed phase of the study will involve the creation of an actual controlled-release therapy and testing of that therapy on patients with Cystinosis.

Thomas Jeitner, PhD, *Department of Cellular and Molecular Pharmacology, Rosalind Franklin University of Medicine and Science, Chicago Medical School*

Dr. Jeitner was recently awarded a one-year grant to study whether H2S treatment removes cystine from fibroblasts without toxicity. The aim of the study is to demonstrate that H2S is an important cysteamine metabolite that has therapeutic value in Cystinosis. The study will advance our understanding of cysteamine metabolism and provide new treatment strategies.

Dzung H. Nguyen, PhD, *Ajit Varki Laboratory, School of Medicine, Glycobiology Research and Training Program, University of California, San Diego*

The aim of Dr. Nguyen's study is to develop a rapid and simple method of isolating neutrophil and monocytes from the blood for the analysis of cystine. If successful, this new method of analyzing cystine will result in a more rapid, accurate and simplified process of analyzing cystine. This could result in earlier diagnosis of Cystinosis and better, consistent drug therapy critical to the long term health of children and young adults with Cystinosis.

Amy Spilkin, PhD, *Department of Neurosciences, University of California, San Diego*

Dr. Spilkin was awarded a two-year grant to comprehensively investigate the cognitive domain of executive functioning in individuals with Cystinosis. This is the first study to explore this important area of cognitive functioning in individuals with Cystinosis. The focus of the study is to delineate the cognitive-behavioral profile of individuals with Cystinosis. This study has tremendous implications for everyday functioning and quality of life for individuals with Cystinosis and their families.

Jess G. Thoene, MD, *Director, Hayward Genetics Center, Karen Gore Professor of Pediatrics, Tulane University, School of Medicine*

Dr. Thoene was awarded a two-year grant to determine how lysosomal cystine storage in Cystinosis causes the lethal nephropathic phenotype. Dr. Thoene is at the Hayward Genetics Center at Tulane School of Medicine. We are saddened to report that the Tulane medical school was heavily damaged in Hurricane Katrina. Fortunately though, Dr. Thoene and his colleagues working on Cystinosis are all safe but are scattered throughout the country. The immediate aim is to get their center functioning again and they are committed to making that happen.

We are so encouraged and pleased with the research progress being made. Three years ago none of this would have been possible. Your commitment to finding a cure has made a difference and changed the course of Cystinosis research. We are moving closer to better treatments every day. There is still much to be done. With your continued help we can turn Natalie's wish into a reality. We are so thankful that you have joined us on this journey to find a cure.

We will be thinking of you this Thanksgiving as we count our blessings and remember all of you who have given so much to make Natalie's dream and the dream of all children with Cystinosis come true.

Cystinosis is a rare, inherited, metabolic disease that is characterized by the abnormal accumulation of the amino acid cystine in each cell. The build-up of cystine in the cells slowly and eventually destroys all major organs of the body including the kidneys, liver, eyes, muscles, bone marrow, thyroid and brain.

Cystinosis Research Foundation

18802 Bardeen Avenue ■ Irvine, CA 92612-1521 ■ (949) 809-2418 ■ www.natalieswish.org