The Turi Family

iGive.com Supporters Raise Over $800 for The Children's Fund

Many thanks to our dedicated shoppers for choosing to support The Children's Fund for GSD Research. **iGive.com** is an online fundraising site where members raise money for our cause. They shop at over 900 participating stores and each time they do, a percentage of their transactions goes directly to The Children's Fund. It's that easy!!! Go to iGive.com, select our cause and start shopping. If you make your first iGive.com purchase within 45 days of joining, you'll earn an additional $5 for GSD research. Plus, you can keep track of your individual contributions and our foundation's earnings too. Best part, donation checks are mailed to The Children's Fund throughout the year! The iGive.com stores have so much to offer. Enjoy sales, discounts, coupons, free shipping deals, and more. Compare prices and donation percentages. Create your own list of favorite stores. There are no costs, no hidden fees, no obligations; just shopping fundraising at its best. Want to raise even more money? Earn $0.01 for every search when you use **iSearchiGive.com** powered by Bing. It all adds up…over $800 worth so far. Many thanks to Kathy Turi for all of her hard work in making iGive such a success.

The Cash Family

Running for Kenslee

by Carlee Cash

After months of training and many Saturday morning runs in below freezing temperatures, my sister, Brittany, and I headed to downtown Cincinnati to run 13.1 miles for one reason...to raise money for Glycogen Storage Disease research and find a cure. We started our training in January and ended at the "Finish Swine" (as they call it) to support those that struggle with GSD, especially my beautiful two year old daughter, Kenslee. Our experience was definitely an emotional one. I experienced many long runs and even the race day itself where I just wanted to stop and thought there was no way I could finish, but then Kenslee's beautiful, smiling face would pop in my mind. I would think about all the struggles she has gone through and everything she will go through, and that kept me going. Kenslee, like virtually all GSD patients, went through months of physical therapy and exercises at home just to learn how to walk. She has been hospitalized, poked more times then I can count to test her blood sugar and drank countless bottles of corn starch just to stay healthy. Honestly, all that Brittany and I did from training to the race day itself doesn't even compare to what GSD patients face every day of their life. So, yes, I could finish this for my daughter and all GSD patients out there. When Brittany and I crossed that finish line, like many we balled our eyes out, but not just because we finished... because we have a dream for every GSD patient to be healthy and run a marathon one day if they want to. The money we raised surpassed our goal and will go to help make that dream come true.

6th Annual Children's Fund GSD Golf Classic & Casino

Wow! What an amazing day! Thank you to everyone who came out for our 6th Annual Children's Fund GSD Golf Classic & Casino on Friday, October 14th at Heron Bay. We had a full course and beautiful weather, which set the scene for a perfect NFL-themed golf tournament. Congratulations to all of our Contest, Division and Wild Card Winners. And kudos to our Super Bowl Champs; Michael Shooster, Keith Stuart, Steve Guinta and Mark Kirby! Casino Night, which followed this great day on the course, was a blast. We had an incredible silent auction, a super exciting live auction, and lots of competition at the tables! Congratulations to our big winners, Rich Hopper and Dave Kushner! We thank our title sponsor, Ryder Charitable Foundation, as well as all of our supporting sponsors and event partners. We also thank each and every person who participated, donated or somehow contributed to making this event such a huge success. With your help and support we were able to raise over $150,000 for GSD Research. Special thanks to our amazing auctioneer, Gordon Latz; our good friend and tournament coordinator, Jim Keenan; our UF Research Coordinator, Laurie Fiske; and our amazing group of friends who volunteer their time and energy to help plan and execute this fantastic day. We've come a long way since we started this little event in 2005. The money we've raised over the years has helped us cure GSD in mice and dogs and has helped to improve the lives of many GSD patients. We are not far from a cure. When that day comes, we expect you all to join us in celebration. Until then, we hope you will continue with us on this journey and we'll look forward to seeing you at our next event in 2012. Thank you all, from the bottom of our hearts, Lisa & Sandy Hodes, parents of Samantha & Katie.

Visit The Children's Fund Online!

CureGSD.org is a wonderful resource for those interested in obtaining information about this metabolic disorder. Our site provides scientific updates, information about annual events and much, much more. Be sure to visit the site today to register your email so we can keep you updated on our progress!

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"...because every child deserves to be healthy."

10th Annual Super Bowl Raffle

It is time once again for our 10th Super Bowl Raffle! Thanks so much for your help in past years making the raffle a success. We all know the economy is still staggering along so any help you can offer us again this year is much appreciated. Our foundation has come so far in funding promising GSD research and our researchers need as much as we have given them in past years (when it was easier to raise money!) to keep their research moving forward. Thank you, Fran, Teri, Anna & Jack Reed

Super Bowl XLVI

"...because Every Child Deserves to be Healthy."

FIRST PRIZE:
Trip for two to Super Bowl XLVI
Indianapolis, Indiana

Prize Includes:
- Two tickets to Super Bowl XLVI in Indianapolis, IN on 2/5/12 at Lucas Oil Stadium
- 5 days/4 nights accommodations at the Radisson Hotel
- Two playing spots in Super Bowl NFL Charities Celebrity Bowling Classic on 2/4/12 redeemable at Woodland Lanes, Indianapolis IN

SECOND PRIZE:
1 night accommodation and breakfast for 2 at the Norwich Inn and Spa, in Norwich, CT

A total of 1000 tickets will be sold and tickets are $100 each. The drawing will be held Sunday, December 18. For more information, please Contact Teri Reed: 203-972-9199 or email treed04@gmail.com.

10th Annual Super Bowl Raffle

Supporting The Children's Fund for GSD Research

Congratulations to Chris Labbate of Croton-on-Hudson, NY, Our Super Bowl XLV Raffle Winner!

"Thank you for the wonderful trip to the Super Bowl. My wife Laura and I had a great time. We truly enjoyed mingling with the former NFL greats at the bowling and golf events. We were surprised to also find ourselves conversing with many of these former players at the hotel, in the restaurant / bar! The game was exciting to the end and the atmosphere was electric. Thanks again." Last year's Super Bowl raffle raised (with matching gifts) over $130,000!

Hopes and Dreams

The Newsletter for Friends of
The Children's Fund for Glycogen Storage Disease Research, Inc.

DECEMBER 2011 GSD NEWSLETTER VOLUME 9

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Cheshire, CT 06410
(203) 272-CURE (2873)

WEBSITE
www.cureGSD.org

E-MAIL
info@cureGSD.org

Mission Statement:

We are committed to funding research so that children born with GSD1 will benefit from early detection, treatment and an eventual cure.

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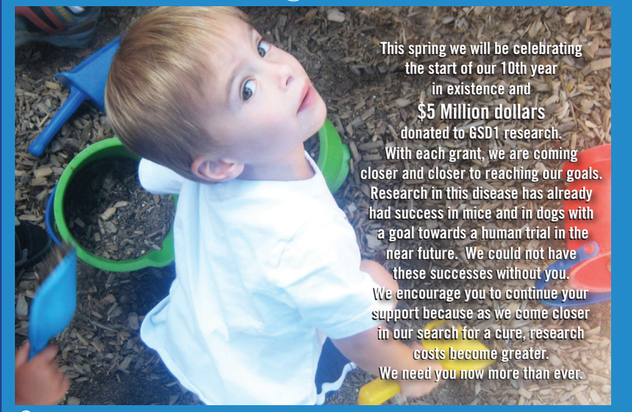
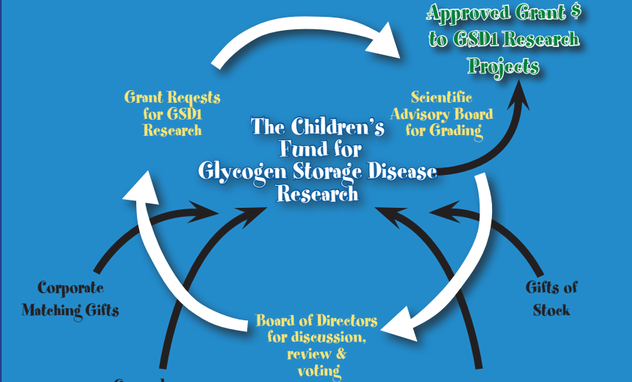
Searching for a Cure



This spring we will be celebrating the start of our 10th year in existence and **$5 Million dollars** donated to GSD1 research. With each grant, we are coming closer and closer to reaching our goals. Research in this disease has already had success in mice and in dogs with a goal towards a human trial in the near future. We could not have these successes without you. We encourage you to continue your support because as we come closer in our search for a cure, research costs become greater. We need you now more than ever.

One of the most important attributes of our foundation is our system of grant review. Our scientific advisors utilize the NIH grading system, which scores grants based on significance, investigator(s), innovation, approach and environment. With this system in place, we are able to objectively determine and fund the world's most promising GSD1 research that will one day lead to a cure for Glycogen Storage Disease, Type 1.



"...because every child deserves to be healthy."

2011 GSD-1 Scientific Update

Thanks to your generosity, we have been able to fund three great projects this year. Drs. Thomas Conlon, David Weinstein and Barry Byrne are hard at work at The University of Florida. We were able to continue to fund the second year of their grant, "Gene Therapy for GSD1a", in the amount of $217,508. Dr. Janice Chou at the NIH received our support for two different projects during 2011. The first is a $93,936 award to study the long-term consequences of AAV-mediated gene therapy for GSD1a. The second is a dual site grant with Dr. Dwight Koeberl at Duke University Medical Center, titled the "Evaluation of AAV Vectors in Murine GSD1a". The total award for this dual site project is $198,563. Taking a step back and looking at the state of GSD1 research when this foundation was started back in 2002, we are amazed at the progress the research has made and proud of The Children's Fund and the nearly $5,000,000 we've raised and granted. This amazing group of volunteers, their friends and family – YOU are in large part responsible for this progress in research that will one day lead to a cure of GSD1. Thank you.

National Institutes of Health

Janice Chou, Ph.D.

Our current therapeutic approach is to give the patient back a good G6Pase-α enzyme. To develop a safe and effective method for doing this, we have been working with a mouse model of GSD-Ia. Our therapy works by putting the G6PC gene in a novel viral vector, named AAV8-GPE. When introduced into the GSD-Ia mouse, this virus delivers the gene into the liver and restores the G6Pase-α activity lacking in the GSD-Ia mice. The unique characteristic of our approach is that we use both the native human G6PC gene and the human G6PC gene control elements in our vector to ensure it expresses the G6Pase-α enzyme properly. In an earlier study, we showed that gene therapy mediated by this vector completely corrected metabolic abnormalities in GSD-Ia. While AAV vectors are not known to be associated with any human disease, Donsante and coworkers have shown that neonatal mice treated with one particular AAV vector containing a gene unrelated to G6PC and not under the normal human gene control elements, was associated with an increased risk of the mice developing hepatocellular carcinoma. Before we can develop a human gene therapy for clinical trials, FDA requires that we demonstrate that our therapy does not carry this risk and indeed should possess the ability to prevent the development of hepatocellular adenomas (HCA).

Studies have shown that the first detectable signs of HCA occurred in GSD-Ia mice at age 9 months with 100% of the GSD-Ia mice developing HCA by age 18 months. In the current study, we treated GSD-Ia mice with various dosages of AAV8-GPE, sufficient to restore 3% to 100% of normal liver G6Pase-α activity and observed the impact of this therapy over 70-90 weeks. We showed that when GSD-Ia mice are treated with this vector, the G6PC transgene is delivered to the liver efficiently, and the treated GSD-Ia mice grow normally for the 70-90 week study. The mice exhibit normal blood glucose levels, both before and after 24 hours of fasting, and exhibit normal blood metabolite profiles. Moreover the livers of the treated mice have normal levels of lipid storage, and show no evidence of histological abnormalities. Importantly, none of the treated GSD-Ia mice developed HCA. In summary, our results indicate that AAV8-GPE-mediated gene transfer in GSD-Ia corrects hepatic G6Pase-α deficiency and prevents HCA formation. Our finding holds great potential for future clinical trials for human GSD-Ia patients.

University of Florida Medical Center

David Weinstein M.D., M.M.Sc, Thomas Conlon, Ph.D. and Barry Byrne, M.D., Ph.D.

With The Children's Fund for GSD Research support, our collaborative group at the University of Florida has continued to seek out and move closer to achieving the goal of a gene therapy treatment for Glycogen Storage Disease type Ia. The group the foundation supports includes members of the Colleges of Medicine and Veterinary Medicine as well as the Powell Gene Therapy Center. With such a unique team assembled, our research has proven positive towards a treatment. People with GSDIa have a mutation in both copies, one from the mother and one from the father, of the DNA that code for the glucose-6-phosphatase (G6Pase) enzyme. Therefore, they don't have a functional enzyme in order to make glucose from glycogen when going for long periods without food. We want to give the individuals a third copy of the gene without the mutations. We have been successful doing this in other genetic disorders using a virus that naturally infects human cells without causing any harm. The virus is called Adeno-associated Virus (AAV) and we can insert a "correct" copy of a gene into it and inject it into the person's blood stream. Eventually, the virus infects the liver and puts the third copy of the gene into the cells and thus expressing an active G6Pase enzyme.

Dr. Weinstein with Tucker. Tucker has GSD, and he has had 2 treatments. The first treatment was in April 2010 just after birth, and the second was in June 2010. He continues to do great, and he was the first GSD dog to ever father puppies. His puppies Colin, Gemini, and Casper have GSD and are doing very well. Tucker is now 18 months old.

Before injecting a person in a clinical trial, research must be done in the laboratory and in animals, and preferably in animals with the same disease. Fortunately, there is a dog model with a mutation in the same gene and has symptoms much like those with GSDIa. Here at UF, we maintain a breeding colony of these dogs and a staff of up to 75 students that care for them 24/7 providing food and glucose supplements since they can't take their glucose and lactate values themselves. Using these dogs, we have been determining the appropriate dose of the AAV gene therapy and DNA sequence needed to give the animal back as much of the enzyme as possible. To determine this, we perform fasting studies just like many patients are asked to be a part of, perform biochemical assays on liver and kidney biopsies and take images by MRI to look for adenoma formation. The overall goal of the proposed study is to provide proof-of-concept and safety data of AAV gene therapy in a higher vertebrate animal model for the treatment of GSDIa. Such studies are necessary to ensure the positive effects and safety of the gene therapy and are needed prior to the initiation of human clinical trials. The results of the proposed studies will be used to support applications for human gene therapy clinical trials for the treatment of GSDIa.

Duke University Medical Center

Dwight Koeberl, M.D., Ph.D.

Glycogen Storage Disease type Ia (GSD-Ia) is an autosomal recessive disorder of metabolism associated with life-threatening hypoglycemia and other serious long-term complications. GSD-Ia is caused by the deficiency of glucose-6-phosphatase (G6Pase) in the liver and kidney. Long-term complications of GSD-Ia are resistant to current dietary therapy, including progressive renal failure, delayed growth, severe anemia, and hepatic adenoma formation. The lack of complete efficacy from dietary therapy justifies the development of new therapy such as gene therapy for GSD-Ia.

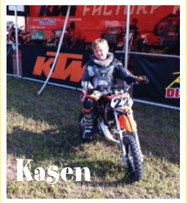
The development of gene therapy has been possible using the available animal models for GSD-Ia, including mice and dogs. The canine model has significant advantages in terms of replicating the human disease. Dogs with GSD-Ia have been treated with adeno-associated virus (AAV) vectors producing G6Pase, which prolonged survival and prevented hypoglycemia during fasting in puppies with GSD-Ia. One of the limitations associated with gene therapy is a waning effect of transgene expression over time after initial vector injection, which was first described by Weinstein and colleagues. Our paper from 2008 reported a different AAV vector that prolonged survival and prevented hypoglycemia for >11 months in 3 consecutive dogs with GSD-Ia. Subsequent to publication of our 2008 paper, we recognized the risk that an AAV vector can lose efficacy in the first months following injection, and we now seek to address this critical problem.

AAV vectors come in many serotypes, and the two papers mentioned above tested AAV serotype 8 (rAAV8) vectors. Under our current grant, we tested 4 serotypes for our AAV vector, rAAV8, rAAV9, rAAV7, and rAAV1. These vectors were evaluated with regard to the restoration of efficacy in dogs previously treated neonatally with the rAAV8 or rAAV9 vectors. Initially these latter vectors prevented hypoglycemia during fasting for up to 8 hours, demonstrating reversal of the primary metabolic abnormality in GSD-Ia. The rAAV8 vector maintained efficacy longer than the rAAV9 vector in puppies with GSD-Ia, despite evidence that the rAAV9 vector performed better in mice with GSD-Ia. However, efficacy from either vector eventually waned and re-administration of a new vector was required to maintain control of hypoglycemia. The analysis of liver biopsies revealed that glycogen content was normalized following AAV vector administration. The G6Pase activity in liver biopsies reached approximately 40% of normal for two female dogs following rAAV9 vector administration. Survival was prolonged for 15 to 58 months in dogs treated by re-administration, and all dogs treated by readministration are alive despite the very high mortality previously observed in this model. These preclinical data support the further translation of AAV vector-mediated gene therapy in GSD-Ia.

The second aspect of our grant was to demonstrate efficacy with an AAV vector that is maintained stably in the liver. Unique sequences will be added to our AAV vector to promote safe, site-specific integration in the chromosomes in the liver cells. Currently we have treated a single puppy with the new vector, after testing the vector in mice with GSD-Ia. We are analyzing the benefits from this new vector in the liver from treated GSD-Ia mice. The treated puppy is over 5 months old and doing very well. Furthermore, we are anticipating delivery of an additional litter in October, and plan to treat these GSD-Ia puppies with the new vector.

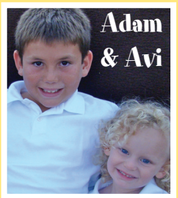
Finally, we have received a new grant from The Childrens' Fund to evaluate both our original AAV vector1 with another vector from Dr. Janice Chou's laboratory at NIH in mice with GSD-Ia. This study will perform a head-to-head comparison of these two vectors. Efficacy with regard to normalization of growth and the prevention of hypoglycemia will be evaluated over 3 months, and the correction of other metabolic abnormalities associated with GSD-Ia will be evaluated thereafter. We will exchange materials with Dr. Chou's laboratory, and both groups will perform the comparison independently. This study will determine the preferred vector for a proposed clinical trial of an rAAV8 vector in adult patients with GSD-Ia.

8th Annual Andrushko BBQ Fundraiser for GSD Research Raised $19,600!



Thank you to everyone who participated and for all of your generous donations.
We have raised a grand total of almost $110,000.00 with this event.

Happy Third Birthday to Avi Harris!



In honor of his cousin Adam Julius, Avi asked friends and family to donate to The Children's Fund for his Upshernish ceremony. Thank you.

Young Entrepreneurs Support GSD-1 Research

Thank you to Chris Ploch and his friend Kiernan Joyce who participated in a mock business program named TREPS$ Marketplace. They sold Puffles and Duct Tape Bracelets and raised $40.64 in honor of Anna Reed.

A Special Cousin

From an early age Ally Feldman has made finding a cure for GSD her mission. She has always asked her friends to donate to our foundation for birthdays and different events, but this past spring, Ally and her parents did something even more special. They celebrated her Bat Mitzvah and asked their guests not to give gifts, but to send donations to our foundation. She was able to raise $13,000 towards finding a cure for her cousin Jonah. How lucky are we! Thank you Ally!!

Wine & Chocolate in NY

Jeanne Muchnick hosted a decadent evening of Wine & Chocolate at Chocolations in Mamaroneck, NY to raise money for GSD research. Donations were accepted at the door and there was also a silent auction. Jeanne's emotional speech from the heart helped raise a total of $8,439.

What a Team!

Rylee Graham with her softball team proudly sporting the www.curegsd.org website on their jerseys.
Thank you Graham family for continuing to spread awareness and for your awesome support of GSD1 Research.

Team CureGSD.org

Go Rylee!