

HIGH HOPES



Joslin Diabetes Center

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HELP FOR TODAY...HOPE FOR TOMORROW. YOU MAKE IT POSSIBLE!

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When the Peterson family learned their oldest daughter had diabetes, their life changed.



1967 Laser Eye Surgery:
Left to Right
Nurse Holman,
Dr. Beetham,
and Dr. Aiello

GROUNDBREAKING ADVANCES

CAN YOU SEE ME NOW?

The Ruby Laser Eye Treatment turns 50 this year. Your gift to Joslin today is making new advances in eye treatment research possible.

PLACING IN THE TOP 10 is wonderful if you are an endurance athlete. Or, in your college graduating class. Or, maybe even in a dance competition. How would you feel if you were one of the top 10 to receive a new medical procedure that would save your eyesight from the devastating impact of complications from diabetes?

For J. Christine Wilson, what started out as a normal eye exam in her hometown of Rochester, New York, ended in a hurried trip to Boston the very next day. Her worried parents, after consulting with their local doctor,

brought the determined teen to Joslin Diabetes Center for a new treatment for diabetic retinopathy. The year was 1967.

At Joslin, they met William P. Beetham, M.D. and Lloyd M. Aiello, M.D., the pioneers of this new procedure. Dr. Beetham made it clear to Chris and her parents: if she did not have the procedure, she would lose her eyesight. Chris says

Chris says, "Drs. Beetham and Aiello are my heroes and I will be forever grateful for their work."

she never questioned that decision. She would have the treatment. It would save her eyesight!

Chris remembers being in a small room, no bigger than a closet, her feet almost hanging out the door of the tiny space. Drs. Beetham and Aiello, with Nurse Priscilla Holman, donned

heavy dark glasses to protect their eyes from the scorching light of the "Ruby Laser." This new device placed hundreds of tiny pinpoint "burns" in the back of Chris' eye, on the retina, to stop the advancement of her diabetic retinopathy.

Chris says Drs. Beetham and Aiello are her "heroes" and she will be forever grateful for their work.

Today, 50 years since the first panretinal laser treatments, groundbreaking research continues in the Beetham Eye Institute at Joslin. While laser surgery continues as an effective means of treatment for some, others are benefitting from newer research. The discovery of treatments inhibiting vascular endothelial growth factor (VEGF), known as anti-VEGF, has been a major new progression for solving eye complications. This innovation was another step in learning more about eye complications and why they happen. For almost two decades,

SAVING EYESIGHT

50 Years later people are still benefitting from the Ruby Laser Treatment, and the knowledge that has been gained through its use.

WHILE ANALYZING his patient records on advanced diabetic retinopathy, Dr. William P. Beetham made an intriguing observation. He found that in some of his patients, the expected progression to blindness because of this complication had been stopped in one eye. He wondered why this was happening.

Dr. Beetham set out to find the answer. He reasoned that a brand new laser technology might be used to simulate naturally occurring scars. He had observed these scars in his patients who experienced ar-

rested retinopathy. His son-in-law, Dr. Lloyd M. Aiello, working closely with him, tested the safety of this approach.

Together the two ophthalmologists worked to perform the first panretinal application treatment. They would accomplish this by "scattering" ruby laser scars over wide regions of the retina, while avoiding the central vision area.

Within weeks after the procedure, they would find that the growth of new vessels had been arrested. This was an amazing breakthrough for patients, many of them quite young, who had



The original Ruby Laser machine can be seen on display in the waiting room of Joslin's Beetham Eye Institute.



For almost two decades, Joslin researchers Dr. King and Dr. Lloyd Paul Aiello are the leaders in their field of study of anti-VEGF treatments.



Dr. Lloyd M. Aiello (left) with his son Dr. Lloyd Paul Aiello holding a picture of his grandfather, Dr. William Beetham, pioneer of the panretinal laser treatment.

Joslin doctors, George L. King, M.D., Chief Scientific Officer and Lloyd Paul Aiello M.D., Ph.D., (grandson of Dr. Beetham, son of Dr. Lloyd M. Aiello), Director of the Beetham Eye Institute, have led the charge for understanding these anti-VEGF treatments. But there is still so much more to learn!

50 years ago, eyesight was being saved

through a controversial laser treatment that has since been proven to be one of the most effective medical therapies ever developed! For a patient with diabetic eye disease today, you make the difference, by providing the financial support needed to continue the wide ranging eye research being conducted at Joslin. •

been facing a lifetime of blindness. Now there was hope!

Drs. Aiello and Beetham performed this first panretinal laser photocoagulation for proliferative diabetic retinopathy using the ruby laser on February 7, 1967. The procedure revolutionized the treatment of diabetic retinopathy. It has been the standard of care for 50 years.

As with many new discoveries though, this innovative technique was not without controversy among their peers. After a number of national studies, the procedure using the newly available argon laser was proven to be highly effective in preserving vision and preventing blindness. Drs. Beetham and Aiello's contributions represent one of the most significant "moments" in the nearly 120-year history of Joslin Diabetes Center. •

JOSLIN GRATEFUL PATIENT CORNER

"I HAVE BEEN under the care of Dr. Richard Beaser for over 20 years. I can honestly relay that if it wasn't for him I probably wouldn't be as healthy as I am. I like to say that I'm the healthiest unhealthy person around! I have had type 2 diabetes for over 30 years and I'm living quite well with it thanks to the patience and guidance of Dr. Beaser. He has not only provided excellent professional care but most importantly he has been a thoughtful and supportive teacher helping me understand my particular case of type 2 diabetes so that I can apply the knowledge that I have gained about my disease to better manage on my own. Dr. Richard Beaser has made an indelible difference in my quality of life."

—Grateful Patient Richard Fabricant

Tell us about your favorite Joslin doctor
Email gratefulpatient@joslin.harvard.edu

COMMUNITY EVENTS

RUNNING TOWARDS A CURE

From Hopkinton to Boston, running a marathon with type 1 diabetes isn't easy! But, this runner is thankful to you. Because without your support, the impossible would still be impossible!



Team Joslin Captain Greg Weintraub gets some encouragement from Heartbreak Hill Bill during a break in his training run.

30,000 finger pricks. 5,400 sleep-deprived nights. Getting to run in the Boston Marathon:

Unparalleled possibility!

THERE HAVE BEEN SO MANY high points during Greg Weintraub's training for the Boston Marathon. There have been just as many lows, in both blood sugar and in emotion, as he wrestles with cramps, sore legs, and long training runs. So why does he run?

Greg says the answer is simple: he is thankful for every moment experienced along the way; thankful for every friend made during those arduous training runs; thankful for every spectator

he greets along the course.

Greg is grateful too for his entire medical team at Joslin who "made the impossible possible with their guidance and advice."

He appreciates researchers like Dr. Ed Horton (See next page) who paved the way for him and others with diabetes, to be able to participate in high endurance athletic events. Greg says: "I am indebted to Dr. Horton, and his groundbreaking research and advocacy for endurance athletes with diabetes, for enabling me to demonstrate that diabetes is not a barrier to excellence in any aspect of life."

"I am indebted to Dr. Horton... for enabling me to demonstrate that diabetes is not a barrier to excellence in any aspect of life."

Greg has received tremendous support for his marathon run from family and friends. They support the mission of Joslin through Greg's participation in several Boston Marathons. Greg has raised about \$200,000 to benefit Joslin's *High Hopes Fund*, supporting all areas of patient care and groundbreaking research.

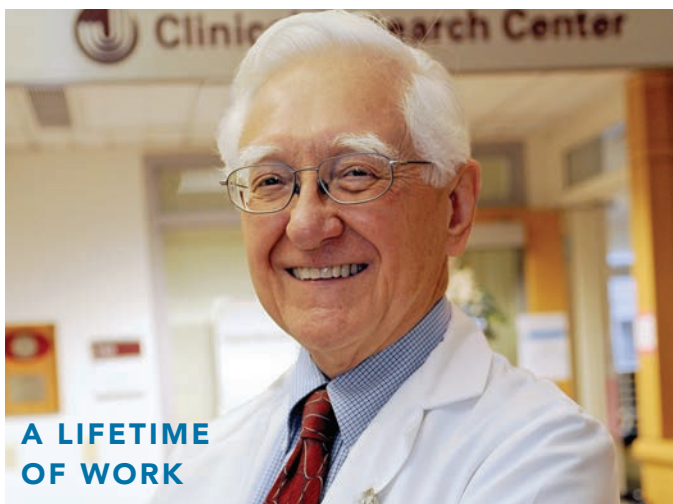
Greg remembers standing at the starting line of his first Boston Marathon and the emotion of crossing the finish line that very first time. He was filled with hope, wonder, and excitement; a moment where barriers, obstacles, and despair simply didn't exist.

Greg has one barrier that he still wants to conquer: he wants a cure for diabetes.

As Greg runs down Boylston Street on Marathon Monday, Joslin scientists will be searching for that cure.

We've made it this far! With your continued support of Joslin researchers, we'll cross the finish line together. ●

To learn more about the members of Team Joslin, go to www.joslin.org and click on the Team Joslin banner.



Edward Horton, M.D. has been conducting clinical research for 50 years. Most of that time has been spent unravelling the puzzle of how exercise impacts glucose in people with type 1 diabetes.

ENTRY DENIED

There was a time, not too long ago, when someone with type 1 diabetes couldn't participate in high endurance sports. Much has changed in recent years allowing involvement in all kinds of sports.

WHEN EDWARD HORTON, M.D. began his research career, people with type 1 diabetes couldn't run marathons. What would happen if someone was injured during a race because they were having a hypoglycemic incident? Who would be liable? These were some of the ques-

tions keeping people with diabetes from participating in high level sporting events.

An accomplished athlete in his own right, Dr. Horton wasn't ready to accept these barriers. He focused his research on exercise physiology and understanding the related challenges facing someone with diabetes. Dr. Horton and his work played a central role in determining healthy procedures for athletes with type 1 diabetes.

Dr. Horton was finishing up his studies at Duke University some 50 years ago when a friend recruited him to continue his work at the University of Vermont. Being an avid cross country skier, Dr. Horton accepted the new opportunity as Director of the Clinical Research Center at UVM. Before long he was involved with a cross-country skiing group in the area. Realizing little was known about exercise physiology, and how endurance sports impacts diabetes, glucose metabolism and insulin requirements, it came naturally that he melded his love for exercise with his research interests.

Some of the earliest studies of the mechanisms of how muscles take in glucose, and how it is utilized during exercise were conducted by Dr. Horton. Along the way, he teamed up with a nurse from Phoenix, Arizona, Paula Harper, R.N., C.D.E., who founded the International Diabetic Athletes Association. Together they would gather groups of people with type 1 diabetes for discussions. They talked about exercising at a high level. Dr. Horton and his colleagues shared with

ON MARATHON MONDAY, April 17, Dr. Horton will have two more reasons to be proud as he watches the runners pass by. Two of his grandchildren, **ADRIAN AND ELENA HORTON** will be running for *Team Joslin*. The girls say they are running Boston to honor their grandfather who has devoted his life to diabetes research. Elena says "running has always been an important part of my life...and it's only fitting that I devote my first marathon to diabetes research." Adrian echoes her sister's feelings: "It is a dream come true to run the Boston Marathon with my sister; we're looking forward to representing Joslin and are incredibly grateful for all the support along the way!" •

them the latest research. Dr. Horton's research proved with proper planning and oversight, a type 1 diabetic could do just about anything a person without diabetes could do. Protocols were developed; barriers started falling.

Slowly, through demonstrated science, Horton was able to dispel fears about any liability that might occur by allowing participation in sports. His work helped open doors for running, scuba diving, cycling, and many other types of endurance exercise.

Dr. Horton accepted a position at Joslin Diabetes Center in 1993 and continued his research here. Technology advances now allow for easy monitoring of glucose levels. Various types of long and fast acting insulin are used in crafting a comprehensive plan for a type 1 athlete. So much has changed.

Today, Dr. Horton leads Joslin's Clinical Research Center, a return to the type of work he was doing some 50 years ago. He has come full circle in his career. ●

Name Joslin as a beneficiary in your Will or Trust, Retirement Fund, IRA Account, Life Insurance Policy, or Charitable Annuity Agreement.

To enroll in the Priscilla White Society, or to request more information, contact (617) 309-2412 and ask to speak with someone about making a planned gift or send an email to philanthropy@joslin.harvard.edu.

CUTTING EDGE RESEARCH

MAN OF MANY CULTURES

Joslin researchers are focusing on the bacteria that live in our guts. Your gift to Joslin lets researchers follow new paths for discovery of the cause of diabetes.

COULD IT BE THAT THE BACTERIA FOUND IN YOUR GUT has a major impact on your health? That's exactly what researchers at Joslin are studying. They are looking at the impact of the gut microbiome, which is



Aleksandar Kostic, Ph.D. is heading up a team of scientists who will be looking at the role the microbiome plays in the development of type 1 diabetes and other diseases.

the study of the bacteria in our digestive tracts. They hope to determine how the microbiome is involved in the development of type 1 diabetes in some people and not others.

Joslin is excited to welcome noted authority on the microbiome, Aleksandar Kostic Ph.D.,

to our team of esteemed scientists. Before coming to Joslin, Dr. Kostic was one of the researchers analyzing a large clinical study that collected microbiome samples from infants living in Finland and Russia. The study participants were genetically at risk for developing type 1 diabetes.

Researchers determined the bacteria found in these young digestive tracts played a significant role in whether they would actually develop type 1 diabetes. This gave researchers some new clues to follow.

In his new work at Joslin, Dr. Kostic will take this information and bring it to the next level of analysis. Dr. Kostic's lab is studying bacterial strains that have been most commonly associated with type 1.

Dr. Kostic's new lab will be germ-free. Starting a project of this type, and building a very specific lab needs a considerable financial investment. Dr. Kostic received philanthropic support from the Smith Family Foundation through a multi-year, \$300,000 grant. Additionally, Dr. Kostic received a \$1.625 million grant from the American Diabetes Association for this important work through Pathway to Stop Diabetes®.

Dr. Kostic followed an international path leading to Joslin. Born in Serbia, he immigrated to the United States where his family settled in Chicago. As a teen he moved with his family to Toronto before coming to the Boston area for his doctoral program studies. With the research he is conducting at Joslin, Dr. Kostic says he hopes "to determine whether the microbiome is capable of preventing the onset of diabetes." He goes on to say that he then "hopes to be able to use the microbiome to deliver preventative measures against diabetes." •

If you would like to know how you can support this and other areas of research at Joslin, call John Perry, Chief Philanthropy Officer, at (617) 309-2412 or email philanthropy@joslin.harvard.edu.



CLINICAL CARE

Clarissa shows off her party dress to WCVB-TV personality J.C. Monahan while brother Seth watches with Joslin President and CEO Dr. Peter S. Amenta at the High Hopes Gala.

NO DAYS OFF

When the Peterson family learned their oldest daughter had diabetes, their life changed. Little did they know that this was only the beginning of their journey!

CLARISSA WAS PREPARING to celebrate her 4th birthday when her life suddenly changed. A trip to the doctor brought a diagnosis of type 1 diabetes. Clarissa now was having her finger pricked numerous times a day to check her blood sugar level. Her diet changed. There were doctors' appointments. Diabetes education became the focus of her family. Even her dad, a medical researcher, opted to change his area of study to diabetes. Clarissa and her family were adapting to a new way of life, life with type 1 diabetes.

When the family relocated to Boston, Clarissa's parents brought her to Joslin. A comprehensive team of pediatric clinicians worked with the family to keep Clarissa healthy. She began to look forward to her trips to the Pediatric Clinic. There, in the safety of the playroom, she learned all the things she needed to know about her diabetes with the help of the Child Life Ambassadors.

Clarissa is in the 5th grade. She loves to read. She plays the flute. Everything seems to be normal...**EXCEPT** that she has a disease that impacts her life 24/7/365.

THERE ARE NO DAYS OFF FROM DIABETES.

You have to do the work every day: test your blood sugar, plan your snacks, prepare your supplies, and take your insulin.

But there is more to this family's story.

Clarissa's younger sister Sarah was diagnosed with type 1 diabetes just two weeks after her 3rd birthday. Her parents quickly recognized the symptoms. They brought their youngest daughter to Joslin. Their worst fears were confirmed. Why was this happening again to their family?

Sarah's family was soon on their way to man-

aging the needs of a second child with diabetes. Clarissa says she now has a "diabetes buddy." She and Sarah have each other to help get through the tough times.

Clarissa and Sarah need you. They need you to continue to support diabetes research. They need you to continue to support innovative clinical care; the care that helps them to live normally.

Clarissa and Sarah want a cure for diabetes.

What a joyful day that will be when you can say that you were part of a cure! ●

Tell us your story! We want to know how Joslin Diabetes Center has impacted your life or the life of someone you care about. Contact Anne Bradley at (617) 309-2405 or send an email to: gratefulpatient@joslin.harvard.edu

You Make a Difference

YOUR SUPPORT FUNDS RESEARCH AND CLINICAL PROGRAMS, ALL TO CREATE A WORLD WITHOUT DIABETES!

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CHECKS CAN BE MAILED TO: Joslin Diabetes Center, *High Hopes* newsletter, One Joslin Place, Boston, MA 02215 **OR MAKE A GIFT ONLINE AT:** giving.joslin.org

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