

Scientists raise alarm that shortage of human islet cells will slow diabetes research

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Rohit Kulkarni, M.D., Ph.D., Senior Investigator in the Section on Islet Cell and Regenerative Biology at Joslin Diabetes Center and Associate Professor at Harvard Medical School, coauthored a paper that was published today in *Diabetes*, which voiced concerns about the increasing difficulty of access to high quality islet cells for diabetes research. Andrew Stewart, M.D., Director of the Diabetes, Obesity and Metabolism Institute at Mount Sinai Hospital in New York, served as the other lead author.

"Obtaining human islets for research in [diabetes](#) is an important component that will allow investigators to gain critical insights into how insulin-producing cells work," said Dr. Kulkarni. "These experiments are of high significance in the overall goal of developing therapeutic approaches to successfully replace and/or regenerate [insulin-producing cells](#) in all forms of human diabetes."

Diabetes cases across the world continue to increase, which creates the need for more research into causes of and treatment for the disease. Dr. Kulkarni and Dr. Stewart are leading the calls for a number changes that mostly relate to improving the productivity of centers that isolate and distribute islets. They and a number of colleagues discussed the issues and possible solutions at a keystone meeting in April 2014; the points of discussion were captured in the [Diabetes whitepaper](#), which Dr. Kulkarni and Dr. Stewart also submitted to the NIH.

In 2010 only 35 labs were working with human islets. Now, in 2014,

there are 104 labs working with islets and this number continues to grow, in part, due to a new initiative by the National Institutes of Health (NIH) called the Human Islet Research Network, or HIRN. With HIRN, the NIH hopes to fund new labs, in addition to the existing one undertaking studies involving human islets.

One solution Dr. Kulkarni and Dr. Stewart presented involved increasing funding for the Integrated Islet Distribution Program to isolate and distribute more islets.

"From our own calculations and also from talking to the IIDP and other colleagues we think that getting about \$2 to \$2.5 million more per year [to the IIDP] would allow a doubling of these islets." said Dr. Kulkarni. "Another concern to be addressed is the 4-fold increase in the cost of human islets that is currently to be borne by the Investigators."

Dr. Kulkarni and the other signatories on the whitepaper recognize that the NIH shouldn't shoulder the entire burden, so they recommend researchers come up with creative ways to use fewer islets in experiments, while still achieving usable results. They also suggest that labs contribute ideas for quality standardization procedures to ensure each lab ends up with the maximum number of usable islets.

"The NIDDK has done a tremendous job in supporting the IIDP since its inception and we hope that it will find a long-term solution to continue supporting this organization. We also hope this whitepaper will encourage creative approaches to lessen the burden on Research Investigators to shoulder the increasing costs of human islets when they are already impacted by cuts in research funding," said Dr. Kulkarni.

Provided by Joslin Diabetes Center

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