JDRF IMPROVING LIVES. CURING TYPE 1 DIABETES.

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COOL Research News

Whether you are newly diagnosed or have been living with type 1 diabetes (T1D) for a long time, JDRF is committed to improving the lives of every person affected by the disease. We aim to accelerate the progress of research to provide better treatments, prevention, and ultimately a cure for T1D. We hope that you will enjoy reading about two exciting areas of research that have the potential to bring us closer to our goal.

Advancing eye protection

Almost 80 years ago, two doctors at the Mayo Clinic in Minnesota discovered the first diabetes-related complication: eye disease. Their groundbreaking research was published in *The New England Journal of Medicine*. Since the very beginning of JDRF, more than 40 years ago, we've been funding research to help treat and prevent diabetic eye disease. For example, we supported the work of the doctors who were the "pioneers" in surgery to treat this complication. And we won't stop, because diabetic eye disease is the leading cause of blindness and impaired vision in people with T1D.

Recently, JDRF formed a new partnership with KalVista Pharmaceuticals, a company in the United Kingdom, to investigate new treatments for diabetic eye disease. One of the founders of this company, Edward Feener, Ph.D., associate professor of medicine at Harvard Medical School and Joslin Diabetes Center, has been supported by JDRF in the past. Previously, Dr. Feener found that a high level of an enzyme called plasma kallikrein—pronounced "ka-li-KREE-in," or just "pK"—in the eyes of people with diabetic eye disease was responsible for damaging vision. Now, JDRF is teaming up with KalVista to investigate potential blockers of pK (referred to as plasma kallikrein inhibitors). The company is planning to investigate a number of possible drug candidates that can stop pK from doing damage. Their studies will begin this year, and if one or more of the candidates shows promise, it will be a great step forward in JDRF's quest for treatments to stop or delay the progress of diabetic eye disease.

Biomarkers brain trust

Another priority area of research for JDRF is biomarkers for T1D. Biomarkers are measurements that potentially can identify the stage or progress of a disease, or assess a person's response to a particular therapy. In December 2011 in New York City, we convened our first conference on biomarkers, "Identification and Utilization of Robust Biomarkers in Type 1 Diabetes." We brought together scientists from different areas of expertise, including medicine, immunology, beta-cell biology, and biotechnology to address the best way to move the field of biomarkers research forward.

In understanding this research, it's useful to know that T1D is a heterogeneous disease—meaning that although it is a single disease, it can have distinct differences from person to person on the molecular level (involving some of the tiniest particles in the body). It is these differences that help to explain why the development and progression of T1D can vary among individuals. Biomarkers for T1D could address these differences and provide significant information for experts to use to track T1D—from identifying people at risk for the disease, to analyzing the progression of the disease, to evaluating the effectiveness of treatments. JDRF is encouraged about the results of the conference. "By hosting this conference, we now have a better understanding of the gaps in the field and the ways in which we can attempt to fill them—hopefully as a combined effort among some of the best talent around," says Simi T. Ahmed, Ph.D., JDRF's scientific program manager of immune therapies.

To find out more about T1D research, or how to get involved with JDRF in your community, visit www.jdrf.org.