

JDRF's Complications Therapies research focuses on ways to free people from the devastating long-term complications that can accompany diabetes, including diseases of the eyes, nerves, and kidneys. The aim is to stop complications from starting and from getting worse, with the hope that the body can repair any damage. Eventually, it may be possible to prevent complications from ever taking hold in people with diabetes.

JDRF's Complications Therapies Research Goals

The overall goal of JDRF's complications research is to free people who have type 1 diabetes from the devastating long-term complications that can accompany the disease and to achieve this independently of the protection afforded through glucose control.

Priority Program

JDRF prioritizes research in complications protection because of its strong potential to generate breakthroughs that can help people with diabetes lead healthier lives.

This research area looks at ways to use the science of genes and genetic resistance to block complications from ever developing. One of the key projects in this area will be to examine the genes and gene modifiers that protect some people from diabetic complications, particularly kidney disease. Through the study of "genetic resistance," researchers will identify new gene targets and pathways that can then be translated into protective therapies that block complications from developing.

A second research track focuses on delivering early treatments to slow or halt the progression of complications that have already developed, as well as on developing treatments to reverse complications. Treatment research projects will inform the complications protection program and will include validating pathways and targets that have been linked to diabetic eye, kidney, and nerve disease, identifying biomarkers of risk and progression, and conducting clinical trials of promising drug candidates.

Specific Research Goals

JDRF has developed a specific set of goals for complications and the rest of our therapeutic areas. These goals are guiding every decision we make about where to direct our funds and energies to bring results as quickly as possible. For Complications Therapies, they include:

- Developing new therapies to treat retinopathy, nephropathy, neuropathy, and cardiac and vascular disease.

- Researching disease pathways to determine possible combination therapies that target several of the biological processes that lead to complications.
- Developing therapies that are effective against multiple complications.
- Developing biomarkers to identify people at risk for complications and speed the progress of clinical trials.

Complications Therapies Research Facts

JDRFI Funding:	\$22 million (U.S.); 22 per cent of all FY09 funding
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Human Clinical Trials:	9
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Programs:	Genetic resistance, metabolic memory, predictors and risk factors, common mechanisms, retinopathy, neuropathy, nephropathy, cardiac and vascular disease
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What Will Your Support Mean?

Your support of JDRF's Complications Therapies research will help us accelerate progress toward developing drugs and other therapies to stop, reverse, and ultimately prevent the complications of diabetes.

Recent Research Progress

- Industry partner Sangamo BioSciences reports positive findings from its Phase II trial of a gene therapy for diabetic nerve damage.
- Researchers discover that lipids—triglycerides, fats, and cholesterol—may be involved in the development of diabetes and its complications, suggesting a need for lipid monitoring and management in people with type 1 diabetes.
- Two drugs for high blood pressure are found to significantly slow the progression of diabetic retinopathy, an eye-related complication that can lead to vision loss.
- JDRFI's investment in the "Genetics of Kidneys in Diabetes Study" yields a treasure trove of information about diabetic kidney disease. ■