

## Dr. Zhao, Ph.D.



Dr. Zhao joined CDI from the University of Illinois at Chicago. The focus of Dr. Zhao's work is the treatment of autoimmune diseases with cord blood stem cells. Dr. Zhao identified a new type of stem cells from human cord blood that can treat autoimmune diseases and developed a now-patented technology, the Stem Cell Educator, for clinical use. Stem Cell Educator therapy involves "educating" the patient's immune cells by exposing them to cord blood stem cells and returning only the patient's own immune cells into blood circulation. Thus far, he has demonstrated success in multi-center clinical trials in China for patients with either Type 1 or Type 2 diabetes.

Type 1 diabetes is characterized by autoimmune destruction of islet beta cells, leading to a shortage of beta cells. By the time patients have been diagnosed with the condition, they have already lost 75% of their islet beta cells. After the diagnosis, the number of beta cells continues to decline over the course of the next two years. Stem Cell Educator therapy can balance immunity and stimulate beta cell regeneration, thereby enabling the patient to produce their own insulin. Clinical trials are currently underway in the United States with Type 1 diabetes patients.

The applications for Dr. Zhao's Stem Cell Educator therapy are not limited to Type 1 diabetes, but are relevant for many autoimmune diseases, such as alopecia areata (hair loss). Patients with alopecia areata were treated with Dr. Zhao's Stem Cell Educator therapy in a clinical trial and were able to grow back their own hair. His group continues to explore the mechanisms underlying the therapy for its continual refinement.

Dr. Zhao's works have been published in BMC Medicine, Stem Cells Translational Medicine, and EBioMedicine, and supported by the American Diabetes Association (ADA), Juvenile Diabetes Research Foundation, and the Hackensack UMC Foundation.