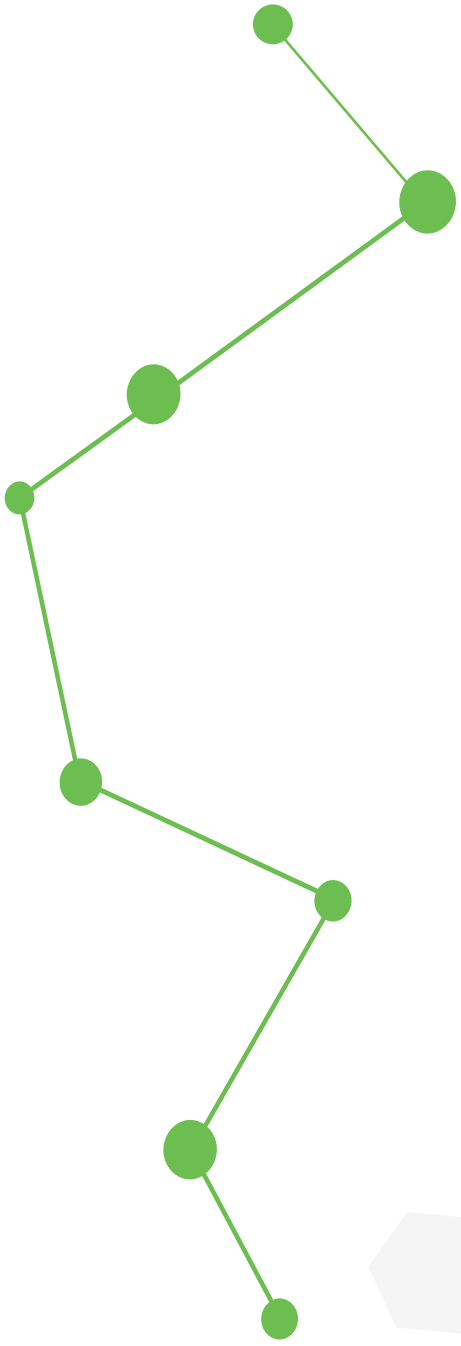
HEMOPHILIA RESEARCH PROGRAMS

Spark™ THERAPEUTICS

At Spark Therapeutics, we're striving to challenge genetic disease by **discovering, developing and delivering gene therapies** that address a range of inherited diseases.

Spark focuses on developing gene therapies. Members of our founding scientific team have been at the forefront of gene therapy research for more than two decades and are responsible for numerous developmental milestones, including the first clinical trials of adeno-associated viral (AAV) vectors in skeletal muscle tissue and the liver; the first clinical studies to evaluate AAV administration to the second eye; and the first gene therapy trial for a non-lethal disorder that included pediatric participants. Building on this unique expertise, we have **progressed three investigational gene therapies into clinical studies for hemophilia.** We began our clinical studies of gene therapy in hemophilia B (this program is now in Phase 3 development with Pfizer, Inc.). Our enrolling investigational programs are currently aimed at studying gene therapy in people with hemophilia A.



OUR COMMITMENT TO THE HEMOPHILIA COMMUNITY

We believe gene therapy has the potential to be transformative in the treatment of hemophilia, and our objective with our investigational hemophilia programs is to provide safe therapies that offer durable, predictable clinical outcomes, with a favorable benefit-risk profile.

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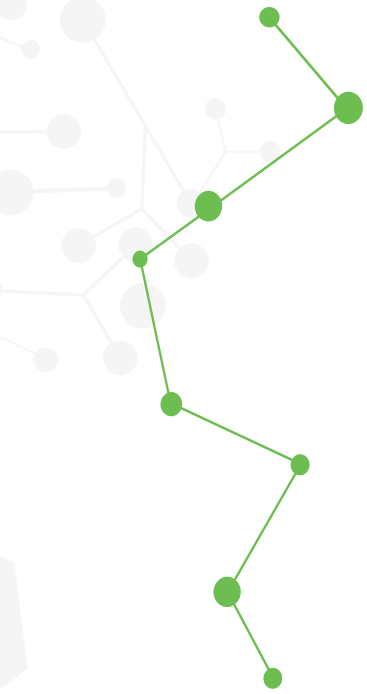
OUR ONGOING CLINICAL STUDIES IN HEMOPHILIA A

Spark Therapeutics has two clinical studies of investigational gene therapies for hemophilia A and one observational study (without therapeutic intervention), which is collecting real-time data about people living with hemophilia A.



A GENE TRANSFER STUDY OF *SPK-8011* FOR HEMOPHILIA A (NCT03003533). This clinical research study is being conducted by Spark Therapeutics, Inc. to determine the safety and efficacy of the factor VIII gene transfer treatment with *SPK-8011* in individuals with hemophilia A.

DOSE-FINDING STUDY OF *SPK-8016* GENE THERAPY IN PATIENTS WITH HEMOPHILIA A TO SUPPORT EVALUATION IN INDIVIDUALS WITH FVIII INHIBITORS (NCT03734588). *SPK-8016* is in development for the treatment of patients with inhibitors to FVIII. This Phase 1/2, open-label, non-randomized, dose-finding study is part one of a planned two part study of *SPK-8016*. Part one will evaluate the safety, efficacy and tolerability of *SPK-8016* in adult males with clinically severe hemophilia A and no measurable inhibitor against FVIII. Data obtained from Part 1 will inform the study design and dose selection for Part 2 in patients with FVIII inhibitors.

LEAD-IN STUDY TO COLLECT PROSPECTIVE EFFICACY AND SAFETY DATA OF CURRENT FVIII PROPHYLAXIS REPLACEMENT THERAPY IN ADULT HEMOPHILIA A PARTICIPANTS (NCT03876301). The aim of this prospective, observational study is to establish a dataset on the frequency of bleeding events, as well as other characteristics of bleeding events and FVIII infusions, in patients with clinically severe hemophilia A receiving prophylactic FVIII replacement therapy as standard of care. The data collected from this study may assist in providing baseline information for comparison to Spark's investigational hemophilia A gene therapy in future Phase 3 studies.

For more information about our current investigational hemophilia programs, please visit www.clinicaltrials.gov or contact Medical Information at Spark with your questions by completing this form: Spark Medical Information or by emailing medinfo@sparktx.com.