UNITED STATES
SECURITIES AND EXCHANGE COMMISSION
WASHINGTON, D.C. 20549

FORM 8-K

CURRENT REPORT

Pursuant to Section 13 or 15(d) of the Securities Exchange Act of 1934

Date of Report (Date of earliest event reported): June 15, 2026

Lexeo Therapeutics, Inc.

(Exact name of Registrant as Specified in Its Charter)

Delaware	**001-41855**	**85-4012572**
(State or Other Jurisdiction of Incorporation)	**(Commission File Number)**	**(IRS Employer Identification No.)**

345 Park Avenue South, Floor 6 **New York, New York**	**10010**
(Address of Principal Executive Offices)	**(Zip Code)**

Registrant's Telephone Number, Including Area Code: 212 547-9879

N/A
(Former Name or Former Address, if Changed Since Last Report)

Check the appropriate box below if the Form 8-K filing is intended to simultaneously satisfy the filing obligation of the registrant under any of the following provisions:

☐ Written communications pursuant to Rule 425 under the Securities Act (17 CFR 230.425)

☐ Soliciting material pursuant to Rule 14a-12 under the Exchange Act (17 CFR 240.14a-12)

☐ Pre-commencement communications pursuant to Rule 14d-2(b) under the Exchange Act (17 CFR 240.14d-2(b))

☐ Pre-commencement communications pursuant to Rule 13e-4(c) under the Exchange Act (17 CFR 240.13e-4(c))

Securities registered pursuant to Section 12(b) of the Act:

Title of each class	Trading Symbol(s)	Name of each exchange on which registered
Common Stock, $0.0001 par value per share	LXEO	Nasdaq Global Market

Indicate by check mark whether the registrant is an emerging growth company as defined in Rule 405 of the Securities Act of 1933 (§ 230.405 of this chapter) or Rule 12b-2 of the Securities Exchange Act of 1934 (§ 240.12b-2 of this chapter).

Emerging growth company ☒

If an emerging growth company, indicate by check mark if the registrant has elected not to use the extended transition period for complying with any new or revised financial accounting standards provided pursuant to Section 13(a) of the Exchange Act. ☐

Item 7.01 Regulation FD Disclosure.

The corporate presentation to be used in connection with the webcast described in Item 8.01 below is attached as Exhibit 99.2 to this Current Report on Form 8-K and incorporated into this Item 7.01 by reference.

The information in this Item 7.01, including Exhibit 99.2 attached hereto, shall not be deemed "filed" for purposes of Section 18 of the Exchange Act, or otherwise subject to the liabilities of that section, nor shall they be deemed incorporated by reference in any filing under the Securities Act, except as expressly set forth by specific reference in such filing.

Item 8.01 Other Events.

On June 15, 2026, Lexeo Therapeutics, Inc. (the "Company") issued a press release announcing the regulatory updates to LX2006 for the treatment of Friedreich ataxia (FA) cardiomyopathy including the pivotal study design to support accelerated approval. As part of the press release, the Company announced that it would be hosting a conference call and webcast at 8:00 a.m. ET on June 15, 2026 to discuss regulatory updates on LX2006 for the treatment of FA cardiomyopathy. The press release is attached hereto as Exhibit 99.1 and incorporated by reference herein.

Also on June 15, 2026, the Company posted on its website an updated corporate presentation (the "Corporate Presentation"). The Corporate Presentation will be used from time to time in meetings with investors and analysts. A copy of the Corporate Presentation is attached hereto as Exhibit 99.3 and is incorporated by reference herein.

Cautionary Note Regarding Forward-Looking Statements

This report contains certain forward-looking statements regarding the business of the Company that are not a description of historical facts within the meaning of the Private Securities Litigation Reform Act of 1995. Forward-looking statements include statements regarding the Company's expected plans with respect to clinical trials of the Company's gene therapy candidates and the timing for announcement of data from such trials. Actual results could differ materially from those anticipated in such forward-looking statements as a result of various risks and uncertainties, which include, without limitation, expectations regarding the initiation, progress, and expected results of the Company's preclinical studies, clinical trials and research and development programs, the unpredictable relationship between preclinical study results and clinical study results, delays in submission of regulatory filings or failure to receive regulatory approval, and liquidity and capital resources. Additional risks and uncertainties that could cause actual results to differ materially from those contemplated by the forward-looking statements are included in the Company's Quarterly Report on Form 10-Q for the quarterly period ended March 31, 2026, filed with the U.S. Securities and Exchange Commission (SEC) on May 11, 2026, and subsequent future filings the Company may make with the SEC from time to time that are available at www.sec.gov.

You are cautioned not to place undue reliance on forward-looking statements which are current only as of the date hereof. Except as required by applicable law, the Company undertakes no obligation to revise or update any forward-looking statement, or to make any other forward-looking statements, whether as a result of new information, future events or otherwise.

Item 9.01 Financial Statements and Exhibits.

(d) Exhibits

Exhibit Number	Description
99.1	Press release issued by the Company on June 15, 2026
99.2	Corporate Presentation (LX2006), dated June 15, 2026, furnished herewith
99.3	Corporate Presentation, dated June 15, 2026
104	Cover Page Interactive Data File (embedded within the Inline XBRL document)

SIGNATURES

Pursuant to the requirements of the Securities Exchange Act of 1934, the registrant has duly caused this report to be signed on its behalf by the undersigned hereunto duly authorized.

Lexeo Therapeutics, Inc.

Date: June 15, 2026

By: /s/ R. Nolan Townsend
R. Nolan Townsend, Chief Executive Officer

Exhibit 99.1

Lexeo Therapeutics Announces Regulatory Update and Registrational Trial Design for LX2006 Gene Therapy in Friedreich Ataxia

SUNRISE-FA 2 study parameters include LVMI primary endpoint, 6-month topline efficacy analysis, inclusion criteria focused on abnormal baseline LVMI and open-label trial design

BLA supportive manufacturing strategy includes flexible process validation, including reduced PPQ manufacturing batches

SUNRISE-FA 2 initiation on track for Q2 2026, with first patient expected to be enrolled by end of June

Company to host webcast today at 8:00 AM ET

NEW YORK – June 15, 2026 (GLOBE NEWSWIRE) – Lexeo Therapeutics, Inc. (Nasdaq: LXEO), a clinical stage genetic medicine company dedicated to pioneering novel treatments for cardiovascular diseases, today announced that the Company has finalized the SUNRISE-FA 2 pivotal trial protocol and statistical analysis plan (SAP) intended to provide clinical evidence to support the submission of a Biologics License Application (BLA) to the U.S. Food and Drug Administration (FDA) for gene therapy candidate LX2006 under the accelerated approval pathway in 2028.

“We have reached a major milestone with the finalization of the SUNRISE-FA 2 pivotal study design, establishing a clear and rigorous path to evaluate LX2006 in Friedreich ataxia (FA) cardiomyopathy,” said Narinder Bhalla, M.D., Chief Medical Officer of Lexeo Therapeutics. “Patients living with FA, particularly those with cardiac involvement, have a significant unmet need for new treatment options and remain at the center of our efforts. This progress brings us one step closer to delivering a potential new therapy, and we remain focused on execution as we work to initiate the pivotal study and enroll the first patient by the end of the month.”

"FARA congratulates the Lexeo Therapeutics team on this important milestone and is deeply grateful for their commitment to advancing the first gene therapy program for Friedreich ataxia," said Jennifer Farmer, Chief Executive Officer of the Friedreich's Ataxia Research Alliance (FARA). "We also thank the participants and investigators in the SUNRISE-FA Phase I/II study, whose courage paved the way for this pivotal trial. We commend Lexeo for designing SUNRISE-FA 2 with scientific rigor while recognizing that a sham or placebo design is neither necessary nor appropriate in the context of gene therapy and adding a pediatrics arm to this study, putting patients first as we work urgently toward the first approved treatment for FA cardiomyopathy."

SUNRISE-FA 2 Pivotal Trial Protocol and SAP

SUNRISE-FA 2 is an open-label pivotal study in which 13 participants aged 16 years and older will receive a single, intravenous administration of high-dose LX2006 (1.2×10^{12} vector genomes per kilogram), compared with 13 participants untreated with LX2006 (untreated control). The study does not include a placebo or sham procedure for participants in the untreated control arm.

The concurrent untreated control arm reflects key elements of an external natural history control while being implemented prospectively within the same protocol. This design incorporates FDA feedback aimed at reducing potential sources of bias and ensures consistency in study assessments and evaluation methods across both arms, without impacting key study parameters, including size and duration.

Key design elements include:

- **Primary endpoint:** Left ventricular mass index (LVMI), assessed via cardiac magnetic resonance imaging (MRI), with a topline efficacy readout at 6 months post-treatment.
    - The SAP is powered to detect an LVMI effect size of 15% or greater.

    - Informed by the clinically meaningful results observed to date in Phase I/II studies, the FDA has recommended removal of the cardiac frataxin protein expression co-primary endpoint, as it is no longer necessary to demonstrate proof of mechanism for LX2006.
- **Key secondary endpoints:** Measures of neurologic and cardiac outcomes and relevant biomarkers, including modified Friedreich Ataxia Rating Scale (mFARS), Kansas City Cardiomyopathy Questionnaire (KCCQ), high-sensitivity (hs) troponin-I, and lateral wall thickness.
- **Patient population:** The study will enroll participants with abnormal LVMI at baseline, defined as at least two standard deviations above the normal mean.
- **Statistical analysis plan:** Participants will be randomly allocated to receive LX2006 or to the untreated control arm. This random allocation approach is intended to eliminate patient selection bias between untreated and treated arms, and ensure balanced baseline characteristics, including LVMI.
- **Crossover eligibility**: Participants in the untreated control arm are eligible to cross over to receive LX2006 after 6 months and will be included in the 6-month efficacy analysis, as well as in all long-term follow-up assessments.
- **Pediatric cohorts:** Pediatric cohorts will be assessed for safety following dosing in participants aged 16 years and above.

The FDA has confirmed that no additional nonclinical bridging studies are required and Lexeo may use its optimized, high-yield Sf9-baculovirus final manufacturing process to initiate dosing in the SUNRISE-FA 2 pivotal study. Clinical drug product has been manufactured at commercial scale and is immediately available for patient dosing.

CLARITY-FA Natural History Study
CLARITY-FA is a natural history study that will provide supportive evidence on the untreated disease course for both accelerated and full approval. Enrollment is ongoing and progressing well. CLARITY-FA shares identical inclusion criteria with the SUNRISE-FA 2 pivotal study and patients enrolled are eligible to participate in SUNRISE-FA 2, with the first patient expected to enroll by the end of June.

Next Steps
- Lexeo remains in ongoing discussions with the FDA regarding the confirmatory evidence strategy, including the potential use of certain secondary endpoints at the 12-month time point in SUNRISE-FA 2 to support full approval, and will provide an update once finalized.
- Based on the study size and duration of SUNRISE-FA 2, as well as expected PPQ and process validation requirements, Lexeo expects a topline data readout in the second half of 2027 and a BLA submission under the accelerated approval pathway in the first half of 2028.

Corporate Webcast Details
Lexeo Therapeutics will host a webcast at 8:00 AM ET today, June 15, 2026. Analysts and investors can participate by accessing the webcast live on the News & Events page in the Investors section of Lexeo's website, www.lexeotx.com. The webcast will be archived on the company's website following the call.

About Lexeo Therapeutics
Lexeo Therapeutics is a New York City-based, clinical stage genetic medicine company dedicated to reshaping heart health by applying pioneering science to fundamentally change how cardiovascular diseases are treated. The Company is advancing a portfolio of therapeutic candidates that take aim at the underlying genetic causes of conditions, including LX2006 in Friedreich ataxia (FA), LX2020 in plakophilin-2 (PKP2) arrhythmogenic cardiomyopathy, and others in devastating diseases with high unmet need.

Cautionary Note Regarding Forward-Looking Statements

Certain statements in this press release may constitute "forward-looking statements" within the meaning of the federal securities laws, including, but not limited to, Lexeo's expectations and plans regarding its current product candidates and programs, the anticipated benefits of its current product candidates, and the timing and likelihood of potential regulatory developments and approvals. Words such as "may," "might," "will," "objective," "intend," "should," "could," "can," "would," "expect," "believe," "design," "estimate," "predict," "potential," "develop," "plan" or the negative of these terms, and similar expressions, or statements regarding intent, belief, or current expectations, are forward-looking statements. While Lexeo believes these forward-looking statements are reasonable, undue reliance should not be placed on any such forward-looking statements. These forward-looking statements are based upon current information available to the company as well as certain estimates and assumptions and are subject to various risks and uncertainties (including, without limitation, those set forth in Lexeo's filings with the U.S. Securities and Exchange Commission (SEC)), many of which are beyond the company's control and subject to change. Actual results could be materially different from those indicated by such forward-looking statements as a result of many factors, including but not limited to: the outcome of ongoing discussions with the FDA regarding the design of our pivotal trial and full approval study; expectations regarding the initiation, progress, and expected results of Lexeo's preclinical studies, clinical trials and research and development programs; the unpredictable relationship between preclinical study results and clinical study results; delays in submission of regulatory filings or failure to receive regulatory approval; liquidity and capital resources; and other risks and uncertainties identified in Lexeo's Quarterly Report on Form 10-Q for the quarterly period ended March 31, 2026, filed with the SEC on May 11, 2026, and subsequent future filings Lexeo may make with the SEC. New risks and uncertainties may emerge from time to time, and it is not possible to predict all risks and uncertainties. Lexeo claims the protection of the Safe Harbor contained in the Private Securities Litigation Reform Act of 1995 for forward-looking statements. Lexeo expressly disclaims any obligation to update or alter any statements whether as a result of new information, future events or otherwise, except as required by law.

Media Response:
Media@lexeotx.com

Investor Response:
Ashley Kaplowitz
akaplowitz@lexeotx.com

Exhibit 99.2

Lexeo Therapeutics
LX2006 Regulatory Update

June 15, 2026

Forward Looking Statements

This presentation contains “forward-looking statements” within the meaning of the federal securities laws, including, but not limited to, statements regarding Lexeo’s expectations and plans regarding its current product candidates and programs, including statements regarding the structure of and timelines for completion of any current or additional clinical trials required by the U.S. Food and Drug Administration (FDA), the timing for receipt and announcement of data from any such clinical trials, and the timing and likelihood of potential regulatory developments, trial design changes and approval. Words such as “may,” “might,” “will,” “objective,” “intend,” “should,” “could,” “can,” “would,” “expect,” “believe,” “design,” “estimate,” “predict,” “potential,” “develop,” “plan” or the negative of these terms, and similar expressions, or statements regarding intent, belief, or current expectations, are forward-looking statements. While Lexeo believes these forward-looking statements are reasonable, undue reliance should not be placed on any such forward-looking statements. These forward-looking statements are based upon current information available to the company as well as certain estimates and assumptions and are subject to various risks and uncertainties (including, without limitation, those set forth in Lexeo’s filings with the U.S. Securities and Exchange Commission (SEC)), many of which are beyond the company’s control and subject to change. Actual results could be materially different from those indicated by such forward looking statements as a result of many factors, including but not limited to: the outcome of ongoing discussions with the FDA regarding the design of our pivotal trial for accelerated approval pathway and the design of our confirmatory study for obtaining full approval; risks and uncertainties related to expectations regarding the initiation, progress, and expected results of Lexeo’s preclinical studies, clinical trials and research and development programs; the unpredictable relationship between preclinical study results and clinical study results; topline data and final results from our pivotal trial; delays in submission of regulatory filings or failure to receive regulatory approval; liquidity and capital resources; and other risks and uncertainties identified in Lexeo’s Quarterly Report on Form 10-Q for the quarterly period ended March 31, 2026, filed with the SEC on May 11, 2026, and subsequent future filings Lexeo may make with the SEC. New risks and uncertainties may emerge from time to time, and it is not possible to predict all risks and uncertainties. Lexeo claims the protection of the Safe Harbor contained in the Private Securities Litigation Reform Act of 1995 for forward-looking statements. Lexeo expressly disclaims any obligation to update or alter any statements whether as a result of new information, future events or otherwise, except as required by law.

Dedicated to **reshaping heart health** by applying pioneering science to fundamentally change how cardiovascular disease is treated

Individuals and families impacted by Friedreich ataxia

LEXEO therapeutics

- **Genetic medicine leader with rare cardiac disease focus**
- **Proven experience in the clinic**
- **Platform designed for safety and scalability**

Finalized pivotal study protocol for LX2006, with potential BLA submission in 1H 2028

Pivotal Protocol for Accelerated Approval

- Finalized LX2006 pivotal study and statistical analysis plan to support BLA for LX2006 under accelerated approval pathway
- Study initiation on track for Q2 2026, topline data readout expected in 2H 2027, and potential BLA submission in 1H 2028

Key Study Details

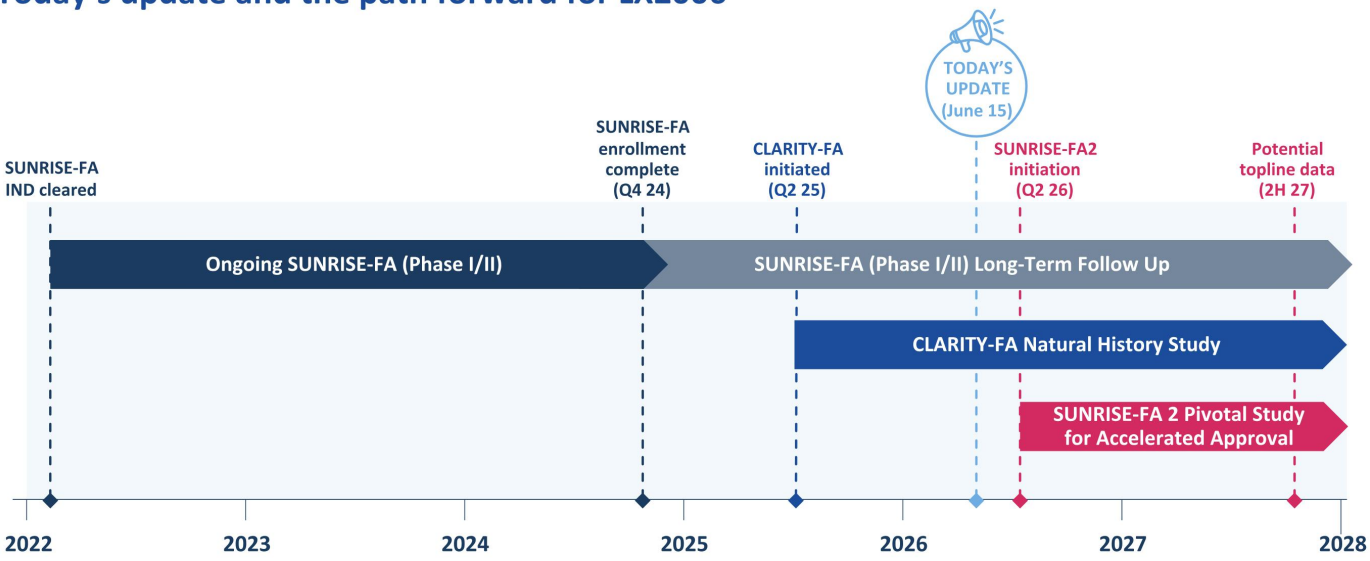
- Open-label trial with 13 participants aged 16+ who will receive a single IV administration of high-dose LX2006 compared with 13 participants untreated with LX2006 (no placebo or sham procedure)
- Primary endpoint is LVMI at 6-months post-treatment
- Key secondary endpoints include mFARS, KCCQ, hs-troponin I, and lateral wall thickness
- Lexeo remains in ongoing FDA discussions regarding the confirmatory evidence strategy

CLARITY-FA Natural History Study

- CLARITY-FA natural history will provide supportive evidence on the untreated disease course for both accelerated and full approval
- Enrollment is progressing well; CLARITY-FA shares identical inclusion criteria and patients enrolled are eligible to participate in SUNRISE-FA 2
- First patient expected to enroll from CLARITY-FA into SUNRISE-FA 2 by end of June

BLA = biologics license application, LVMI = left ventricular mass index, mFARS = modified Friedreich Ataxia Rating Scale, KCCQ = Kansas City Cardiomyopathy Questionnaire, Hs = high sensitivity.

Today's update and the path forward for LX2006



Today We Are Providing a Regulatory Update Regarding the SUNRISE-FA 2 Pivotal Study

LX2006 for the Treatment of Friedreich Ataxia

Cardiac complications are the leading cause of death in Friedreich Ataxia

FA is a **rare, progressive and devastating multisystem disease** caused by a loss of function mutation in the FXN gene[1].

With a typical age of onset between 5 and 15 years[2], individuals with FA experience a combination of cardiac and neurological manifestations, with **cardiac complications accounting for up to 80% of deaths**[1]

Cardiac dysfunction in FA is associated with a multitude of symptoms but ultimately presents as **cardiac hypertrophy and subsequent heart failure**[1]; **hypertrophy in childhood** is potentially associated with a **more severe phenotype**, with earlier progression to end-stage disease[3]

The only approved disease-specific treatment for FA demonstrated efficacy on neurological measures but was not evaluated for the treatment of cardiac dysfunction in clinical trials, **leaving significant unmet need within FA cardiomyopathy**[4]

~5,000
individuals affected by FA in the U.S.[2]

~15,000
individuals affected by FA worldwide[2]

Cardiac complications account for **up to 80%** of deaths in those with FA, with an average life expectancy of 35–40 years[1,5]

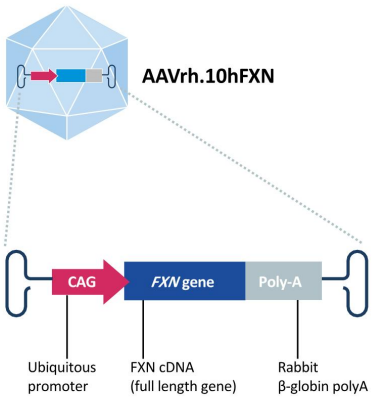
Up to 40% of adults with FA have left ventricular hypertrophy as defined by abnormal LVMI[6,7]

FA - Friedreich Ataxia;
FXN - Frataxin;
LVMI - Left Ventricular Mass Index.

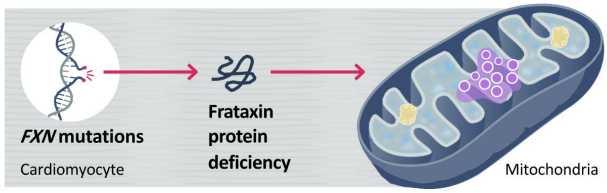
1 - Payne R.M. JACC Basic Transl Sci, 2022;13;7(12):1267-1283.
2 - Friedreich's Ataxia Research Alliance, 2024.
3 - Norrish G., et al. Arch Dis Child, 2022;107(5), 450–455.
4 - Reetz, K., et al. Lancet Neurol, 2025;24(7):614-624.
5 - Indelicato, E., et al. Mov Disord, 2024;39(3), 510–518.
6 - Clinical Management Guidelines for Friedreich Ataxia. Chapter 4. The heart and cardiovascular system in Friedreich ataxia. 2022.
7 - Lexeo Therapeutics, Data on File, 2025.

LX2006 has the potential to treat the root cause of FA cardiomyopathy: significant decrease in frataxin in the heart

LX2006 construct:

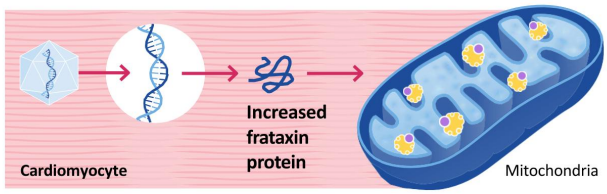


FA cardiomyopathy:



Frataxin deficiency results in **mitochondrial dysfunction** and leads to **deficient energy production** in hypertrophic cardiomyocytes

LX2006 mechanism:

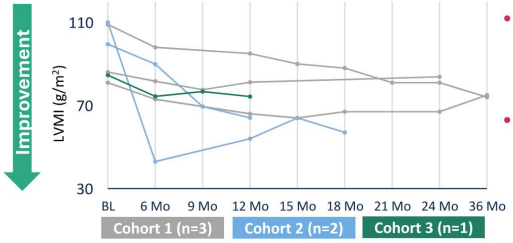


Transfer of *FXN* gene to cardiomyocytes is intended to **increase frataxin levels** in the mitochondria and **improve cardiac muscle cell function**

AAV, Adeno-Associated Virus; CAG, Chicken Beta-Actin; cDNA, Copy DNA; FA, Friedreich Ataxia; FXN, Frataxin; Poly-A, Poly Adenosine.

LX2006 clinical data show sustained or deepening improvements across cardiac measures of FA; LX2006 generally well tolerated

Cardiac MRI: LVMI (n=6; abnormal at baseline)



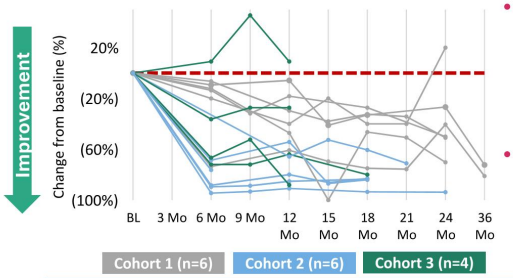
- Majority of participants reach or remain in normal LVMI range at latest visit
- **Durable LVMI improvement maintained out to three years following treatment**

Cardiac MRI: LVMI

Mean LVMI Change	
Participants at 12-mo visit *(n=6)*	-23%
Participants at 6-mo visit[1] *(n=6)*	-18%
Cohorts 2 and 3 at 12-mo visit *(n=3)*	-33%
Cohorts 2 and 3 at 6-mo visit[1] *(n=3)*	-28%

Among participants with abnormal baseline LVMI (key inclusion criteria for pivotal study; n=6):

Biomarkers: High-Sensitivity Troponin I (n=17)



- **16 of 17 participants have significantly reduced or stable troponin I,** excluding participant with myocarditis[2]
- Highly specific, blood-based marker of myocardial injury

LX2006 generally well tolerated

- LX2006 generally well tolerated across 17 participants dosed with no Grade 3 treatment-related SAEs to date
- No clinically significant complement activation
- Minimal, transient LFT elevations
- No signs of frataxin over-expression observed in cardiac tissue
- One previously disclosed, possibly treatment-related Grade 2 event of asymptomatic myocarditis observed one year after dosing

(1) Participant 11 6-month visit not conducted due to hurricane; 3-month visit used for mean calculations. (2) Participant 10 not included in Hs-TNI chart due to scale. Values are +29% at 6M, +45% at 9M, +2,702% at 12M, +1,857% at 18M, +1,620% at 21M, and +1,458% at 24M as of most recent safety monitoring.
Note: Data as of December 2025.

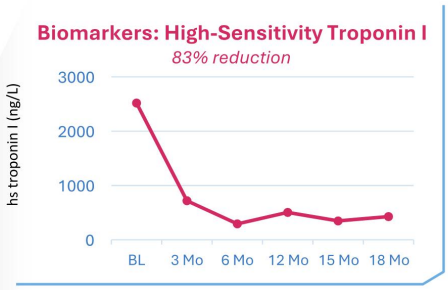
Cardiac function improvement observed in individual with later stage cardiomyopathy

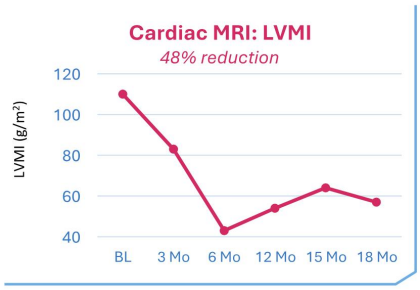
Effect of LX2006 on Cardiac Function

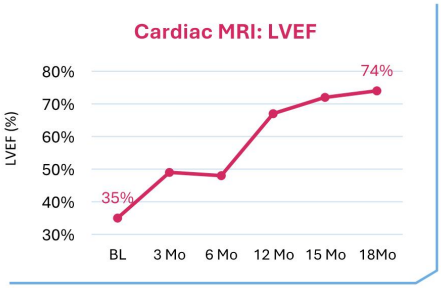
Majority of Participants (16/17)
- **Baseline LVEF:** Normal
- **Post therapy:** No change

One Participant (#13) with later stage cardiomyopathy
- **Baseline LVEF:** Low (35%)
- **Post Therapy:** Significant improvements across all cardiac biomarkers

Cardiac Improvements 18 months Post LX2006 Treatment in Participant with Low Baseline LVEF



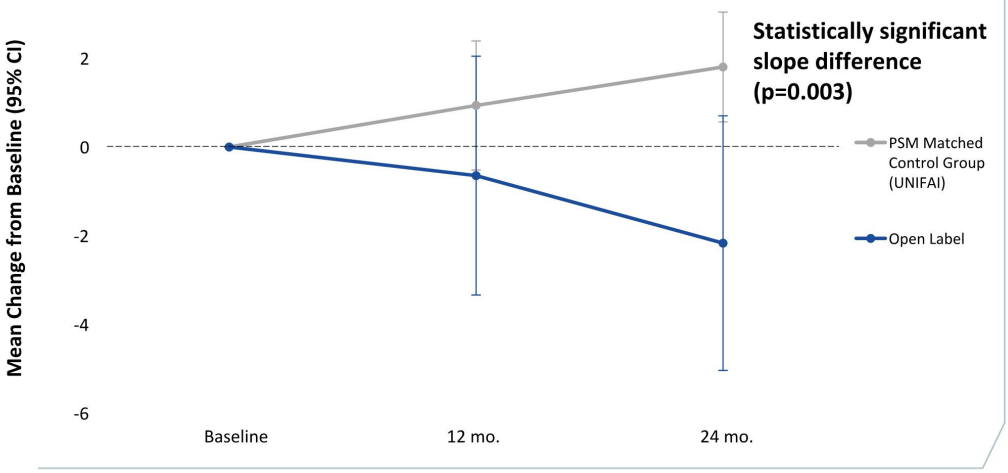




LVMI = left ventricular mass index, LVEF = left ventricular ejection fraction.
Note: Data as of December 2025.

Statistically significant improvement in mean mFARS scores for LX2006-treated participants compared to propensity-matched control cohort

Change in mFARS: Open Label Cohort (n=16) vs. UNIFAI Matched Control (n=45)



- ✓ mFARS validated clinical scale measures FA neurological progression; higher scores represent disease worsening
- ✓ Majority of LX2006-treated participants demonstrate mFARS improvement or stabilization at latest visit relative to baseline
- ✓ **New evidence of neurological functional improvement compared to propensity matched control, with annualized difference in progression of 2.3 points per year** (95% CI: 0.82-3.84)

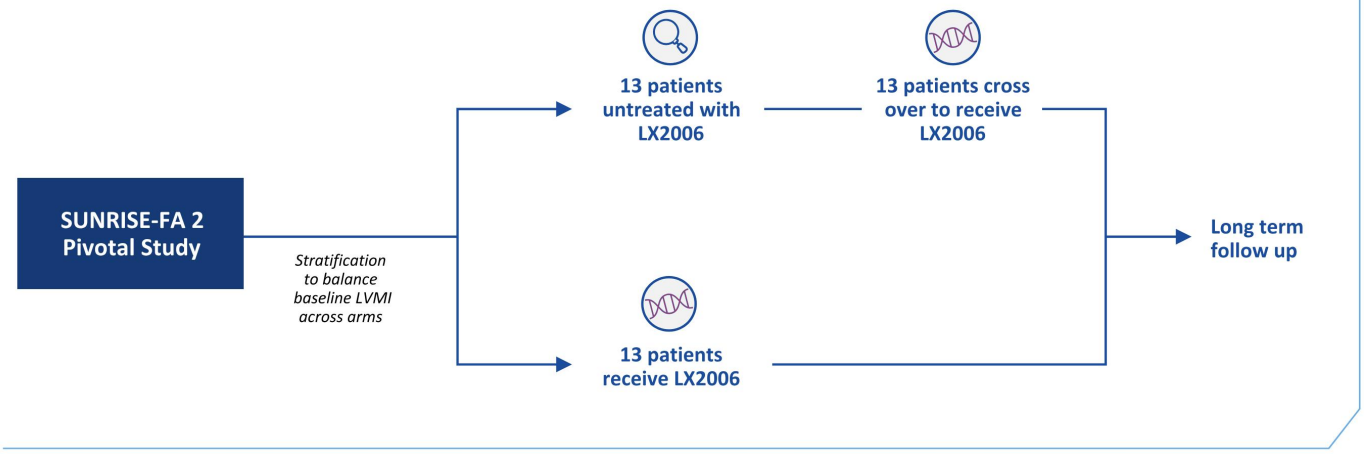
PSM, propensity score matched.
Note: Data as of December 2025. 16 patients treated with LX2006 in the Open Label study were matched to a control group of individuals in the Friedrich Ataxia Global Clinical Consortium UNIFIED Natural History Study of Friedrich's Ataxia (UNIFAI) in a 3:1 ratio. While some patients did not have 2 years of follow up, this model is using every patient's earlier visits to inform the rate-of-change estimate for mFARS (an annualized slope). Analysis performed by Christian Rumney in partnership with FARA.

LEXEO therapeutics

SUNRISE-FA 2 pivotal study design

SUNRISE FA2

Finalized Open-Label Study Design for LX2006



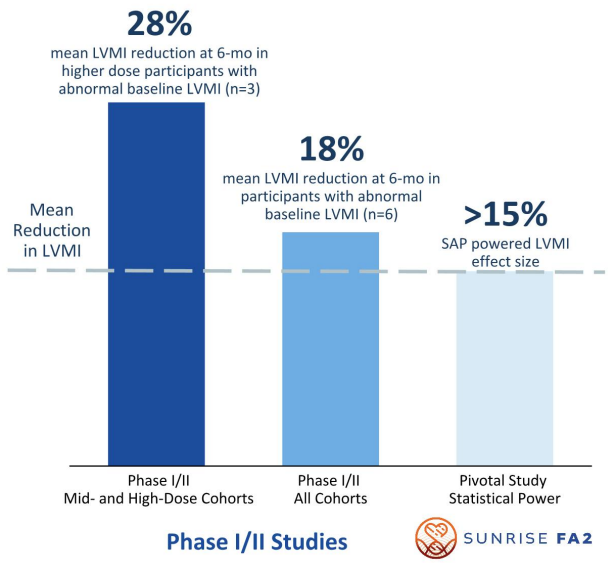
Eligible CLARITY-FA participants or new participants can enroll into the pivotal study[1]

LEXEO therapeutics

1. Eligible participants are those who test negative for neutralizing antibodies to AAVrh10 and meet the LVMI criteria (≥2SD above normal mean).

Phase I/II data showed clinically meaningful benefit in LVMI improvement

Phase I/II Results Exceed the Effect Size in LVMI Used to Power the SUNRISE-FA 2 Pivotal Study



SUNRISE FA2

Dose	• $1.2x10^{12}$ vg/kg, one-time IV infusion
Key Eligibility Criteria	• **Adults (16yrs+): Abnormal baseline LVMI**, ≥2SD above normal mean • Pediatric (6-15yrs): Abnormal baseline LV wall thickness, assessed via echocardiography. Pediatric cohorts assessed primarily for safety
Primary Endpoint (Adults)	• **LVMI**, via cMRI at 6 months
Key Secondary Endpoints	• mFARS, KCCQ, Hs-Troponin I, lateral wall thickness
Immune Suppression	• Corticosteroid use following LX2006 administration
Statistical Plan	• **Sample size:** 26 participants, 13 participants treated with LX2006 • Pivotal arms stratified to balance baseline LVMI • SAP powered for 15% or greater LVMI change at 6 months
Confirmatory Evidence Strategy	• Lexeo remains in ongoing discussions with the FDA • Potential use of certain secondary endpoints at the 12-month time point in SUNRISE-FA 2 to support full approval

SAP = statistical analysis plan, Vg/kg = vector genomes per kilogram, LVMI = left ventricular mass index, cMRI = cardiac magnetic resonance imaging, mFARS = modified Friedreich Ataxia Rating Scale, KCCQ = Kansas City Cardiomyopathy Questionnaire, Hs = high sensitivity.

LEXEO therapeutics

Summary: Finalized LX2006 pivotal study design with potential BLA filing in 1H 2028 under accelerated approval pathway

Finalized SUNRISE-FA 2 Pivotal Trial Protocol

Pivotal Study Design for Accelerated Approval

- **Primary endpoint with clinical relevance: LVMI**
- Evaluating LVMI at **6 months,** SAP powered for 15% or greater reduction
- Phase I/II data to be submitted for safety and comprehensive BLA review
- No need for frataxin assay or nonclinical murine bridging study

Statistical Analysis Plan

- **Open label design,** with no placebo or sham procedures
- 26 adult participants total, **13 adult participants treated with LX2006**
  - Pediatric cohorts (n≈6) will be assessed for safety following dosing in adults
- Random allocation of participants into LX2006 treatment arm or untreated control; **minimizes sources of bias without changing study size, duration or open-label design**

Manufacturing

- Approval to use optimized, high-yield Sf9-baculovirus manufacturing process to begin dosing patients in pivotal study
- **Clinical drug product already manufactured** at commercial scale and immediately available
- Anticipate FDA flexibility in PPQ, **supporting faster timelines to reach BLA filing**

BLA = biologics license application, LVMI = Left Ventricular Mass Index.

Strong path forward for LX2006

SUNRISE-FA 2 to be Initiated in Q2 2026, with First Patient Expected to be Enrolled by End of June

Phase I/II Results Exceed the Effect Size in LVMI Used to Power the Pivotal Study

Building Internal Commercial Capabilities to Support Successful Launch

Differentiated AAVrh10 Capsid and Commercial-Ready CMC Supply Chain

With Final SUNRISE-FA 2 Protocol, Lexeo Anticipates Potential Topline Data in 2H 2027 and BLA in 1H 2028

LEXEO therapeutics

Thank you

Exhibit 99.3

Lexeo Therapeutics
Corporate Overview

June 2026

Forward-looking statements

This presentation contains “forward-looking statements” within the meaning of the federal securities laws, including, but not limited to, Lexeo’s expectations and plans regarding its current product candidates and programs and the timing for receipt and announcement of data from its clinical trials, the timing and likelihood of potential regulatory developments, trial design changes and approval, and expectations regarding the time period over which Lexeo’s capital resources will be sufficient to fund its anticipated operations and estimates regarding Lexeo’s financial condition. Words such as “may,” “might,” “will,” “objective,” “intend,” “should,” “could,” “can,” “would,” “expect,” “believe,” “design,” “estimate,” “predict,” “potential,” “develop,” “plan” or the negative of these terms, and similar expressions, or statements regarding intent, belief, or current expectations, are forward-looking statements. While Lexeo believes these forward looking statements are reasonable, undue reliance should not be placed on any such forward-looking statements. These forward-looking statements are based upon current information available to the company as well as certain estimates and assumptions and are subject to various risks and uncertainties (including, without limitation, those set forth in Lexeo’s filings with the U.S. Securities and Exchange Commission (SEC)), many of which are beyond the company’s control and subject to change. Actual results could be materially different from those indicated by such forward-looking statements as a result of many factors, including but not limited to: the outcome of ongoing discussions with the U.S. Food and Drug Administration (FDA) regarding the design of our pivotal trial for accelerated approval pathway and the design of our confirmatory study for obtaining full approval; expectations regarding the initiation, progress, and expected results of Lexeo’s preclinical studies, clinical trials and research and development programs; the unpredictable relationship between preclinical study results and clinical study results; topline data and final results from our pivotal trial; delays in submission of regulatory filings or failure to receive regulatory approval; risks and uncertainties related to global macroeconomic conditions and related volatility; liquidity and capital resources; and other risks and uncertainties identified in Lexeo’s Quarterly Report on Form 10-Q for the quarterly period ended March 31, 2026, filed with the SEC on May 11, 2026, and subsequent future filings Lexeo may make with the SEC. New risks and uncertainties may emerge from time to time, and it is not possible to predict all risks and uncertainties. Lexeo claims the protection of the Safe Harbor contained in the Private Securities Litigation Reform Act of 1995 for forward-looking statements. Lexeo expressly disclaims any obligation to update or alter any statements whether as a result of new information, future events or otherwise, except as required by law.

LEXEO therapeutics

Dedicated to **reshaping heart health** by applying pioneering science to fundamentally change how cardiovascular disease is treated

Individuals and families impacted by Friedreich ataxia

LEXEO therapeutics

- **Genetic medicine leader with rare cardiac disease focus**
- **Proven experience in the clinic**
- **Platform designed for safety and scalability**

Building a leading cardiac gene therapy platform

Genetic cardiac disease expertise

Leader in genetic medicine for inherited cardiac diseases

Differentiated AAVrh10 capsid

Proven cardiac tropism allows for lower doses and improved therapeutic index

Innovative AAV manufacturing

Optimized Sf9 baculovirus manufacturing platform designed to support future commercial scale-up

Operating experience

Deep cardiac genetic medicine know-how, anchored by two clinical and two preclinical programs

Strong financial position

Cash runway into 2028, supporting multiple value creating milestones

LEXEO therapeutics

Advancing cardiac genetic medicines in diseases with high unmet need

Market opportunity:

High unmet need
Cardiomyopathies have few disease-modifying therapies and high morbidity/mortality

White space
Cardiac gene therapy is less competitive, offering opportunity to establish leadership

Transformative potential
Lexeo's vision is to fundamentally change the course of inherited cardiac disease with a single infusion

Lexeo cardiac programs and expertise:

Clinical:

- **LX2006** — Friedreich Ataxia Cardiomyopathy
- **LX2020** — PKP2 Arrhythmogenic Cardiomyopathy

Proven clinical experience with 27 patients treated using AAVrh10

Pre-Clinical:

- **LX2021** — Desmoplakin Cardiomyopathy
- **LX2022** — Hypertrophic Cardiomyopathy

Deep expertise in genetic cardiac disease models and IND enabling studies

LEXEO therapeutics

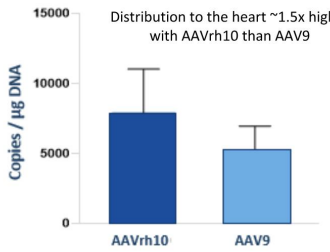
Lexeo's AAVrh10 is a highly differentiated capsid

Cardiac tropism of AAVrh10 may allow lower doses for cardiac gene therapy

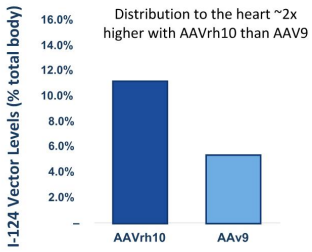
- **AAVrh10 cardiac tropism may allow for lower doses** compared to other vector serotypes while achieving targeted transgene biodistribution
- Observed ~1.5x to 2.0x greater biodistribution in the heart compared to AAV9 in multiple large animal models
- Observed greater trends of functional improvements in PKP2-murine model compared to AAV9
- AAVrh10 has been utilized systemically across multiple Lexeo clinical programs with **no clinically significant complement activation**; both LX2006 and LX2020 have been generally well-tolerated to date

Compelling Cardiac Tropism

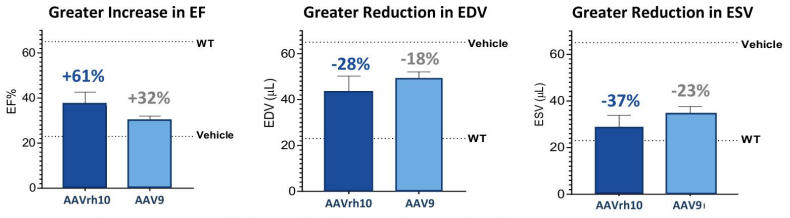
Yucatan Minipig Biodistribution[1]



NHP Biodistribution[2]



Greater Trends of Functional Improvement Versus AAV9 in PKP2-ACM Model[1]



Note: PKP2 homozygous mouse model administered with human PKP2 (N = 5 mice / group).

1 - Data presented at ASGCT 2023.
2 - Ballon DJ et al, Human Gene Therapy, 2020.

Lexeo manufactures AAVrh10 utilizing an optimized Sf9 baculovirus process

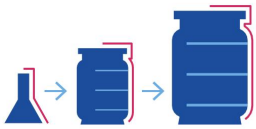
Innovative approach

- High yield, high quality Sf9 baculovirus manufacturing platform compared to conventional manufacturing (e.g. HEK based)

- LX2006 selected for **FDA CDRP program,** created to facilitate CMC registrational readiness and support faster patient access

Optimal potency

- Higher yields (1.0E15 vg/L)
- Greater downstream recovery (>55%)
- Fewer empty AAV capsids (<25%)
- Improved genomic purity owing to lack of plasmid transfections



Scalable manufacturing

- Sustainable and defined starting materials, similar to therapeutic protein process (e.g. cell banks, virus banks)
- Low overall complexity
- Enables robust commercialization
- Poised to deliver an industry-leading and potentially transformational COGS profile

LEXEO therapeutics

Lexeo's two clinical stage programs address devastating cardiac diseases

Focus:

Leveraging gene therapy to address devastating cardiac diseases with no existing disease-modifying treatments

LX2006

Friedreich Ataxia Cardiomyopathy

- Only program with clinical-stage data in FA cardiomyopathy, which accounts for death in up to 80% of people with FA
- Clinical data to date demonstrate an encouraging safety profile and sustained and deepening improvements across both cardiac and neurologic measures of FA
- Finalized SUNRISE-FA 2 pivotal protocol & SAP for accelerated approval; Study on track to initiate in Q2 2026; Expect topline data in 2H 2027 and potential BLA filing in 1H 2028

LX2020

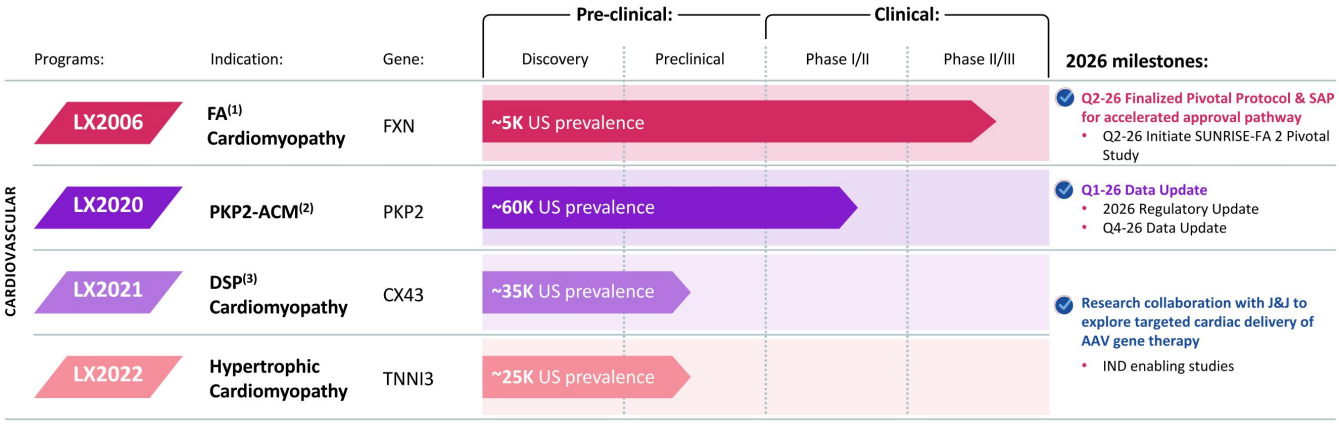
PKP2 Arrhythmogenic Cardiomyopathy

- Potential best-in-class treatment for PKP2-ACM; ~60K people in US with no disease-modifying treatment available
- Interim clinical data show encouraging early signals on efficacy and safety measures across patients dosed in the low and high dose cohorts
- 12-month data update for all high dose participants expected in Q4 2026; regulatory engagement expected in 2026.

FA - Friedreich Ataxia; FXN - Frataxin; LVMI - Left Ventricular Mass Index; ACM - arrhythmogenic cardiomyopathy; SAP – Statistical analysis plan.

LEXEO therapeutics

Our pipeline



Lexeo retains global rights across all programs.

1 - Friedreich ataxia.
2 - Plakophilin 2 Arrhythmogenic Cardiomyopathy.
3 - Desmoplakin.

LX2006

Friedreich Ataxia Cardiomyopathy (FA-CM)

LEXEO therapeutics

Cardiac complications are the leading cause of death in Friedreich Ataxia

FA is a **rare, progressive and devastating multisystem disease** caused by a loss of function mutation in the FXN gene[1].

With a typical age of onset between 5 and 15 years[2], individuals with FA experience a combination of cardiac and neurological manifestations, with **cardiac complications accounting for up to 80% of deaths**[1]

Cardiac dysfunction in FA is associated with a multitude of symptoms but ultimately presents as **cardiac hypertrophy and subsequent heart failure**[1]; **hypertrophy in childhood** is potentially associated with a **more severe phenotype**, with earlier progression to end-stage disease[3]

The only approved disease-specific treatment for FA demonstrated efficacy on neurological measures but was not evaluated for the treatment of cardiac dysfunction in clinical trials, **leaving significant unmet need within FA cardiomyopathy**[4]

~5,000
individuals affected by FA in the U.S.[2]

~15,000
individuals affected by FA worldwide[2]

Cardiac complications account for **up to 80%** of deaths in those with FA, with an average life expectancy of 35–40 years[1,5]

Up to 40% of adults with FA have left ventricular hypertrophy as defined by abnormal LVMI[6,7]

FA - Friedreich Ataxia;
FXN - Frataxin;
LVMI - Left Ventricular Mass Index.

1 - Payne R.M. JACC Basic Transl Sci, 2022;13;7(12):1267-1283.
2 - Friedreich's Ataxia Research Alliance, 2024.
3 - Norrish G., et al. Arch Dis Child, 2022;107(5), 450–455.
4 - Reetz, K., et al. Lancet Neurol, 2025;24(7):614-624.
5 - Indelicato, E., et al. Mov Disord, 2024;39(3), 510–518.
6 - Clinical Management Guidelines for Friedreich Ataxia. Chapter 4. The heart and cardiovascular system in Friedreich ataxia. 2022.
7 - Lexeo Therapeutics, Data on File, 2025.

LEXEO therapeutics

Timely, multidisciplinary care is critical to diagnose and manage FA-CM

Individuals with FA typically present with cardiac symptoms in adolescence, and face an average life expectancy of 35-40 years

Symptom onset

Early signs often associated with the onset of ataxia

~5% of young children present with cardiac symptoms years before ataxia[2]

Journey to diagnosis

Journey to diagnosis with genetic test can take years

Guidelines recommend an EKG and ECHO at diagnosis and annually[5]

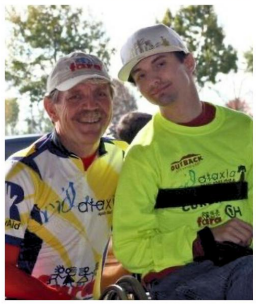
Cardiac dysfunction

Almost all individuals with FA will develop cardiomyopathy or cardiac dysfunction during their lifetime[1]

Life expectancy

Cardiac dysfunction is the cause of death in 60-80% of those with FA, often occurring by mid-30s[3,4]

Ron Bartek and his son, Keith, who passed from FA cardiomyopathy at age 24



"There are no approved treatments for the cardiomyopathy of FA. Time is of the essence."

Ron Bartek, Co-founder of FARA

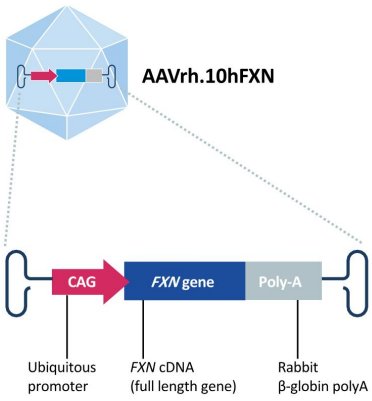
FARA Friedreich's Ataxia Research Alliance

1 - Regner S, et al. American Journal of Cardiology, 2012.
2 - Norrish G., et al. Friedreich's ataxia-associated childhood hypertrophic cardiomyopathy: a national cohort study. Archives of disease in childhood, 107(5), 450–455, 2022.
3 - Subramoney S, et al. MDA Clinical and Scientific Conference, 2023.
4 - Pousset, F. et al. JAMA Neurol, 2015;72(11):1334-1341.
5 - Clinical Management Guidelines for Friedreich Ataxia. Chapter 4. The heart and cardiovascular system in Friedreich ataxia. 2022.

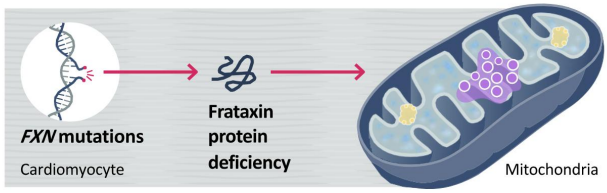
LEXEO therapeutics

LX2006 has the potential to treat the root cause of FA cardiomyopathy: significant decrease in frataxin in the heart

LX2006 construct:

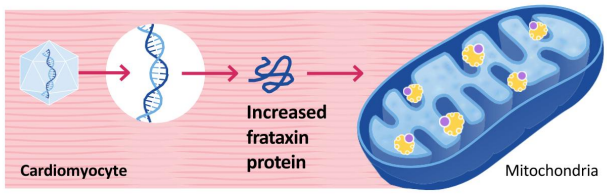


FA cardiomyopathy:



Frataxin deficiency results in **mitochondrial dysfunction** and leads to **deficient energy production** in hypertrophic cardiomyocytes

LX2006 mechanism:



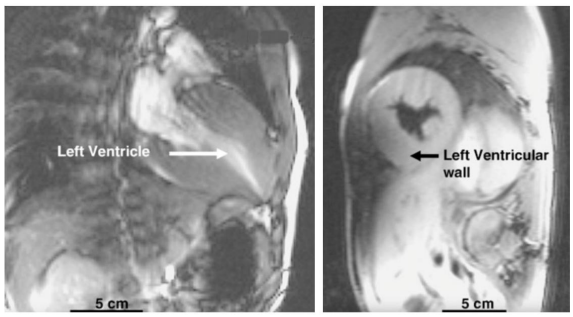
Transfer of *FXN* gene to cardiomyocytes is intended to **increase frataxin levels** in the mitochondria and **improve cardiac muscle cell function**

AAV, Adeno-Associated Virus; CAG, Chicken Beta-Actin; cDNA, Copy DNA; FA, Friedreich Ataxia; FXN, Frataxin; Poly-A, Poly Adenosine.

Elevated LVMI predicts mortality in FA and is not expected to decrease significantly without intervention

Increases in LVMI independently predict mortality in Friedreich Ataxia (FA)

Natural history study showed a **19%** higher risk of death per 10g/m^2 (HR 1.19; 95% CI)[1]



MRI of individual with FA cardiomyopathy demonstrating significant hypertrophy.

No Significant Change in LVMI or LV Mass (LVM) Control Across Multiple Randomized Controlled Trials

Disease	Measure[3]	LVMI or LVM Percent Change from Baseline in Placebo or Control Arm
Fabry Disease	LVMI at 18 months on ERT	-2 g/m^2 (-2.2%)
Amyloidosis (ATTR)	LVM at 18 Months	+0.6g (0.3%)
HCM	LVMI at 30 Weeks	-1.6 g/m^2 (-1.7%)

Note: Percent change in LVM / LVMI calculated based on change applied to baseline levels.

-10% 0% 10%

- Concentric hypertrophy, with increased left ventricular mass and wall thickness, is a hallmark of FA cardiomyopathy[1]
- In FA and many other cardiac diseases, elevated LVMI is not expected to significantly decrease without intervention[1,3] – and abnormal LVMI is closely correlated with poor outcomes[2]
- Reduction in LVMI may improve cardiac outcomes; FDA alignment on endpoint for pivotal trial in FA cardiomyopathy

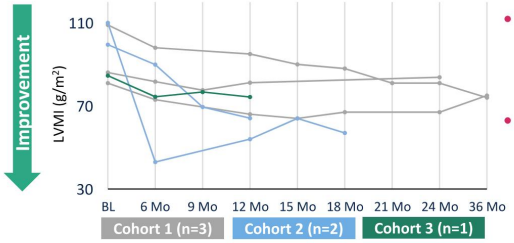
HR - Hazard Ratio; CI - Confidence Internal;
LVMI - Left Ventricular Mass Index.
Note: 10g/m^2 represents approximately 10% change in LVMI based on echocardiography measurements of upper bound of normal (105 g/m^2).

1 - Pousset, F. et al. JAMA Neurol, 2015;72(11):1334-1341.
2 - Includes heart failure with preserved ejection fraction, Shah et al, Journal of American College of Cardiology, 2019; hypertensive cardiomyopathy, Muiesan et al, Hypertension, 2004; Fabry disease, Orsborne et al, Journal of American College of Cardiology, 2022; and obstructive hypertrophic cardiomyopathy, Hegde et al, Journal of American College of Cardiology, 2021.
3 - Hughes DA, et al. *J Med Genet,* 2017;54:288–296; Migalastat; Solomon S, et al. *Circulation,* 2018. Patisiran; Saberi S, et al. *Circulation,* 2021;143:606–608. Mavacamten; Data on file.

LEXEO therapeutics

LX2006 clinical data show sustained or deepening improvements across cardiac measures of FA; LX2006 generally well tolerated

Cardiac MRI: LVMI (n=6; abnormal at baseline)



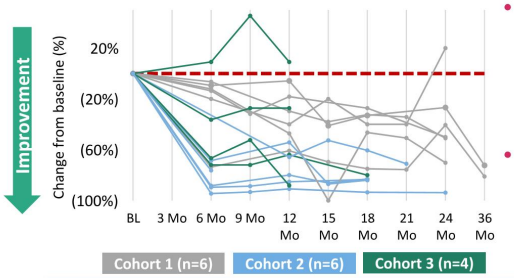
- Majority of participants reach or remain in normal LVMI range at latest visit
- **Durable LVMI improvement maintained out to three years following treatment**

Cardiac MRI: LVMI

Mean LVMI Change	
Participants at 12-mo visit *(n=6)*	-23%
Participants at 6-mo visit[1] *(n=6)*	-18%
Cohorts 2 and 3 at 12-mo visit *(n=3)*	-33%
Cohorts 2 and 3 at 6-mo visit[1] *(n=3)*	-28%

Among participants with abnormal baseline LVMI (key inclusion criteria for pivotal study; n=6):

Biomarkers: High-Sensitivity Troponin I (n=17)



- **16 of 17 participants have significantly reduced or stable troponin I,** excluding participant with myocarditis[2]
- Highly specific, blood-based marker of myocardial injury

LX2006 generally well tolerated

- LX2006 generally well tolerated across 17 participants dosed with no Grade 3 treatment-related SAEs to date
- No clinically significant complement activation
- Minimal, transient LFT elevations
- No signs of frataxin over-expression observed in cardiac tissue
- One previously disclosed, possibly treatment-related Grade 2 event of asymptomatic myocarditis observed one year after dosing

(1) Participant 11 6-month visit not conducted due to hurricane; 3-month visit used for mean calculations. (2) Participant 10 not included in Hs-TNI chart due to scale. Values are +29% at 6M, +45% at 9M, +2,702% at 12M, +1,857% at 18M, +1,620% at 21M, and +1,458% at 24M as of most recent safety monitoring.
Note: Data as of December 2025.

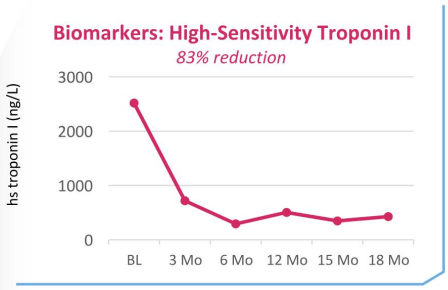
Cardiac function improvement observed in individual with later stage cardiomyopathy

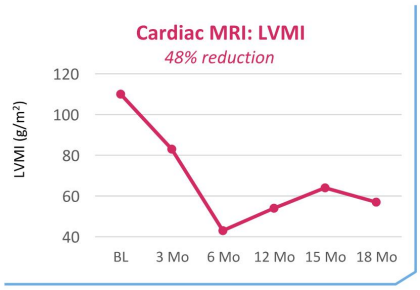
Effect of LX2006 on Cardiac Function

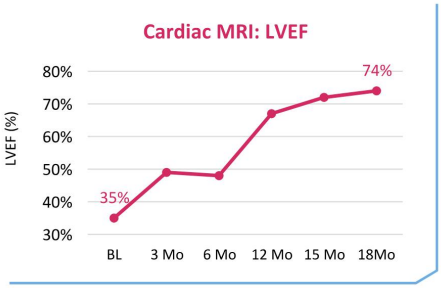
Majority of Participants (16/17)
- **Baseline LVEF:** Normal
- **Post therapy:** No change

One Participant (#13) with later stage cardiomyopathy
- **Baseline LVEF:** Low (35%)
- **Post Therapy:** Significant improvements across all cardiac biomarkers

Cardiac Improvements 18 months Post LX2006 Treatment in Participant with Low Baseline LVEF



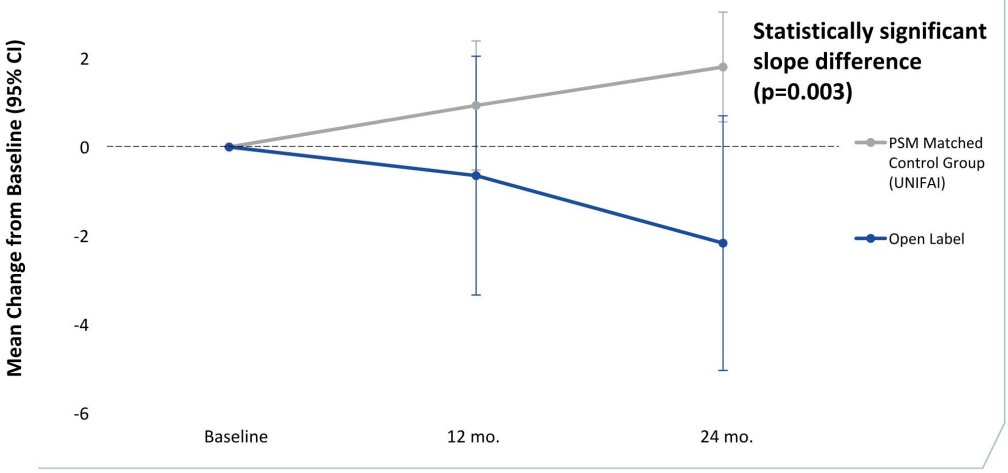




LVMI = left ventricular mass index, LVEF = left ventricular ejection fraction.
Note: Data as of December 2025.

Statistically significant improvement in mean mFARS scores for LX2006-treated participants compared to propensity-matched control cohort

Change in mFARS: Open Label Cohort (n=16) vs. UNIFAI Matched Control (n=45)



- ✓ mFARS validated clinical scale measures FA neurological progression; higher scores represent disease worsening
- ✓ Majority of LX2006-treated participants demonstrate mFARS improvement or stabilization at latest visit relative to baseline
- ✓ **New evidence of neurological functional improvement compared to propensity matched control, with annualized difference in progression of 2.3 points per year** (95% CI: 0.82-3.84)

PSM, propensity score matched.
Note: Data as of December 2025. 16 patients treated with LX2006 in the Open Label study were matched to a control group of individuals in the Friedrich Ataxia Global Clinical Consortium UNIFIED Natural History Study of Friedrich's Ataxia (UNIFAI) in a 3:1 ratio. While some patients did not have 2 years of follow up, this model is using every patient's earlier visits to inform the rate-of-change estimate for mFARS (an annualized slope). Analysis performed by Christian Rumney in partnership with FARA.

LEXEO therapeutics

Finalized SUNRISE-FA 2 pivotal protocol and SAP for LX2006

Study on track to initiate in Q2 2026; Expect topline data in 2H 2027 and potential BLA filing in 1H 2028

SUNRISE **FA2**

- **Study design:** Open-label pivotal study with untreated control arm (no placebo or sham)
- **Dose:** $1.2x10^{12}$ vg/kg, one-time IV infusion
- **Sample Size:** 26 participants, 13 participants treated with LX2006
- **Key Eligibility Criteria:** Adults (16yrs+): Abnormal baseline LVMI, ≥2SD above normal mean
  - Pediatric (6-15yrs): Abnormal baseline LV wall thickness, assessed via echocardiography. Pediatric cohorts assessed primarily for safety
- **Primary Endpoint:** LVMI, via cMRI at 6 months
- **Statistical Analysis Plan**: Pivotal arms stratified to balance baseline LVMI
  - SAP powered for 15% or greater LVMI change at 6 months
- **Key Secondary Endpoints**: mFARS, KCCQ, Hs-Troponin I, lateral wall thickness
- **Confirmatory Evidence Strategy**: Lexeo remains in ongoing discussions with the FDA regarding potential use of certain secondary endpoints at the 12-month time point in SUNRISE-FA 2 to support full approval

Phase I/II results **exceed the 15% effect size in LVMI** used to power the SUNRISE-FA 2 pivotal study

28% mean LVMI reduction at 6-mo in higher dose participants with abnormal baseline LVMI (n=3)

18% mean LVMI reduction at 6-mo in participants with abnormal baseline LVMI (n=6)

Vg/kg = vector genomes per kilogram, LVMI = left ventricular mass index, cMRI = cardiac magnetic resonance imaging, mFARS = modified Friedreich Ataxia Rating Scale, KCCQ = Kansas City Cardiomyopathy Questionnaire, Hs = high sensitivity.

LX2020

Plakophilin 2 Arrhythmogenic Cardiomyopathy (PKP2-ACM)

LEXEO therapeutics

Arrhythmogenic cardiomyopathy caused by mutations in the *PKP2* gene: devastating genetic heart disease with clearly defined mechanism

PKP2-ACM is a **rare, genetic cardiac disease** caused by loss of function mutations in the *PKP2* gene

Progressive replacement of cardiac muscle with fatty fibrotic tissue, with an **increased risk of ventricular arrhythmias and sudden cardiac death (SCD) due to disrupted cardiac electrical signals**[1][2]

Approximately 23% of individuals experience **SCD as the presenting symptom** and individuals often suffer from **anxiety and reduced quality of life**[3][4]

ICDs are commonly utilized but **do not halt disease progression**. Individuals experience ongoing arrhythmias, along with both appropriate and inappropriate shocks necessitating escalating treatments, **underscoring severe unmet need**[2][3]

Prevalence:

US ~60,000

Mortality:

23%

of individuals experience SCD as presenting symptom

Standard of care:

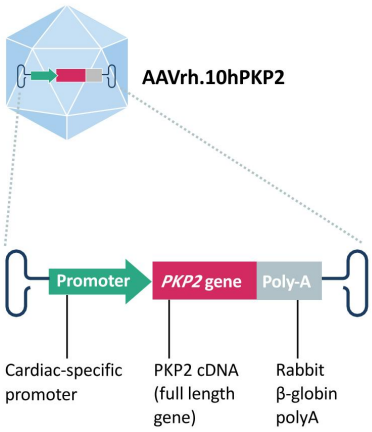
Current management methods are focused on relieving symptoms and preventing SCD, **and do not address the underlying cause of ACM.**

ACM, arrhythmogenic cardiomyopathy; ARVD/C, arrhythmogenic right ventricular dysplasia/cardiomyopathy; ICD implantable cardioverter defibrillator; SDC sudden cardiac death.
(1) Cedars-Sinai ARVC overview. (2023). (2) Corrado et al. (2017). (3) Dalal et al. (2005). (4) Day, Circulation: Cardiovascular Genetics (2012).

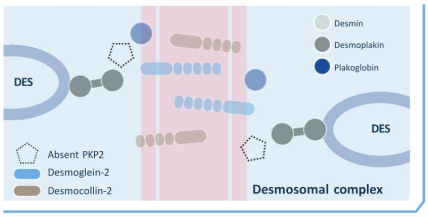
LEXEO therapeutics

Mutations in the *PKP2* gene are the most common genetic cause of ACM; LX2020 delivers a full-length *PKP2* gene to cardiomyocytes, restoring the desmosome

LX2020 construct:

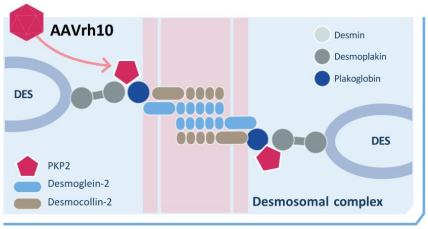


PKP2-ACM:



Absence of PKP2 results in impairment of cardiac desmosomes, leading to abnormal cardiac rhythms (arrhythmias) and onset of cardiac dysfunction

LX2020 mechanism:



PKP2 expression **is expected to restore the balance of desmosomal proteins** by scaffolding adjacent cell-cell junctional proteins

The restoration of PKP2 may lead to **improvement in cardiac electrical and mechanical function** as well as **inhibit further structural damage**

ACM, arrhythmogenic cardiomyopathy.

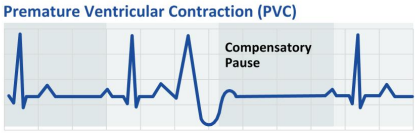
Individuals with ACM experience high arrhythmia burden with a spectrum of severity

Severity of Arrhythmias

Premature Ventricular Contractions (PVCs)

Normal Sinus Rhythm

Premature Ventricular Contraction (PVC)

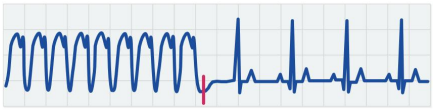


- Early indicator of electrical instability that **can trigger more severe/sustained arrhythmia**

Non-Sustained Ventricular Tachycardia (NSVT)

- **≥3 ventricular beats in a row, lasting under 30 seconds**; self-terminating
- Closely associated with **increased risk of sustained VT, ICD shock and SCD**[1]; impacts patient anxiety and quality of life

Sustained VT / ICD Shock



Ventricular Tachycardia | **Cardioversion Shock** | **Sinus Rhythm**

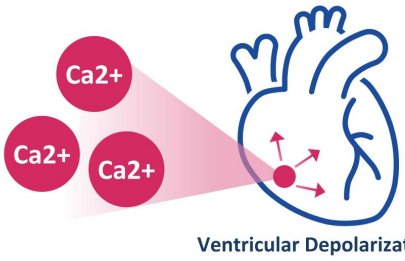
- ≥3 ventricular beats in a row **lasting over 30 seconds**
- **Can cause collapse, cardiac arrest or SCD**; sustained VT may be terminated by ICD shock to restore normal rhythm

SCD, sudden cardiac death; ICD, implantable cardioverter defibrillator; VT, ventricular tachycardia.

(1) Gasperetti A, et al. *JAMA Cardiology*, 2022; 7

Premature ventricular contractions (PVCs) may trigger ventricular tachycardia (VT); measures are related but driven by potentially different mechanisms

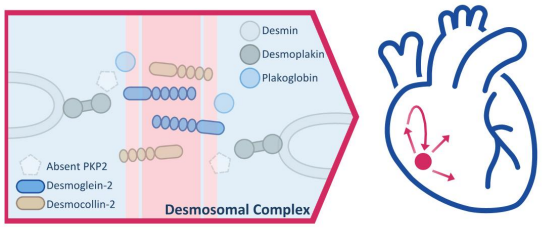
PVCs Are a Trigger That Can Precipitate More Severe Arrhythmias



- **PKP2 deficient myocytes demonstrate calcium instability**; Ca^{2+} leak can disrupt refractory period and depolarization[1,2]
- PVCs are not reentry loops but can trigger them
- Calcium instability due to PKP2 deficiency **likely driven by downstream proteins**, which may take more time to repair versus the desmosome with direct PKP2 function

VT is Caused When a Trigger (PVC) Meets an Electrical or Structural Vulnerability

PKP2 Deficiency Reduces Cell-to-Cell Adhesion, Slowing Electrical Conduction and Causing Reentry Loops:



- **VT occurs when a PVC meets a vulnerability like slow electrical conduction**, enabling the premature beat to propagate as a reentry loop[3,4]
- Reentry loops are self-sustaining electrical circuits that override normal rhythm, consistently re-exciting the heart
- PKP2 deficiency causes electrical and structural vulnerabilities like slow conduction and scarring; hypothesis that **VT could be reduced if vulnerabilities are improved even if PVCs persist**

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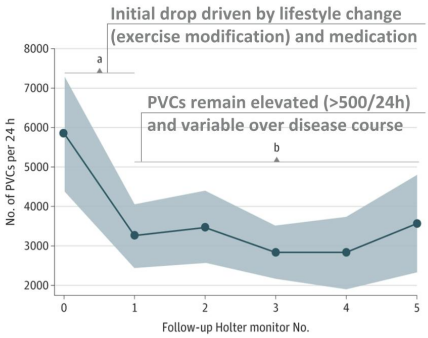
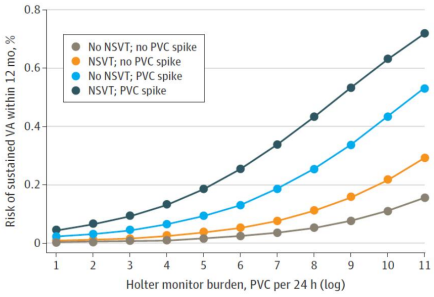
(1) Cerrone et al. *Nature Comm,* 2017. (2) Kim et al. *Circulation,* 2019. (3) Sato P. et al. *Circulation Research,* 2009. (4) Oxford E.M et al. *Circulation Research,* 2007.

In people with ACM, sustained VT risk is predicted by increased PVC burden and by non-sustained VT events

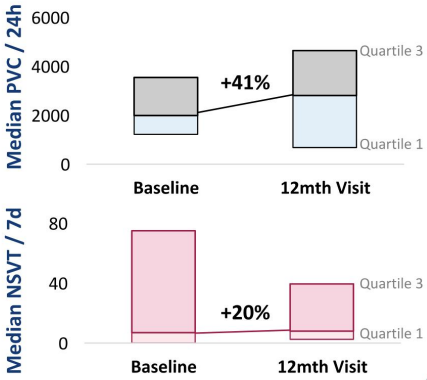
PVC burden in ACM decreases initially after diagnosis but persists long term[1]



VT risk increases with PVCs and NSVT[1]



Prospective natural history SNAPSHOT (n=15)



Participants mean 8 years after diagnosis

While lifestyle modification may reduce PVCs immediately following diagnosis, Lexeo-sponsored SNAPSHOT natural history data suggests that PVCs and NSVT may increase later in disease progression, both of which are associated with greater VT risk

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1. Gasperetti A, et al. JAMA Cardiol. 2022;7(4):378–385

Lexeo's role in advancing PKP2-ACM research

HEROIC PKP2

Phase I/II Trial

Objective: Assess the safety and efficacy of LX2020 in individuals with PKP2-ACM

Dose: 2.0E13 vg/kg (Cohort 1), 6.0E13 vg/kg (Cohorts 2, 3)

Key Endpoints: PKP2 expression, VT, PVC, QRS, T-wave inversion, cardiac function, PROs

Status: Ongoing (fully enrolled, n=10)

SNAPSHOT PKP2

Retrospective EMR Review and Prospective Observational Natural History Study

Objective: Evaluate the clinical burden of illness for patients with PKP2-ACM, and prospectively evaluate changes in key cardiac parameters and patient-reported outcome measures (PROs) associated with PKP2-ACM progression

Dose: N/A

Key Assessments: VT, PVC, QRS, T-wave inversion, cardiac function, PROs

Status: Ongoing (actively recruiting)

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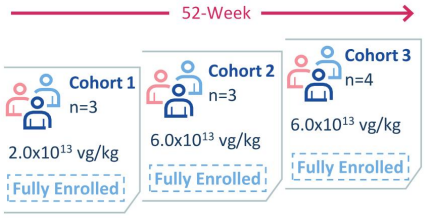
LX2020 is being evaluated in an ongoing phase 1/2 study (HEROIC-PKP2); enrollment completed in Q4 2025

1 Study Design & Objective

Design:
52-week open-label study with a **4-year** long term follow up

Objective:
To assess the **safety** and **efficacy** of LX2020 in individuals with PKP2-ACM



2 Key Inclusion Criteria

- Adults (18-65 years)
- Diagnosis of ACM with documented PKP2 mutation
- Existing ICD that is MRI compatible and minimum threshold of PVCs / 24-hr
- Neutralizing anti-AAVrh.10 titer cutoff

3 Key Measurements

- Ventricular arrhythmias and associated measures (PVC, VT, QRS, T-wave inversion)
- Cardiac Structure & Function (EF, EDV, ESV)
- Change in Symptoms (NYHA Class and PROs)
- PKP2 Protein Expression (quantitative WB)

PVC, Premature Ventricular Contraction; hsTnI, High Sensitivity Troponin I; WB, Western Blot; ECG, Electrocardiogram; NYHA, New York Heart Association; PROs, Patient Reported Outcomes.
Note: LX2020 is administered systemically; participants receive immune suppression with prednisone and sirolimus beginning on the day prior to treatment through 12 weeks following LX2020 administration.

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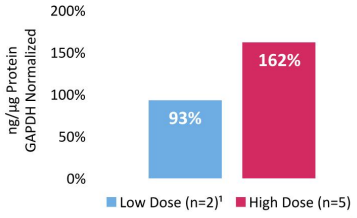
Interim results demonstrate increased PKP2 expression and potential for LX2020 to reduce severe arrhythmia burden

Mean change in PKP2 expression from baseline (western blot)

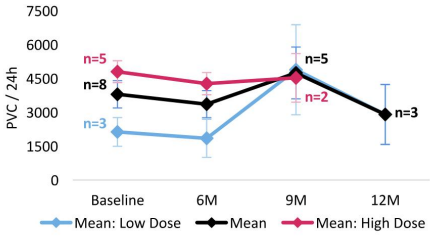


Patient reported outcomes

4 of 5

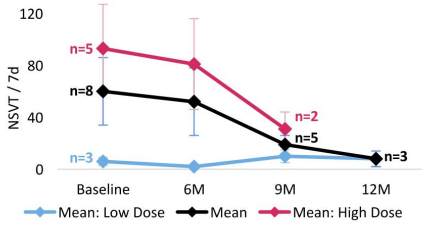
participants at high dose report improvement relative to baseline on the Patient Global Impression of Change (PGIC) scale

Mean PVC change



- **PVCs reduced or stabilized in majority of participants** with >6 months of follow up
- **-14% improvement** in mean PVCs at latest visit in high-dose cohort

Mean NSVT change



- **NSVT reduced or stabilized in majority of participants** with >6 months of follow up
- **-22% improvement** in mean NSVT at latest visit in high-dose cohort

LX2020 generally well tolerated

- LX2020 generally well tolerated across ten participants dosed
- No clinically significant complement activation
- Elevations in liver function tests (LFT) observed in seven participants at the high-dose, treated successfully per trial protocol with no complications or hospitalization[2]
- No participants discontinued from study
- One previously disclosed Grade 3 serious adverse event of sustained ventricular tachycardia (VT) was observed three months after dosing. This event is consistent with the natural course of PKP2-ACM and its known clinical manifestations. The participant was successfully treated with anti-arrhythmic medication and discharged with no additional intervention required.

Note: Data as of January 2026.
(1) Participant 3 elected not to undergo a post-treatment biopsy (2) Five participants' elevations occurred following steroid tapering and resolved with re-introduction of low-dose prednisone; two participants' elevations occurred prior to steroid tapering and resolved with increased prednisone and sirolimus treatment; all elevations have since resolved without other complications or hospitalization, and no other medications were required for resolution

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Preclinical Programs

Lexeo is also advancing two preclinical cardiac gene therapy programs

LX2021

Desmoplakin Cardiomyopathy

- High unmet need characterized by extensive fibrosis, high arrhythmic risk, and high heart failure burden
- 30-50% mortality within 5 years of diagnosis for dilated phenotype
- ~35K patients in U.S.
- IND-enabling studies and potential regulatory engagement in 2026

LX2022

Hypertrophic Cardiomyopathy

- TNNI3 variants compose 3-5% of all HCM cases, causing cardiomyopathy, clinical heart failure and shortened lifespan
- Non-obstructive phenotype, often with preserved EF; myosin inhibitors not effective
- ~25K patients in U.S.

+2026 research collaboration with Johnson & Johnson exploring novel routes of administration for cardiac AAV gene therapy to maximize safety and efficacy

LEXEO therapeutics

Lexeo – a leader in cardiac gene therapy

1. Leader in cardiac genetic medicine addressing **high unmet need** and **clear market opportunity**
2. **Catalyst rich 2026** with multiple key milestones expected across **two clinical stage programs**
3. Differentiated **AAVrh10 capsid** and innovative **Sf9 baculovirus manufacturing** platform
4. **Advancing toward late-stage development**; SUNRISE-FA 2 pivotal study on track to initiate in Q2 2026 with BLA filing expected 1H 2028 under accelerated approval pathway
5. Strong financial position with **cash runway into 2028**

LEXEO therapeutics

LEXEO therapeutics

Thank You