

**UNITED STATES  
SECURITIES AND EXCHANGE COMMISSION**  
Washington, D.C. 20549

**FORM S-8**

**REGISTRATION STATEMENT  
UNDER  
THE SECURITIES ACT OF 1933**

**LEXEO THERAPEUTICS, INC.**

(Exact name of Registrant as specified in its charter)

**Delaware**  
(State or other jurisdiction of incorporation or  
organization)

**85-4012572**  
(I.R.S. Employer Identification No.)

**345 Park Avenue South, Floor 6  
New York, New York, 10010  
(212) 547-9879**  
(Address of principal executive offices, including zip code)

**Lexeo Therapeutics, Inc. 2023 Equity Incentive Plan  
Lexeo Therapeutics, Inc. 2023 Employee Stock Purchase Plan  
(Full title of the plan)**

**R. Nolan Townsend  
Chief Executive Officer  
Lexeo Therapeutics, Inc.  
345 Park Avenue South, Floor 6  
New York, New York 10010  
(212) 547-9879**  
(Name, address and telephone number, including area code, of agent for service)

*Copies to:*

**Megan J. Baier  
David G. Sharon  
Wilson Sonsini Goodrich & Rosati, P.C.  
1301 Avenue of the Americas  
New York, New York 10019  
(212) 999-5800**

**Louis Tamayo  
Chief Financial Officer  
Lexeo Therapeutics, Inc.  
345 Park Avenue South, Floor 6  
New York, New York 10010  
(212) 547-9879**

Indicate by check mark whether the registrant is a large accelerated filer, an accelerated filer, a non-accelerated filer, a smaller reporting company or an emerging growth company. See the definitions of “large accelerated filer,” “accelerated filer,” “smaller reporting company,” and “emerging growth company” in Rule 12b-2 of the Exchange Act.

Large accelerated filer	<input type="checkbox"/>	Accelerated filer	<input type="checkbox"/>
Non-accelerated filer	<input checked="" type="checkbox"/>	Smaller reporting company	<input checked="" type="checkbox"/>
		Emerging growth company	<input checked="" type="checkbox"/>

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 7(a)(2)(B) of the Securities Act.

## PART I

### INFORMATION REQUIRED IN THE SECTION 10(A) PROSPECTUS

The information called for by Part I of Form S-8 is omitted from this Registration Statement in accordance with Rule 428 of the Securities Act of 1933, as amended (the “Securities Act”) and the instructions to Form S-8. In accordance with the rules and regulations of the Securities and Exchange Commission (the “Commission”) and the instructions to Form S-8, such documents are not being filed with the Commission either as part of this Registration Statement or as prospectuses or prospectus supplements pursuant to Rule 424 of the Securities Act.

## PART II

### INFORMATION REQUIRED IN REGISTRATION STATEMENT

#### Item 3. Incorporation of Documents by Reference.

Lexeo Therapeutics, Inc. (the “Registrant”) hereby incorporates by reference into this registration statement (the “Registration Statement”) the following documents previously filed with the Commission:

(1) The Registrant’s Annual Report on Form [10-K](#) (including those portions of the Registrant’s definitive proxy statement relating to its 2026 annual meeting of stockholders that are incorporated by reference in the Registrant’s Annual Report on Form 10-K) for the fiscal year ended December 31, 2025 filed with the SEC on March 30, 2026;

(2) All other reports filed pursuant to Section 13(a) or 15(d) of the Securities Exchange Act of 1934, as amended (the “Exchange Act”), since the end of the fiscal year covered by the Annual Report (other than the portions of these documents not deemed to be filed); and

(3) The description of the Registrant’s Common Stock contained in the Registrant’s Registration Statement on Form 8-A filed on November 1, 2023 (File No. 001-41855) under Section 12(b) of the Exchange Act, including any amendment or report filed for the purpose of updating such description.

All documents filed by the Registrant pursuant to Sections 13(a), 13(c), 14 and 15(d) of the Exchange Act on or after the date of this Registration Statement and prior to the filing of a post-effective amendment to this Registration Statement that indicates that all securities offered have been sold or that deregisters all securities then remaining unsold shall be deemed to be incorporated by reference in this Registration Statement and to be part hereof from the date of filing of such documents; provided, however, that documents or information deemed to have been furnished and not filed in accordance with the rules of the Commission shall not be deemed incorporated by reference into this Registration Statement. Any statement contained in a document incorporated or deemed to be incorporated by reference herein shall be deemed to be modified or superseded for purposes of this Registration Statement to the extent that a statement contained herein or in any subsequently filed document which also is deemed to be incorporated by reference herein modifies or supersedes such statement. Any such statement so modified or superseded shall not be deemed, except as so modified or superseded, to constitute a part of this Registration Statement.

#### Item 4. Description of Securities.

Not applicable.

#### Item 5. Interests of Named Experts and Counsel.

Not applicable.

#### Item 6. Indemnification of Directors and Officers.

The Registrant is incorporated under the laws of the State of Delaware. Section 102 of the Delaware General Corporation Law permits a corporation to eliminate the personal liability of directors and officers of a corporation to the corporation or its stockholders for monetary damages for a breach of fiduciary duty as a director and officer, except where the director or officer authorized the payment of a dividend or approved a stock repurchase in violation of Delaware corporate law, breached such person’s duty of loyalty, failed to act in good faith, engaged in intentional misconduct or knowingly violated a law, or obtained an improper personal benefit, and except for any action by or in the right of the corporation against an officer. The Registrant’s amended and restated certificate of incorporation contains provisions that eliminate the liability of its directors and officers for monetary damages to the fullest extent permitted under applicable law.

Section 145 of the Delaware General Corporation Law generally provides that a corporation has the power to indemnify a director, officer, employee or agent of the corporation and certain other persons serving at the request of the corporation in related

capacities against expenses (including attorneys' fees), judgments, fines and amounts paid in settlements actually and reasonably incurred by the person in connection with an action, suit or proceeding to which such person is or is threatened to be made a party by reason of such position, if such person acted in good faith and in a manner such person reasonably believed to be in or not opposed to the best interests of the corporation, and, in any criminal action or proceeding, had no reasonable cause to believe such conduct was unlawful, except that, in the case of actions brought by or in the right of the corporation, no indemnification shall be made with respect to any claim, issue or matter as to which such person shall have been adjudged to be liable to the corporation unless and only to the extent that the Court of Chancery or other adjudicating court determines that, despite the adjudication of liability but in view of all of the circumstances of the case, such person is fairly and reasonably entitled to indemnity for such expenses which the Court of Chancery or such other court shall deem proper.

As permitted by the Delaware General Corporation Law, the Registrant's amended and restated bylaws provide that: (i) the Registrant is required to indemnify its directors to the fullest extent not prohibited by the Delaware General Corporation Law; (ii) the Registrant may, in its discretion, indemnify its officers, employees and agents as set forth in the Delaware General Corporation Law; (iii) the Registrant is required, upon satisfaction of certain conditions, to advance all expenses incurred by its directors in connection with certain legal proceedings; (iv) the rights conferred in the bylaws are not exclusive; and (v) the Registrant is authorized to enter into indemnification agreements with its directors, officers, employees and agents.

The Registrant has entered into indemnification agreements with its directors and executive officers that generally require it to indemnify them against expenses, judgments, fines, settlements and other amounts that any such person becomes legally obligated to pay in connection with any proceeding, whether actual or threatened, to which such person may be made a party by reason of the fact that such person is or was a director or officer of the Registrant or any of its affiliates, provided such person acted in good faith and in a manner such person reasonably believed to be in, or not opposed to, the Registrant's best interests.

The Registrant maintains a directors' and officers' liability insurance policy that covers its directors and officers with respect to certain liabilities, including liabilities arising under the Securities Act, or otherwise.

#### Item 7. Exemption from Registration Claimed.

Not applicable.

#### Item 8. Exhibits.

The Registrant has filed the exhibits listed on the accompanying Exhibit Index of this Registration Statement.

#### EXHIBIT INDEX

Exhibit Number	Exhibit Description	Form	Incorporated by Reference			Filed or Furnished Herewith
			File No.	Exhibit	Filing Date	
4.1	<a href="#">Amended and Restated Certificate of Incorporation (as amended and currently in effect)</a>	8-K	001-41855	3.1	November 7, 2023	
4.2	<a href="#">Amended and Restated Bylaws (as amended and currently in effect)</a>	8-K	001-41855	3.2	November 7, 2023	
4.3	<a href="#">Amended and Restated Investors' Rights Agreement, dated August 10, 2021, by and among the Registrant and certain of its stockholders</a>	S-1	333-274777	4.1	September 29, 2023	
4.4	<a href="#">Form of common stock certificate of the Registrant</a>	S-1/A	333-274777	4.2	October 30, 2023	
5.1	<a href="#">Opinion of Wilson Sonsini Goodrich &amp; Rosati, P.C.</a>					X
23.1	<a href="#">Consent of KPMG LLP, independent registered public accounting firm</a>					X
23.2	<a href="#">Consent of Wilson Sonsini Goodrich &amp; Rosati, P.C. (included in Exhibit 5.1 hereto)</a>					X
24.1	<a href="#">Power of Attorney (included on the signature page hereto)</a>					X
99.1	<a href="#">The Registrant's 2023 Equity Incentive Plan and Forms of Option Grant Notice and Agreement, Exercise Notice, Early Exercise Notice and Restricted Stock Award Notice</a>	S-1/A	333-274777	10.2	October 30, 2023	

## Item 9. Undertakings.

A. The undersigned Registrant hereby undertakes:

- (1) To file, during any period in which offers or sales are being made, a post-effective amendment to this Registration Statement:
  - (i) To include any prospectus required by Section 10(a)(3) of the Securities Act;
  - (ii) To reflect in the prospectus any facts or events arising after the effective date of the Registration Statement (or the most recent post-effective amendment thereof) that, individually or in the aggregate, represent a fundamental change in the information set forth in the Registration Statement. Notwithstanding the foregoing, any increase or decrease in volume of securities offered (if the total dollar value of securities offered would not exceed that which was registered) and any deviation from the low or high end of the estimated maximum offering range may be reflected in the form of a prospectus filed with the Commission pursuant to Rule 424(b) if, in the aggregate, the changes in volume and price represent no more than a 20 percent change in the maximum aggregate offering price set forth in the "Calculation of Registration Fee" table in the effective Registration Statement; and
  - (iii) To include any material information with respect to the plan of distribution not previously disclosed in the Registration Statement or any material change to such information in the Registration Statement;

*provided, however,* that paragraphs (A)(1)(i) and (A)(1)(ii) do not apply if the information required to be included in a post-effective amendment by those paragraphs is contained in periodic reports filed with or furnished to the Commission by the Registrant pursuant to Section 13 or Section 15(d) of the Exchange Act that are incorporated by reference in this Registration Statement.

- (2) That, for the purpose of determining any liability under the Securities Act, each such post-effective amendment shall be deemed to be a new registration statement relating to the securities offered therein, and the offering of such securities at that time shall be deemed to be the initial bona fide offering thereof.
- (3) To remove from registration by means of a post-effective amendment any of the securities being registered which remain unsold at the termination of the offering.

B. The undersigned Registrant hereby undertakes that, for purposes of determining any liability under the Securities Act, each filing of the Registrant's annual report pursuant to Section 13(a) or Section 15(d) of the Exchange Act (and, where applicable, each filing of an employee benefit plan's annual report pursuant to Section 15(d) of the Exchange Act) that is incorporated by reference in the Registration Statement shall be deemed to be a new registration statement relating to the securities offered therein, and the offering of such securities at that time shall be deemed to be the initial bona fide offering thereof.

C. Insofar as indemnification for liabilities arising under the Securities Act may be permitted to directors, officers and controlling persons of the Registrant pursuant to the foregoing provisions, or otherwise, the Registrant has been advised that in the opinion of the Commission such indemnification is against public policy as expressed in the Securities Act and is, therefore, unenforceable. In the event that a claim for indemnification against such liabilities (other than the payment by the Registrant of expenses incurred or paid by a director, officer or controlling person of the Registrant in the successful defense of any action, suit or proceeding) is asserted by such director, officer or controlling person in connection with the securities being registered, the Registrant will, unless in the opinion of its counsel the matter has been settled by controlling precedent, submit to a court of appropriate jurisdiction the question whether such indemnification by it is against public policy as expressed in the Securities Act and will be governed by the final adjudication of such issue.

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## SIGNATURES

Pursuant to the requirements of the Securities Act of 1933, as amended, the Registrant certifies that it has reasonable grounds to believe that it meets all of the requirements for filing on Form S-8 and has duly caused this Registration Statement to be signed on its behalf by the undersigned, thereunto duly authorized, in New York, New York, on March 30, 2026.

### LEXEO THERAPEUTICS, INC.

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

## POWER OF ATTORNEY

KNOW ALL PERSONS BY THESE PRESENTS, that each person whose signature appears below hereby constitutes and appoints each of R. Nolan Townsend and Louis Tamayo as his or her true and lawful attorney-in-fact and agent with full power of substitution and resubstitution, for such person in any and all capacities, to sign any and all amendments to this Registration Statement (including post-effective amendments) on Form S-8, and to file the same, with all exhibits thereto and other documents in connection therewith, with the Securities and Exchange Commission, granting unto said attorney-in-fact, proxy, and agent full power and authority to do and perform each and every act and thing requisite and necessary to be done in connection therewith, as fully for all intents and purposes as such person might or could do in person, hereby ratifying and confirming all that any said attorney-in-fact, proxy and agent, or any substitute of any of them, may lawfully do or cause to be done by virtue hereof.

Pursuant to the requirements of the Securities Act of 1933, as amended, this Registration Statement has been signed by the following persons in the capacities and on the dates indicated:

<u>Signature</u>	<u>Title</u>	<u>Date</u>
<u>/s/ R. Nolan Townsend</u> R. Nolan Townsend	Chief Executive Officer and Director (Principal Executive Officer)	March 30, 2026
<u>/s/ Louis Tamayo</u> Louis Tamayo	Chief Financial Officer (Principal Financial and Accounting Officer)	March 30, 2026
<u>/s/ Mette Kirstine Agger</u> Mette Kirstine Agger	Director	March 30, 2026
<u>/s/ Steven Altschuler</u> Steven Altschuler, M.D.	Director	March 30, 2026
<u>/s/ Paula HJ Cholmondeley</u> Paula HJ Cholmondeley	Director	March 30, 2026
<u>/s/ Brenda Cooperstone</u> Brenda Cooperstone, M.D.	Director	March 30, 2026
<u>/s/ Reinaldo Diaz</u> Reinaldo Diaz	Director	March 30, 2026
<u>/s/ Tolga Tanguler</u> Tolga Tanguler	Director	March 30, 2026
<u>/s/ Tim Van Hauwermeiren</u> Tim Van Hauwermeiren	Director	March 30, 2026

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Wilson Sonsini Goodrich & Rosati  
Professional Corporation  
31 W 52nd Street, 5th Floor  
New York, NY 10019-6022  
PHONE: 212.999.5800  
FAX: 866.974.7329

March 30, 2026

Lexeo Therapeutics, Inc.  
345 Park Avenue South, Floor 6  
New York, New York, 10010  
(212) 547-9879

**Re: Registration Statement on Form S-8**

Ladies and Gentlemen:

We have examined the Registration Statement on Form S-8 (the "Registration Statement") to be filed by Lexeo Therapeutics, Inc., a Delaware corporation, with the Securities and Exchange Commission on or about the date hereof, in connection with the registration under the Securities Act of 1933, as amended, of (i) 3,650,088 shares of your common stock, par value \$0.0001 per share (the "EIP Shares"), reserved for issuance pursuant to the 2023 Equity Incentive Plan (the "2023 Plan") and (ii) 477,200 shares of your common stock, par value \$0.0001 per share (the "ESPP Shares" and, together with the EIP Shares, the "Shares"), reserved for issuance pursuant to the 2023 Employee Stock Purchase Plan (the "2023 ESPP" and, together with the 2023 Plan, the "Plans").

On the basis of the foregoing, and in reliance thereon, we are of the opinion that the Shares, when issued and sold in the manner referred to in the Plans and pursuant to the agreements that accompany the Plans, will be legally and validly issued, fully paid and nonassessable.

We consent to the use of this opinion as an exhibit to the Registration Statement, and further consent to the use of our name wherever appearing in the Registration Statement and any amendments thereto.

Very truly yours,

/s/ Wilson Sonsini Goodrich & Rosati, P.C.  
WILSON SONSINI GOODRICH & ROSATI  
Professional Corporation

AUSTIN BEIJING BOSTON BOULDER BRUSSELS HONG KONG LONDON LOS ANGELES NEW YORK PALO ALTO  
SALT LAKE CITY SAN DIEGO SAN FRANCISCO SEATTLE SHANGHAI WASHINGTON, DC WILMINGTON, DE



KPMG LLP  
345 Park Avenue  
New York, NY 10154-0102

**Consent of Independent Registered Public Accounting Firm**

We consent to the use of our audit report dated March 30, 2026, with respect to the financial statements of Lexeo Therapeutics, Inc., included herein by reference.

/s/ KPMG LLP

New York, New York  
March 30, 2026

KPMG LLP, a Delaware limited liability partnership and a member firm of the KPMG global organization of independent member firms affiliated with KPMG International Limited, a private English company limited by guarantee.

## Calculation of Filing Fee Tables

Form S-8  
(Form Type)Lexeo Therapeutics, Inc.  
(Exact Name of Registrant as Specified in its Charter)

Table 1 – Newly Registered Securities

Security Type	Security Class Title	Fee Calculation Rule	Amount Registered <sup>(1)</sup>	Proposed Maximum Offering Price Per Unit	Maximum Aggregate Offering Price	Fee Rate	Amount of Registration Fee
Equity	Common Stock, \$0.0001 par value per share, reserved for issuance pursuant to the 2023 Equity Incentive Plan	457(c) and 457(h)	3,650,088 <sup>(2)</sup>	\$5.82 <sup>(3)</sup>	\$21,243,512.16	\$138.10 per \$1,000,000	\$2,933.73
Equity	Common Stock, \$0.0001 par value per share, reserved for issuance pursuant to the 2023 Employee Stock Purchase Plan	457(c) and 457(h)	477,200 <sup>(4)</sup>	\$4.94 <sup>(5)</sup>	\$2,357,368.00	\$138.10 per \$1,000,000	\$325.55
<b>Total Offering Amounts</b>					\$23,600,880.16		\$3,259.28
<b>Total Fee Offsets</b>							–
<b>Net Fee Due</b>							\$3,259.28

- (1) Pursuant to Rule 416(a) under the Securities Act of 1933, as amended (the “Securities Act”), this Registration Statement shall cover any additional shares of the Registrant’s common stock that become issuable under the 2023 Equity Incentive Plan (the “2023 Plan”) and the 2023 Employee Stock Purchase Plan (the “2023 ESPP”) by reason of any stock dividend, stock split, recapitalization, or other similar transaction effected without receipt of consideration that increases the number of the Registrant’s outstanding shares of common stock.
- (2) Represents an automatic annual increase on January 1, 2026 equal to 5% of the total number of shares of the Registrant’s common stock outstanding on December 31 of the preceding year, which annual increase is provided for in the 2023 Plan.
- (3) Estimated in accordance with Rule 457(c) and 457(h) solely for the purpose of calculating the registration fee on the basis of \$5.82 per share, which represents the average of the high and low prices of the Registrant’s common stock as reported on the Nasdaq Global Market on March 25, 2026.
- (4) Represents an automatic annual increase on January 1, 2026 equal to 1% of the total number of shares of the Registrant’s common stock outstanding on December 31 of the preceding year, which annual increase is provided for in the 2023 ESPP.

- (5) Estimated in accordance with Rules 457(c) and 457(h) of the Securities Act solely for the purpose of calculating the registration fee on the basis of 85% of \$5.82 per share, which represents the average of the high and low prices of the Registrant's common stock as reported on the Nasdaq Global Market on March 25, 2026. Pursuant to the 2023 ESPP, the purchase price of the shares of common stock reserved for issuance thereunder will be 85% of the lower of the fair market value of the common stock on (i) the first trading day of the offering period or (ii) the exercise date.

