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

SCHEDULE 13G

Under the Securities Exchange Act of 1934  
(Amendment No.)\*

**Lexeo Therapeutics, Inc.**

(Name of Issuer)

**Common stock, \$0.0001 par value per share**

(Title of Class of Securities)

**52886X107**

(CUSIP Number)

**December 31, 2023**

(Date of Event Which Requires Filing of this Statement)

Check the appropriate box to designate the rule pursuant to which this Schedule is filed:

- Rule 13d-1(b)  
 Rule 13d-1(c)  
 Rule 13d-1(d)

\*The remainder of this cover page shall be filled out for a reporting person's initial filing on this form with respect to the subject class of securities, and for any subsequent amendment containing information which would alter the disclosures provided in a prior cover page.

The information required in the remainder of this cover page shall not be deemed to be "filed" for the purpose of Section 18 of the Securities Exchange Act of 1934 ("Act") or otherwise subject to the liabilities of that section of the Act but shall be subject to all other provisions of the Act (however, see the Notes).

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1.	Names of Reporting Persons Lundbeckfond Invest A/S	
2.	Check the Appropriate Box if a Member of a Group (See Instructions) (a) <input checked="" type="checkbox"/> (b) <input checked="" type="checkbox"/> (1)	
3.	SEC Use Only	
4.	Citizenship or Place of Organization Denmark	
Number of Shares Beneficially Owned by Each Reporting Person With	5.	Sole Voting Power 1,835,959 shares
	6.	Shared Voting Power 0
	7.	Sole Dispositive Power 1,835,959 shares
	8.	Shared Dispositive Power 0
9.	Aggregate Amount Beneficially Owned by Each Reporting Person 1,835,959 shares	
10.	Check if the Aggregate Amount in Row (9) Excludes Certain Shares (See Instructions) <input type="checkbox"/>	
11.	Percent of Class Represented by Amount in Row (9) 6.9% (2)	
12.	Type of Reporting Person (See Instructions) CO	

- (1) All of such shares are Common Stock and held of record by Lundbeckfond. Lene Skole ("Skole") is the Chief Executive Officer of Lundbeckfond and may be deemed to have sole power to vote and dispose of these shares. The directors of Lundbeckfond have delegated voting and dispositive power with respect to the shares held by Lundbeckfond to Skole.
- (2) This calculation is based on 26,645,538 shares of Common Stock outstanding as of December 7, 2023, as reported in the Issuer's Quarterly Report on Form 10-Q filed on December 11, 2023 with the Securities and Exchange Commission (the "SEC").

1.	Names of Reporting Persons Lene Skole	
2.	Check the Appropriate Box if a Member of a Group (See Instructions) (a) <input type="checkbox"/> (b) <input checked="" type="checkbox"/> (1)	
3.	SEC Use Only	
4.	Citizenship or Place of Organization Denmark	
Number of Shares Beneficially Owned by Each Reporting Person With	5.	Sole Voting Power 1,835,959 shares
	6.	Shared Voting Power 0
	7.	Sole Dispositive Power 1,835,959 shares
	8.	Shared Dispositive Power 0
9.	Aggregate Amount Beneficially Owned by Each Reporting Person 1,835,959 shares	
10.	Check if the Aggregate Amount in Row (9) Excludes Certain Shares (See Instructions) <input type="checkbox"/>	
11.	Percent of Class Represented by Amount in Row (9) 6.9% (3)	
12.	Type of Reporting Person (See Instructions) IN	

- (1) All of such shares are Common Stock and held of record by Lundbeckfond. Skole is the Chief Executive Officer of Lundbeckfond and may be deemed to have sole power to vote and dispose of these shares. The directors of Lundbeckfond have delegated voting and dispositive power with respect to the shares held by Lundbeckfond to Skole.
- (2) This calculation is based on 26,645,538 shares of Common Stock outstanding as of December 7, 2023, as reported in the Issuer's Quarterly Report on Form 10-Q filed on December 11, 2023 with the SEC.

**Item 1.**

- (a) Name of Issuer  
Lexeo Therapeutics, Inc.
- (b) Address of Issuer's Principal Executive Offices  
345 Park Avenue South, Floor 6, New York, New York 10010

**Item 2.**

- (a) Name of Person Filing  
Lundbeckfond Invest A/S ("Lundbeckfond")  
Lene Skole ("Skole")
- (b) Address of Principal Business Office or, if none, Residence  
Scherfigsvej 7 DK-2100, København Ø, Denmark
- (c) Citizenship  
Entities: Lundbeckfond - Danish corporation  
Individuals: Skole - Denmark
- (d) Title of Class of Securities  
Common Stock, \$0.0001 par value ("Common Stock")
- (e) CUSIP Number  
52886X107

**Item 3.** If this statement is filed pursuant to §§240.13d-1(b) or 240.13d-2(b) or (c), check whether the person filing is a:  
Not applicable

**Item 4. Ownership**

The following information regarding the aggregate number and percentage of the class of securities of the issuer identified in Item 1 is provided as of December 31, 2023:

Reporting Persons	Shares Held Directly	Sole Voting Power	Shared Voting Power	Sole Dispositive Power	Shared Dispositive Power	Beneficial Ownership	Percentage of Class (2)
Lundbeckfond (1)	1,835,959	1,835,959		1,835,959		1,835,959	6.9%
Skole (1)		1,835,959		1,835,959		1,835,959	6.9%

- (1) All of such shares are Common Stock and held of record by Lundbeckfond. Skole is the Chief Executive Officer of Lundbeckfond and may be deemed to have sole power to vote and dispose of these shares. The directors of Lundbeckfond have delegated voting and dispositive power with respect to the shares held by Lundbeckfond to Skole.
- (2) This calculation is based on 26,645,538 shares of Common Stock outstanding as of December 7, 2023, as reported in the Issuer's Quarterly Report on Form 10-Q filed on December 11, 2023 with the SEC.

**Item 5. Ownership of Five Percent or Less of a Class**

If this statement is being filed to report the fact that as of the date hereof the reporting person has ceased to be the beneficial owner of more than five percent of the class of securities, check the following

**Item 6. Ownership of More than Five Percent on Behalf of Another Person**

Not applicable

**Item 7. Identification and Classification of the Subsidiary Which Acquired the Security Being Reported on By the Parent Holding Company or Control Person**

Not applicable

**Item 8. Identification and Classification of Members of the Group**

Not applicable

**Item 9. Notice of Dissolution of Group**

Not applicable

**Item 10. Certification**

Not applicable

**Signature**

After reasonable inquiry and to the best of my knowledge and belief, I certify that the information set forth in this statement is true, complete and correct.

Dated: February 14, 2024

**LUNDBECKFOND INVEST A/S**

By: /s/ Christian Elling

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Name: Christian Elling

Title: Managing Partner

/s/ Lene Skole

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LENE SKOLE, CEO

**ATTENTION**

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**Intentional misstatements or omissions of fact constitute Federal Criminal Violations (See 18 U.S.C. 1001).**  
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**Exhibit(s):**

[A](#)     [Joint Filing Agreement](#)

EXHIBIT A

JOINT FILING AGREEMENT

We, the undersigned, hereby express our agreement that the attached Schedule 13G (or any amendments thereto) relating to the Common Stock of Lexeo Therapeutics, Inc. is filed on behalf of each of us.

**LUNDBECKFOND INVEST A/S**

By: /s/ Christian Elling

Name: Christian Elling

Title: Managing Partner

/s/ Lene Skole

LENE SKOLE, CEO

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