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

SCHEDULE 13D

Under the Securities Exchange Act of 1934  
(Amendment No. 7)\*

**Eliem Therapeutics, Inc.**

(Name of Issuer)

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

(Title of Class of Securities)

**28658R 106**

(CUSIP Number)

**RA Capital Management, L.P.**  
**200 Berkeley Street, 18<sup>th</sup> Floor**  
**Boston, MA 02116**  
**Attn: Peter Kolchinsky**  
**Telephone: 617.778.2500**

(Name, Address and Telephone Number of Person  
Authorized to Receive Notices and Communications)

**June 27, 2024**

(Date of Event Which Requires Filing of this Statement)

If the filing person has previously filed a statement on Schedule 13G to report the acquisition that is the subject of this Schedule 13D, and is filing this schedule because of §§ 240.13d-1(e), 240.13d-1(f) or 240.13d-1(g), check the following box.

**Note:** Schedules filed in paper format shall include a signed original and five copies of the schedule, including all exhibits. See Section 240.13d-7 for other parties to whom copies are to be sent.

\* 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 disclosures provided in a prior cover page.

The information required on 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, as amended ("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.  
**RA Capital Management, L.P.**

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2. Check the Appropriate Box if a Member of a Group (See Instructions)

(a)

(b)

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3. SEC Use Only

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4. Source of Funds (See Instructions)  
**AF**

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5. Check if Disclosure of Legal Proceedings Is Required Pursuant to Items 2(d) or 2(e)

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6. Citizenship or Place of Organization  
**Delaware**

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7. Sole Voting Power  
**0**

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Number of  
Shares  
Beneficially  
Owned by  
Each  
Reporting  
Person With

8. Shared Voting Power  
**31,459,267**

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9. Sole Dispositive Power  
**0**

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10. Shared Dispositive Power  
**31,459,267**

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11. Aggregate Amount Beneficially Owned by Each Reporting Person  
**31,459,267**

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12. Check if the Aggregate Amount in Row (11) Excludes Certain Shares (See Instructions)

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13. Percent of Class Represented by Amount in Row (11)  
**47.1%**

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14. Type of Reporting Person (See Instructions)  
**IA, PN**

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1. Names of Reporting Persons.

**Peter Kolchinsky**

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2. Check the Appropriate Box if a Member of a Group (See Instructions)

(a)

(b)

---

3. SEC Use Only

---

4. Source of Funds (See Instructions)

**AF**

---

5. Check if Disclosure of Legal Proceedings Is Required Pursuant to Items 2(d) or 2(e)

---

6. Citizenship or Place of Organization

**United States**

---

7. Sole Voting Power

**0**

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Number of  
Shares  
Beneficially  
Owned by  
Each  
Reporting  
Person With

8. Shared Voting Power

**31,459,267**

---

9. Sole Dispositive Power

**0**

---

10. Shared Dispositive Power

**31,459,267**

---

11. Aggregate Amount Beneficially Owned by Each Reporting Person

**31,459,267**

---

12. Check if the Aggregate Amount in Row (11) Excludes Certain Shares (See Instructions)

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13. Percent of Class Represented by Amount in Row (11)

**47.1%**

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14. Type of Reporting Person (See Instructions)

**HC, IN**

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1. Names of Reporting Persons.

**Rajeev Shah**

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2. Check the Appropriate Box if a Member of a Group (See Instructions)

(a)

(b)

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3. SEC Use Only

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4. Source of Funds (See Instructions)

**AF**

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5. Check if Disclosure of Legal Proceedings Is Required Pursuant to Items 2(d) or 2(e)

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6. Citizenship or Place of Organization

**United States**

---

7. Sole Voting Power

**0**

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Number of  
Shares  
Beneficially  
Owned by  
Each  
Reporting  
Person With

8. Shared Voting Power

**31,459,267**

---

9. Sole Dispositive Power

**0**

---

10. Shared Dispositive Power

**31,459,267**

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11. Aggregate Amount Beneficially Owned by Each Reporting Person

**31,459,267**

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12. Check if the Aggregate Amount in Row (11) Excludes Certain Shares (See Instructions)

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13. Percent of Class Represented by Amount in Row (11)

**47.1%**

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14. Type of Reporting Person (See Instructions)

**HC, IN**

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1. Names of Reporting Persons.  
**RA Capital Healthcare Fund, L.P.**

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  2. Check the Appropriate Box if a Member of a Group (See Instructions)
    - (a)
    - (b)

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  3. SEC Use Only

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  4. Source of Funds (See Instructions)  
**WC**

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  5. Check if Disclosure of Legal Proceedings Is Required Pursuant to Items 2(d) or 2(e) 

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  6. Citizenship or Place of Organization  
**Delaware**

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  7. Sole Voting Power  
**0**

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  8. Shared Voting Power  
**26,001,629**

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  9. Sole Dispositive Power  
**0**

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  10. Shared Dispositive Power  
**26,001,629**

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  11. Aggregate Amount Beneficially Owned by Each Reporting Person  
**26,001,629**

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  12. Check if the Aggregate Amount in Row (11) Excludes Certain Shares (See Instructions) 

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  13. Percent of Class Represented by Amount in Row (11)  
**38.9%**

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  14. Type of Reporting Person (See Instructions)  
**PN**

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Number of  
Shares  
Beneficially  
Owned by  
Each  
Reporting  
Person With

## Item 1. Security and Issuer

Item 1 of the Statement is amended and supplemented as follows:

This Amendment No. 7 (this "Amendment No. 7" or this "Schedule 13D/A") amends and supplements the statement on the Schedule 13D originally filed with the Securities and Exchange Commission (the "SEC") on August 19, 2021, and amended on April 10, 2023, November 17, 2023, March 18, 2024, April 12, 2024, May 17, 2024 and June 6, 2024 (as amended, the "Statement"), filed by RA Capital Management, L.P., Dr. Kolchinsky, Mr. Shah, and RA Capital Healthcare Fund, L.P. with respect to the common stock, par value \$0.0001 per share (the "Common Stock"), of Eliem Therapeutics, Inc., a Delaware corporation (the "Issuer"). Unless otherwise defined herein, capitalized terms used in this Amendment No. 7 shall have the meanings ascribed to them in the Statement. Unless amended or supplemented below, the information in the Statement remains unchanged.

## Item 2. Identity and Background

Item 2 of the Statement is hereby amended and restated as follows:

- (a) This Schedule 13D/A is being filed on behalf of RA Capital Management, L.P. ("RA Capital"), Peter Kolchinsky, Rajeev Shah, and RA Capital Healthcare Fund, L.P. (the "Fund"). RA Capital, Dr. Kolchinsky, Mr. Shah and the Fund are collectively referred to herein as the "Reporting Persons."

The Reporting Persons' beneficial ownership of the Issuer's securities includes (i) 23,521,757 shares of Common Stock held directly by the Fund, (ii) 2,479,872 shares of Common Stock held directly by Sera Medicines, LLC ("Sera"), (iii) 1,226,497 shares of Common Stock held directly by RA Capital Nexus Fund, L.P. (the "Nexus Fund"), (iv) 483,679 shares of Common Stock held directly by RA Capital Nexus Fund II, L.P. (the "Nexus Fund II"), (v) 2,866,375 shares of Common Stock held directly by RA Capital Nexus Fund III, L.P. (the "Nexus Fund III"), (vi) 841,087 shares of Common Stock held directly by a separately managed account (the "Account"), and (vii) a total of 40,000 vested stock options (right to buy).

RA Capital Healthcare Fund GP, LLC is the general partner of the Fund, RA Capital Nexus Fund GP, LLC is the general partner of the Nexus Fund, RA Capital Nexus Fund II GP, LLC is the general partner of the Nexus Fund II, and RA Capital Nexus Fund III GP, LLC is the general partner of the Nexus Fund III. The general partner of RA Capital is RA Capital Management GP, LLC, of which Dr. Kolchinsky and Mr. Shah are the controlling persons. The Fund and the Nexus Fund III collectively own approximately 81% of the outstanding equity interests of Sera and may be deemed to beneficially own the securities of the Issuer held by Sera for purposes of Section 13(d) of the Securities Exchange Act of 1934 (the "Act"). RA Capital serves as investment adviser for the Fund, the Nexus Fund, the Nexus Fund II, the Nexus Fund III and the Account and may be deemed a beneficial owner, for purposes of Section 13(d) of the Act of any securities of the Issuer held by the Fund, the Nexus Fund, the Nexus Fund II, the Nexus Fund III, Sera or the Account. The Fund, the Nexus Fund, the Nexus Fund II and the Nexus Fund III have delegated to RA Capital the sole power to vote and the sole power to dispose of all securities held in the Fund, the Nexus Fund, the Nexus Fund II and the Nexus Fund III, and each of these funds has divested themselves of voting and investment power over the reported securities they hold and may not revoke that delegation on less than 61 days' notice. The Fund, the Nexus Fund, the Nexus Fund II and the Nexus Fund III disclaim beneficial ownership of the securities they hold for purposes of Section 13(d) of the Act and therefore disclaim any obligation to report ownership of the reported securities under Section 13(d) of the Act. As managers of RA Capital, Dr. Kolchinsky and Mr. Shah may be deemed beneficial owners, for purposes of Section 13(d) of the Act, of any securities of the Issuer beneficially owned by RA Capital. RA Capital, Dr. Kolchinsky, and Mr. Shah disclaim beneficial ownership of the securities reported in this Schedule 13D/A other than for the purpose of determining their obligations under Section 13(d) of the Act, and the filing of the Schedule 13D/A shall not be deemed an admission that either RA Capital, Dr. Kolchinsky, or Mr. Shah is the beneficial owner of such securities for any other purpose.

- (b) The address of the principal business office of each of the Reporting Persons is 200 Berkeley Street, 18<sup>th</sup> Floor, Boston, MA 02116.
- (c) The Fund is a private investment vehicle. RA Capital provides investment management services to the Fund, the Nexus Fund, the Nexus Fund II, the Nexus Fund III and the Account. The principal occupation of Dr. Kolchinsky and Mr. Shah is investment management.
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- (d) During the last five years, none of the Reporting Persons has been convicted in a criminal proceeding (excluding traffic violations or similar misdemeanors).
- (e) During the last five years, none of the Reporting Persons has been a party to a civil proceeding of a judicial or administrative body of competent jurisdiction and as a result of such proceeding was or is subject to a judgment, decree of final order enjoining future violations of, or prohibiting or mandating activities subject to, federal or state securities laws or finding any violation with respect to such laws.
- (f) See Item 6 of the cover pages.

**Item 3. Source and Amount of Funds or Other Consideration**

Item 3 of the Statement is hereby amended and supplemented as follows:

On June 27, 2024, the Issuer completed its acquisition of Tenet in accordance with the terms of the Acquisition Agreement. At the closing of the Acquisition, the Issuer issued an aggregate of 5,560,047 shares of its Common Stock to Tenet equityholders. Of the shares issued to Tenet equityholders, 2,479,872 shares were issued to Sera, 973,000 shares were issued to the Fund and 1,807,000 shares were issued to the Nexus Fund III. The shares were received in consideration of equity interests in Tenet and such Tenet securities were funded by working capital of Sera, the Fund and the Nexus Fund III.

Also, on June 27, 2024, the Issuer issued an aggregate of 31,238,282 PIPE Shares in connection with the closing of the Private Placement, which closed immediately following the closing of the Acquisition. The Fund and the Nexus Fund III purchased 11,949,171 and 1,059,375 PIPE Shares, respectively, in the Private Placement for the purchase price of \$45.9 million and \$4.1 million, respectively. The purchases of the PIPE Shares were funded by working capital of the Fund and the Nexus Fund III.

**Item 5. Interest in Securities of the Issuer**

Item 5 of the Statement is hereby amended and restated in its entirety to read as follows:

- (a) The information set forth in rows 11 and 13 of the cover pages to this Schedule 13D/A is incorporated by reference. The percentage set forth in row 13 is based on the sum of (i) 66,785,449 shares of Common Stock outstanding as of June 27, 2024, as reported in the Issuer's Current Report on Form 8-K filed with the SEC on June 27, 2024 (which includes the shares issued in connection with the closing of the Acquisition and the Private Placement), and (ii) 40,000 shares of Common Stock issuable upon the exercise of stock options within 60 days.
- (b) The information set forth in rows 7 through 10 of the cover pages to this Schedule 13D/A and Item 2 above is incorporated by reference.
- (c) Schedule A sets forth all transactions with respect to the shares of Common Stock effected since the most recent amendment to this Statement by any Reporting Person and is incorporated herein by reference.
- (d) No person (other than the Reporting Persons) is known to have the right to receive or the power to direct the receipt of dividends from, or the proceeds from the sale of, the shares of Common Stock subject to this Schedule 13D/A.
- (e) Not applicable.

**Item 6. Contracts, Arrangements, Understanding or Relationships with Respect to Securities of the Issuer**

Item 6 of the Statement is hereby amended and supplemented as follows:

The Fund and the Nexus Fund III collectively own approximately 81% of the outstanding equity interests of Sera. The remaining equity interests of Sera are owned by members of the Tenet management team, who are not affiliated with the Reporting Persons. On June 18, 2024, the Board of Directors of Sera granted profits interest units to each of Stephen Thomas, William Bonificio, and Naveen Daryani. Pursuant to the terms of the profits interest units, if, at the time Sera ultimately distributes the shares it received in the Acquisition, the value of such shares exceeds the value of such shares as of the date of the closing of the Acquisition, these individuals are entitled to share ratably in the distributions of such shares, up to a specified maximum. The specified maximum requires that the three holders of this series of profits interest units will not receive more than 50% of the total shares Sera distributes to its members.

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**SIGNATURES**

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: July 1, 2024

**RA CAPITAL MANAGEMENT, L.P.**

By: /s/ Peter Kolchinsky  
Name: Peter Kolchinsky  
Title: Authorized Signatory

**PETER KOLCHINSKY**

/s/ Peter Kolchinsky

**RAJEEV SHAH**

/s/ Rajeev Shah

**RA CAPITAL HEALTHCARE FUND, L.P.**

By: RA Capital Healthcare Fund GP, LLC  
Its: General Partner

By: /s/ Peter Kolchinsky  
Name: Peter Kolchinsky  
Title: Manager

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## SCHEDULE A

<b>Transaction</b>	<b>Purchaser</b>	<b>Date</b>	<b>No. Shares</b>	<b>Price</b>	
Acquisition	Fund	06/27/2024	973,000		(1)
Acquisition	Nexus Fund III	06/27/2024	2,479,872		(1)
Acquisition	Sera	06/27/2024	1,807,000		(1)
Private Placement	Fund	06/27/2024	11,949,171	\$	3.84
Private Placement	Nexus Fund III	06/27/2024	1,059,375	\$	3.84

(1) Received in exchange for equity of Tenet pursuant to the Acquisition Agreement.

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CUSIP No. 28658R 106

**JOINT FILING AGREEMENT**

This Joint Filing Agreement, dated as of July 1, 2024, is by and among RA Capital Management, L.P., Peter Kolchinsky, Rajeev Shah, and RA Capital Healthcare Fund, L.P. (the foregoing are collectively referred to herein as the “Filers”).

Each of the Filers may be required to file with the United States Securities and Exchange Commission a statement on Schedule 13G and/or 13D with respect to Common Stock, par value \$0.0001 per share of Eliem Therapeutics, Inc. beneficially owned by them from time to time.

Pursuant to and in accordance with Rule 13(d)(1)(k) promulgated under the Securities Exchange Act of 1934, as amended, the Filers hereby agree to file a single statement on Schedule 13G and/or 13D (and any amendments thereto) on behalf of each of such parties, and hereby further agree to file this Joint Filing Agreement as an exhibit to such statement, as required by such rule.

This Joint Filing Agreement may be terminated by any of the Filers upon one week’s prior written notice or such lesser period of notice as the Filers may mutually agree.

Executed and delivered as of the date first above written.

**RA CAPITAL MANAGEMENT, L.P.**

By: /s/ Peter Kolchinsky  
Name: Peter Kolchinsky  
Title: Authorized Signatory

**PETER KOLCHINSKY**

/s/ Peter Kolchinsky

**RAJEEV SHAH**

/s/ Rajeev Shah

**RA CAPITAL HEALTHCARE FUND, L.P.**

By: RA Capital Healthcare Fund GP, LLC  
Its: General Partner

By: /s/ Peter Kolchinsky  
Name: Peter Kolchinsky  
Title: Manager

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