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

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**POST-EFFECTIVE AMENDMENT NO. 1  
TO  
FORM S-3  
REGISTRATION STATEMENT NO. 333-264864  
UNDER  
THE SECURITIES ACT OF 1933**

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**Lyra Therapeutics, Inc.**  
(Exact name of Registrant as specified in its charter)

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

**81-1700838**  
(I.R.S. Employer  
Identification Number)

**480 Arsenal Way  
Watertown, Massachusetts 02472  
(617) 393-4600**

(Address, including zip code, and telephone number, including area code, of registrant's principal executive offices)

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**Maria Palasis, Ph.D.  
480 Arsenal Way  
Watertown, Massachusetts 02472  
(617) 393-4600**

(Name, address, including zip code, and telephone number, including area code, of agent for service)

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*Copies to:*

**Peter N. Handrinos  
Wesley C. Holmes  
Latham & Watkins LLP  
200 Clarendon Street  
Boston, MA 02116  
(617) 948-6000**

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**Approximate date of commencement of proposed sale to the public: Not applicable**

If the only securities being registered on this form are being offered pursuant to dividend or interest reinvestment plans, please check the following box.

If any of the securities being registered on this form are to be offered on a delayed or continuous basis pursuant to Rule 415 under the Securities Act of 1933, other than securities offered only in connection with dividend or interest reinvestment plans, check the following box.

If this form is filed to register additional securities for an offering pursuant to Rule 462(b) under the Securities Act, please check the following box and list the Securities Act registration statement number of the earlier effective registration statement for the same offering.

If this form is a post-effective amendment filed pursuant to Rule 462(c) under the Securities Act, check the following box and list the Securities Act registration statement number of the earlier effective registration statement for the same offering.

If this Form is a registration statement pursuant to General Instruction I.D. or a post-effective amendment thereto that shall become effective upon filing with the Commission pursuant to Rule 462(e) under the Securities Act, check the following box.

If this Form is a post-effective amendment to a registration statement filed pursuant to General Instruction I.D. filed to register additional securities or additional classes of securities pursuant to Rule 413(b) under the Securities Act, check the following box.

Indicate by check mark whether the registrant is a large accelerated filer, an accelerated filer, a non-accelerated filer, 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

Non-accelerated filer

Accelerated filer

Smaller reporting company

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

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**EXPLANATORY NOTE  
DEREGISTRATION OF SECURITIES**

This Post-Effective Amendment (the “Post-Effective Amendment”) filed by Lyra Therapeutics, Inc., a Delaware corporation (the “Registrant”), deregisters all securities remaining unsold or otherwise unissued under the Registration Statement on Form S-3 (No. 333-264864) (the “Registration Statement”), which was filed with the U.S. Securities and Exchange Commission (the “SEC”) on May 11, 2022, registering up to 15,521,322 shares by selling securityholders.

On February 2, 2026, the Registrant received a letter (the “Staff Determination Letter”) from the Listing Qualifications Department of The Nasdaq Stock Market LLC (“Nasdaq”) notifying the Registrant that Nasdaq had determined to delist the Registrant’s common stock from The Nasdaq Stock Market. In the Staff Determination Letter, Nasdaq stated that, pursuant to Listing Rule 5101, it believes the Registrant is a “public shell” and that the continued listing of its securities is no longer warranted. Trading of the Registrant’s common stock was suspended at the open of trading on March 17, 2026.

As a result of the foregoing, and Nasdaq’s determination that the Registrant’s Common Stock is no longer suitable for listing pursuant to certain Nasdaq rules, Nasdaq plans to file a Form 25 with the SEC to remove the Registrant’s common stock from listing and registration on the Nasdaq. The Registrant has terminated any and all offerings of its securities pursuant to the Registration Statement. Accordingly, the Registrant hereby terminates the effectiveness of the Registration Statement and, in accordance with an undertaking made by the Registrant in Part II of the Registration Statement to remove from registration, by means of post-effective amendment, any securities that had been registered for issuance but remain unsold at the termination of the offering, removes from registration any and all securities of the Registrant registered but unsold under the Registration Statement as of the date hereof.

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**SIGNATURES**

Pursuant to the requirements of the Securities Act of 1933, the registrant has duly caused this registration statement to be signed on its behalf by the undersigned, thereunto duly authorized in the City of Watertown, Commonwealth of Massachusetts, on this 25 day of March, 2026.

**Lyra Therapeutics, Inc.**

By: /s/ Jason Cavalier  
Name: Jason Cavalier  
Title: Authorized Signatory

No other person is required to sign this Post-Effective Amendment in reliance upon Rule 478 under the Securities Act of 1933, as amended.