

**SUPPLEMENT NO. 4 DATED JANUARY 10, 2022
(to the Offering Circular dated December 13, 2021)**

RespireRx Pharmaceuticals Inc.
126 Valley Road, Suite C
Glen Rock, New Jersey 07452
(201) 444-4947

This Offering Circular Supplement No. 4 (“Supplement No. 4”) supplements and amends the offering circular of RespireRx Pharmaceuticals, Inc. (the “Company”) dated December 13, 2021 as previously supplemented by Offering Circular Supplement No. 1 on December 14, 2021 and by Offering Circular Supplement No. 2 on December 14, 2021 add by Offering Circular Supplement No. 3 on January 3, 2022 (the “Offering Circular”), relating to Company’s Tier 2 offering under Regulation A of Section 3(6) of the Securities Act of 1933, as amended, of up to 375,000,000 shares of the Company’s common stock, par value \$0.001 per share (the “Common Stock”), at an offering price of \$0.02 per share, for a maximum offering amount of \$7,500,000 (the “Offering”). This Supplement No. 4 should be read in conjunction with the Offering Circular and is qualified by reference to the Offering Circular except to the extent that the information in this Supplement No. 4 supersedes the information contained in the Offering Circular.

Departure of Directors or Certain Officers; Election of Directors; Appointment of Certain Officers; Compensatory Arrangements of Certain Officers.

On January 4, 2022, Mr. Timothy Jones, the President and Chief Executive Officer and member of the Board of Directors (“BOD”) of RespireRx Pharmaceuticals, Inc. (the “Company”) notified the Company of his intent to resign which he and the Company subsequently agreed would target January 31, 2022 and would include his resignation as a member of the BOD.

The BOD intends to appoint Arnold S. Lippa as the Interim President and Interim Chief Executive effective upon Mr. Jones’ departure. The terms of Mr. Jones’ employment agreement, as amended, remain in effect.

The Company has had non-contentious preliminary discussions with Mr. Jones regarding the timing, transfer of responsibilities, process, expectations during the transition period through his departure date, as well as related financial matters. The discussions were preliminary and do not represent final terms, conditions or processes at this time. If the Company enters into any subsequent agreement with Mr. Jones regarding the circumstances of his resignation or departure, the Company will file a subsequent report on Form 8-K.

Mr. Jones indicated in those preliminary discussions that he is resigning to pursue a consulting practice.

This Supplement No. 4 attaches the Current Report on Form 8-K that the Company filed with the U.S. Securities and Exchange Commission on January 10, 2022.

Investing in our securities involves a high degree of risk. You should review carefully the risks and uncertainties described under the heading “Risk Factors” beginning on page 10 of the Offering Circular, and under similar headings in any amendments or supplements to the Offering Circular.

Neither the Securities and Exchange Commission nor any state securities commission has approved or disapproved of these securities or passed upon the adequacy or accuracy of the Offering Circular or this Supplement No. 1. Any representation to the contrary is a criminal offense.

The date of this Supplement No. 4 is January 10, 2022

**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): January 4, 2022

RESPIRERX PHARMACEUTICALS INC.

(Exact name of registrant as specified in its charter)

Delaware
(State or other jurisdiction
of incorporation)

1-16467
(Commission
File Number)

33-0303583
(I.R.S Employer
Identification No.)

126 Valley Road, Suite C
Glen Rock, New Jersey
(Address of principal executive offices)

07452
(Zip Code)

Registrant's telephone number, including area code: (201) 444-4947

(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
N/A	N/A	N/A

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 5.02 Departure of Directors or Certain Officers; Election of Directors; Appointment of Certain Officers; Compensatory Arrangements of Certain Officers.

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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.

Date: January 10, 2022

RESPIRERX PHARMACEUTICALS INC.
(Registrant)

By: /s/ Jeff Eliot Margolis

Jeff Eliot Margolis

Senior Vice President, Chief Financial Officer, Secretary and
Treasurer
