

**PROSPECTUS SUPPLEMENT NO. 3
(TO PROSPECTUS DATED June 19, 2018)**

Catabasis Pharmaceuticals, Inc.

4,200,000 Common Units, Each Consisting of One Share of Common Stock

and a Warrant to Purchase One Share of Common Stock

This prospectus supplement No. 3 supplements and amends the prospectus dated June 19, 2018, related to the offer and sale of 4,200,000 common units (each a “Common Unit”) of Catabasis Pharmaceuticals Inc., a Delaware corporation (“we,” “us” or “our”), each Common Unit consisting of one share of our common stock and a warrant to purchase one share of our common stock at an exercise price of \$12.00 per share (each, a “Warrant”), issued to Oppenheimer & Co. Inc., the underwriter named in the prospectus, pursuant to an underwriting agreement dated June 19, 2018 that we entered into with Oppenheimer & Co. Inc., and the offering of the shares of common stock that are issuable from time to time upon exercise of the Warrants.

This prospectus supplement should be read in conjunction with the prospectus dated June 19, 2018, which is to be delivered with this prospectus supplement. This prospectus supplement is qualified by reference to the prospectus except to the extent that the information in this prospectus supplement supersedes the information contained in the prospectus. This prospectus supplement is not complete without, and may not be delivered or utilized except in connection with, the prospectus, including any amendments or supplements to it.

Our common stock is listed on the Nasdaq Global Market under the symbol “CATB.” On February 5, 2019, the last reported sale price of our common stock on the Nasdaq Global Market was \$6.05 per share.

This prospectus supplement incorporates into our prospectus the information contained in our Current Report on Form 8-K filed with the Securities and Exchange Commission on February 6, 2019, attached hereto.

Investing in our common stock involves risks. See “Risk Factors” beginning on page 11 of the prospectus.

Neither the Securities and Exchange Commission nor any state securities commission has approved or disapproved of these securities or determined if this prospectus supplement or the prospectus to which it relates are truthful or complete. Any representation to the contrary is a criminal offense.

The date of this prospectus supplement is February 6, 2019.
