

PROSPECTUS SUPPLEMENT NO. 5

INHALE THERAPEUTIC SYSTEMS, INC.

\$230,000,000
of
3.5% Convertible Subordinated Notes
due October 17, 2007
and
4,558,065 Shares of Common Stock
Issuable Upon Conversion of the Notes

This prospectus supplement supplements the prospectus dated February 2, 2001 of Inhale Therapeutic Systems, Inc. relating to the public offering and sale by selling security holders described below. This prospectus supplement contains information on ownership of principal amount of notes beneficially owned and offered and shares of our common stock issuable upon conversion of the notes. This prospectus supplement should be read in conjunction with the prospectus, and this prospectus supplement is qualified by reference to the prospectus, except to the extent that the information provided by this prospectus supplement supersedes the information contained in the prospectus.

SEE "RISK FACTORS" BEGINNING ON PAGE 5 OF THE PROSPECTUS TO READ ABOUT FACTORS YOU SHOULD CONSIDER BEFORE BUYING THE NOTES OR OUR COMMON STOCK.

Neither the Securities and Exchange Commission nor any other regulatory body has approved or disapproved of these securities or passed upon the adequacy or accuracy of this prospectus. Any representation to the contrary is a criminal offense.

The table and related notes, and the paragraphs immediately following the table and related notes, appearing in the prospectus under the heading "Selling Security Holders" is amended by the addition of the following table and related notes, and the following paragraph immediately following the table and related notes:

Selling Security Holders	Principal Amount of Notes Beneficially Owned and Offered(1)(2)	Common Stock Issuable Upon Conversion of the Notes (2)	Common Stock Offered	Common Stock Owned After Completion of the Offering
Bank Austria Cayman Islands, Ltd.	7,100,000	140,705	140,705	—
RCG Latitude Master Fund	600,000	11,890	11,890	—
BTOPP	2,000,000	39,635	39,635	—
BTES — Convertible ARB	1,000,000	19,817	19,817	—
JP Morgan Securities Inc.	3,500,000	69,361	69,361	—

(1) Amounts indicated may be in excess of the total amount registered due to sales or transfers exempt from the registration requirements of the Securities Act since the date upon which the selling holders provided to us in the information regarding their notes.

(2) Amounts listed include additional amounts now being registered by the selling holder for notes beneficially owned and offered and common stock issuable upon conversion of the notes that were already included in the prospectus dated February 2, 2001.

Additional information regarding selling holders will be provided by amendment or supplement to this prospectus.

With the exception of Merrill Lynch, Pierce, Fenner & Smith Incorporated, Deutsche Bank Securities Inc. and Lehman Brothers Inc., none of the selling holders nor any of their affiliates, officers, directors or principal equity holders has held any position or office or has had any material relationship with us within the past three years, although the selling holders may hold additional securities of Inhale. Merrill Lynch, Pierce, Fenner & Smith Incorporated, Deutsche Bank Securities Inc. and Lehman Brothers Inc. were initial purchasers of the notes. The selling holders purchased the notes in private transactions on or after October 27, 2000. All of the notes were "restricted securities" under the Securities Act prior to this registration.

Information concerning the selling holders may change from time to time and any changed information will be set forth in supplements to this prospectus if and when necessary. In addition, the conversion rate and therefore, the number of shares of common stock issuable upon conversion of the notes, is subject to adjustment under certain circumstances. Accordingly, the aggregate principal amount of notes and the number of shares of common stock into which the notes are convertible may increase or decrease.

The date of this prospectus supplement is August 27, 2001.

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