

PROSPECTUS SUPPLEMENT NO. 2
(To prospectus dated September 19, 2007)

2,490,131 Shares

INTEGRA LIFESCIENCES HOLDINGS CORPORATION

Common Stock

This prospectus supplement no. 2, which supplements the prospectus dated September 19, 2007 and filed by us on September 20, 2007 (as amended by prospectus supplement no. 1 dated December 14, 2007), relates to the resale from time to time by selling stockholders of the shares of common stock that may be issued to them upon the conversion of our 2.75% Senior Convertible Notes due 2010.

You should read this prospectus supplement no. 2 in conjunction with the related prospectus and prospectus supplement no. 1, which should be delivered in conjunction with this prospectus supplement no. 2. This prospectus supplement no. 2 is not complete without, and may not be delivered or used except in conjunction with the prospectus, including prospectus supplement no. 1 and any amendments or other supplements to the prospectus. This prospectus supplement no. 2 is qualified by reference to the prospectus and prospectus supplement no. 1, except to the extent that the information provided by this prospectus supplement no. 2 supersedes information contained in the prospectus and prospectus supplement no. 1.

You should read and rely only on the information contained in this prospectus supplement no. 2 and the related prospectus and prospectus supplement no. 1, together with additional information described on page 34 of the related prospectus under the heading "Where You Can Find More Information and Incorporation by Reference." Neither we nor the selling stockholders have authorized anyone to provide you with different information. If anyone provides you with different or inconsistent information, you should not rely on it. Neither we nor the selling stockholders are making an offer to sell these securities in any jurisdiction where the offer or sale is not permitted. You should assume that the information contained or incorporated by reference in this prospectus supplement no. 2 or the related prospectus and prospectus supplement no. 1 is accurate only as of the dates of the documents containing the information.

Investing in our common stock involves risks. See "Risk Factors" beginning on page 5 of the related prospectus.

Neither the Securities and Exchange Commission nor any state securities commission has approved or disapproved of these securities or passed upon the accuracy or adequacy of this prospectus supplement no. 2 and the related prospectus and prospectus supplement no. 1. Any representation to the contrary is a criminal offense.

THIS PROSPECTUS SUPPLEMENT NO. 2 IS DATED MARCH 13, 2008.

SELLING STOCKHOLDERS

The information appearing in the table below with respect to the selling stockholders named therein supplements and supersedes the information with respect to such selling stockholders in the table appearing under the heading "Selling Stockholders" in the related prospectus dated September 19, 2007 and filed on September 20, 2007 and prospectus supplement no. 1. The information is based solely on information provided to us by or on behalf of the selling stockholders on or prior to March 12, 2008 in Selling Securityholder Notices and Questionnaires.

The number of shares of our common stock issuable upon the conversion of the notes shown in the table below assumes conversion of the full amount of notes held by each selling stockholder at the initial conversion rate of 15.0917 shares of our common stock per \$1,000 principal amount of notes and a cash payment in lieu of any fractional share, which rate is subject to adjustment upon the occurrence of certain events. Accordingly, the number of shares of our common stock issued upon the conversion of the notes may increase or decrease from time to time. The selling stockholders may offer all, some or none of the shares of our common stock that we may issue upon the conversion of the notes. Therefore, we cannot estimate the number of shares of our common stock that will be held by the selling stockholders upon consummation of any of these sales. The number of shares of our common stock owned by the other selling stockholders or any future transferee from any such holder assumes that they do not beneficially

own any shares of common stock other than the common stock that we may issue to them upon the conversion of the notes. In addition, the selling stockholders identified below may have acquired, sold, transferred or otherwise disposed of, in transactions exempt from the registration requirements of the Securities Act, all or a portion of their notes or shares of our common stock since the date on which they provided the information regarding their notes and therefore the aggregate number of shares set forth in the table below may exceed the number of shares actually issuable upon conversion of the notes.

Based upon information provided by the selling stockholders, none of the selling stockholders or their affiliates has, or within the past three years has had, any material relationship with us or any of our predecessors or affiliates, except as disclosed below.

Name of Selling Stockholder	Principal Amount of Notes Owned Prior to Offering (in U.S. dollars)	Number of Shares Beneficially Owned Prior to Offering (1)	Number of Shares Being Offered	Number of Shares Beneficially Owned After Offering (2)	Percentage of Shares Outstanding (2)(3)
Advent Convertible Arbitrage Master	8,535,000	128,807	128,807		*
Advent Enhanced Phoenix	4,285,000	64,667	64,667		*
B.C. McCabe Foundation	150,000	2,263	2,263		*
Commissioners of the Land Office	2,010,000	30,334	30,334		*
dbx Convertible Arbitrage 12 Fund c/o					
Quattro Global Capital, LLC	376,000	5,674	5,674		*
Florida Light and Power	912,000	13,763	13,763		*
Forest Global Convertible Master Fund, L.P.	2,268,000	34,227	34,227		*

Forest Multi-Strategy Master Fund SPC, on behalf of its Multi-Strategy Segregated Portfolio	80,000	1,207	1,207	*
Governing Board Employees Benefit Plan of the City of Detroit	12,000	181	181	*
Healthcare Georgia Foundation	58,000	875	875	*
HFR CA Global Opportunity Master Trust	593,000	8,949	8,949	*
HFR CA Op Master Trust	119,000	1,795	1,795	*
HFR RVA Select Performance Master Trust	245,000	3,697	3,697	*
Institutional Benchmark Series Limited	897,000	13,537	13,537	*
Institutional Benchmark Series (Master Feeder) Limited in respect of Electra Series c/o Quattro Global Capital, LLC	1,316,000	19,860	19,860	*
Intl. Truck & Engine Corp. Non Contributory Retirement Plan Trust	925,000	13,959	13,959	*
Intl. Truck & Engine Corp. Retirement Plan for Salaried Employees Trust	450,000	6,791	6,791	*
KeySpan Insurance Company	225,000	3,395	3,395	*
KeySpan Foundation	85,000	1,282	1,282	*
LLT Limited	266,000	4,014	4,014	*
Lord Abbett Investment Trust — LA Convertible Fund	5,370,000	81,042	81,042	*
Lyxor/Forest Fund Limited	4,048,000	61,091	61,091	*
Lyxor Master Trust Fund	126,000	1,901	1,901	*
Lyxor / Quattro Fund Limited c/o Quattro Global Capital, LLC	150,000	2,263	2,263	*
National Fuel & Gas Company Retirement Plan	700,000	10,564	10,564	*
NYC Teachers' Variable Annuity Fund	2,050,000	30,937	30,937	*
Pension, Hospitalization Benefit Plan of the Electrical Ind Plan	800,000	12,073	12,073	*
Philadelphia Board of Pensions	875,000	13,205	13,205	*

Quattro Fund Ltd.	7,144,000	107,815	107,815	*
Quattro Multistrategy Masterfund LP	564,000	8,511	8,511	*
Raytheon Phoenix	756,000	11,409	11,409	*
Sage Capital Management, LLC	1,500,000	22,637	22,637	*
SCI Cemetery Merchandise Common Trust	160,000	2,414	2,414	*
SCI Pre Need Common Trust Fund	80,000	1,207	1,207	*
Seattle City Employee Retirement System	85,000	1,282	1,282	*
Teacher Retirement System of the City of New York	1,134,000	17,113	17,113	*
Tenor Opportunity Master Fund, Ltd.	35,000,000	528,209	528,209	*
Total Fina Elf Finance USA, Inc.	375,000	5,659	5,659	*
Vermont Mutual Insurance Company	200,000	3,018	3,018	*

* Less than 1%.

(1) Certain of the selling stockholders listed in this table may also own or be deemed to own shares of the Company's common stock issuable upon conversion of the 2008 notes and/or the 2012 notes.

(2) The beneficial ownership in this column assumes that the selling stockholder sells all of the shares offered by this prospectus that are beneficially owned by the selling stockholder and that prior to the sale of such shares the selling stockholder does not acquire additional shares or dispose of shares beneficially owned by the stockholder that are not being offered pursuant to this prospectus.

(3) The percentage of outstanding shares is based on 26,454,967 shares of common stock outstanding as of March 6, 2008.