

SECURITIES AND EXCHANGE COMMISSION

Washington, D.C. 20549

SCHEDULE 13D

Under the Securities Exchange Act of 1934
(Amendment No. 1)*

AVI Biopharma, Inc.

(Name of Issuer)

Common Stock, \$.0001 par value

(Title of Class of Securities)

637184 10 8

(CUSIP Number)

**Carol E. Malkinson, Esq.
Medtronic, Inc.
710 Medtronic Parkway Northeast
Minneapolis, Minnesota 55432
(612) 514-4000**

(Name, Address and Telephone Number of Person Authorized
to Receive Notices and Communications)

December 31, 2001

(Date of Event which Requires Filing of this Statement)

If the filing person has previously filed a statement on Schedule 13G to report the acquisition which is the subject of this Schedule 13D, and is filing this schedule because of Rule 13d-1(e), 13d-1(f) or 13d-1(g), check the following box. //

Note: Schedules filed in paper format shall include a signed original and five copies of the schedule, including all exhibits. See Rule 13d-7(b) for other parties to whom copies are to be sent.

*The remainder of this cover page shall be filled out for a reporting person's initial filing on this form with respect to the subject class of securities, and for any subsequent amendment containing information which would alter disclosures provided in a prior cover page.

The information required on the remainder of this cover page shall not be deemed to be "filed" for the purpose of Section 18 of the Securities Exchange Act of 1934 ("Act") or otherwise subject to the liabilities of that section of the Act but shall be subject to all other provisions of the Act (however, see the Notes).

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SCHEDULE 13D

CUSIP No. 637184 10 8

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1 NAMES OF REPORTING PERSONS/I.R.S. IDENTIFICATION NOS. OF ABOVE PERSONS (ENTITIES ONLY)

Medtronic Inc.
41-0793183

2 CHECK THE APPROPRIATE BOX IF A MEMBER OF A GROUP (SEE INSTRUCTIONS)** (a) // (b) //

* Joint Filing

3 SEC USE ONLY

4 SOURCE OF FUNDS (SEE INSTRUCTIONS)

5 CHECK IF DISCLOSURE OF LEGAL PROCEEDINGS IS REQUIRED PURSUANT TO ITEMS 2(d) or 2(e) //

6 CITIZENSHIP OR PLACE OF ORGANIZATION

Minnesota

NUMBER OF SHARES BENEFICIALLY OWNED BY EACH REPORTING PERSON WITH

7 SOLE VOTING POWER

4,408,451 (includes 3,000,000 shares which may be purchased upon exercise of exercisable warrant)

8 SHARED VOTING POWER

0

9 SOLE DISPOSITIVE POWER

4,408,451 (includes 3,000,000 shares which may be purchased upon exercise of exercisable warrant)

10 SHARED DISPOSITIVE POWER

0

11 AGGREGATE AMOUNT BENEFICIALLY OWNED BY EACH REPORTING PERSON

4,408,451 (includes 3,000,000 shares which may be purchased upon exercise of exercisable warrant)

12 CHECK IF THE AGGREGATE AMOUNT IN ROW (11) EXCLUDES CERTAIN SHARES (SEE INSTRUCTIONS) //

13 PERCENT OF CLASS REPRESENTED BY AMOUNT IN ROW (11)

16.9%

14 TYPE OF REPORTING PERSON (SEE INSTRUCTIONS)

CO

SCHEDULE 13D

CUSIP No. 637184 10 8

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1 NAMES OF REPORTING PERSONS/I.R.S. IDENTIFICATION NOS. OF ABOVE PERSONS (ENTITIES ONLY)

Medtronic International, Ltd.
41-1278948

2 CHECK THE APPROPRIATE BOX IF A MEMBER OF A GROUP (SEE INSTRUCTIONS)*

(a) //
(b) //

** Joint Filing

3 SEC USE ONLY

4 SOURCE OF FUNDS (SEE INSTRUCTIONS)

N/A

5 CHECK IF DISCLOSURE OF LEGAL PROCEEDINGS IS REQUIRED PURSUANT TO ITEMS 2(d) or 2(e) //

6 CITIZENSHIP OR PLACE OF ORGANIZATION

Delaware

NUMBER OF SHARES BENEFICIALLY OWNED BY EACH REPORTING PERSON WITH	7	SOLE VOTING POWER	4,408,451 (includes 3,000,000 shares which may be purchased upon exercise of exercisable warrant)
	8	SHARED VOTING POWER	0
	9	SOLE DISPOSITIVE POWER	4,408,451 (includes 3,000,000 shares which may be purchased upon exercise of exercisable warrant)
	10	SHARED DISPOSITIVE POWER	0
11	AGGREGATE AMOUNT BENEFICIALLY OWNED BY EACH REPORTING PERSON		
	4,408,451 (includes 3,000,000 shares which may be purchased upon exercise of exercisable warrant)		
12	CHECK IF THE AGGREGATE AMOUNT IN ROW (11) EXCLUDES CERTAIN SHARES (SEE INSTRUCTIONS) / /		
13	PERCENT OF CLASS REPRESENTED BY AMOUNT IN ROW (11)		
	16.9%		
14	TYPE OF REPORTING PERSON (SEE INSTRUCTIONS)		
	CO		

The purpose of this Amendment is to substitute Medtronic International, Ltd. for Medtronic Asset Management, Inc. as a Reporting Person as a result of the merger, effective December 31, 2001, of Medtronic Asset Management, Inc. with and into Medtronic International, Ltd.

Item 1. Security and Issuer

The class of equity security to which this statement relates is the Common Stock, \$0.0001 par value per share, of AVI Biopharma, Inc. ("AVI"). The name and address of the principal executive offices of the issuer of such securities are AVI Biopharma, Inc., One Southwest Columbia Street, Suite 1105, Portland, Oregon 97258.

Item 2. Identity and Background

(a), (b) and (c):

Medtronic, Inc. ("Medtronic"), 710 Medtronic Parkway N.E., Minneapolis, Minnesota 55432, is a Minnesota corporation, principally engaged in the business of therapeutic medical technology, specializing in implantable and interventional therapies. Medtronic International, Ltd., 710 Medtronic Parkway N.E., Minneapolis, Minnesota 55432, a Delaware corporation ("MIL"), is a wholly-owned subsidiary of Medtronic through which Medtronic holds certain investments. Information is provided below with respect to persons who are directors and executive officers of the Reporting Persons.

William W. George, Chairman and Director, Medtronic, 710 Medtronic Parkway N.E., Minneapolis, MN 55432;

Arthur D. Collins, Jr., President, Chief Executive Officer and Director, Medtronic. and President, MIL, 710 Medtronic Parkway N.E., Minneapolis, MN 55432;

Glen D. Nelson, M.D., Vice Chairman and Director, Medtronic, 710 Medtronic Parkway N.E., Minneapolis, MN 55432;

Michael R. Bonsignore, Director, Medtronic, Retired Chairman, Honeywell International, Inc., 101 Columbia Road, P. O. Box 4000, Morristown, New Jersey 07962-2497;

William R. Brody, M.D., Ph.D., Director, Medtronic, President, The Johns Hopkins University, 3400 North St. Charles St., 242 Garland Hall, Baltimore, MD 21218;

Paul W. Chellgren, Director, Medtronic, Chairman and Chief Executive Officer, Ashland Inc., 50 E. RiverCenter Boulevard, P.O. Box 391, Covington, KY 41012-0391;

Antonio M. Gotto, Jr., M.D., Director, Medtronic, Dean, Cornell University Medical College, Medical Affairs Provost, Cornell University, Office of the Dean, 1300 York Avenue, New York, NY 10021;

Bernadine P. Healy, M.D., Director, Medtronic, Retired President and CEO, American Red Cross, 710 County Line Road, Gates Mills, OH 44040;

Jean-Pierre Rosso, Director, Medtronic, Chairman, CNH Global N.V., 700 State Street, Racine, WI 53404;

Jack W. Schuler, Director, Medtronic, Chairman, Stericycle, Inc. and Ventana Medical Systems, Inc., 28161 North Keith Drive, Lake Forest, IL 60045;

Gordon M. Sprenger, Director, Medtronic, Retired from Allina Health System, 2800 Chicago Avenue S., Minneapolis, MN 55407;

Jeffrey Balagna, Senior Vice President and Chief Information Officer, Medtronic, 710 Medtronic Parkway N.E., Minneapolis, Minnesota 55432;

Chuck Brynelsen, Vice President, MIL, 710 Medtronic Parkway N.E., Minneapolis, Minnesota 55432;

Gary L. Ellis, Vice President, Controller, Treasurer and Director, MIL, 710 Medtronic Parkway N.E., Minneapolis, MN 55432.

Michael D. Ellwein, Vice President, MIL, 710 Medtronic Parkway N.E., Minneapolis, MN 55432;

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Janet S. Fiola, Senior Vice President, Human Resources, Medtronic, 710 Medtronic Parkway N.E., Minneapolis, MN 55432;

Robert Guezuraga, Senior Vice President and President, Cardiac Surgery, Medtronic, 710 Medtronic Parkway N.E., Minneapolis, MN 55432;

Steven B. Kelmar, Senior Vice President, External Affairs, Medtronic, 710 Medtronic Parkway N.E., Minneapolis, MN 55432;

Stephen H. Mahle, Senior Vice President and President, Cardiac Rhythm Management, Medtronic, 710 Medtronic Parkway N.E., Minneapolis, MN 55432;

Margaret A. Osborne, Vice President, MIL, 710 Medtronic Parkway N.E., Minneapolis, MN 55432;

Robert L. Ryan, Senior Vice President and Chief Financial Officer, Medtronic, and Vice President, Chief Financial Officer and Director, MIL, 710 Medtronic Parkway N.E., Minneapolis, MN 55432;

David J. Scott, Senior Vice President and General Counsel and Secretary, Medtronic, and Vice President, Secretary and Director, MIL, 710 Medtronic Parkway N.E., Minneapolis, MN 55432;

Keith E. Williams, Senior Vice President and President, Neurological, Spinal, and ENT, Medtronic, 710 Medtronic Parkway N.E., Minneapolis, MN 55432;

Barry W. Wilson, Senior Vice President and President, International, Medtronic, 710 Medtronic Parkway N.E., Minneapolis, MN 55432;

(d), (e) and (f): No change.

Item 3. Source and Amount of Funds or Other Consideration

No change

Item 4. Purpose of Transaction

Effective December 31, 2001, Medtronic Asset Management, Inc., a former Reporting Person, was merged with and into Medtronic International, Ltd. ("MIL"). As a result of such merger, Medtronic International, Ltd. is substituted as a Reporting Person.

MIL has acquired the shares of AVI Common Stock and the Warrant solely for investment purposes. Based upon their evaluation of AVI's financial condition, market conditions and other factors it may deem material, the Reporting Persons may seek to acquire additional shares of AVI Common Stock in the open market or in private transactions, or may dispose of all or any portion of the shares currently owned or which may be acquired upon exercise of the Warrant. Except as set forth in the preceding sentence or as provided in the Investment Agreement entered into at the time of the initial acquisition of the AVI Common Stock and Warrant, the Reporting Persons presently do not have any definitive plans or proposals that relate to or would result in transactions of the kind described in paragraphs (a) through (j) of Item 4 of Schedule 13D, but may, at any time and from time to time, review, reconsider and discuss with AVI or others the Reporting Persons' positions with respect to AVI which could thereafter result in the adoption of such plans or proposals. At the time of the initial acquisition of the shares of AVI Common Stock and the Warrant, AVI and Medtronic entered into a License and Development Agreement (the "License Agreement") and a Supply Agreement (the "Supply Agreement"). Under the License Agreement, AVI granted to Medtronic a worldwide exclusive license for a family of antisense compounds, including Resten-NGTM, which Medtronic expects to load on medical devices, including stents to treat vascular disease. Under the Supply Agreement, AVI agreed to supply all of Medtronic's needs for the products developed by Medtronic under the License Agreement at negotiated prices.

Item 5. Interest in Securities of the Issuer

(a) Medtronic, through MIL, is the beneficial owner of 4,408,451 shares of Common Stock of AVI (including 3,000,000 shares which are not outstanding but which may be purchased upon exercise of the Warrant), which represents approximately 16.9% of the outstanding Common Stock of AVI (assuming exercise of the Warrant). To the knowledge of the Reporting Persons, no other person named in Item 2 beneficially owns any AVI shares.

(b) Medtronic, through MIL, has the sole power to vote and the sole power to dispose of all shares of AVI Common Stock beneficially owned by it.

(c) The only transaction in the Common Stock of AVI that was effected by any person named in paragraph (a) above during the past 60 days was the acquisition by MIL, as the surviving corporation in its merger with Medtronic Asset Management, Inc., of the AVI Common Stock and Warrant previously owned by Medtronic Asset Management, Inc.

(d) No other person is known to have the right to receive or the power to direct the receipt of dividends from, or the proceeds of the sale of, the subject securities.

(e) Not applicable.

Item 6. Contracts, Arrangements, Understandings or Relationships With Respect to Securities of the Issuer

No change

Item 7. Material to be Filed as Exhibits

Exhibit A — Agreement by the persons filing this Schedule 13D Amendment to make a joint filing.

Exhibit B — Warrant to purchase 3,000,000 shares of AVI Common Stock dated June 20, 2001—incorporated by reference to Exhibit B to initial Schedule 13D filed June 29, 2001.

SIGNATURE

After reasonable inquiry and to the best of my knowledge and belief, I certify that the information set forth in this statement is true, complete and correct.

Dated: January 7, 2002

MEDTRONIC, INC.

By: /s/ DAVID J. SCOTT

David J. Scott
Senior Vice President and General Counsel

MEDTRONIC INTERNATIONAL, LTD.

By: /s/ DAVID J. SCOTT

David J. Scott
Vice President and Secretary

EXHIBIT INDEX

Exhibit	Description
A	Agreement by the persons filing this Schedule 13D Amendment to make a joint filing.
B	Warrant to purchase 3,000,000 shares of AVI Common Stock dated June 20, 2001—incorporated by reference to Exhibit B to initial Schedule 13D filed June 29, 2001.

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Exhibit A

The undersigned hereby agree to file a joint Schedule 13D with respect to the interests of the undersigned in AVI Biopharma, Inc., and that the Schedule 13D Amendment to which this Exhibit A is attached has been filed on behalf of each of the undersigned.

Dated: January 7, 2002.

MEDTRONIC, INC.

By: /s/ DAVID J. SCOTT

David J. Scott
Senior Vice President and General Counsel

MEDTRONIC INTERNATIONAL, LTD.

By: /s/ DAVID J. SCOTT

David J. Scott
Vice President and Secretary

QuickLinks

[Exhibit A](#)