AS FILED WITH THE SECURITIES AND EXCHANGE COMMISSION ON AUGUST 24, 2001

REGISTRATION NO. 333-66692

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SECURITIES AND EXCHANGE COMMISSION
WASHINGTON, D.C. 20549

PRE-EFFECTIVE AMENDMENT NO. 1
TO
FORM S-3
REGISTRATION STATEMENT
UNDER
THE SECURITIES ACT OF 1933

STEMCELLS, INC.
(Exact name of registrant as specified in its charter)

DELAWARE	2836	94-3078125
(State or other Jurisdiction of Incorporation or Organization)	(Primary Standard Industrial Classification Code Number)	(I.R.S. Employer Identification No.)

3155 PORTER DRIVE
PALO ALTO, CA 94304
(650) 475-3100
(Address, including zip code, and telephone number, including area code, of Registrant's principal executive offices)

IRIS BREST, ESQ.
STEMCELLS, INC.
3155 PORTER DRIVE
PALO ALTO, CA 94304
(650) 475-3100
(Name, address, including zip code, and telephone number, including area code, of agent for service)

COPIES TO:
GEOFFREY B. DAVIS, ESQ.
Ropes & Gray
One International Place
Boston, Massachusetts 02110
(617) 951-7000
(617) 951-7050 (fax)

APPROXIMATE DATE OF COMMENCEMENT OF PROPOSED SALE TO THE PUBLIC: As soon as practicable after this Registration Statement becomes effective.

If any of the securities being registered on this Form are to be offered on a delayed or continuous basis pursuant to Rule 415 under the Securities Act of 1933, check the following box. /X/

If this Form is filed to register additional securities for an offering pursuant to Rule 462(b) under the Securities Act, check the following box and list the Securities Act registration statement number of the earlier effective registration statement for the same offering. / /

If this Form is a post-effective amendment filed pursuant to Rule 462(c) under the Securities Act, check the following box and list the Securities Act registration statement number of the earlier effective registration statement for the same offering. / /

If this Form is a post-effective amendment filed pursuant to Rule 462(d) under the Securities Act, check the following box and list the Securities Act registration statement number of the earlier effective registration statement for the same offering. / /

If delivery of the prospectus is expected to be made pursuant to Rule 434, please check the following box. / /

CALCULATION OF REGISTRATION FEE

TITLE OF EACH CLASS OF SECURITIES TO BE REGISTERED	AMOUNT TO BE REGISTERED	PROPOSED MAXIMUM OFFERING PRICE PER SHARE(1)	PROPOSED MAXIMUM AGGREGATE OFFERING PRICE(1)	AMOUNT OF REGISTRATION FEE
Common Stock, par value $.01 per share.....	1,900,000 shares	$4.275	$8,122,500	$2,031(2)

(1) Estimated solely for the purpose of calculating the registration fee pursuant to Rule 457(c) of the Securities Act of 1933, based on the average of the high and low prices as reported on the Nasdaq National Market on August 2, 2001.

(2) Paid as of August 3, 2001.

THE REGISTRANT HEREBY AMENDS THIS REGISTRATION STATEMENT ON SUCH DATE OR DATES AS MAY BE NECESSARY TO DELAY ITS EFFECTIVE DATE UNTIL THE REGISTRANT SHALL FILE A FURTHER AMENDMENT WHICH SPECIFICALLY STATES THAT THIS REGISTRATION STATEMENT SHALL THEREAFTER BECOME EFFECTIVE IN ACCORDANCE WITH SECTION 8(a) OF THE SECURITIES ACT OF 1933 OR UNTIL THE REGISTRATION STATEMENT SHALL BECOME EFFECTIVE ON SUCH DATE AS THE COMMISSION, ACTING PURSUANT TO SAID SECTION 8(a), MAY DETERMINE.

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PROSPECTUS

STEMCELLS, INC.

1,900,000 SHARES OF COMMON STOCK

The selling stockholder listed on page 7 of this prospectus or in an accompanying supplement to this prospectus is offering to sell up to 1,900,000

shares of our common stock.

Our common stock is listed on the Nasdaq National Market under the symbol "STEM." The last reported sale price for our common stock on the Nasdaq National Market on August 23, 2001 was $3.57 per share.

THE SECURITIES OFFERED HEREBY INVOLVE A HIGH DEGREE OF RISK.
SEE "RISK FACTORS" BEGINNING ON PAGE 1.

THESE SECURITIES HAVE NOT BEEN APPROVED OR DISAPPROVED BY THE SECURITIES AND EXCHANGE COMMISSION OR ANY STATE SECURITIES COMMISSION NOR HAS THE SECURITIES AND EXCHANGE COMMISSION OR ANY STATE SECURITIES COMMISSION PASSED UPON THE ACCURACY OR ADEQUACY OF THIS PROSPECTUS. ANY REPRESENTATION TO THE CONTRARY IS A CRIMINAL OFFENSE.

THE DATE OF THIS PROSPECTUS IS AUGUST 27, 2001.

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EXECUTIVE OFFICE

Our principal executive office is located at 3155 Porter Drive, Palo Alto, California 94304 and our telephone number is (650) 475-3100. We maintain a website on the Internet at WWW.STEMCELLSINC.COM. Our website, and the information contained therein, is not a part of this prospectus.

RISK FACTORS

THE OFFERING INVOLVES A HIGH DEGREE OF RISK. YOU SHOULD CAREFULLY CONSIDER THE RISKS DESCRIBED BELOW AND THE OTHER INFORMATION IN THIS PROSPECTUS BEFORE MAKING AN INVESTMENT DECISION REGARDING STEMCELLS, INC.OUR BUSINESS, FINANCIAL CONDITION OR RESULTS OF OPERATIONS COULD BE MATERIALLY ADVERSELY AFFECTED IF ANY OF THESE RISKS ACTUALLY OCCUR. CONSEQUENTIALLY, THE TRADING PRICE OF OUR COMMON STOCK COULD DECLINE, RESULTING IN THE LOSS OF ALL OR PART OF YOUR INVESTMENT.

OUR TECHNOLOGY IS AT AN EARLY STAGE OF DISCOVERY AND DEVELOPMENT, AND WE MAY FAIL TO DEVELOP ANY COMMERCIALLY ACCEPTABLE PRODUCTS.

Our stem cell technology is at the early pre-clinical stage for the brain stem cell and at the discovery phase for the liver and pancreas stem cells and has not yet led to the development of any product. We may fail to discover the stem cells we are seeking, to develop any products, to obtain regulatory approvals, to enter clinical trials, or to commercialize any products. Any product using stem cell technology may fail to:

- survive and persist in the desired location;

- provide the intended therapeutic benefits;

- properly integrate into existing tissue in the desired manner; or

- achieve therapeutic benefits equal to or better than the standard of treatment at the time of testing.

In addition, our products may cause undesirable side effects. Results of early pre-clinical research may not be indicative of the results that will be obtained in later stages of pre-clinical or clinical research. If regulatory authorities do not approve our products, or if we fail to maintain regulatory compliance, we would have limited ability to commercialize our products, and our business and results of operations would be harmed. Furthermore, because stem cells are a new form of therapy, the marketplace may not accept any products we may develop.

If we do succeed in developing products, we will face many potential obstacles such as the need to obtain regulatory approvals, and to develop or obtain manufacturing, marketing and distribution capabilities. In addition, we will face substantial additional risks such as product liability.

WE HAVE PAYMENT OBLIGATIONS RESULTING FROM REAL PROPERTY OWNED OR LEASED BY US IN RHODE ISLAND, WHICH DIVERTS FUNDING FROM OUR STEM CELL RESEARCH AND DEVELOPMENT.

Prior to our reorganization in 1999 and the consolidation of our business in California, we carried out our encapsulated cell therapy programs in Lincoln, Rhode Island, where we also had our administrative offices. Although we have vacated the Rhode Island facilities, we remain obligated to make lease payments and operating costs of approximately $1,200,000 per year for our former science and administrative facility, which we have leased through June 30, 2013, and debt service payments and operating costs of approximately $1,000,000 per year for our former encapsulated cell therapy pilot manufacturing facility, which we own. We are currently seeking to sublease the science and administrative facility and to sell the pilot manufacturing facility, but may not be able to do so. These

continuing costs significantly reduce our cash resources and adversely affect our ability to fund further development of our stem cell technology.

WE MAY NEED BUT FAIL TO OBTAIN PARTNERS TO SUPPORT OUR STEM CELL DEVELOPMENT EFFORTS AND TO COMMERCIALIZE OUR TECHNOLOGY.

Equity and debt financings alone may not be sufficient to fund the cost of developing our stem cell technologies, and we may need to rely on our ability to reach partnering arrangements to provide financial support for our stem cell discovery and development efforts. In addition, in order to successfully develop and commercialize our technology, we may need to enter into a wide variety of arrangements with corporate sponsors, pharmaceutical companies, universities, research groups and others. While we have engaged, and expect to continue to engage, in discussions regarding such arrangements, we have not reached any agreement, and we may fail to obtain any such agreement on terms acceptable to us. Even if we enter into these arrangements, we may not be able to satisfy our obligations under them or renew or replace them after their original terms expire. Furthermore, these arrangements may require us to grant certain rights to third parties, including exclusive marketing rights to one or more products, may require us to issue securities to our collaborators or may contain other terms that are burdensome to us. If any of our collaborators terminates its relationship with us or fails to perform its obligations in a timely manner, the development or commercialization of our technology and potential products may be adversely affected.

WE HAVE A HISTORY OF OPERATING LOSSES AND WE MAY FAIL TO OBTAIN REVENUES OR BECOME PROFITABLE.

We expect to continue to incur substantial operating losses in the future in

order to conduct our research and development activities, and, if those activities are successful, to fund clinical trials and other expenses. These expenses include the cost of acquiring technology, product testing, acquiring regulatory approvals, establishing production, marketing, sales and distribution programs and administrative expenses. We have not earned any revenues from sales of any product. All of our past revenues have been derived from, and any revenues we may obtain for the foreseeable future are expected to be derived from, cooperative agreements, research grants, investments and interest on invested capital. We currently have no cooperative agreements and we have received only two research grants for our stem cell technology, and we may not obtain any such agreements or additional grants in the future or receive any revenues from them.

IF WE ARE UNABLE TO PROTECT OUR PATENTS AND PROPRIETARY RIGHTS, OUR BUSINESS, FINANCIAL CONDITION AND RESULTS OF OPERATION WILL BE HARMED.

We own or license a number of patents and pending patent applications covering human nerve stem cell cultures, central nervous system stem cell cultures, neuroblast cultures, peripheral nervous system stem cell cultures, and an animal model for liver failure. Patent protection for products such as those we propose to develop is highly uncertain and involves complex and continually evolving factual and legal questions. The governmental authorities that consider patent applications can deny or significantly reduce the patent coverage requested in an application before or after issuing the patent. Consequently, we do not know whether any of our pending applications will result in the issuance of patents, or if any existing or future patents will provide sufficient protection or significant commercial advantage or if others will circumvent these patents. We cannot be certain that we were the first to make the inventions covered by each of our pending patent applications or that we were the first to file patent applications for such inventions because patent applications are secret until patents are issued in the United States or until the applications are published in foreign countries, and because publication of discoveries in the scientific or patent literature often lags behind actual discoveries. Patents may not issue from our pending or future patent applications or, if issued, may not be of commercial benefit to us, or may not afford us adequate protection from competing products. In addition, third parties may

challenge our patents or governmental authorities may declare them invalid. In the event that a third party has also filed a patent application relating to inventions claimed in our patent applications, we may have to participate in proceedings to determine priority of invention. This could result in substantial uncertainties and cost for us, even if the eventual outcome is favorable to us, and the outcome might not be favorable to us. Even if a patent issues, a court could decide that the patent was issued invalidly.

Proprietary trade secrets and unpatented know-how are also important to our research and development activities. We cannot be certain that others will not independently develop the same or similar technologies on their own or gain access to our trade secrets or disclose such technology, or that we will be able to meaningfully protect our trade secrets and unpatented know-how and keep them secret. We require our employees, consultants, and significant scientific collaborators and sponsored researchers to execute confidentiality agreements upon the commencement of an employment or consulting relationship with us. These agreements may, however, fail to provide meaningful protection or adequate remedies for us in the event of unauthorized use, transfer or disclosure of such information or inventions.

IF OTHERS ARE FIRST TO DISCOVER AND PATENT THE STEM CELLS WE ARE SEEKING TO DISCOVER, WE COULD BE BLOCKED FROM FURTHER WORK ON THOSE STEM CELLS.

Because the first person or entity to discover and obtain a valid patent to a particular stem or progenitor cell may effectively block all others, it will be important for us or our collaborators to be the first to discover any stem cell that we are seeking to discover. Failure to be the first could prevent us from commercializing all of our research and development affected by that patent.

WE MAY BE UNABLE TO OBTAIN NECESSARY LICENSES TO THIRD PARTY PATENTS AND OTHER RIGHTS.

A number of pharmaceutical, biotechnology and other companies, universities and research institutions have filed patent applications or have received patents relating to cell therapy, stem cells and other technologies potentially relevant to or necessary for our expected products. We cannot predict which, if any, of the applications will issue as patents. If third party patents or patent applications contain claims infringed by our technology and these claims are valid, we may be unable to obtain licenses to these patents at a reasonable

cost, if at all, and may also be unable to develop or obtain alternative technology. If we are unable to obtain such licenses at a reasonable cost, our business could be significantly harmed.

We have obtained rights from universities and research institutions to technologies, processes and compounds that we believe may be important to the development of our products. Licensors may cancel our licenses or convert them to non-exclusive licenses if we fail to use the relevant technology or otherwise breach these agreements. Loss of these licenses could expose us to the risks of third party patents and/or technology. We can give no assurance that any of these licenses will provide effective protection against our competitors.

WE COMPETE WITH COMPANIES THAT HAVE SIGNIFICANT ADVANTAGES OVER US.

The market for therapeutic products that address degenerative diseases is large and competition is intense. We expect competition to increase. We believe that our most significant competitors will be fully integrated pharmaceutical companies and more established biotechnology companies, such as Biogen, Inc. and Genzyme, an Elan Corporation. These companies already produce or are developing treatments for degenerative diseases that are not stem cell-based, and they have significantly greater capital resources and expertise in research and development, manufacturing, testing, obtaining regulatory approvals and marketing than we do. Many of these potential competitors have significant products approved or in development that could be competitive with our potential products, and also

operate large, well-funded research and development programs. In addition, we expect to compete with smaller companies such as NeuralStem and Layton Bioscience and with universities and other research institutions who are developing treatments for degenerative diseases that are stem cell-based.

Our competitors may succeed in developing technologies and products that are more effective than the ones we are developing, or that would render our technology obsolete or non-competitive.

The relative speed with which we and our competitors can develop products, complete the clinical testing and approval processes, and supply commercial quantities of a product to market will affect our ability to gather market acceptance and market share. With respect to clinical testing, competition may delay progress by limiting the number of clinical investigators and patients available to test our potential products.

DEVELOPMENT OF OUR TECHNOLOGY IS SUBJECT TO AND RESTRICTED BY EXTENSIVE GOVERNMENT REGULATION.

Our research and development efforts, as well as any future clinical trials, and the manufacturing and marketing of any products we may develop, will be subject to and restricted by extensive regulation by governmental authorities in the United States and other countries. The process of obtaining U.S. Food and Drug Administration and other necessary regulatory approvals is lengthy, expensive and uncertain. We or our collaborators may fail to obtain the necessary approvals to commence or continue clinical testing or to manufacture or market our potential products in reasonable time frames, if at all. In addition, the U.S. Congress and other legislative bodies may enact regulatory reforms or restrictions on the development of new therapies that could adversely affect the regulatory environment in which we operate or the development of any products we may develop.

We base our research and development on the use of human stem and progenitor cells obtained from fetal tissue. The federal and state governments and other jurisdictions impose restrictions on the use of fetal tissue. These restrictions change from time to time and may become more onerous. Additionally, we may not be able to identify or develop reliable sources for the cells necessary for our potential products--that is, sources that follow all state and federal guidelines for cell procurement. Further, we may not be able to obtain such cells in the quantity or quality sufficient to satisfy the commercial requirements of our potential products. As a result, we may be unable to develop or produce our products in a profitable manner.

We may apply for status under the Orphan Drug Act for some of our therapies to gain a seven year period of marketing exclusivity for those therapies. The U.S. Congress in the past has considered, and in the future again may consider, legislation that would restrict the extent and duration of the market exclusivity of an orphan drug. If enacted, such legislation could prevent us from obtaining some or all of the benefits of the existing statute even if we were to apply for and be granted orphan drug status with respect to a potential product.

WE DEPEND ON A LIMITED NUMBER OF KEY PERSONNEL.

We are highly dependent on the principal members of our management and scientific staff and some of our outside consultants, including the members of our scientific advisory board, our chief executive officer, each of our vice presidents and the directors of our neural stem cell and liver stem cell programs. Although we have entered into employment agreements with some of these individuals, they may terminate their agreements at any time. We currently have outside consultants and interim personnel, rather than permanent employees, in key management and scientific positions. Loss of services of any of these individuals could have a material adverse effect on our operations because these individuals possess management experience or specialized scientific skills that we do not otherwise have and that we may not be able to replace. In addition, our operations are dependent upon our ability to attract and retain additional qualified scientific and management personnel. We may not be able to attract and retain the personnel we need on acceptable terms given the competition for

experienced personnel among pharmaceutical, biotechnology and health care companies, universities and research institutions. If we lose the services of these key personnel or are unable to attract and retain additional qualified personnel, we may have to delay, reduce or eliminate some or all of our research and development programs.

HEALTH CARE INSURERS AND OTHER ORGANIZATIONS MAY NOT PAY FOR OUR PRODUCTS OR MAY IMPOSE LIMITS ON REIMBURSEMENTS.

In both domestic and foreign markets, sales of potential products are likely to depend in part upon the availability and amounts of reimbursement from third party health care payor organizations, including government agencies, private health care insurers and other health care payors, such as health maintenance organizations and self-insured employee plans. There is considerable pressure to reduce the cost of therapeutic products, and government and other third party payors are increasingly attempting to contain health care costs by limiting both coverage and the level of reimbursement for new therapeutic products, and by refusing, in some cases, to provide any coverage for uses of approved products for disease indications for which the U.S. Food and Drug Administration has not granted marketing approval. Significant uncertainty exists as to the reimbursement status of newly approved health care products. We can give no assurance that reimbursement will be provided by such payors at all or without substantial delay, or, if such reimbursement is provided, that the approved reimbursement amounts will be sufficient to enable us to sell products we develop on a profitable basis. Changes in reimbursement policy could also adversely affect the willingness of pharmaceutical companies to collaborate with us on the development of our stem cell technology.

In certain foreign markets, pricing or profitability of prescription pharmaceuticals is subject to government control. We also expect that there will continue to be a number of federal and state proposals to implement government control over health care costs. Efforts at health care reform are likely to continue in future legislative sessions. We do not know what legislative proposals federal or state governments will adopt or what actions federal, state or private payers for health care goods and services may take in response to health care reform proposals or legislation. We cannot predict the effect government control and other health care reforms may have on our business.

WE HAVE LIMITED LIQUIDITY AND CAPITAL RESOURCES AND MAY NOT OBTAIN THE SIGNIFICANT CAPITAL RESOURCES WE WILL NEED TO SUSTAIN OUR RESEARCH AND DEVELOPMENT EFFORTS.

We have limited liquidity and capital resources and must obtain substantial additional capital to support our research and development programs, for acquisition of technology and intellectual property rights, and, to the extent we decide to undertake these activities ourselves, for pre-clinical and clinical testing of our anticipated products, pursuit of regulatory approvals, establishment of production capabilities, establishment of marketing and sales capabilities and distribution channels, and general administrative expenses. If we do not obtain the necessary capital resources, we may have to delay, reduce or eliminate some or all of our research and development programs or license our technology or any potential products to third parties rather than commercializing them ourselves.

If we are unable to draw down on our equity line or choose not to do so, we intend to pursue our needed capital resources through equity and debt financings, corporate alliances, grants and collaborative research arrangements. We may fail to obtain the necessary capital resources from any such sources when needed or on terms acceptable to us. Our ability to complete any such arrangements successfully will depend upon market conditions and, more specifically, on continued progress in our research and development efforts. We are prohibited from entering into other stand-by equity based credit facilities

during the term of the common stock purchase agreement that governs our equity line.

IF OUR COMMON STOCK PRICE DROPS SIGNIFICANTLY, WE MAY BE DELISTED FROM THE NASDAQ NATIONAL MARKET, WHICH COULD ELIMINATE THE TRADING MARKET FOR OUR COMMON STOCK.

Our common stock is quoted on the Nasdaq National Market. In order to continue to be included in the Nasdaq National Market, a company must meet Nasdaq's maintenance criteria. The maintenance criteria most applicable to us requires a minimum bid price of $1.00 per share and $5,000,000 market value of publicly held shares. Additionally, we must maintain either $10 million in stockholders' equity or $4 million in net tangible assets. After November 1, 2002, the net tangible asset maintenance criterion will no longer apply and we must satisfy the stockholders' equity maintenance criterion. Failure to meet these maintenance criteria may result in the delisting of our common stock from the Nasdaq National Market. If our common stock is delisted and in order to have our common stock relisted on the Nasdaq National Market, we would be required to meet the criteria for initial listing, which are more stringent than the maintenance criteria. Accordingly, we cannot assure you that if we were delisted we would be able to have our common stock relisted on the Nasdaq National Market.

If our common stock were delisted from the Nasdaq National Market, we would not be able to draw down any additional funds on the equity line, and we also may be required to pay damages to other holders of our common stock under agreements we previously entered into with them in connection with equity financings. Finally, if our common stock were removed from listing on the Nasdaq National Market, it might become more difficult for us to raise funds through the sale of our common stock or securities convertible into our common stock.

USE OF PROCEEDS

We will not receive any of the proceeds from the resale of shares offered by the selling stockholder under this prospectus.

SELLING STOCKHOLDER

Millennium Partners, L.P. will be selling shares in this offering. On June 21, 2001, we issued 457,750 shares of our common stock to Millennium. At the same time we also issued to Millennium a callable warrant to purchase 50,352 shares of our common stock and an adjustable warrant for a number of shares to be determined on eight dates beginning December 18, 2001 and then every 90 days thereafter.

On June 21, 2001, we also entered into a registration rights agreement with Millennium in which we agreed to register the shares of our common stock purchased by Millennium on that date as well as those shares issuable upon exercise of the warrants issued to Millennium on that date. We agreed to use commercially reasonable efforts to keep the registration statement in effect for five years, until all shares covered by the registration statement are eligible for resale pursuant to Rule 144(k), or until Millennium and its transferees no longer hold the shares covered by the registration statement, whichever occurs first.

In addition to the adjustable warrant described above, Millennium holds an adjustable warrant, issued August 3, 2000, that may become exercisable for additional shares of common stock. We agreed to register all shares of common stock issued on August 3, 2000 or thereafter in connection with that transaction, including shares issuable to Millennium pursuant to warrants. We have previously registered 2,160,000 shares of common stock issued or issuable to Millennium, including all shares issued upon exercise of an August 3, 2000 adjustable warrant on or before August 21, 2001.

The following table shows information regarding the beneficial ownership of our capital stock for Millennium prior to and after this offering. We have determined beneficial ownership in the table in accordance with the rules of the Securities and Exchange Commission as more specifically described in the notes below. In computing the number of shares beneficially owned by Millennium and

the percentage ownership of Millennium, we have deemed to be outstanding shares of capital stock subject to options or warrants held by Millennium that are currently exercisable or will become exercisable within 60 days of June 30, 2001. To our knowledge Millennium possesses sole voting and investment power with respect to all shares of common stock shown as beneficially owned by it.

SHARES OF COMMON STOCK BENEFICIALLY OWNED BEFORE THIS OFFERING(2)		SHARES OF COMMON STOCK BENEFICIALLY OWNED AFTER THIS OFFERING(4)	
NUMBER OF SHARES	PERCENTAGE	NUMBER OF SHARES	PERCENTAGE
1,829,235	8.04%	1,900,000(3)	5.47%

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(1) The address of Millenium Partners, L.P. is 666 Fifth Avenue, New York, New York 10103.

(2) Includes 171,839 shares issuable upon exercise of warrants. Beneficial ownership percentage is based on: these warrants; plus 21,935,192 shares of our common stock outstanding as of June 30, 2001; plus 622,469 shares issued upon exercise of a warrant by Millennium on July 19, 2001; plus 25,804 shares issued upon exercise of a warrant on August 21, 2001. Information on Millennium's beneficial ownership is based in part on a Schedule 13G/A filed by Millennium on February 23, 2001 and on information provided by Millennium as of July 20, 2001. By agreement between Millennium and us, Millennium is not permitted to exercise warrants if such exercise would cause its beneficial ownership of our common stock to exceed 9.99%.

(3) Includes 457,750 outstanding shares issued on June 21, 2001 and 50,352 shares issuable upon exercise of a callable warrant issued on June 21, 2001. The remaining 1,391,898 shares are an estimate of the number of shares which may become issuable upon exercise of the adjustable warrant issued June 21, 2001 and those underlying the adjustable warrant issued August 3, 2000 that have not previously been registered by us.

(4) Includes 121,487 shares issuable upon exercise of warrants. Beneficial ownership percentage is based on: these warrants; plus 21,935,192 shares of our common stock outstanding as of June 30, 2001; plus 622,469 shares issued upon exercise of a warrant by Millennium on July 19, 2001; plus 25,804 shares issued upon exercise of a warrant on August 21, 2001; plus 50,352 issuable upon exercise of a callable warrant issued on June 21, 2001; plus 1,391,898 shares deemed issuable upon exercise of the adjustable warrants issued on June 21, 2001 and August 3, 2000.

PLAN OF DISTRIBUTION

We will not receive any of the proceeds from the sale by the selling stockholder of the common stock offered hereby.

The shares of the common stock offered hereby may be sold from time to time by the selling stockholder, or by pledgees, donees, transferees or other successors in interest:

- to or through underwriters or dealers;

- directly to one or more other purchasers;

- through agents on a best-efforts basis; or

- through a combination of any such methods of sale.

Such sales may be made on one or more exchanges or in the over-the-counter market, or otherwise at prices and at terms then prevailing or at prices related to the then current market price, or in privately negotiated transactions. The shares may be sold by one or more of the following:

- a block trade in which the broker or dealer so engaged will attempt to sell the shares as agent but may position and resell a portion of the block as principal to facilitate the transaction;

- purchases by a broker or dealer as principal and resale by such broker or dealer for its account pursuant to this prospectus;

- an exchange distribution in accordance with the rules of such exchange;

- ordinary brokerage transactions and transactions in which the broker solicits purchasers; and

- privately negotiated transactions without a broker or dealer.

In effecting sales, brokers or dealers engaged by the selling stockholder may arrange for other brokers or dealers to participate. Brokers or dealers will receive commissions or discounts from the selling stockholder in amounts to be negotiated prior to the sale. In addition, any securities covered by this prospectus which qualify for sale pursuant to Rule 144 under the Securities Act of 1933 may be sold under Rule 144 rather than pursuant to this prospectus.

In addition, the selling stockholder may engage in short sales and other transactions in the common stock or derivatives thereof, and may pledge, sell, deliver or otherwise transfer the common stock offered under this prospectus in connection with such transactions.

If we are notified by a selling stockholder that a material arrangement has been entered into with a broker-dealer for the sale of shares through a block trade, special offering, exchange distribution or secondary distribution, or a purchase by a broker-dealer as a principal, a supplemental prospectus will be filed listing:

- the name of each selling stockholder and of the participating broker-dealer(s);

- the number of shares involved;

- the price at which such shares were sold;

- the commissions paid or discounts or concessions allowed to such broker-dealer(s), where applicable; and

- other facts material to the transaction.

We have agreed to pay the cost of registering the shares covered by this prospectus and the costs of preparing this prospectus and the registration statement under which it is filed.

We and the selling stockholder have agreed to indemnify one another against certain liabilities, including liabilities arising under the Securities Act.

LEGAL MATTERS

The validity of the shares of our common stock offered hereby will be passed upon for us by Ropes & Gray, Boston, Massachusetts.

EXPERTS

Ernst & Young LLP, independent auditors, have audited our consolidated financial statements included in our Annual Report on Form 10-K for the year ended December 31, 2000, as set forth in their report, which is incorporated by reference in the prospectus and elsewhere in the registration statement. Our financial statements are incorporated by reference in reliance on Ernst & Young LLP's report, given on their authority as experts in accounting and auditing.

WHERE YOU CAN FIND MORE INFORMATION

We have filed with the SEC a registration statement on Form S-3 under the Securities Act with respect to the common stock to be sold in this offering. This prospectus does not contain all the information included in the registration statement and the related exhibits and schedules. You will find additional information about us and our common stock in the registration statement. The registration statement and the related exhibits and schedules may be inspected and copied at the public reference facilities maintained by the SEC at Room 1024, Judiciary Plaza, 450 Fifth Street, N.W., Washington, D.C. 20549, and at the public reference facilities of the SEC's Regional Offices: New York Regional Office, Seven World Trade Center, Suite 1300, New York, New York 10048; and Chicago Regional Office, Citicorp Center, 500 West Madison Street, Chicago, Illinois 60661. Copies of this material may also be obtained from the Public Reference Section of the SEC at 450 Fifth Street, N.W., Washington, D.C. 20549 at prescribed rates. You can obtain information on the operation of the public reference facilities by calling 1-800-SEC-0330. The SEC also maintains a site on the World Wide Web (http://www.sec.gov) that contains reports, proxy and information statements and other information regarding registrants, including us, that file electronically with the SEC. Statements made in this prospectus about legal documents may not necessarily be complete and you should read the documents which are filed as exhibits or schedules to the registration statement or otherwise filed with the SEC.

INCORPORATION OF DOCUMENTS BY REFERENCE

The SEC allows us to incorporate by reference the information we file with it, which means that we can disclose information important to you by referring you to those documents. The information incorporated by reference is considered to be a part of this prospectus, and information that we later file with the SEC will automatically update and supersede this information. Accordingly, we incorporate by reference the following documents we filed with the SEC pursuant to Section 13 of the Securities Exchange Act of 1934:

- our Annual Report on Form 10-K for the year ended December 31, 2000 (filed April 2, 2001, as amended April 30, 2001);

- our Quarterly Report on Form 10-Q for the quarters ended June 30, 2001 (filed August 10, 2001) and March 31, 2001 (filed May 9, 2001);

- our Proxy Statement for the Annual Meeting of Stockholders held on May 31, 2001 (filed April 30, 2001);

- our Current Reports on Form 8-K dated May 8, 2001 (filed May 8, 2001) and May 14, 2001 (dated May 14, 2001);

- the description of our common stock contained in the registration statement on Form 8-A filed with the SEC pursuant to Section 12 of the Securities Exchange Act of 1934 and all amendments thereto and reports filed for the purpose of updating such description; and

- all documents filed by us with the SEC pursuant to the Securities Exchange Act of 1934 after the date of this prospectus and before the offering of common stock is completed (other than portions of such documents described in paragraphs (i), (k) and (l) of Item 402 of Regulation S-K promulgated by the SEC).

These documents are or will be available for inspection or copying at the locations identified above under the caption "Where You Can Find More Information." We will provide without charge to each person to whom this prospectus is delivered, upon written or oral request, a copy of any and all of the documents that have been incorporated by reference in this prospectus (other than exhibits to those documents). You should direct requests for documents to:

StemCells, Inc.
3155 Porter Drive
Palo Alto, CA 94304

Attention: Investor Relations
Telephone number: (650) 475-3100

PART II
INFORMATION NOT REQUIRED IN PROSPECTUS

ITEM 14. OTHER EXPENSES OF ISSUANCE AND DISTRIBUTION.

The following table sets forth the costs and expenses payable by the Registrant in connection with the sale of the securities being registered. All amounts shown are estimates except the SEC registration fee.

SEC registration fee	$ 2,031
Printing and engraving expenses	$ 5,000
Legal fees and expenses	$10,000
Accounting fees and expenses	$ 3,000
Miscellaneous	$10,000
Total	$30,031

ITEM 15. INDEMNIFICATION OF DIRECTORS AND OFFICERS.

Section 145 of the Delaware General Corporation Law provides that a corporation may indemnify any person who was or is a party or is threatened to be made a party to any threatened, pending or completed action, suit or proceeding, whether civil, criminal, administrative or investigative, other than an action by or in the right of the corporation, by reason of the fact that the person is or was a director, officer, employee or agent of the corporation or is or was serving at the corporation's request as a director, officer, employee or agent of another corporation, partnership, joint venture, trust or other enterprise, against expenses, including attorneys' fees, judgments, fines and amounts paid in settlement actually and reasonably incurred by the person in connection with the action, suit or proceeding if the person acted in good faith and in a manner the person reasonably believed to be in or not opposed to the best interests of the corporation, and, with respect to any criminal action or proceeding, had no reasonable cause to believe the person's conduct was unlawful. The power to indemnify applies to actions brought by or in the right of the corporation as well, but only to the extent of expenses, including attorneys' fees but excluding judgments, fines and amounts paid in settlement, actually and reasonably incurred by the person in connection with the defense or settlement of the action or suit and with the further limitation that in these actions no indemnification shall be made in the event of any adjudication of negligence or misconduct in the performance of his duties to the corporation, unless a court believes that in light of all the circumstances indemnification should apply.

Section Ten of our Restated Certificate of Incorporation provides that we shall, to the maximum extent legally permitted, indemnify and upon request advance expenses to each person who is or was a party or is threatened to be made a party to any threatened, pending or completed action, suit proceeding, or claim (civil, criminal, administrative or investigative) by reason of the fact that he is or was, or has agreed to become, a director or officer of the Company, or is or was serving, or has agreed to serve, at the request of the Company, as a director, officer, partner, employee, agent or trustee of, or in a similar capacity with, another corporation, partnership, joint venture, trust or other enterprises, provided, however, that the Company is not required to indemnify or advance expenses to any person in connection with any action, suit, proceeding, claim or counterclaim initiated by or on behalf of such person. The indemnification provided for in Section Ten is expressly not exclusive of any other rights to which those seeking indemnification may be entitled under any by-law, agreement or vote of directors or stockholders or otherwise, and shall inure to the benefit of the heirs and legal representatives of such persons.

Section 145(g) of the Delaware General Corporation Law provides that the Company shall have the power to purchase and maintain insurance on behalf of its officers, directors, employees and agents, against any liability asserted against and incurred by such persons in any such capacity.

We have obtained insurance covering our directors and officers against

certain liabilities.

Section 102(b)(7) of the General Corporation Law of the State of Delaware provides that a corporation may eliminate or limit the personal liability of a director to the corporation or its stockholders for monetary damages for breach of fiduciary duty as a director, provided that such provisions shall not eliminate or limit the liability of a director (i) for any breach of the director's duty of loyalty to the corporation or its stockholders, (ii) for acts or omissions not in good faith or which involve intentional misconduct or a knowing violation of law, (iii) under Section 174 of the General Corporation Law of the State of Delaware, or (iv) for any transaction from which the director derived an improper personal benefit. No such provision shall eliminate or limit the liability of a director for any act or omission occurring prior to the date when such provision becomes effective.

Pursuant to the Delaware General Corporation Law, Section Nine of the Company's Restated Certificate of Incorporation eliminates a director's personal liability for monetary damages for breach of fiduciary duty as a director, except in circumstances involving a breach of the director's duty of loyalty to StemCells, Inc. or its shareholders, acts or omissions not in good faith, intentional misconduct, knowing violations of the law, self-dealing or the unlawful payment of dividends or repurchase of stock.

ITEM 16. EXHIBITS AND FINANCIAL STATEMENT SCHEDULES

(a) EXHIBITS. The following exhibits are filed as part of this registration statement:

NUMBER	DESCRIPTION
3.1*	Restated Certificate of Incorporation of the Registrant
3.2++	Amended and Restated By-Laws of the Registrant.
4.1*	Specimen Common Stock Certificate.
4.2++++	Form of Warrant Certificate issued to a certain purchaser of the Registrant's Common Stock in April 1995.
4.3X	Warrant to Purchase Common Stock--Mark Angelo.
4.4X	Warrant to Purchase Common Stock--Robert

Farrell. 4.5X Warrant to Purchase Common Stock-- Joseph Donahue. 4.6X Warrant to Purchase Common Stock-- Hunter Singer. 4.7X Warrant to Purchase Common Stock--May Davis. 4.8X Common Stock Purchase Warrant. 4.9X Callable Warrant, dated July 31, 2000, issued to Millennium Partners, L.P. 4.10XXX Registration Rights Agreement dated as of May 10, 2001 between the Company and Sativum Investments Limited. 4.11XXX Warrant, dated May 10, 2001, to Purchase Common Stock issued to Sativum Investments Limited. 4.12XXX Warrant, dated May 10, 2001, to Purchase Common Stock issued to Pacific Crest Securities, Inc. 4.13XXX Warrant dated May 10, 2001, to Purchase Common Stock issued to Granite Financial Group, Inc. 4.14XXX Callable Warrant, dated June 21, 2001, issued to Millennium Partners, L.P. 4.15XXX Common Stock Purchase

Warrant, Class A, dated June 21, 2001, issued to Millennium Partners, L.P. 5.1XXXX Opinion of Ropes & Gray. 10.1* Amendment to Registration Rights dated as of February 14, 1992 among the Registrant and certain of its stockholders. 10.2* Form of at-will Employment Agreement between the Registrant and most of its employees. 10.3* Form of Agreement for Consulting Services between the Registrant and members of its Scientific Advisory Board. 10.4* Form of Nondisclosure Agreement between the Registrant and its Contractors. 10.5* Master Lease and Warrant Agreement dated April 23, 1991 between the Registrant and PacifiCorp Credit, Inc. 10.6* 1988 Stock Option Plan. 10.7* 1992 Equity Incentive Plan. 10.8* 1992 Stock Option Plan for Non-Employee Directors. 10.9**!!!! 1992 Employee Stock Purchase Plan.

NUMBER	DESCRIPTION
10.12++	Research Agreement dated as of March 16, 1994 between NeuroSpheres, Ltd. and Registrant.
10.13++	Term Loan Agreement dated as of September 30, 1994 between The First National Bank of Boston and Registrant.
10.14++	Lease Agreement between the Registrant and Rhode Island Industrial Facilities Corporation, dated as of August 1, 1992.
10.15++	First Amendment to Lease Agreement between Registrant and The Rhode Island Industrial Facilities Corporation dated as of September 15, 1994.
10.17**++++	Development, Marketing and License Agreement, dated as of March 30, 1995 between Registrant and Astra AB.
10.18++++	Form of Unit Purchase Agreement to be executed by the purchasers of the Common Stock and Warrants offered in April 1995.
10.19+++	Form of Common Stock Purchase Agreement to be executed among the Registrant and certain purchasers of the Registrant's Common Stock.
10.22###	Lease Agreement dated as of November 21, 1997 by and

between Hub RI Properties Trust, as Landlord, and CytoTherapeutics, Inc., as Tenant.

10.24!! CTI individual stockholders option agreement dated as of July 10, 1996 among the Company and the individuals listed therein.

10.25!! CTI Valoria option agreement dated of July 10, 1996 between the Company and the Societe Financiere Valoria SA.

10.26!!! Term Loan Agreement dated as of October 22, 1996 between The First National Bank of Boston and the Registrant.

10.27*** Agreement and Plan of Merger dated as of August 13, 1997 among StemCells, Inc., the Registrant and CTI Acquisition Corp.

10.28*** Consulting Agreement dated as of September 25, 1997 between Dr. Irving Weissman and the Registrant.

10.29### Letter Agreement among each of Dr. Irving Weissman and Dr. Fred H. Gage and the Registrant.

10.32**** StemCells, Inc. 1996 Stock Option Plan.

10.33**** 1997 StemCells Research Stock Option Plan (the "1997 Plan").

10.34**** Form of Performance-Based Incentive Option Agreement issued under the 1997 Plan.

10.35### Employment Agreement dated as of September 25, 1997 between Dr. Richard M. Rose and the Registrant.

10.38[*] Rights

NUMBER	DESCRIPTION
	Agreement, dated as of July 27, 1998 between Bank Boston, N.A. as Rights Agent and the Registrant.
10.40%**	Consulting Services Agreement dated as of July 27, 1998, as amended December 19, 1998 between Dr. John J. Schwartz and the Registrant.
10.41%**	Letter Agreement dated as of December 19, 1998 between John J. Schwartz and the Registrant.
10.42%**	License Agreement dated as of October 27, 1998 between The Scripps Research Institute and the Registrant.

NUMBER	DESCRIPTION
10.43%**	License Agreement dated as of October 27, 1998 between The Scripps Research Institute and the Registrant.
10.44%**	License Agreement dated as of November 20, 1998 between The Scripps Research Institute and the Registrant.
10.45%%**	Purchase Agreement and License Agreement

dated as of December 29, 1999 between Neurotech S.A. and the Registrant.

10.46** License Agreement, dated as of June 1999, between The Scripps Research Institute and the Registrant.

10.47** License Agreement, dated as of June 1999, between The Scripps Research Institute and the Registrant.

10.48X Form of Registration Rights Agreement, dated as of July 31, 2000, between StemCells, Inc. and investors.

10.49X Subscription Agreement, dated as of July 31, 2000, between StemCells, Inc. and Millennium Partners, L.P.

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10.52XX License Agreement, dated as of October 30, 2000, between the Company and Neuro Spheres Ltd.
10.53XX Letter Agreement, dated January 2, 2001, between the Company and Martin McGlynn.
10.54XX Lease, dated February 1, 2001, between the Board of Trustees of Stanford University and the Company.
10.55XXX Registration Rights Agreement, dated as of June 21, 2001, by and between the Company and Millennium Partners, L.P.
10.56XXX Subscription Agreement, dated as of June 21, 2001, by and between the Company and Millennium Partners, L.P.
10.57%%% 2001 Equity Incentive Plan. 21.1X Subsidiaries of the Registrant.
23.1 Consent of Ernst & Young LLP, Independent Auditors.
23.2XXXX Consent of Ropes & Gray (included in the form of opinion filed as Exhibit 5.1). 24.1

	Power of Attorney pursuant to which amendments to this registration statement may be filed (contained on page II-9 hereto).
99.2XX	Side Letter, dated March 17, 2001, between the Company and Oleh S. Hnatiuk regarding NeuroSpheres License Agreement, dated October 30, 2000.

- ------------------------

++ Previously filed with the Commission as Exhibits to, and incorporated herein by reference to, the Registrant's Registration Statement on Form S-1, File No. 333-85494.

+++ Previously filed with the Commission as Exhibits to, and incorporated herein by reference to, the Registrant's Registration Statement on Form S-3, File No. 333-97272.

++++ Previously filed with the Commission as Exhibits to, and incorporated herein by reference to, the Registrant's Registration Statement on Form S-1, File No. 333-91228.

* Previously filed with the Commission as Exhibits to, and incorporated herein by reference to, Registration Statement on Form S-1, File No. 333-45739.

Previously filed with the Commission as Exhibits to, and incorporated herein by reference to, the Registrant's Annual Report on Form 10-K for fiscal year ended December 31, 1992 and filed March 30, 1993.

** Confidential treatment requested as to certain portions. The term "confidential treatment" and the mark "**" as used throughout the indicated Exhibits mean that material has been omitted and separately filed with the Commission.

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Previously filed with the Commission as an Exhibit to, and incorporated herein by reference to, the Registrant's annual report on Form 10-K for the fiscal year ended December 31, 1997 and filed on March 30, 1998.

[*] Previously filed with the Commission as an Exhibit to, and incorporated herein by reference to, the Registrant's current report on Form 8-K filed on August 3, 1998.

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X Previously filed with the Commission as an Exhibit to, and incorporated herein by reference to, the Registrant's Registration Statement on Form S-1, File No. 333-45496.

XX Previously filed with the Commission as an Exhibit to, and incorporated herein by reference to, the Registrant's Annual Report on Form 10-K for the fiscal year ended December 31, 2000 and filed on April 2, 2001.

XXX Previously filed with the Commission as an Exhibit to, and incorporated herein by reference to, the Registrant's Registration Statement filed on Form S-1 as amended to Form S-3, File No. 333-61726.

XXXX Previously filed with the Commission as an Exhibit to, and incorporated herein by reference to, the Registrant's Registration Statement filed on Form S-3, File No. 333-66692.

ITEM 17. UNDERTAKINGS.

(a) Insofar as indemnification for liabilities arising under the Securities Act may be permitted to directors, officers and controlling persons of the Registrant pursuant to the provisions described under Item 14 above, or otherwise, the Registrant has been advised that in the opinion of the Securities and Exchange Commission such indemnification is against public policy as expressed in the Securities Act and is, therefore, unenforceable. In the event that a claim for indemnification against such liabilities (other than the payment by the Registrant of expenses incurred or paid by a director, officer or controlling person of the Registrant in the successful defense of any action, suit or proceeding) is asserted by such director, officer or controlling person in connection with the securities being registered, the Registrant will, unless in the opinion of its counsel the matter has been settled by controlling precedent, submit to a court of appropriate jurisdiction the question whether such indemnification by it is against public policy as expressed in the Securities Act and will be governed by the final adjudication of such issue.

(b) The undersigned Registrant hereby undertakes:

(1) To file, during any period in which offers or sales are being made, a post-effective amendment to this registration statement:

(i) To include any prospectus required by Section 10(a)(3) of the Securities Act of 1933;

(ii) To reflect in the prospectus any facts or events arising after the effective date of the registration statement (or the most recent post-effective amendment thereof) which, individually or in the aggregate, represent a fundamental change in the information set forth in the registration statement. Notwithstanding the foregoing, any increase or decrease in volume of securities offered (if the total dollar value of securities offered would not exceed that which was registered) and any deviation from the low or high end of the estimated maximum offering range may be reflected in the form of prospectus filed with the Commission pursuant to Rule 424(b) if, in the aggregate, the changes in volume and price represent no more than 20 percent change in the maximum aggregate offering price set forth in the "Calculation of Registration Fee" table in the effective registration statement.

(iii) To include any material information with respect to the plan of distribution not previously disclosed in the registration statement or any material change to such information in the registration statement.

(2) For the purpose of determining any liability under the Securities Act, each post-effective amendment that contains a form of prospectus shall be deemed to be a new registration statement relating to the securities offered therein, and the offering of such securities at that time shall be deemed to be the initial BONA FIDE offering thereof.

(3) To remove from registration by means of a post-effective amendment any of the securities being registered which remain unsold at the termination of the offering.

(4) To file a post-effective amendment to the Registration Statement to include any financial statements required by section 10(a)(3) of the Securities Act.

(c) The undersigned registrant hereby undertakes that, for purposes of determining any liability under the Securities Act of 1933, each filing of the registrant's annual report pursuant to Section 13(a) or 15(d) of the Securities Exchange Act of 1934 (and, where applicable, each filing of an employee benefit plan's annual report pursuant to Section 15(d) of the Securities Exchange Act of 1934) that is incorporated by reference in the registration statement shall be deemed to be a new registration statement relating to the securities offered therein, and the offering of such securities at that time shall be deemed to be the initial BONA FIDE offering thereof.

SIGNATURES

Pursuant to the requirements of the Securities Act of 1933, the Registrant has duly caused this Pre-Effective Amendment No. 1 to the Registration Statement to be signed on its behalf by the undersigned, thereunto duly authorized, in the City of Palo Alto, State of California, on the 24th day of August, 2001.

STEMCELLS, INC.

BY: /S/ MARTIN M. MCGLYNN

Martin M. McGlynn
Chief Executive Officer

POWER OF ATTORNEY

Pursuant to the requirements of the Securities Act of 1933, this

Pre-Effective Amendment No. 1 to the Registration Statement has been signed by the following persons in the capacities indicated on August 24, 2001.

SIGNATURE	TITLE
- Martin M. McGlynn,	President, Chief Executive Officer
/s/ MARTIN M. MCGLYNN	(Principal Executive Officer), Director
-- George Koshy,	Controller and Acting Chief Financial Officer
(Principal Financial Officer and * Principal Accounting Officer)	
-- Mark J. Levin *	Director
-- Roger M. Perlmutter, M.D., Ph.D. *	Director
-- John J. Schwartz, Ph. D. *	Director
-- Irving Weissman, M.D.	Director
--	

* By executing his name hereto, Martin M. McGlynn is signing this document on behalf of the persons indicated above pursuant to the power of attorney duly

executed by such persons and filed with the Securities and Exchange Commission.

*By: /s/ MARTIN M. MCGLYNN

Martin M. McGlynn
ATTORNEY-IN-FACT

EXHIBIT INDEX

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NUMBER DESCRIPTION
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EXHIBIT 23.1

CONSENT OF ERNST & YOUNG LLP, INDEPENDENT AUDITORS

We consent to the reference to our firm under the caption "Experts" in the Pre-Effective Amendment No. 1. to the Registration Statement (Form S-3 No. 333-66692) and related Prospectus of StemCells, Inc. for the registration of 1,900,000 shares of its common stock and to the incorporation by reference therein of our report dated February 23, 2001, with respect to the consolidated financial statements of StemCells, Inc. included in its Annual Report (Form 10-K) for the year ended December 31, 2000, filed with the Securities and Exchange Commission.

/s/ Ernst & Young LLP

Palo Alto, California
August 21, 2001