March 8, 2009

(ChattahBox) — We spoke with **Robin Smith, MD, CEO** of NeoStem, as part our series on stem cell harvesting and storage series started here, to find out more about what NeoStem does. First a quick intro on the company. NeoStem, Inc. (NYSE Alternext US: NBS), is a pioneer in the pre-disease collection, processing and long-term storage of adult stem cells for future medical need. NeoStem is developing a network of adult stem cell collection centers that are focused on enabling people to donate and store their own (autologous) stem cells when they are young and healthy for their personal use in times for future medical need. The Company has also recently entered into research and development through the acquisition of a worldwide exclusive license to technology to identify and isolate VSELs (very small embryonic-like stem cells), which have been shown to have several physical characteristics that are generally found in embryonic stem cells (more on this below).

Can you tell us about the details of your long-term storage of adult stem cells for future medical need?

NeoStem is the first company to provide adult stem cell collection and long-term storage to the general public. NeoStem's medically proven process is safe and minimally invasive, collecting **your** cells for **your** future use, thereby reducing the risk of complications associated with rejection or transmission of disease from donor cells.

Once collected, the cells are processed, separating the desired cells from the collected product. They are then placed in storage containers, slowly cooled and eventually placed in a liquid nitrogen tank at a select processing and storage laboratory facility where they are safely stored for your future use.

How is it done?

Through NeoStem's proprietary technology, autologous stem cells (**one's own** stem cells) are collected from peripheral blood utilizing a safe and minimally invasive procedure called apherisis. Once medically approved, the client selects a collection date, and for two days prior to collection receives a stem cell mobilizing agent (through injection), that increases the number of stem cells in the circulating blood. The Collection procedure, which takes place at a NeoStem Collection Center, is 3-4 hours, and is similar to donating platelets or partially similar to donating blood. Blood is circulated through a highly specialized machine that collects cells in an extremely safe and sterile manner. Upon completion, the product is packed and sent for processing and storage at a licensed laboratory facility where it remains available for your use at any time. Normal activities can be resumed almost immediately following the collection procedure.

How long can cells be stored for later use?

Cells that are properly cryopreserved can be stored for very long periods of time- probably longer than the life expectancy of the donor. There is a very small degradation process that occurs from the time of collection until eventual use, but most of the collected cells should be active and healthy when you are ready to use them.

Which kind of cells do you collect and why?

NeoStem collects only adult autologous stem cells. Your cells for your use!

Adult stem cells are undifferentiated cells that can renew themselves and can differentiate to yield the major cell types of a tissue or organ. The primary role of adult stem cells is to maintain and repair the tissue in which they are found.
Some attributes of adult stem cells include:

- They are not immunogenic, that is a recipient who receives their own stem cells will not experience immune rejection.
- There is a relative ease of procurement - the collection procedure is safe and relatively painless
- They are non-tumorigenic – they tend not to form tumors.

Why should healthy people think about doing this?
The best time to collect your adult stem cells is when you are healthy, while your cells are most strong and viable! The NeoStem Team is committed to instilling in our clients the importance of looking beyond the "right now" by emphasizing the benefits of being proactive in one's healthcare and collecting and banking your cells while you are healthy. Taking part in a healthcare innovation like stem cell collection and storage today, gives you the option of medical advances that will be available tomorrow…. advances that could one day save you life.
Is there a benefit to doing this at a younger age?
The best time to collect your stem cells is when you are young and healthy. Stem cells, like other cells of the body, undergo cellular changes with the passage of time. DNA point mutations, altered cellular function, decreases in spindle apparatus length are a few of the changes a stem cell may undergo with age. These changes, as would be expected, have the potential of diminishing the effectiveness of an individual's stem cells. While there is no data to suggest an optimal or upper limit age to collect and store stem cells, stem cells collected when you are younger, function better than stem cells collected later in life.
How much does it cost?
The stem cell collection and processing fee is $7,500. There is an additional cost for the stem cell mobilizing injections, which range from $800 -$1,500 depending on the required dose (weight related). Storage fees are additional at $62.50/month, $699/year or $6,500/ten years. NeoStem will assist clients in financing through Care Credit, a low interest healthcare credit card, which offers numerous payment options including an interest free payment plan for as little as $495. month for 18 months which includes two years of storage.
Where is the service offered?
You can have your cells collected today at any one of our licensed Collection Centers. Presently, NeoStem Collection Centers are located on the West Coast in San Diego and Los Angeles, California and on the East Coast in Manhattan and Long Island, New York as well as Coral Gables Florida. Our Louisville, Kentucky Center will be available to clients shortly.
New Technologies at NeoStem

NeoStem is very focused on acquiring technologies related to Stem Cell Therapies. The first technology NeoStem has licensed is from University of Louisville. Dr. Mariusz Ratajczak, M.D., Ph.D. Director of the Stern Cell Biology Program made the important discovery that bone marrow contains a rare population of pluripotent stem cells that are mobilized into the periphery blood during stress and/or at the time of injury, and assist in the repair of the damaged tissue. These cells, called "very-small embryonic-like stem cells" or VSELs express a multitude of pluripotent stem cell markers and are enriched in expression of genes found in skeletal muscles, heart, neural cells, liver, intestinal epithelium, skin epithelium and endocrine pancreas. VSELs

have demonstrated several embryonic stem cell-like characteristics, including the capacity to form in vitro spheres resembling embryoid bodies which express the placental form of alkaline phosphatase and several genes involved in early gastrulation. Furthermore, their extensive pluripotency has been confirmed by demonstrating the ability of VSELs to differentiate into all three germ-layer lineages, ectoderm, endoderm and mesoderm. Most recently, VSELs have been shown to assist in cardiac repair after myocardial infarction.

The significance of these findings, in the grand scheme of things, is that each of us has a population of very primitive embryonic-like stem cells that can be harvested for potential therapeutic use. This is possible because VSELs are also released into the peripheral blood by using an FDA approved drug called G-CSF which functions as a "bone marrow mobilizing agent". This drug causes the VSELs that reside in the bone marrow to enter the blood where they are collected by a process called apheresis, a process that is used as standard-of-care in blood donations.

NeoStem is working on methods to optimally harvest and expand these cells and prove their ability to restore healthy tissue. Our ultimate goal is to provide each donor with a greatly expanded number of VSELs that can be used as an advanced form of Regenerative Medicine to aid in the repair of degenerative, damaged or diseased tissue. Importantly, these VSELs are one's own cells. This removes the risk of serious graft verses host disease or tissue rejection which frequently occurs when the source of cells used for regenerative purposes in from a donor other than one's self.

The most recent technology NeoStem licensed, which includes an issued as well as pending patent application, was developed by Vincent C. Giampapa, M.D., F.A.C.S., a Board-certified plastic reconstructive surgeon and Assistant Clinical Professor of Plastic and Reconstructive Surgery at the University of Medicine and Dentistry of New Jersey. Dr. Giampapa, one of the first certified anti-aging medical physicians in the world, is Director of the Plastic Surgery Center Internationale and The Giampapa Institute for Anti-Aging Medical Therapy. The acquisition of the exclusive worldwide rights to these innovative stem cell skin rejuvenation procedures enhances NeoStem's leadership in the anti-aging and regenerative medicine arena. This has long been one of our core pursuits. Our earliest stem cell collection center is focused on treatments for physical aging.

In January 2009, Dr. Giampapa presented and demonstrated some of his skin rejuvenation techniques using autologous adult stem cells at the 2009 International Stem Cell Technology and Applications Summit in Qingdao, China. The exciting part about this is it is natural, not synthetic and helps your skin to rejuvenate itself.

For more information, please visit: www.neostem.com.