What Eye Stem Cell and Genetic Research Offer in the New Decade

According to researchers at the Prevention of Blindness Society of Metropolitan Washington’s Macular Degeneration Town Meeting on Sunday, April 18, stem cell research may offer a light at the end of the tunnel for some sufferers of age-related macular degeneration (AMD), along with other eye diseases resulting in blindness.

Richard Garfinkel, M.D., of Retina Group of Washington, presented a review of past and current treatments for AMD. The current standard of care includes antioxidant and zinc supplements to slow the progression of the disease for people at high risk of developing advanced stages of wet AMD. Research has also proven that these supplements provide no apparent benefit for people with no AMD or early AMD. Patients should consult their doctor about taking such supplements. Newer drugs, such as Avastin and Lucentis, are available for the treatment of the wet form, and are effective in maintaining overall vision for months and sometimes even years.
Wai Wong, M.D., Ph.D., noted that there have been numerous advances in the basic science of retinal stem biology, which may have important clinical implications in the future. Dr. Wong was the recipient of the Macular Degeneration Research Grant from the Prevention of Blindness Society of Metropolitan Washington in 2009. With this grant, Dr. Wong and Thomas Johnson, a researcher at the National Eye Institute, National Institutes of Health, have researched strategies to help protect the retina and replace cells in AMD and other retinal diseases.

Stem cells serve as a sort of internal repair system within the human body, dividing and replenishing other cells. When a stem cell divides, each new cell has the potential either to remain a stem cell or become another type of cell with a more specialized function, such as a muscle, red blood or brain cell.

There are three different types of stem cells: embryonic, adult (or somatic) and induced pluripotent stem cells (iPSCs). When a sperm cell fertilizes an egg, a one-cell embryo is formed. After about five days of development, the embryo consists of a ball of 50 to 100 cells called a blastocyst. Embryonic stem cells are derived from an inner cell mass within the blastocyst. Adult stem cells are found in bone marrow, blood, the eye, brain and skeletal muscle. iPSCs are adult cells that have been genetically reprogrammed, and can be a useful tool for drug development, modeling of diseases and as transplantation medicine.
Stem cells can help AMD by protecting the surviving cells or replacing lost photoreceptors, also called retinal pigment-ed epithelial cells (RPE), when they die. These cells provide nourishment for retinal visual cells. Dysfunction and death of these cells is responsible for many diseases, including AMD.

Research over the last decade has produced methods that allow scientists to take human embryonic stem cells and change them into RPE cells in culture dishes.

Preclinical studies in animals have shown that these new RPE cells (transplanted through injections into the eye) take over the duties of the old, dying ones, slowing vision loss. Clinical trials in human patients are expected to start in the next year or two.

Right now these preliminary studies show promise, but work remains before these scientific results can be used with human patients. Stem cell research is one of the most fascinating areas of contemporary biology, but research on stem cells also raises scientific questions as rapidly as it generates new discoveries. Patients should consult their physicians about treatments and clinical trials they may be eligible for.

- Contributions by Rosana Vollmerhausen, The Beacon Newspapers
Choosing Sunglasses

What You Need to Know to Choose Great Shades

Overexposure to the sun can wreak havoc on your eyes. Sun damage can cause severe conditions such as photokeratitis (sunburn to the cornea), pterygium (tissue growth on the whites of the eyes that can block vision), skin cancer on the eyelids, and has been implicated in the development of cataracts and possibly macular degeneration as well.

What you may not know is that even the best designer sunglasses may be doing more to improve your reputation than to protect your eyes from sun damage.

The three most common myths about sunglasses are:
-- Darker sunglasses provide better protection against the sun.
-- Expensive designer sunglasses are of a better quality than generic sunglasses.
-- Sunglasses only need to be worn during the summer.

Please refer to the calendar of events for programs on this topic that will include a lively and informative sight-saving discussion regarding the myths and facts about eye protection, and choosing the right sunglasses for summer fun and all year round.
Calendar of Events

For more information on these events, please call POB at (202) 234-1010

• Saturday, May 1, 2010
“Don’t Lose Sight to Glaucoma,” 12 - 4 p.m.
Medical Update with Andrew Adelson, M.D., and Gregory Butler, M.D., 1 - 3 p.m.
Resource and technology exhibits, and FREE glaucoma and visual acuity screenings, 12 - 4 p.m.
Martin Luther King, Jr. Memorial Library
901 G Street, NW
Washington, DC 20001
If you require special accommodations, please call the Adaptive Services Division at (202) 727-2142.

• Tuesday, May 11, 2010
“Protecting Your Sight from the Sun,” 11 a.m.
Dianna Finisecy, Licensed Master Optician, Wagner Opticians
Washington Hospital Center, National Eye Center
110 Irving Street, NW
Washington, DC 20010
Free parking sticker. Call (202) 877-6081 to reserve complimentary lunch.

• Tuesday, May 11, 2010
Low Vision Group, 2 p.m.
Falcon’s Landing
20522 Falcon’s Landing Circle
Potomac Falls, VA 20165
• Wednesday, May 12, 2010
Aging Eye Network, “Macular Degeneration: The ABCs of AMD with an ‘EYE’ Toward the Future,” 1:15 p.m.
Daniel Bernstein, M.D., Retina and Macula Specialist, Retina Group of Washington
Holiday Park Multiservice Senior Center
3950 Ferrara Drive
Silver Spring, MD 20906
There will be no glaucoma or visual acuity screenings.

• Tuesday, May 18, 2010
William Davis, O.D., M.S., Washington Eye Physicians
Friendship Heights Village Center
4433 Southpark Avenue
Chevy Chase, MD 20815
Bring a bag lunch. Beverage and dessert are provided.

• Wednesday, May 19, 2010
Low Vision Group, 10 a.m.
Vinson Hall
6251 Old Dominion Drive
McLean, VA 22101

• Wednesday, May 19, 2010
“Tips on Technology for People with Less Sight,” 10:30 a.m.
Moira Williams, Envision Technology
Classic Residence by Hyatt
8100 Connecticut Avenue
Chevy Chase, MD 20815
Calendar of Events

• Saturday, May 22, 2010
“Macular Degeneration Network: Helping to Chart its Course,” 10:30 a.m., First Connection, 10 a.m.
Sibley Memorial Hospital,
Hayes Hall, Conference Room #1
5255 Loughboro Road, NW
Washington, DC 20016

• Wednesday, May 26, 2010
“Picture This!,” 1 - 2:30 p.m.
National Gallery of Art, West Building
Meet at Second Floor Rotunda
4th and Constitution Avenue, NW
Washington, DC 20565 / (202) 737-4215
Wheelchairs and assistance are available by calling (202) 234-1010 by May 19.

MAY IS HEALTHY VISION MONTH
See What You’ve Been Missing

A recent study by the National Eye Institute found that more than 11 million Americans have common vision problems. The good news is that common vision problems can be detected through a comprehensive dilated eye exam and can be corrected.

Your eyes are an important part of your health. Find a window of time to schedule an eye exam today. Visit www.nei.nih.gov/healthyeyes to learn more about eye exams and common vision problems.
June 8: Washington Hospital Center, Eye Clinic, 11 a.m.
June 8: Low Vision Group, Falcon’s Landing, 2 p.m.
June 15: Lunch & Learn Vision Support Group, Friendship Heights Village Center, 12:30 p.m.
June 16: Low Vision Group, Vinson Hall, 10 a.m.
June 24: National Gallery of Art, “Picture This!,” 1 p.m.

To receive E-mail reminders about upcoming events, please send an E-mail to jheilman@youreyes.org.