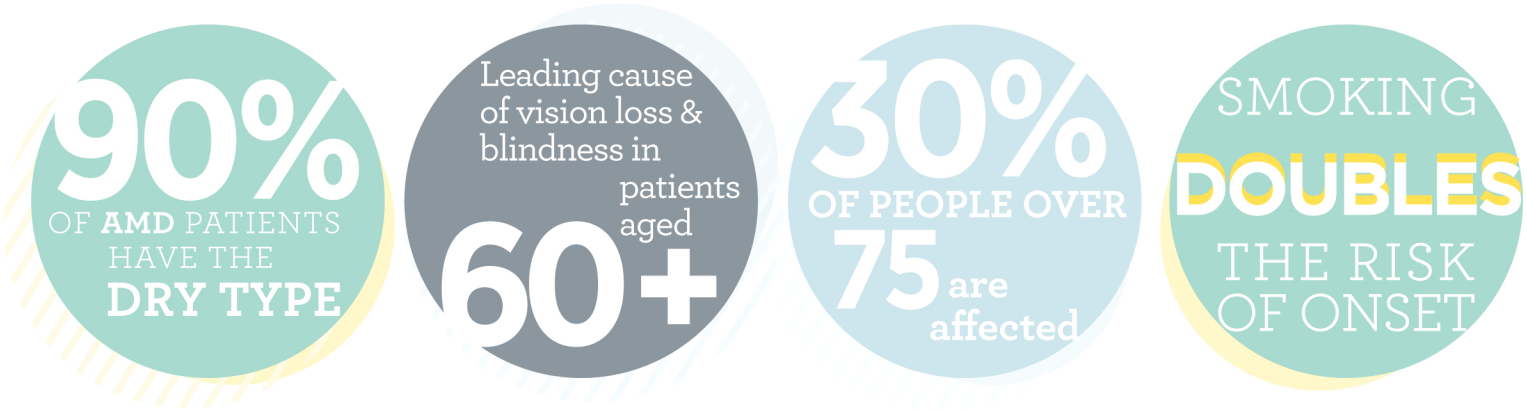
AGE-RELATED MACULAR DEGENERATION (AMD) is a progressive disease where the *macula*—the cells at the central portion of the retina—deteriorates. The macula is responsible for focusing central vision, controlling our ability to read, drive, recognize faces and colors, and see fine details.

With macular degeneration, images are not received correctly. In the early stages of the disease, vision is not affected; however, as the disease progresses, people experience wavy or blurred vision, and, if the condition continues to worsen, central vision may be completely lost. There are two types of AMD: dry (atrophic) and wet (neovascular or exudative).



HMO RESEARCH:

One of the most promising areas of research with human embryonic stem cells (hESCs) is the collaborative work of Prof. Eyal Banin, Director of Hadassah Medical Organization's Center for Retinal and Macular Degeneration, and Prof. Benjamin Reubinoff, Director of HMO's Human Embryonic Stem Cell Research Center. Their research, which has focused on the dry form of the disease, is aimed at halting age-related macular degeneration (AMD).

Since AMD is caused by dysfunction in cells of the retina, called retinal pigment epithelium (RPE) cells, bolstering and replacing the failing cells has the potential to slow progression of the disease. Once the HMO team identified the necessary conditions for hESCs to become RPE cells in the laboratory, they were able to produce cells that are ***practically identical*** to those in the human eye.

Then the research team transplanted the cells into a rodent model with retinal disease and found that the cells significantly rescued the retina's structure and ability to function.

With this success:

- HMO has launched a groundbreaking clinical trial to transplant hESC-derived RPE cells into patients with the advanced dry form of AMD.
- HMO continues to pioneer gene augmentation therapy—where a missing or defective gene is replaced with a healthy counterpart—to treat childhood blindness and other visual problems.

NEXT STEPS:

Additional clinical trials using stem cells to slow, and potentially reverse, the progression of AMD

With the aging baby boomer population, the diagnosis of AMD will rise exponentially.

THE POWER IS IN YOUR HANDS.

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