



## **WHAT IS GLAUCOMA & HOW DOES IT LEAD TO BLINDNESS?**

Glaucoma is among the leading causes of preventable blindness in the world. Glaucoma is a group of diseases in which the optic nerve fibers are slowly destroyed usually resulting in gradual loss of sight, and if left untreated, ultimately in blindness.

In its most common form, the optic nerve is damaged by elevated eye pressure from either poor drainage or blockages in the aqueous (the liquid inside the eye itself). Some other forms affecting only newborns, young children and others discrete populations, are seen only in association with specific diseases like diabetes or extreme near sightedness. In even less common forms of the disease, the optic nerve may be damaged by poor blood supply to the nerve or other causes so that vision is lost without the pressure in the eye being high (low tension or low pressure glaucoma).

## **HOW IS GLAUCOMA TREATED?**

Most glaucoma treatment involves lowering the eye pressure. The classic method for treating the most common forms of glaucoma involves:

- trying medicine(s) first,
- laser treatment second, and
- when other methods fail, surgery.

## **WHAT IS THE ROLE OF THE WESTERN GLAUCOMA FOUNDATION IN RESEARCH AND TREATMENT?**

The mission of the Western Glaucoma Foundation is to advance the research and treatment of glaucoma in US and international settings in a highly cost effective manner, with low overhead and transparency to donors.

## **WHAT RESEARCH IS THE WESTERN GLAUCOMA FOUNDATION INVOLVED IN?**

- Genetic research, that is already showing that glaucoma is really a number of diseases with different molecular causes
- Drug studies to evaluate whole new classes of drugs to treat glaucoma
- Surgical implant studies that may lead to better glaucoma surgery with substantially less risk than present methods

## **RESEARCH DISCOVERIES THAT OUR STAFF HAVE BEEN INVOLVED IN:**

- Discovery of three of the first nine autosomal genes for open angle glaucoma: suggesting a pathway for gene therapy and stem cell therapy
- Discovery of the only known gene for narrow angle glaucoma –the glaucoma that affects the Asian eye.
- Learning the mechanism for why steroids elevates eye pressure, resulting in better treatments for steroid induced glaucoma in the future
- Discovering whole new classes of medications to lower eye pressure.
- Gaining an increased understanding of how laser treatment actually works to lower eye pressure, which has contributed to improvements in laser surgery in US and elsewhere in the world.

## **HOW CAN YOU HELP?**

Call or write the Foundation to ask for more detailed information on its vision, goals and 2008 activities and programs. You can also help support glaucoma research, treatment and education by donating to the Foundation.

**WESTERN GLAUCOMA FOUNDATION  
PO BOX 1567  
PORTLAND, OR 97207  
ATTN: JOHN R. SAMPLES, M.D.**