

Narrow Angle Glaucoma

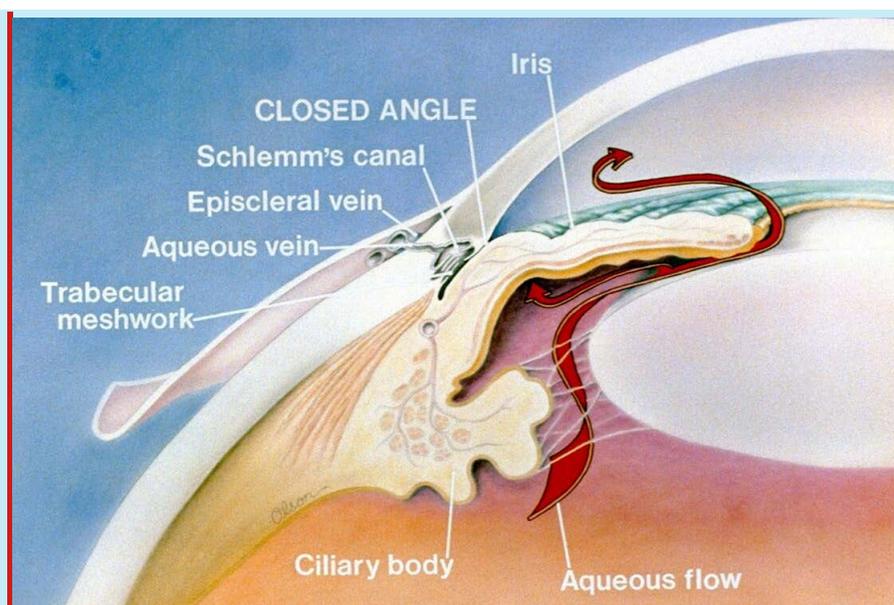
and

Acute Angle Closure Glaucoma

With the exclusion of injuries, acute angle closure glaucoma remains the number one medical eye emergency problem. Within a few hours of its onset, one may experience profound eye pain, nausea, and severe vision loss. If allowed to go untreated, extensive permanent vision damage may occur. In many situations, the condition is preventable simply by having regular examinations by your ophthalmologist who is trained to recognize those at risk.

In a prior discussion, we have noted that the condition called narrow angle glaucoma exists when the aqueous fluid inside the eye is restricted from getting into the internal drain. This drain, known as the trabecular meshwork, lies at the outer periphery of the iris (the "colored part" of the eye) where it meets the sclera (the "white" of the eye). At the junction of these structures is a recess called the anterior chamber angle.

Note the photo below. It shows a cross-section of the eye illustrating a closed angle.



The degree to which the trabecular meshwork is available is determined by how wide or narrow the recess is... in other words, how open the angle is. For the mathematically inclined, a very wide angle may be 40 or 45 degrees. A narrow angle may be less than 15 degrees. As long as the angle is open, even if only a slit, the aqueous can get to the drain. A shallow but still open angle will pose a threat if it closes off completely since there is no longer any way the aqueous can drain out. The intraocular pressure can rise to levels well over 50 in just a few hours. This is dangerous and can lead to permanent vision loss.

During our eye examinations, we evaluate the depth of the chamber angle of your eye. Most people have open angles that do not pose a problem. Those who have short eyes, usually fairly farsighted, often have shallow angles. The natural aging process causes all angles to shallow. If you have a wide open angle early in life, it is not likely to ever be a problem. If you have a mildly shallow angle in your middle-age years, you might have trouble later in life.

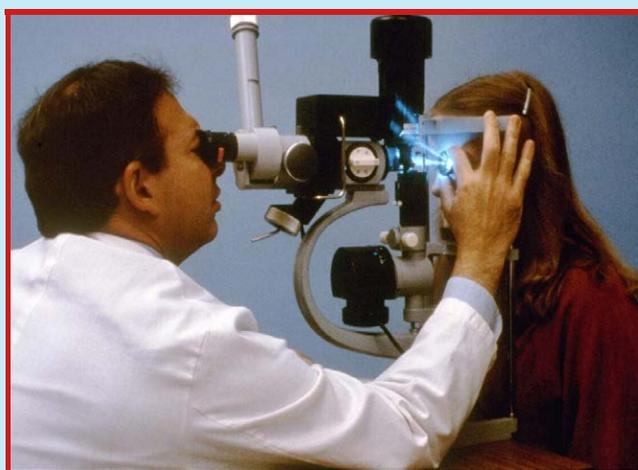
Narrow angle glaucoma is less common than the typical open angle variety. Some patients with narrow angles have very mild short-lived attacks during which the angle, or drain, closes off completely. This results in a spike in the intraocular pressure which frequently causes pain usually described as a headache around the eyebrow area. If the closed angle spontaneously opens a bit, the fluid drains out, the pressure drops, and the headache goes away. Repeated attacks can result in mild degrees of damage with each episode. These are cumulative. Ultimately, by the time you are aware of vision problems, there is typically extensive damage.

If the attack does not spontaneously break, the drain stays closed, and the pressure continues to rise. This causes fluid to accumulate into the normally clear cornea, giving it the likeness of frosted glass rather than clear glass. The blood vessels in the eye become congested, and there often is

intense pain which can cause nausea and vomiting. This attack of acute angle closure glaucoma requires prompt attention. Eye drops and systemic medications usually can cause the attack to break with the resulting lower pressure and symptom relief. However, there may be damage to the drain caused by the attack itself. Treatment is aimed at keeping this from happening again and will be described below.

If you have a narrow angle (determined by your ophthalmologist), you should be aware of the risk of angle closure. Regular use of appropriate eye drops may help increase the ability of the aqueous to drain out of the eye and keep the pressure down. Certain systemic medications often contain a warning not to use if you have glaucoma since they may cause further shallowing of the chamber angle. Note that while these warnings only say "glaucoma," they really apply only to narrow angle glaucoma. If you have open angle glaucoma, these warnings generally don't apply. Please ask us if you are not sure.

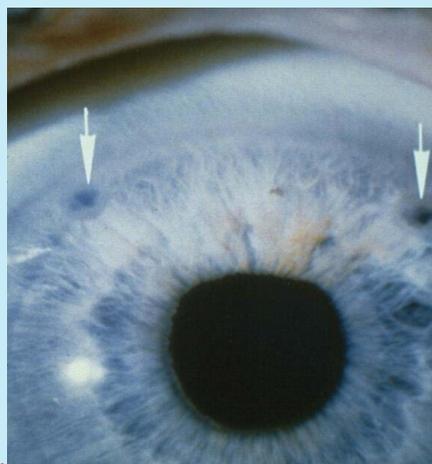
The definitive treatment for a chamber angle that is dangerously shallow or for an eye that has already had an actual attack of angle closure is usually performed with a laser. This instrument has the ability to create a small hole in the iris right near the base of the chamber angle so that the aqueous fluid always has some access to the drain. This opening is totally inside the eye and has nothing to do with ordinary tear drops, nor does the aqueous drain outside the eye. In this manner, the drain can never totally be occluded. It simply is a bypass opening that functions as a safety valve. The procedure is called *laser iridotomy* and is done in our office. It generally requires only a few minutes, and the risk factor of the procedure is extremely low. Most always, the risk of angle closure glaucoma is substantially higher than any unlikely risk of the laser procedure.



Laser iridotomy being performed in the office

If you have had an attack of angle closure in one eye, the risk of having an attack in the other eye generally is very high. We usually will perform a laser iridotomy in the opposite eye in a preventative fashion in such patients. Even if you have never had an attack, we can advise you of the probabilities, and laser iridotomy might be recommended anyway if there is concern about

having such an attack. The photo below shows what an eye with 2 laser iridotomy openings looks like. Notice that these are barely visible when casually looking at the eye



Some patients may still need to continue eye drops even after a successful laser iridotomy. This is usually because the intraocular pressure remains too high in spite of the angle being adequately available. The iridotomy procedure only provides a pathway for the aqueous to get to the drain. If the drain itself is undamaged, laser iridotomy can literally cure the disease. If the drain is not working well anyway, drops may be necessary. Laser iridotomy ordinarily has no direct effect on your vision or your eyeglass prescription.