I would love to be able to tell you that we currently have the tools to screen for glaucoma, and that widespread screening for glaucoma would result in a decrease in loss of vision as well as improved quality of life for individuals with as yet undiagnosed glaucoma. However, I cannot. No one has studied the pros and cons of screening for open angle glaucoma more cogently than the United States Preventive Services Task Force and their chairperson, Ned Calonge, and therefore I will summarize the Task Force’s arguments for you.

The Task Force report reminds us of the potential harms of screening for a disease, which include the false positives that result in patient anxiety, as well as the cost and inconvenience of additional testing, and the false negatives, which give a person a false sense of security. In addition, a screening test may detect a true case of disease, but maybe it occurs in an individual who never would have become symptomatic from the disease. Finally, unless early detection can be demonstrated to be beneficial to individuals, screening and treatment steals resources from other diseases. Finally, the screening itself may be harmful, but that argument has little relevance to glaucoma.

The ultimate rationale for performing screening for open angle glaucoma would be that screening leads to a decrease in the visual impairment and loss of quality of life in our societies. The task force was not convinced that this rationale is sufficiently supported by existing data. In their analytical framework, screening would lead to the detection of asymptomatic cases of glaucoma, in whom treatment would be started which would reduce the number of individuals who become visually impaired. The harm done to individuals through screening and treatment would also have to be less than the benefit gained from reducing visual impairment from glaucoma.

The Task Force’s take on the pathway from screening to reduced visual impairment is as follows:

1) There are good screening tests to detect elevated intraocular pressure and open angle glaucoma.
2) There is good evidence that lowering IOP reduces the incidence of asymptomatic visual field loss, but no evidence that this translates into less visual impairment.
3) There is good evidence that lowering IOP in eyes with early asymptomatic visual field loss reduces progression of visual field loss, but no evidence that this translates into less visual impairment.
4) There is good evidence that treatment of glaucoma can result in harm.

Therefore, the main missing link in proving the usefulness of screening for glaucoma is the lack of evidence that preventing initial visual field loss or preventing the progression of early visual field defects reduces severe visual field loss and visual impairment. For this reason the Task Force has continued to give glaucoma screening an "I" or "insufficient evidence" rating.

Is the story different for closed angle glaucoma? One of our course faculty, Paul Foster, has been instrumental in studies of angle closure throughout Asia. He and his colleagues recently published a study in the British Journal of Ophthalmology entitled “Randomised controlled trial of screening and prophylactic treatment to prevent primary angle closure glaucoma.” They randomized a Mongolian population to receive or not receive an ultrasound examination of anterior chamber depth. Those subjects in the screened group who had an anterior chamber depth of less than 2.53 mm underwent a comprehensive eye exam and received a laser PI if the angle was closed. Of those individuals who had angle closure, half were randomized to laser iridotomy and half were not. Six years later individuals in the observation group, and individuals in the screening plus laser iridotomy group were examined.

There was no difference in the incidence of angle closure glaucoma between the two groups. I hope that future research will eventually convince third parties that glaucoma screening is worthwhile. If we can prove that it can prevent important visual loss we will still have to grapple with the cost of such screening and treatment, and the issue of cost-effectiveness.

References: