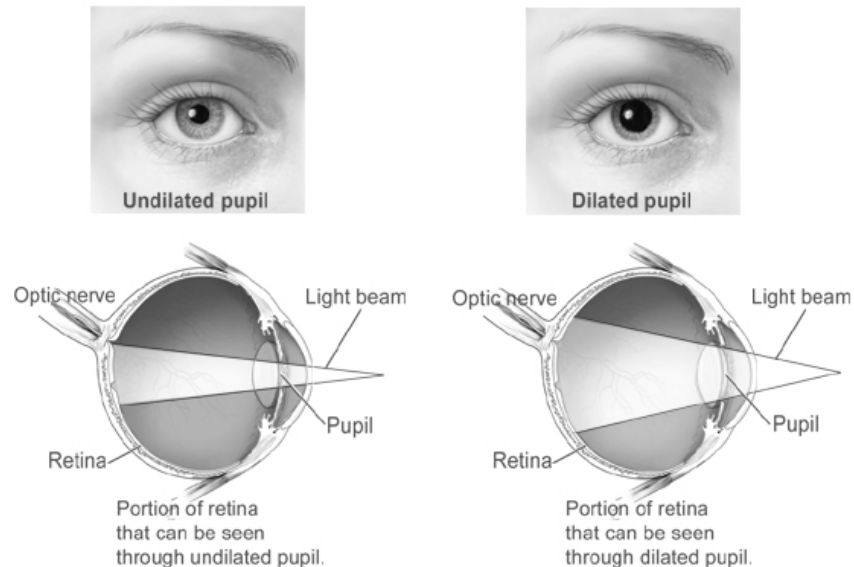




## What is a Dilated Eye Exam?

Dilation of the pupil is a common diagnostic procedure used by optometrists and ophthalmologists to better examine the interior of the eye. It allows a more thorough examination by making the field of view wider and permitting the doctor to see more of the inside of the eye. (Try and picture the difference between looking into a room through a keyhole (undilated view) and looking into a room with the door wide open (dilated view)). Being able to examine the inside of the eye is essential to determining that your eye is healthy.



## When is Dilation of the Pupil Required?

Indications for dilation of the pupils include:

- Sudden loss of vision (dimness, grayness, or blackouts of any duration)
- Sudden onset blurred vision
- Sudden loss of peripheral or side vision
- Partial loss (or spots missing) in central or side vision
- Light flashes or floaters
- Sudden onset double vision
- To allow your eye care practitioner a better view of a cataract
- Patients that have undergone cataract surgery or other intraocular surgery in the past
- Glaucoma patients, glaucoma family history, high intraocular pressure
- Nearsightedness greater than 3.00 Diopters

- Small pupils where an adequate view of the posterior structures of the eye is not possible without dilation
- Patients with diabetes mellitus
- Patients with previous retinal detachment
- Previous diagnosis of any retinal disease or degeneration
- Abnormal papillary responses to light or differences in pupil sizes between the eyes
- Headaches of unexplained origin
- History of metastatic cancer
- Recent trauma (or history of) to the eyeball or head (i.e. blows to the facial, skull or eye area)
- Lumps behind the iris (coloured part of the eye)
- Use of drugs/medications with known ocular side effects
- To give a panoramic view of the interior structures of the eye. Routinely most new patients are dilated as the technique is indispensable in spotting degeneration, preexisting conditions, and other abnormal presentations

Remember, a lack of symptoms hardly rules out the chance of a sight threatening problem. Early detection and timely treatment of conditions such as diabetes and glaucoma can substantially reduce the risk of severe visual loss or blindness. Your eye care practitioner can advise you on how often your eyes should be dilated after considering your particular ocular and medical history.

## **What Does This Procedure Involve?**

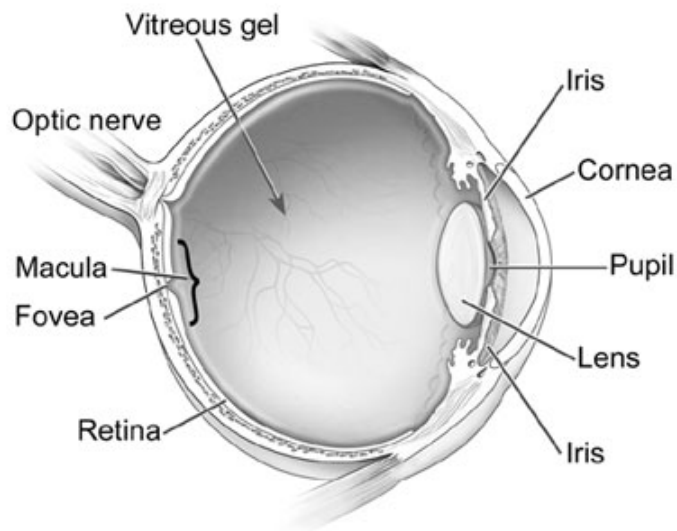
To dilate the pupils, medicated eye drops must be placed into the eyes to enlarge the pupils. They require roughly half an hour to take effect. Once your pupils are dilated, it is common to be sensitive to light, a symptom alleviated by sunglasses. If you do not have any sunglasses, a disposable pair will be provided for you. Another common symptom is blurred vision, especially up close. It will require about 4-6 hours for your vision to return to normal. During this time, you must exercise caution driving a vehicle, operating dangerous machinery, or performing other tasks that may present a risk of injury.

For 94-98% of patients there is no observable risk to this procedure. For the remaining 2-4% there is a possibility of elevating the pressure inside your eye when dilation is performed. The medical term for this is "angle closure glaucoma". Because of the structure of these individuals' eyes, it is possible for angle closure to occur at some other time as well when the symptoms may not be recognized and treatment may not be immediately available. For example, such an attack may occur in a darkened environment which causes dilation of the pupil or under conditions of emotional stress. Symptoms of angle closure glaucoma include sudden onset blurred vision followed by severe pain localized around the involved eye and rainbow coloured haloes around lights. Nausea and vomiting are common. If it is determined that you are at risk for angle closure glaucoma it may be necessary to refer you to an eye surgeon for treatment with a laser to prevent an occurrence of this risk at a later date.

## Structures Visible Inside Your Eye

**The retina**, nourished by blood, is a thin membrane covering the inside of the inner surface of the posterior 2/3 of the wall of the eyeball. Its function is to receive visual images, partially analyze them, and send this information to the brain. In the absence of refractive errors (farsightedness, nearsightedness, astigmatism), coordination problems or diseases of the eye, the images are seen in sharp focus. One part of the retina, the macula, provides sharp central vision used in reading and in colour perception. If the macular area is diseased, central vision may be affected, causing difficulty reading and in seeing small objects. If the peripheral portion of the retina is diseased, side vision may be impaired but central vision may be preserved. With extreme peripheral vision loss, an individual may still read fine print but may have trouble with orientation and mobility. The retina has no pain nerve fibers so the diseases of the retina are painless. In addition they do not cause the eye to become red. The typical field of view through an undilated pupil is only 12 degrees. However, the retina extends approximately 180 degrees around the inside surface of the back of the eye.

**The lens** is a transparent structure immediately located behind the pupil, the round hole in the centre of the iris through which light passes. The lens continues to grow throughout life as layers, or zones, are added. The inner layers are the oldest with the innermost part present since embryologic development. The lens can change shape and increase its power to focus near objects onto the retina (accommodation). Accommodation is measured in diopters, thus 1 diopter of accommodation is needed to focus from infinity to 1 metre or 4 diopters to focus at 25 cm. A child has as much as 14 diopters of accommodation but by 60 years of age the ability is virtually done due to loss of elasticity of the lens (at least sine degree of cloudiness is present in 95% of persons over 65 years of age). A cloudiness of this lens which reduces vision is referred to as a cataract. It is not a growth or a film over the eye. There are many types of cataract ranging from those present at birth, disorders such as diabetes, exposure to ultraviolet radiation, those that result as a side effect from medications, injury to the eye, or complication after surgery. The best way to fully examine a cataract is to dilate the pupil.



**The vitreous** is a clear jelly-like substance filling the chamber of the eyeball behind the lens. It occupies about 2/3 of the volume of the eyeball. Floaters are semi-transparent specks or cloudy spots which drift in this fluid and cast an image on the back of the eye (or retina). Floaters have been described as “spots”, “particles”, “cobwebs”, “spiders”, “treads”, “worms”, “dark strands”, “a ring”, etc. The objects continue to move when the eye stops moving therefore they are called floaters. They are generally not a cause for concern unless they appear suddenly.