Posterior Vitreous Detachment

A Posterior Vitreous Detachment (**PVD**) is what occurs when the jelly (vitreous) in the eye pulls away (detaches) from the retina of the eye (located in the back--posterior part--of the eye). It is very much like a wrinkle forming in the jelly of the eye. It is a normal occurrence seen with aging, but can be found to occur in young people who are very near-sighted or people who had trauma to the head such as boxing or an eye surgery, such as cataract surgery.

To understand it better, realize that the eye is shaped fairly like a ball. Lining about 75% of the back (posterior) part of the eye is a bowl-shaped retina. The retina functions like the film of a camera, receiving light and images. Inside the bowl-shaped retina is a ball of jelly, called the vitreous. The vitreous is within a membrane, the Vitreous Membrane. The vitreous membrane is attached to the retina by many fine strands. The vitreous is very thick when we are born. It is made of hyaluronic acid, collagen, and water. Over time, the molecular links of the collagen and hyaluronic acid change, and *the form of the vitreous changes to a liquid* in that area. Next, the surrounding parts of the vitreous jelly that have <u>not</u> yet liquefied collapse inward toward the center of the liquefied part. This puts traction (a pulling force) on the nearest part of the vitreous membrane, which puts traction on the part of the retina which is attached to the vitreous membrane by those fine strands already mentioned. While the vitreous is detaching from the retina (a *vitreous* detachment), the retina is being stimulated by the tractional tugging and snapping free of the vitreous fine strands. This stimulation of the retina results in the bright **flashes** of light a person sees in dimly-lit conditions. It is similar to seeing lights that are not really present immediately after someone takes a picture of you with a flash. Your retina got highly stimulated and sent that message to the brain for interpretation, and the brain interpreted it as bits of bright white light. Now, the part of the vitreous that had liquefied (and had surrounding parts of non-liquified vitreous jelly collapse inward toward its center) is like a wrinkle in the jelly of the eyeball, making it harder for light to penetrate the "wrinkle" and results in a shadow being cast on the retina (when you are in a brightly lit space looking at a light object) . It is also somewhat mobile, since the vitreous membrane and its connecting strands to the retina have been broken in that area, so it can move with eye movement. This results in seeing the **floaters**…which can take the form of little bugs, dots, strands of hair, or a cobweb.

Posterior Vitreous Detachments are <u>not</u> harmful to the eye in 95% of cases. In 5% of cases, they can cause a tear or hole to form in the retina (due to the tractional pull/ tug on the retina) which can lead to a retinal detachment. The people at highest risk for a retinal detachment are the highly near-sighted people, because their eyes are much longer than normal, which means their retina is thinner in areas and their vitreous (and its membrane) pulls away with a greater tractional force. Holes and tears can be repaired more easily than a retinal detachment. The classic symptom of a retinal detachment is a "shade coming over the vision."

Dr. Hudak will ask to see you within 3 days of the onset of flashes and floaters (depending on your level of near-sightedness and the circumstances surrounding the onset), and again 4-6 weeks later, when the formation of the PVD/ "wrinkle" should be complete. Any damage to the retina that would occur from the PVD formation should have occurred by then.