

## Ageing, Diabetes & Hypertension and Your Retina

Retina is the film lining the inner wall of eye ball on which all images form. Age affects the retina in the following ways:

1. **Posterior Vitreous Detachment:** Vitreous liquefaction & separation from retina felt as floating particles and flashes of light. This can cause retinal tears and retinal detachment. Retina should be examined atleast once so that any retinal tears can be closed with retinal laser to prevent retinal detachment.
2. **Age related Macular Degeneration (AMD):** Affects macula, the most specialised central part of retina, causing loss of sharpness of vision and the ability to read/ write/ recognize faces/ enjoy TV.

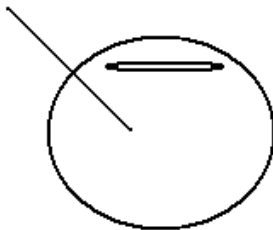
AMD can be Dry or Wet Type. Dry AMD is loss of quality of retina. In Wet AMD abnormal blood vessels grow into macula and cause scarring with rapid vision loss in few months.

Risk Factors include family history of AMD, smoking, high BP, excessive sun exposure.

Prevention involves stopping smoking, vitamin rich diet (fruits & vegetables plenty), physical exercise, sunglasses outdoors (UV protection), eye checks every 2 years after age 45 years

Treatment: Dry type is treated with high dose vitamins

Wet type requires injections of Avastin or Lucentis into the eyeball every 4-6 weeks till blood vessels regress. May need several injections for many months to years.



### Diabetes and the Retina

Diabetes causes diabetic retinopathy and macular edema. Risk increases with duration of diabetes, uncontrolled diabetes, uncontrolled BP, lipids, smoking, alcohol, kidney problems, smoking, anaemia and heart problems.

1. **Diabetic Retinopathy:** Diabetes causes blockage of blood supply to the retina which leads to formation of abnormal blood vessels that burst causing internal bleeding, retinal detachment and blindness. Blindness can be prevented by retinal laser done when abnormal vessels start forming.. Retina check every year is essential for every diabetic so that laser can be done at the right time.

In late stages of retinopathy, injections into eyeball maybe required to prevent repeated vitreous bleed; vitreo-retinal surgery is required for severe bleeding or retinal detachment.

2. **Diabetic Macular Edema:** Swelling of the central retina due to leakage from damaged blood vessels. This causes loss of sharpness of vision affecting reading/ working/ recognition of faces etc.

Treatment is with injections into the eyeball of avastin/ lucentis/ steroids (tricort or ozurdex implant) and with mild laser.

### **Hypertension and Retina**

High blood pressure damages the inner lining of blood vessels causing closure of blood supply and damage to organs

In retina it can cause closure of central retinal artery leading to sudden death of the retina and permanent vision loss. Blockage of blood supply to optic nerve causes loss of the nerve tissue with sudden vision loss. Retina and optic nerve cannot be replaced, hence these conditions cannot be treated.

Closure of retinal veins, the outflow channels, causes increased back pressure leading to leakage, bleeding and swelling of retina (macular edema). Treatment is with retinal lasers to arrest vision loss, bleeding and retinal detachment. Swelling of the retina is treated with eye injections of avastin or lucentis or steroids (tricort or ozurdex implant) every 1-3 months.

### **Recommendations for retinal health:**

1. Maintain good general health after age 45 years
2. Regular Physical Exercises
3. Diet modification: Vegetables, fruits rich, low on carbohydrates, sugars and fats
4. Stop Smoking/ alcohol
5. Vitamin supplements
6. Annual health checks for early detection of diabetes, hypertension, raised cholesterol etc
7. Strict control of these diseases
8. Retina check every year for those with diabetes, family h/o AMD.
9. Eye check every 2-3 years after age 45 years