

Diabetic Retinopathy information

Overview

Compilations

And labeling of levels of severity

(I'm still working on it. There will be constant updating)

Diabetic retinopathy is a classification of a group of eye diseases that are directly linked to diabetes and as time goes by these various diseases are linked with vision loss and possibly blindness.

It is known to be the most common amongst the diabetic eyes diseases and is a leading cause of blindness in people with diabetes; caused by the changes in the blood vessels in the retina.

Retina: is the light sensitive tissue in the back of the eye which light is focused into to create an image in our brains for us to see what is in front of us in real time.

Some inconveniences that come with having diabetic retinopathy are that blood vessels may swell and leak fluids into the eye and others include extra blood vessels growing on the surface of the retina, hindering vision.

- First instances of diabetic retinopathy will not show any symptoms but will get worse over time.
- Some early symptoms include: spotting in vision, or blurriness

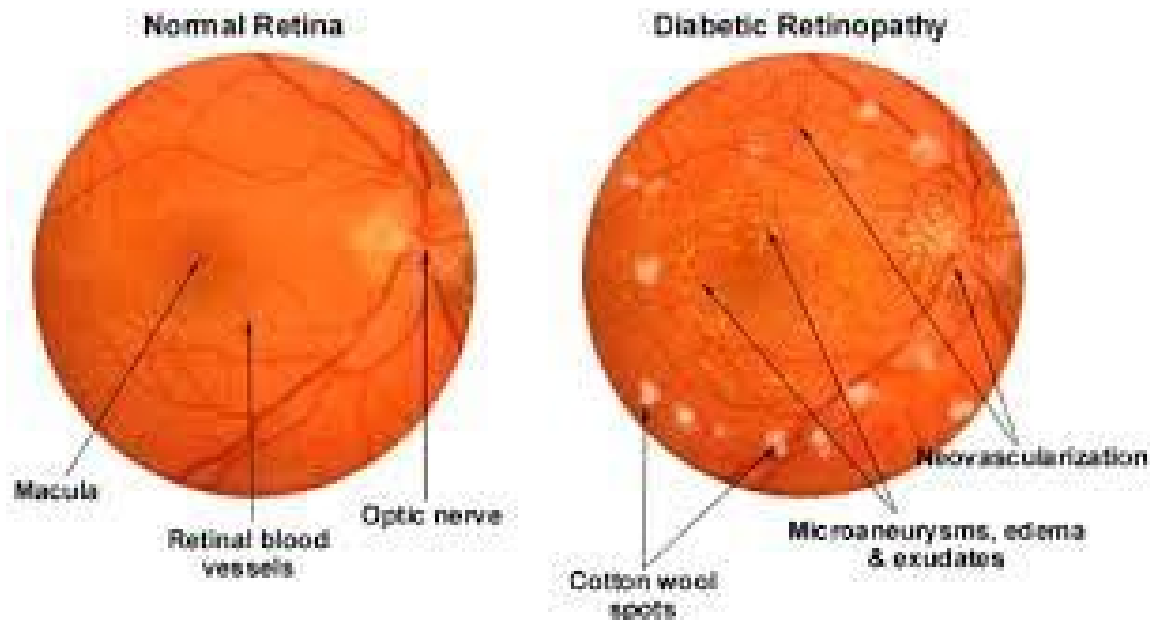
70% of all of the sensory receptors in your entire body are in your eyes; meaning blindness loses 70% of your body's sensory ability

- The sensors in your eyes are called photoreceptors

Basic overview and facts about diabetic eye disease

1. Diabetic eye disease comprises a group of eye conditions that affect people with diabetes. These conditions include diabetic retinopathy, diabetic macular edema (DME), cataract, and glaucoma.
2. All forms of diabetic eye disease have the potential to cause severe vision loss and blindness.
3. Diabetic retinopathy involves changes to retinal blood vessels that can cause them to bleed or leak fluid, distorting vision. (haemorrhage)
4. Diabetic retinopathy is the most common cause of vision loss among people with diabetes and a leading cause of blindness among working-age adults.
5. DME is a consequence of diabetic retinopathy that causes swelling in the area of the retina called the macula.
6. Controlling diabetes—by taking medications as prescribed, staying physically active, and maintaining a healthy diet—can prevent or delay vision loss.
7. Because diabetic retinopathy often goes unnoticed until vision loss occurs, people with diabetes should get a comprehensive dilated eye exam at least once a year.
8. Early detection, timely treatment, and appropriate follow-up care of diabetic eye disease can protect against vision loss.
9. Diabetic retinopathy can be treated with several therapies, used alone or in combination.

10. NEI supports research to develop new therapies for diabetic retinopathy, and to compare the effectiveness of existing therapies for different patient groups.



Microaneurysms:

- Aneurysms occur when a part of the artery wall weakens allowing it to balloon out or widen abnormally.
- Basic swelling and weakening of the artery walls causing inflammation and internal damage.
- Occur in clusters, but occasionally singular.

Physical description: deep red dots varying from 25- 100 micrometers in diameter

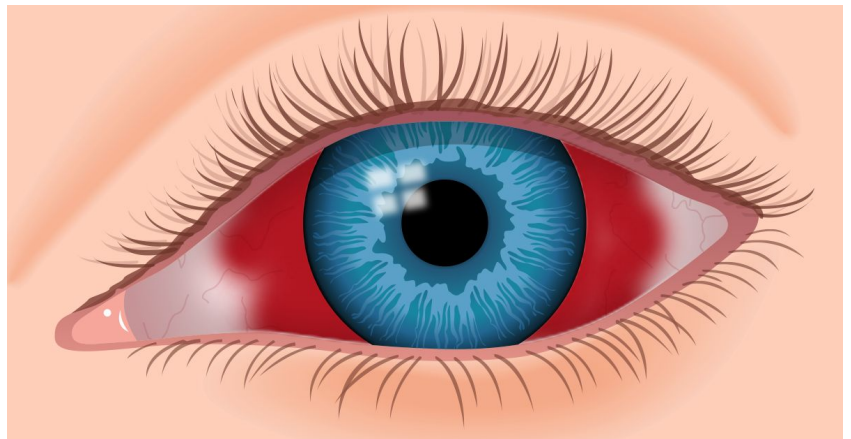
- Formation mechanism is unknown
- Can go away over time in a phenomenon called turnovers
- More microaneurysms signal worsening DR and single but larger versions of microaneurysms signal more advanced stages of DR as well.
- More and bigger microaneurysms = bad.

Hemorrhages:

Internal bleeding of the capillaries either pooled or active.

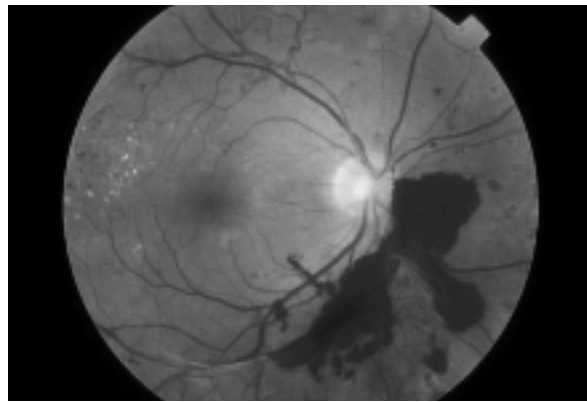
Eye vessels on the whites of the eye are extremely delicate and can break under slight pressure, or strain.

Hemorrhages are generally harmless



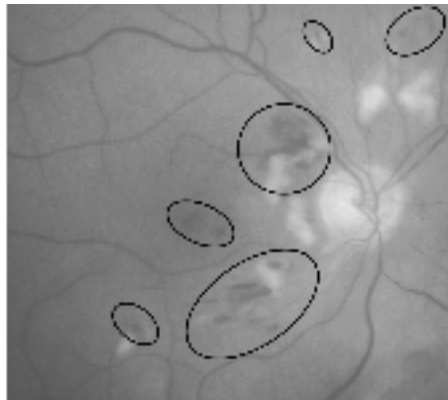
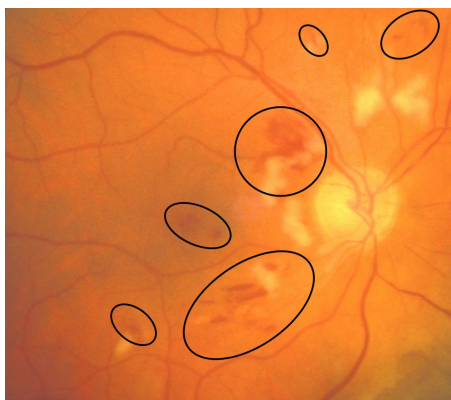
and can dissipate on its own, but when put under context of DR they can cause obstruction of vision.

- Appear as red splotches on the surface of the eye.
- Relatively harmless
- Size of the hemorrhage can help determine the severity of DR



Hemorrhages are very simple to find and diagnose, and they appear as simple splotches both big and small.

More of an example of early stage hemorrhages.

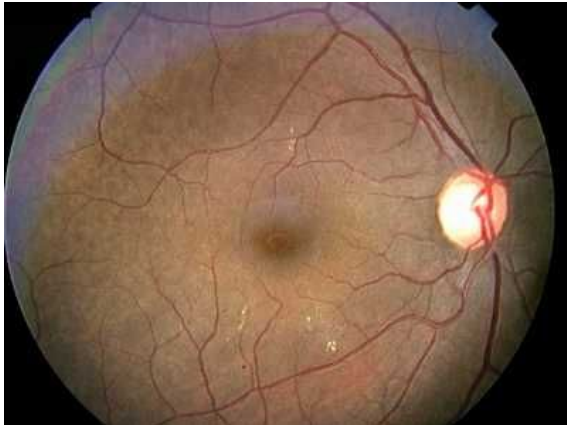


Exudates:

Exudates are yellow flecks made up of lipid residue of serious leakage from the damaged capillaries

- Hard exudates are an indication of excessive retinal vascular permeability by many vision threatening and even life threatening disorders.

Levels of severity.

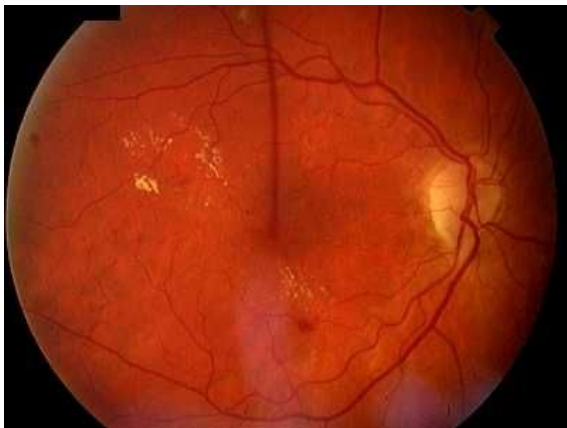


Labeling: Mild

First stages of exudates are very small whitish and yellow spots in the retina.

Sign of minor leakage, nothing dangerous, however can develop further into later stages.

Doctor not needed

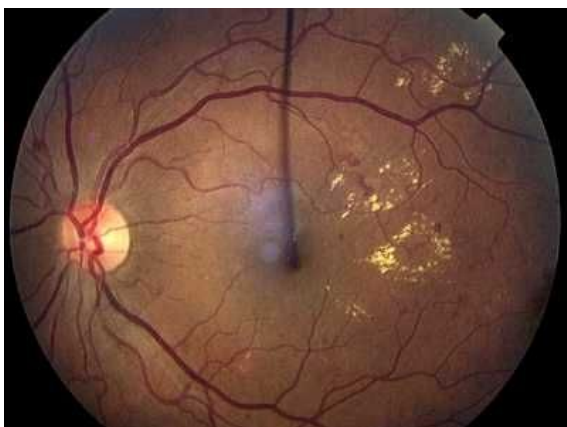


Labeling: Moderate

Second stage of exudates develop into larger patches and clusters.

More leakage and permeability of the capillaries evident of the increase of exudates.

Doctor visit recommended, but not mandatory.

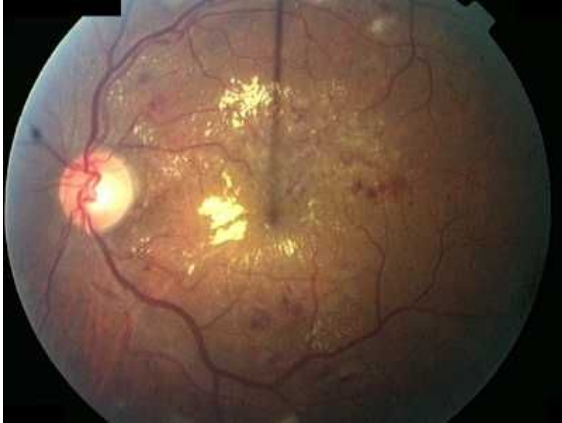


Labeling: Severe

Third stage of exudates develop into larger clusters and congregate into more circular ring shapes called circinatus.

Major leaking of lipids into the retina and forming into shapes on the retina. Can develop further and turn into plaques

Doctor visit recommended



Labeling: Non-Proliferative

Fourth stage of exudates are development of plaques and larger clusters.

Large congregations of extracellular lipids pool and harden to plaques

Doctor visit stressed and mandatory

Neovascularization: The condition that develops from the buildup of tissue that is lacking in oxygen due to the excessive natural growth of new blood vessels in the retina. These new vessels overlap and congregate similar to scar tissue and then block out parts of the retina, obscuring vision.

Neovascularization is a common side effect of diabetic retinopathy

Currently limited information on this...



Proliferate DR example:



Real bad eyes

