

# A look at Macular Degeneration

A Leading Cause of Vision Loss



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## 1 The Macula

is located in the back of the eye and is responsible for our sharp, clear, straight-ahead vision. Damage to it results in blind spots and blurred or distorted vision.



## 2 What is Macular Degeneration?

Macular degeneration affects the retina, a paper-thin tissue lining the back of the eye, and causes the cells in the macula area to die. This may result in blind spots and distorted vision.



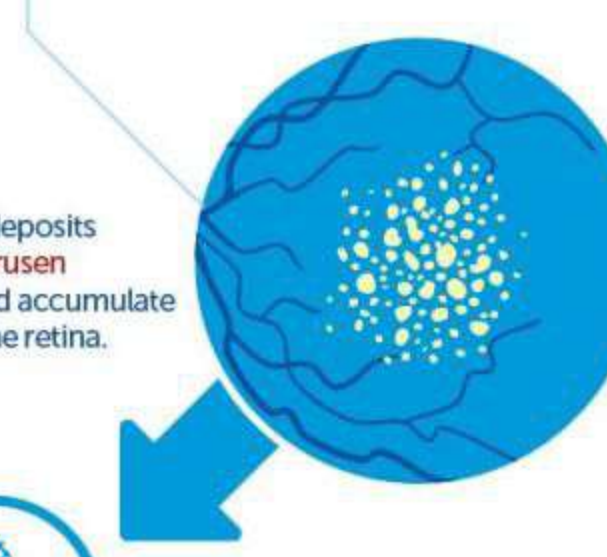
## 3 The Scope of Age-Related Macular Degeneration (AMD)

IN THE U.S.A.

Roughly **2 million people** have advanced AMD.



Incidence is expected to **double** by 2050.



The number of people living with macular degeneration

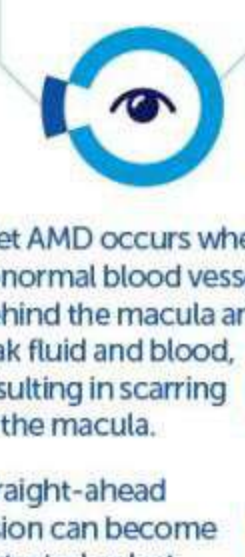
is similar to that of those who have been diagnosed with all types of invasive cancers.



**33 million people** have visual impairment from advanced AMD worldwide.



By 2020, **40 million people** will have visual impairment from advanced AMD.



is the estimated cost of visual impairment in the world due to advanced AMD.

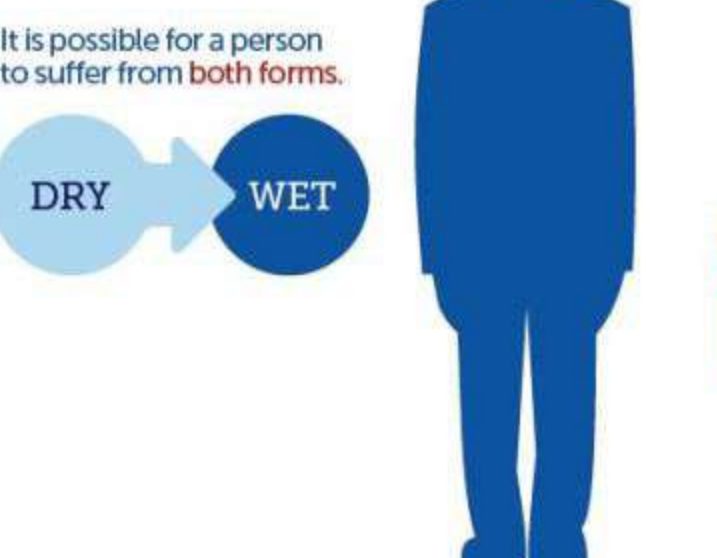
Of that, **\$255 billion** were direct health care costs.



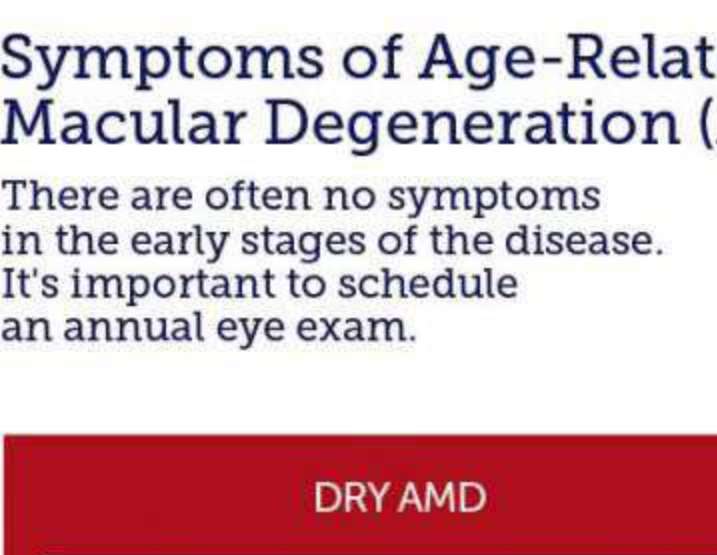
## 4 Forms of Macular Degeneration

### DRY AMD

Is the most common form. It progresses slowly.



Yellow deposits called **drusen** form and accumulate under the retina.



### WET AMD

Accounts for **10%** of cases of AMD

Results in the vast majority of severe vision loss from AMD



Wet AMD occurs when abnormal blood vessels grow behind the macula and leak fluid and blood, resulting in scarring of the macula.



It is possible for a person to suffer from **both forms**.



### JUVENILE MACULAR DEGENERATION

is the term used for several inherited eye diseases, including Stargardt's disease, Best disease, and juvenile retinoschisis.

Juvenile macular degeneration affects children and young adults. These rare diseases cause central vision loss that may begin in childhood or young adulthood.

## 5 Symptoms of Age-Related Macular Degeneration (AMD)

There are often no symptoms in the early stages of the disease. It's important to schedule an annual eye exam.

### DRY AMD

- Slightly blurred central vision
- Fuzz or shadowed central vision which grows as the disease progresses
- Smudged or distorted vision that causes difficulty reading, driving, or recognizing faces
- Blind spots
- Difficulty seeing textures and subtle changes in the environment or difficulty seeing the difference between similar colors side by side
- Trouble adjusting to light changes
- Requiring brighter lights for regular tasks than in the past
- Lessening depth perception

### WET AMD

- Symptoms of dry macular degeneration
- Straight lines may appear wavy
- Rapid loss of central vision in the severe form



## 6 Who is at risk?

Certain risk factors increase a person's chances of developing macular degeneration.

- Being older than 60
- Smoking or having smoked in the past
- Having a family history of macular degeneration
- Caucasians are more likely to develop it than African-Americans or Hispanics
- Spending a lot of time in the sun
- Eating a diet that is high in fat and/or low in nutrients and antioxidants
- Being obese
- High blood pressure
- Having light colored eyes
- Inactivity

People with macular degeneration in one eye are likely to develop it in the other eye.



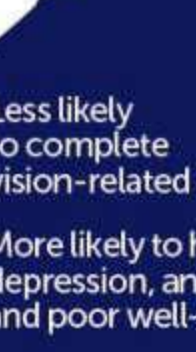
## 7 Tests for Macular Degeneration

Common tests and procedures include:



### AMSLER GRID

Each eye is checked against an image resembling graph paper with a dot in the center to see if any of the lines appear wavy or missing.



### AUTOFLUORESCENCE

Helps determine the area of geographic atrophy in patients with advanced dry AMD.



### DILATED EYE EXAM

To view the back of your retina, the doctor dilates the pupils with eye drops.



### FUNDOSCOPY OR OPHTHALMOSCOPY

The pupil is dilated and a bright beam of light is aimed into the eye to view the retina, choroid, blood vessels, and optic disk.



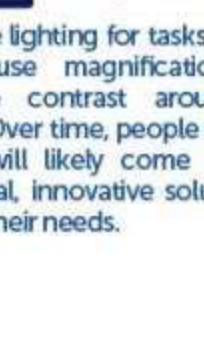
### VISUAL ACUITY TEST

Measures ability to see things at different distances.



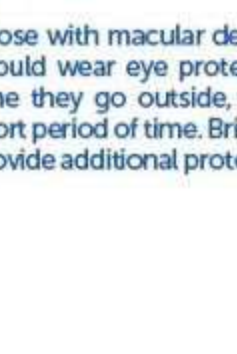
### FUNDUS PHOTOGRAPHY

The doctor uses a customized camera to photograph the back of the eye.



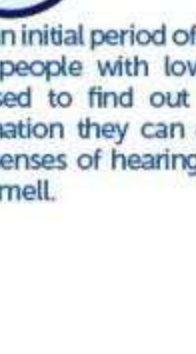
### FLUORESCIN ANGIOGRAPHY

If the wet form of AMD is suspected, this test may be conducted to detect leaking blood vessels.



### OPTICAL COHERENCE TOMOGRAPHY (OCT)

This technique is used to identify regions of the retina that are thinning, indicating the presence of geographic atrophy.



### TONOMETRY

This test measures the pressure inside the eye.

## 8 Treatments

### Angiogenesis inhibitors

This common treatment inhibits the growth of abnormal, leaky blood vessels that eventually damage the macula. After the eye is numbed, this treatment is injected directly into the eye.

### Photodynamic Therapy (PDT)

This treatment is most effective in a subtype of wet AMD and is rarely used. The therapy is injected in the arm that the eye's leaking blood vessels absorb. The doctor then directs a low-intensity laser at the retina, which activates the medicine.

### Laser Photocoagulation

A high-energy laser seals the leaky blood vessels. It is an option for a small number of patients.

### Implantable Miniature Telescope

Treats advanced dry and wet AMD. The tiny telescope is inserted into one eye, which then provides central vision, while the other eye provides peripheral vision.



### The AREDS II Formula

The National Eye Institute's Age-Related Eye Disease Study (AREDS) found that taking nutritional supplements with a specific high-dose formulation of antioxidants delayed or prevented the progression of dry AMD from the intermediate to the advanced stage.



## 9 Living with Macular Degeneration

People with macular degeneration are:

- Less likely to complete vision-related tasks.
- More likely to have depression, anxiety, and poor well-being.

Of people with low vision,



Patients with wet AMD are more likely to have problems with



## 10 Living with vision loss

### Seeing with peripheral vision

People with central vision loss, can learn to use their peripheral vision to navigate, interact with other people, and complete daily living activities. A conscious effort must be made to locate this area and use it as fully as possible.

### Consult a low vision therapist

Low vision therapists work with the visually impaired to identify their personal needs, recommend assistive devices to meet these needs, instruct in the use of such devices, and help make the best use of remaining sight.

### Make home adjustments

Increase lighting for tasks; control glare; use magnification; and increase contrast around the home. Over time, people with low vision will likely come up with individual, innovative solutions to reflect their needs.

### Protection from the sun

Those with macular degeneration should wear eye protection each time they go outside, even for a short period of time. Brimmed hats provide additional protection.

### Emphasize other senses

After an initial period of adjustment, most people with low vision are surprised to find out how much information they can obtain from their senses of hearing, touch and even smell.



**Comprehensive dilated eye exams and treatment** are key to saving your sight from macular degeneration.

Sources provided at [www.brightfocus.org/macularsources](http://www.brightfocus.org/macularsources)



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