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Caring eye health solutions that enhance people's lives

Reducing your risk of sight loss from macular degeneration

The macula is the center of the retina responsible for our ability to see detail. Our ability to read, and recognize faces is totally determined by proper functioning of the macula. Macular degeneration is a degeneration of this vital part of the eye, that results in sight loss. In its most advanced forms people can be considered legally blind even though peripheral vision may be normal. Macular degeneration is the leading cause of sight loss in the United States. The occurrence of the condition rises sharply over age 80 with 12% of adults significantly impacted by the condition.

Types of macular degeneration

There are three main forms of Age Macular Degeneration (AMD): dry, wet, and geographic atrophy. 90% of blindness by this condition is caused by vision loss from the wet form of AMD, followed by geographic atrophy. As a rule of thumb people develop the dry form of macular degeneration before they go on to develop the wet form. Unfortunately the statistics are poor for those with the wet form of the condition as over 90% of people lose their sight in the first eye before receiving treatment. The number drops down to 8% for the second eye because of the close monitoring that takes place. We know that if risk factors are identified early, and with proper care, less than 8% of the people with the condition should have significant sight loss.

Risk factors for AMD

There are many factors that contribute to a person's tendency to develop macular degeneration. Here are common risk factors:

- 1) Genetics

- 2) Age
- 3) Race: light complected races have higher incidence
- 4) Gender: women are 2 times more likely than men to have the condition
- 5) Coronary heart disease
- 6) High blood pressure
- 7) Blue light exposure: the sun is the most significant source
- 8) Obesity
- 9) Poor diet habits
- 10) Diabetes and prediabetes
- 11) Smoking: smokers are 2-5 times more likely to get macular degeneration
- 12) High cholesterol levels
- 13) Metabolic syndrome: Combination of Abdominal obesity, high blood lipids and Diabetes
- 14) Low macular pigment
- 15) Excess iron consumption
- 16) Excess calcium consumption
- 17) Lack of physical activity
- 18) Sleep apnea

Of the 18 risk factors above, only 4 of them are things that we cannot modify (genetics, age, race, and gender). We are going to spend time now looking at the other 14 risk factors, and things you can do to lower your risks of losing your sight from macular degeneration.

Current accepted treatments

The current medical treatments for macular degeneration include taking AREDS (Age Related Eye Disease Study) 2 preventative vitamin supplements, and anti VEGF injections if the macular degeneration becomes wet. Anti VEGF injections have saved the sight of many people; however, they are not without their drawbacks. Having to visit a retina specialist several times a year for injections in the eye to prevent blindness is worth your time, but most people would prefer to spend their time elsewhere.

Unproven treatments

- Hyperbaric treatments
- Acupuncture/ Eastern medicine
- Microcurrent stimulation
- Cannabis

The role of oxygen and blood flow

We know that good circulation is important for general health so it would make sense that it would help your eyes as well. Here is what we know. The retina is a tissue with high demand for nutrients. It has an elaborate blood supply that feeds cells that have a high metabolism. The macula, being part of the retina, has the highest demand for nutrients because it is processing the largest amount of light information. Through a process, it converts light energy into an electrochemical message that is sent back to your brain for processing. When the raw materials for that process are restricted the chemical process goes wrong and toxic byproducts start to damage the retina. The retina has a high demand for nutrients and oxygen that are supplied via your blood circulation to make this all happen.

Here are some different ways this can go wrong:

- 1) Poor nutrition
- 2) Sleep apnea
- 3) Lack of physical activity
- 4) Clogged arteries
- 5) Poor heart function

Fortunately, the above list are all things you can potentially do something about. All of the above factors are linked to increased risk of macular degeneration. Let's explore some of the prevention options available.

Diet

Eleven of the risk factors are affected by diet: coronary heart disease, high blood pressure, obesity, high cholesterol, poor dietary habits, metabolic syndrome, low macular pigment, Diabetes and prediabetes, excess consumption of iron and calcium, and sleep apnea.

Excess food consumption also plays a role in several of the above risk factors. Excess food consumption can be caused for many reasons but a proper diet will reduce craving for the wrong foods. Let's take a look at the diet. (I would like to give credit to Laurie Capogna, O.D., Jeff Anshel, O.D. and Laura Stevens, M.Sci, as the diet guidelines are largely derived from their materials.)

We live in a world that is quite busy for most families. As a result convenience is king. The down side of convenience is that most pre-made or processed food can lead to dietary imbalances that ultimately result in chronic health issues such as obesity, diabetes, high blood pressure and elevated cholesterol. These health issues can lead to an increased risk of macular degeneration. Choosing healthy sources of carbohydrates such as whole grains and vegetables can make a difference. Restrict the amount of refined flours, sugar, fruit juice, sodas, candies and desserts that are high in simple sugar. Consider non-caloric sweeteners like stevia to sweeten foods if needed. Also, watch the types of fats that you consume, the most healthy are those that reduce the tendency toward inflammation such as Omega 3 fats. Let's look at this diet more closely:

What is a serving of food?

- ½ cup of cooked grains or an ounce of dry.
- 1 cup of cooked or raw vegetable
- 2 cups of leafy vegetables
- 1 cup of fruit
- 1 oz lean meat
- 1 egg or 2 egg whites.
- 1 tbsp of nut butter or ¼ oz of seeds
- ¼ cup of cooked beans = 1 oz of protein, ½ cup cooked beans = 1 vegetable
- 1 cup of milk, 1.5 oz of natural cheese or 2 oz of processed cheese

Protein sources:

Choose lean protein sources such as chicken and fish, limiting the amount of beef, pork and lamb to a few times per week. Consume about 4 eggs per week. Low fat dairy can be included in this category. Generally speaking, 2-3 ounces of a protein per day is adequate.

Vegetables:

Choose 5 servings a day of brightly colored vegetables such as yellow, orange, and red peppers. Also include green leafy vegetables such as spinach, kale and collard greens.

Fruits:

Choose 5 servings of fruit per day, again choose a variety of colors for your fruit such as apples, citrus, plums and berries.

Fat sources:

Omega 3 oils reduce inflammation. Most people naturally get enough Omega 6 fats, so being intentional about eating good sources of omega 3 is important.

Plant sources of Omega 3 (ALA) are:

Chia seeds, Flax seeds, Walnuts, Avocados, Canola oil, Black currant seed oil, Evening Primrose oil, Borage oil, and pumpkin seeds.

Animal sources (EPA and DHA):

Oily cold water fish, Fish oil, Algal oil, and Krill oil. It is suggested to supplement with about 1000 mg per day unless you are taking blood thinners or are allergic to one of the products.

Avoid trans fats found in some baked goods at all costs (they are illegal to put in foods now). Limit your intake of saturated fats such as butter and in large animals such as beef, pork, and lamb.

Legumes:

Include in your diet one serving of beans, peas, or lentils per day.

Limit your salt intake if you have tendencies toward high blood pressure.

What about vitamin/ mineral supplements:

In an ideal world, if we followed a perfectly healthy diet we would not need a supplement. The nutrient content of foods has lowered because of current farming practices so most of us do not have an ideal diet, it is prudent to take some supplements. Here is what we suggest:

If you have no family history of macular degeneration and have no signs of it take a general multivitamin mineral once per day and one omega 3 supplement of about 1000 mg (usually fish oil). We recommend a triglyceride form fish oil.

If you family has a history of macular degeneration but you have no signs; take a mineral multivitamin and a supplement of Lutein 6 mg, Zeaxanthin 6 mg, and 1000 mg of fish oil.

If you have macular degeneration: consider taking a genetic test to determine if you should be on a low or high dosage of zinc. Some supplements have as much as 70 mg of zinc, and in about 14% of people this may increase macular degeneration risk. If you do not take a genetic test the recommendation is to take between 15-25 mg of zinc per day in your supplements. Your supplement should include antioxidants of vitamin C and E. We also suggest taking 1000-2000 IU of vitamin D.

Other supplements:

Magnesium supplements are helpful to most people

CoQ10 should be taken if you are on statin medication

Resveratrol - Our recommendation is a product called Longevinex. This appears to affect many body functions that may help the retina repair itself and slow the aging process.

Anti AMD Diet. (Summary)

Every day your dietary goals should include:

Five servings of fruits

Five servings of vegetables

One serving of legumes (beans, peas, lentils)

One serving of nuts (watch calorie intake)

Three servings of whole grain based foods (Less if you have blood sugar issues)

Two servings of poultry (skinless) per week

Two to three servings of oily variety fish per week

One to two serving of beef, pork, or lamb per week

Four to seven eggs per week

Two servings of low fat dairy products per day

Two tablespoons of organic, olive or walnut oil.

Everyone has slightly different dietary needs so adjust these recommendations accordingly.

Additional Recommendations

Sleep apnea

If you or someone close to you suspects you have sleep apnea have a sleep study performed. Sleep apnea can increase your risk of macular degeneration by 44%.

Activity

Staying physically active is important, studies have shown that those who are active have less issues with macular degeneration. Do activities that are within your physical limits, consult your doctor as needed about what you should be doing. If possible, a daily physical activity that lasts continuously ½ to one hour per day is ideal (walking counts!).

Blood sugar

If you are diabetic or prediabetic get professional advice on how to control your blood sugar.

Weight

Control your weight by eating the right kinds of foods and watching portion size and snacking, get professional help if needed You can determine if you are overweight by calculating your body mass index, calculators are available online to help with this. Excess weight is associated with a host of health risks including macular degeneration.

Calcium and iron

It is common for women especially to take calcium to prevent osteoporosis. There is evidence that taking more than 600 mg of calcium per day increases risk of macular degeneration. There are sometimes ways to lower your calcium intake by increasing your vitamin D levels, consult with you doctor about this.

Iron is often given to ward off anemia especially in women of childbearing age. Most men do not need to supplement with iron. We recommend that if you are taking an iron supplement that you test your blood levels to ensure you are not getting too much iron.

Smoking

Smoking is bad because it causes increase in oxidation reactions the body which speeds up the aging process. It causes heart disease and poor circulation as well as increases the risk of cancer. It increased the complications from all of the major aging disorders of the eye. If you are smoker do everything you can to quit.

Cholesterol

High cholesterol is a risk factor for AMD. The AMD diet and lifestyle suggestions above should have a positive impact on your cholesterol profile. If you are on a statin drug we suggest adding a CoQ10 supplement. Work with your doctor to control your cholesterol levels.

Blue light

Exposure to blue light is a risk factor for macular degeneration. The sun is by far the most potent source of blue light. Wearing a blue filtering sunglass outdoors is recommended. It is unknown how much blue light is safe and whether the exposure from cell phones, tablets and computers play a role in AMD development. If you have a significant amount of screen time we recommend blue attenuating lenses be worn. IN addition to protecting your eye these lenses should improve your comfort and help you sleep better if you are on electronics at night.

Macular pigment:

For most people increasing your intake of lutein and zeaxanthin will increase your macular pigment over time. Macular pigment serves as a natural blue light reducer for the retina. Lutein and zeaxanthin are found in green leafy vegetables and fruits or vegetables that are of yellow or orange color. Taking a potent lutein and zeaxanthin supplement is the fastest way to increase your macular pigment score. We can now test you macular pigment levels in the office.

Establishing a trusted relationship with an eye care professional

Your eye doctor plays an important role in helping you maintain your sight. There are several things to look for when choosing an eye care professional. Your eye doctor should have the proper equipment to monitor your eye condition. Today this includes having an Optical Coherence Tomography (OCT), and the ability to take high resolution retina photos preferably with autofluorescence ability. It is also helpful for your doctor to have the availability of macular pigment testing and genetic testing. I would look for a doctor willing to spend time discussing ways to prevent macular degeneration from happening and lowering your risk of progression if you already have AMD. It is not enough just to monitor your condition for progression with all of the knowledge we have today. You should feel comfortable being honest with your concerns and how you are doing carrying out your treatment plan. To prevent sight loss, it may be necessary to see a retina specialist for intervention if your problem becomes more advanced.

As you can see macular degeneration is a disease that can profoundly impact the quality of a person's life. Fortunately even if you have a history of this there are things you can do to lower your risk. Call our office if we can help you with your individual circumstance.

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