

## **ACQUIRED IMMUNODEFICIENCY SYNDROME (AIDS)**

Infection is caused by one of several related retroviruses which become incorporated into the DNA of the cell. These viruses, named HIV (human immunodeficiency virus) affect the number and functioning of the infection fighting cells of the body. AIDS is a secondary syndrome resulting from HIV infection. Diseases associated with AIDS occur because the infection fighting cells are reduced and weakened.

Transmission of HIV requires contact with body fluids or blood plasma containing infected cells. HIV is not transmitted by casual contact or even close, non sexual contact at work, school, or home. Transmission by coughing or sneezing has not been documented.

The eye and surrounding structures may be affected by HIV. These complications include the following:

- \* Herpes Zoster Ophthalmicus - chicken pox-like lesions occur on the face, in the area of the forehead, cheek, eye, and nose.
- \* Kaposi's Sarcoma - bright hemorrhage-like lesions are seen on the white part of the eye. Eyelid lesions are purple-red and painless.
- \* Cytomegalovirus (CMV) Retinopathy - this is the most common ocular infection associated with AIDS. Patients experience painless decreased vision in one or both eyes.
- \* Toxoplasmosis - patients may experience decreased vision, light sensitivity, pain, and the appearance of particles floating in their eyes.
- \* Palsies of the nerves related to the eye can cause double vision and restriction of gaze. Blind spots and visual hallucinations may occur as a result of infection in the brain.

## **CHICKEN POX**

Chicken pox is caused by the varicella virus, and it is highly contagious. The usual incubation period is 14 to 16 days. Individuals begin to be contagious before the characteristic skin lesions appear, and continue to be contagious until all of the skin lesions crust over.

It is not uncommon for the lesions to occur on the lids and surface of the eye, which results in a red, inflamed eye. Lesions which form on the inner surface of the eyelid create the feeling of having something in the eye. Complications may occur weeks to months after the initial outbreak of chicken pox. Serious eye complications are rare.

Cold compresses and antibiotic ointments are usually prescribed when treatment is indicated. Anti-inflammatory agents may be used in the more serious cases.

## **DIABETES**

Diabetes is the leading cause of blindness in adults under the age of 65. It is a complex disorder involving small blood vessels. These blood vessels provide nutrients to all the structures in the body, including the eyes. In diabetes, the blood vessels begin to leak fluid and blood. This causes damage to the surrounding structures, and interferes with the transport of needed nutrients. Research findings show that complications can be delayed with proper care and monitoring of the disease.

Diabetes can affect many structures in the eye, causing double vision from muscle palsies, fluctuations in vision from sugar level changes, and decreased vision from cataracts. The most serious vision problems arise from hemorrhages in the retina, from swelling of the retina, and from blood vessel growth under the retina. Laser therapy is used, when possible, to treat the retina.

Regular examinations are critical for early diagnosis and to determine when treatment will be most effective. Vision can be preserved in the majority of patients who are diagnosed early and examined regularly.

## **HYPERTENSION (HIGH BLOOD PRESSURE)**

It is estimated that more than 50 million people in the United States have high blood pressure. Many factors are thought to contribute to high blood pressure, but the exact cause remains unknown. Untreated high blood pressure speeds up artery-clogging, and is a major risk factor for heart disease and stroke. The organs most commonly affected by high blood pressure are the heart, brain, kidneys, and eyes.

The eye is an important diagnostic tool in assessing the effects of high blood pressure elsewhere in the body. Hardening of the arteries, hemorrhages, and fluid leakage seen in the eye will also be occurring in the other organs.

There is no known cure for hypertension, but the pressure can be controlled and the complications reduced. In addition to prescribed medications, reducing salt intake, losing weight, exercising regularly, limiting alcohol intake, and eating potassium rich foods all help to control high blood pressure. These dietary and exercise measures also help to prevent typical age-related increases in blood pressure.

## **LYME DISEASE**

Lyme disease was first recognized in Lyme, Connecticut, in 1975, and is now present in at least 43 states. It is spread primarily by tiny ticks. Deer are the preferred host for the adult ticks. Disease onset usually occurs in the summer and early fall.

In about 75% of the cases, the tick bite looks like an insect bite. It is red with a clear center. Flu-like symptoms commonly occur 3 to 32 days after a bite. Various symptoms may occur, on and off, for weeks.

Eye symptoms include decreased vision, double vision, pain and light sensitivity. Weakness of facial muscles around the eye may also occur. Oral antibiotics, taken for up to 20 days, are typically the treatment of choice.

### **MULTIPLE SCLEROSIS (M.S.)**

Nerves are covered by a myelin sheath formed early in life. This sheath helps transmit impulses along the nerve. In M.S., the myelin is gradually lost. This can disrupt nerve impulses and cause loss of function. Loss of myelin can also result in permanent nerve damage.

The optic nerve and the nerves controlling the muscles in and around the eye can be affected. Involvement of the optic nerve leads to sudden loss of vision and pain, usually in one eye. Involvement of the muscles can result in double vision, restrictions of eye movement, and drooping of the eyelid. Good recovery usually occurs, but repeated M.S. attacks may cause permanent eye damage.

The cause of M.S. is unknown, but it is suspected that an abnormality of the immune system plays a role. Viruses have also been suspected as causes of M.S. Women seem to be more prone to the disease than men. The course the illness takes is very varied and unpredictable. There is no specific therapy for M.S., but oral steroids may help reduce inflammation of the optic nerve. The effectiveness of immuno-suppressive drugs is currently being investigated.