

Electroretinogram (ERG)

An electroretinogram (ERG) is a test that measures the response of the retina to light. These tests will help the doctor diagnose and monitor eye disorders. This test also monitors the changes caused by certain medicines.

Retina

The retina is a thin tissue that lines the inside back wall of your eye. It is made up of layers of cells. One layer, called the photoreceptor layer, contains the light sensing rods and cones.

Types of ERGs

There are two types of ERGs.

- **Full field ERG (ffERG):** This tests the entire photoreceptor layer of the retina.
- **Multi focal ERG (mfERG):** This tests the macula or central vision.

Day of the Test

Allow two to three hours for testing. Your eyes will be dilated for the test. Arrange for someone to drive you home if you do not want to drive while your eyes are dilated.

During the Full Field ERG

Your eyes will be light and dark 'adapted' (or adjusted). For light adaptation, you will look in a lighted bowl for 10 minutes. For dark adaptation, you will sit in the dark with a technician for 20 minutes.

There are two ways to record the retinal ERG response.

- Sticker electrode method
- Fine thread electrode method

Sticker electrode method: You will have a sticker electrode placed on the lower lid of each eye. This method uses a handheld device to flash lights and to record data from the sticker. Each eye is tested separately.

Fine 'thread' electrode method: The 'thread' electrode floats on the tear layer of the eye after the eye has been numbed with eye drops. These electrodes will collect the data when light is flashed. Both eyes are tested together.

During the Multi Focal ERG

The mfERG uses a special purpose contact lens electrode that gently holds the lids open during testing. The eye will first be numbed with eye drops. Then, a thick artificial tear is placed on the contact lens and the contact lens is then placed on the eye. Once the contact is in place, the multifocal device is moved in front of the eye.

You will view a red 'X' while the opposite eye is patched. For the mfERG, you will view hexagon shapes around the 'X' that will change from black to white while testing. Each eye is tested separately.

After the Test

The thread electrodes and the contact lens electrodes may cause the eyes to feel gritty/scratchy. **Please do not rub your eyes for the rest of the day.** This could harm the eyes. We look at your eyes before you leave to make sure there are no scratches on your eyes. You may use artificial tear drops, as needed, several times that day to relieve symptoms.

When to Call

Call if you have questions or concerns.

Who to Call

University Station Eye Clinic Triage Line
(608) 263-7171

The toll-free number is **1-800-323-8942**.
Ask to be transferred to the above number.

If you are a patient receiving care at UnityPoint – Meriter, Swedish American or a health system outside of UW Health, please use the phone numbers provided in your discharge instructions for any questions or concerns.

Your health care team may have given you this information as part of your care. If so, please use it and call if you have any questions. If this information was not given to you as part of your care, please check with your doctor. This is not medical advice. This is not to be used for diagnosis or treatment of any medical condition. Because each person's health needs are different, you should talk with your doctor or others on your health care team when using this information. If you have an emergency, please call 911. Copyright © 4/2021 University of Wisconsin Hospitals and Clinics Authority. All rights reserved. Produced by the Department of Nursing HF#8191.