



March 2009 Sue Ann Says: Your eyes are a window to cardiovascular health

Poets often reflect that eyes are a window to the soul. I was surprised to learn from Kimberly Stepien, MD, that our eyes are, literally, a window to our heart.

Dr. Stepien, an ophthalmologist with the Eye Institute at the Medical College of Wisconsin, explained that our eyes are one of the few organs in our body through which physicians can directly view blood vessels. As part of our brain's cardiovascular system, the blood vessels of the eye can provide an important glimpse into our overall cardiovascular health. In fact, our eye doctor might see signs of high blood pressure and other cardiovascular or systemic diseases before we even experience symptoms.

What does this mean for women? Cardiovascular disease is the number one cause of death and disability among women across all ethnic groups in our state. If we can catch it early and treat it – or, ideally, prevent it – we can save lives.

Eye exams an important check for vascular health

The retina is a highly complex, multi-layered neural structure lining the back of the eye. Basically, the retina's role is to receive light signals from the outside world and convert it to neural signals that reach the brain. The result: vision.

Our eyes, particularly the retina, receive nutrients from numerous blood vessels that run across its surface. Oxygen and nutrient-rich blood enter the back of the eye through the central retinal artery. It then is distributed by smaller vessels. The central retinal vein then circulates blood away from the eye and back to the heart. The retinal blood vessels can become extremely fragile and damaged due to certain systemic diseases.

We don't go to the eye doctor for cardiovascular check-ups, but research indicates a strong correlation between retinal blood vessels and cardiovascular health. Changes in the retina due to cardiovascular disease are especially common among people with diabetes and older patients. Even the smallest changes in the retinal blood vessels, Dr. Stepien told me, could indicate high blood pressure or other vascular abnormalities, and also systemic diseases such as diabetes, AIDS, lupus or sarcoidosis (inflammation that produces tiny lumps of cells in various organs in your body). Dr. Stepien said eye physicians sometimes are the first to diagnose a patient with underlying vascular issues because the patient notices vision symptoms before any other symptoms occur. Sometimes, though, patients have no symptoms whatsoever.

Dr. Stepien occasionally sees patients with small cholesterol particles in the retinal arteries. These particles can indicate vascular disease and significant blockage of blood

vessels in other parts of the body. These cholesterol particles often break off from plaque built up along the carotid artery.

“If a blood vessel in the eye has a plaque or is blocked, blood vessels in the heart or in the brain also may be blocked. This is a major risk factor for heart attack or stroke, so catching these changes as soon as possible is important,” Dr. Stepien told me. “When I see something in the eye that could indicate cardiovascular or systemic disease, I discuss it with my patient and contact her primary care physician for the necessary follow-up.”

Certain eye diseases and cardiovascular disease share many of the same risk factors, including high blood pressure, diabetes, high cholesterol, smoking, and obesity.

“A patient may not know she has high blood pressure, but she notices if she can’t see well and is having headaches,” Dr. Stepien said. “Those signs often can bring patients to me first.”

Healthy vision, healthy heart

Just as the risks are similar, prevention of eye disease is similar to prevention of cardiovascular disease. When blood pressure and cholesterol are under control, the chances of eye disease due to these factors decrease dramatically. Essentially, what is good for your heart is good for your eyes.

Dr. Stepien’s recommendations:

- Don’t smoke. Or if you do, do everything you can to try to stop. Smoking leads not only to cancer and heart disease, but also can contribute to cataract formation (a leading cause of blindness worldwide), wet macular degeneration, and increased diabetic retinal disease (both leading causes of blindness in the U.S.).
- Have regular health screenings for diabetes, hypertension and cholesterol.
- If you have diabetes, keep it under control and have annual dilated eye exams.
- Eat a well-balanced diet of heart-healthy foods.
- Maintain a healthy weight.
- Exercise.

It is my hope that Wisconsin women can look into each other’s eyes and see vibrant good health. Because it all begins with a healthy woman.

Yours in good health,

A handwritten signature in cursive script that reads "Sue Ann Thompson". The signature is written in a dark ink and is positioned below the typed name.

Sue Ann Thompson
Founder & president

Wisconsin Women's Health Foundation

The Wisconsin Women's Health Foundation (WWHF) is a statewide non-profit organization whose mission is to help Wisconsin women and their families reach their healthiest potential. WWHF presents women's health education and outreach programs, funds women's health research, provides scholarships for women in academic medicine, and publishes resource materials. Your donations help WWHF reach women all over Wisconsin with the information, resources and tools they need to be healthy. To make a donation or to learn more about WWHF, visit www.wwhf.org or call 1-800-448-5148.