

STUDY: FEWER EYE SYMPTOMS DOCUMENTED IN EHR THAN REPORTED ON QUESTIONNAIRES

There can be significant inconsistencies between the symptoms patients at ophthalmology clinics report on a questionnaire and those documented in their electronic health records (EHRs), a study published in *JAMA Ophthalmology* found.¹ Symptoms tended to be more frequently reported on the questionnaires and to lack documentation in the EHRs.

The study included 162 patients seen at ophthalmology and cornea clinics at an academic institution. According to the researchers, 34% of patients had different reporting of blurry vision between the questionnaire and the EHR.

Documentation was also discordant for reporting glare (48%), pain or discomfort (27%), and redness (25%).

The inconsistencies observed by the researchers showed a bias toward self-reporting more symptoms. "If the [EHR] lacks relevant symptom information, it has implications for patient care, including communication errors and poor representation of the patient's reported problems," the authors wrote. "The inconsistencies imply caution for the use of [EHR] data in research studies."

1. Valikodath NG, Newman-Casey PA, Lee PP, Musch DC, Niziol LM, Woodward MA. Agreement of ocular symptom reporting between patient-reported outcomes and medical records [published online ahead of print January 26, 2017]. *JAMA Ophthalmol*.

Analysis: Elevated BP a Problem Worldwide

Worldwide rates of high blood pressure and elevated blood pressure rose between 1990 and 2015, a comparative assessment of 844 studies across 154 countries between 1980 and 2015 found.¹

The study, which included more than 8 million people, found that over those years, the annual death rate increased from 136 to 145 per 100,000 among those with a systolic pressure of at least 110 to 115 mm Hg. Although this range is well below the clinical definition of high blood pressure, it is where the risk of high blood pressure begins.

Among people with systolic pressure of 140 mm Hg or more, the annual death rate rose from 98 to 106 per 100,000, according to researchers. Most blood pressure-related deaths were attributed to heart disease (5 million), bleeding in the brain (2 million), or stroke (1.5 million).

1. Forouzanfar MH, Liu P, Roth GA, et al. Global burden of hypertension and systolic blood pressure of at least 110 to 115 mm Hg, 1990-2015. *JAMA*. 2017;317(2):165-182.

Gluten-Free Diet May Raise Risk of Arsenic, Mercury Exposure

A 2012 survey found that 30% of US adults age 50 and older are cutting down on gluten or avoiding it completely.¹ Rice flour is often used as a substitute for gluten, and the authors of a study published in *Epidemiology* note that rice

can contain potentially harmful toxic metals, including bioaccumulate arsenic and mercury, from water, soil, and fertilizers.² Exposure to such metals has been associated with increased risk of cardiovascular disease, cancer, and other diseases.

The study authors identified 73 participants between the ages of 6 and 80 years who reported following a gluten-free diet. Blood and urine samples were taken from all participants and assessed for levels of arsenic and mercury.

The authors found that levels of each toxic metal were much higher among patients who followed a gluten-free diet than among others who did not eat gluten-free products. Specifically, mercury levels were 70% higher in the blood of gluten-free patients, and arsenic levels in urine were almost twice as high in the blood of gluten-free patients as in patients who did not restrict gluten from their diets.

1. The NPD Group, Inc. Is gluten-free eating a trend worth noting? www.npd.com/perspectives/food-for-thought/gluten-free-2012.html Accessed February 28, 2017.

2. Bulka CM, Davis MA, Karagas MR, et al. The unintended consequences of a gluten-free diet [published online ahead of print February 15, 2017]. *Epidemiology*.

Long-term Postmenopausal Hormone Therapy May Protect From Dementia

Postmenopausal estrogen-based hormone therapy lasting longer than 10 years is associated with a decreased risk of Alzheimer disease, an analysis of multiple studies found. In a doctoral thesis, Bushra Imtiaz, MD, MPH, explored the

association between postmenopausal hormone replacement therapy (HRT), Alzheimer disease, dementia, and cognition in two nationwide case-control studies and two longitudinal studies.¹ The largest study comprised roughly 230,000 Finnish women; follow-up time in the studies was as much as 20 years.

Long-term use of HRT was associated with better performance in the cognitive domains of global cognition and episodic memory and with a lower risk of Alzheimer disease. Short-term use was not significantly linked to dementia risk, but in one cohort dementia risk was higher among short-term users who had started HRT in the late postmenopausal period.

“[HRT] may have a beneficial effect on cognition if started early, around the time of menopause,” said thesis author Dr. Bushra Imtiaz in a press release from the University of Eastern Finland. “The protective effect of hormonal therapy may depend on the health status of neurons at baseline and may be lost if therapy starts years after menopause.”

1. Imtiaz B. Hormone therapy and the risk of dementia, cognitive decline and Alzheimer's disease. 2017. University of Eastern Finland Electronic Publications. http://epublications.uef.fi/pub/urn_isbn_978-952-61-2403-2/index_en.html. Accessed March 2, 2017.

CMV May Affect Women's Susceptibility to Heart Disease, Type 2 Diabetes

Normal-weight women under age 50 who were infected with cytomegalovirus (CMV) were more likely to have metabolic syndrome than their peers, according to researchers at the University of California, San Francisco. Their findings were published in *Obesity*.¹

Data from 1999 to 2004 on more than 2,500 individuals nationwide between the ages of 20 and 49 were examined. Associations were compared between CMV and signs of metabolic syndrome in participants divided into one of four categories: normal weight, overweight, obese, and extremely obese. After taking into account other contributing factors (eg, age, ethnicity, poverty), the researchers found that nearly 5% of normal-weight women infected with CMV had at least three risk factors for metabolic syndrome. The same was true for less than 1% of normal-weight women who did not have CMV.

Interestingly, 56% of extremely obese women with CMV had three or more risk factors associated with metabolic syndrome compared with almost 83% of the extremely obese women without CMV. The former also had higher levels of HDL cholesterol and lower levels of triglycerides, leading researchers to conclude that CMV might protect extremely obese women from metabolic syndrome. The study did not prove a link between cause and effect. Additional research is warranted to understand these associations, the researchers concluded.

1. Fleck-Dearden S, McClellan W, Wojcicki JM. The association between cytomegalovirus infection, obesity, and metabolic syndrome in U.S. adult females. *Obesity (Silver Spring)*. 2017;25(3):626-633.

Studies Point to Benefits, Risks of Testosterone Treatment

Several studies recently published in *JAMA* examined the effects of testosterone treatment in older men with low testosterone.

One study was a placebo-controlled, double-blind trial of 211 men 65 years or older with testosterone concentrations averaging less than 275 ng/L who participated in the Testosterone Trials from December 2011 to June 2014.¹ Researchers found that testosterone treatment for 1 year in older men with low testosterone significantly increased volumetric bone mineral density and estimated bone strength, more in trabecular than peripheral bone and more in the spine than in the hip. The researchers suggested that a larger, longer trial could determine whether this treatment also reduces the risk of fracture.

In a double-masked, placebo-controlled clinical trial, 1 year of testosterone treatment in men aged 65 and older with low serum testosterone was associated with a significant increase in noncalcified coronary artery plaque volume, 41 mm more than in those receiving placebo.² The participants were 170 men with average serum testosterone levels lower than 275 ng/dL (82 men assigned to placebo, 88 to testosterone) and symptoms suggestive of hypogonadism who were among 788 men enrolled in the Testosterone Trials.

Another study was a retrospective cohort study conducted within an integrated health care delivery system that included men at least 40 years old with evidence of androgen deficiency.³ The cohorts consisted of 8,808 men who were ever treated with testosterone (19.8%; 1.4% with prior cardiovascular events) and 35,527 men who were never treated with testosterone (80.2%; 2.0% with prior cardiovascular events). The study authors concluded that, among men with androgen deficiencies, dispensed testosterone prescriptions were associated with a lower risk of cardiovascular outcomes over a median follow-up of 3.4 years. ■

1. Synder PJ, Kopperdahl DL, Stephens-Shields AJ, et al. Effect of testosterone treatment of volumetric bone density and strength in older men with low testosterone [published online ahead of print February 21, 2017]. *JAMA*.

2. Budoff MJ, Ellenberg SS, Lewis CE, et al. Testosterone treatment and coronary artery plaque volume in older men with low testosterone. *JAMA*. 2017;317(7):708-716.

3. Cheetham TC, An JJ, Jacobson SJ, et al. Association of testosterone replacement with cardiovascular outcomes among men with androgen deficiency [published online ahead of print February 21, 2017]. *JAMA*.

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