Eyesight and Vision (March is Save Your Vision Month)

By eyeTopics Staff Editor | Published 12/12/2004 | The Sense of Sight | Rating

Vision is More Than Visual Acuity Alone

Vision is a complex process that involves both the eyes and the brain. Though eyesight (i.e. the clarity of images formed by the eye) is a big part of how well we see, clear comfortable vision requires additional skills as well.

Eyesight

Eyesight is assessed by visual acuity testing. At your eye exam, you will be shown charts of letters or numbers across the room and up close. Distance visual acuity is usually tested at a distance of 20 feet (or a simulated distance of 20 feet using a set of mirrors). Near visual acuity is typically tested at a distance of 16 inches, which is an average reading distance.

The use of letters of incrementally smaller sizes to evaluate a person's eyesight began in the early 1800's. The measurement of visual acuity that is used most frequently is the Snellen fraction. It is named after Dutch Ophthalmologist Hermann Snellen who developed the classic letter chart in 1863. Since then, people have come to recognize that the Snellen fraction "20/20" means perfect eyesight.

Snellen determined the size of the letters on his test chart by comparing the eyesight of a large number of his patients with that of his assistant, who could see distant objects very clearly. (Historical accounts don't explain how Snellen knew his assistant had "perfect" eyesight.)

What does "20/20" mean?

The top number in the Snellen fraction is always 20. It refers to the standardized visual acuity testing distance of 20 feet. The bottom number of the fraction describes the farthest distance from which a person with normal eyesight can recognize the smallest letters you can see when you are 20 feet from the chart.

Therefore, "20/20" means the smallest letters you can recognize at a distance of 20 feet are the same size as those a person with normal eyesight can see at the same distance. You have normal (20/20) eyesight.

But if you have 20/40 visual acuity, the smallest letters you can recognize at 20 feet a person with normal eyesight can recognize when they are 40 feet away. In other words, your visual acuity is only half as clear as that of a person with normal eyesight (20/40 = 50%).

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Eyesight and Vision (cont’d)

The larger the bottom number to the Snellen fraction, the worse your eyesight is. For example, if you have 20/200 visual acuity, the smallest letters you can recognize at 20 feet a person with normal eyesight can recognize when they are 200 feet away. Your visual acuity is only 10 percent the level of normal eyesight (20/200 = 10%).

It's possible to have eyesight that is better than normal. In this case, the lower number in the Snellen fraction is less than 20. For example, if you have 20/15 visual acuity, the smallest letters you can see at 20 feet a person with normal eyesight cannot recognize at 20 feet - they must be closer (15 feet) to recognize them. Your eyesight is 33% better than normal (20/15 = 133%).

Near visual acuity is also described using a Snellen fraction. Although the near test distance is typically 16 inches, letters used on the near test card are appropriately sized to give similar relative measurements of eyesight as the distance Snellen fraction. Therefore, the top number in the Snellen fraction remains 20 for near vision testing, and the fraction is called a "Snellen equivalent."

Sometimes visual acuity is measured using a test distance of 6 meters instead of 20 feet. In these cases, the Snellen fraction "6/6" indicates normal eyesight (6/6 = 20/20), 6/12 is the same relative level of eyesight as 20/40, and so on.

Binocular Vision

Having 20/20 eyesight doesn't guarantee that you have perfect vision. Reading an eye chart is a specific, static visual task. But most daily activities require our eyes to perform more demanding, dynamic functions.

Clear, comfortable vision depends on how well our eyes work together as a team. This teaming of the eyes is called binocularity, or binocular vision. If each eye has 20/20 eyesight but the two eyes are not properly aligned to work together efficiently as a team, blurred vision, eyestrain and headaches can occur.

Computer use and other near vision tasks require our eyes to work together while pointing slightly inward. This inward direction of the line of sight of each eye is called convergence.

Reading and computer work also require our eyes to move quickly and accurately from point to point on a page or screen. And the closer objects are, the more focusing effort our eyes have to perform.

Many visual tasks also require that we change the focus and position of our eyes quickly and repeatedly (taking notes during a classroom lecture, for example). This changing of the focus point of our eyes is called Accommodation.

People who have perfect 20/20 eyesight can have binocular vision problems that can cause headaches, eyestrain, and blurred vision. Binocular vision problems may also cause reading problems among school-aged children.

If you or one of your children are experiencing frequent headaches and eyestrain, see your eye doctor to determine if you have a binocular vision or accommodative problem. Many binocularity and focusing problems can be successfully treated with vision therapy or special prescription eyewear.
March is National Colorectal Cancer Awareness Month

Your current Wellness and Prevention benefits include 100 percent colonoscopy coverage under the UT SELECT preventive care program. This means that a colonoscopy performed by a network physician at a network facility will now be available at no cost to you.

What is colonoscopy?

Colonoscopy is a procedure that enables an examiner (usually a gastroenterologist) to evaluate the appearance of the inside of the colon (large bowel). This is accomplished by inserting a flexible tube that is about the thickness of a finger into the anus, and then advancing it slowly, under visual control, into the rectum and through the colon. It is performed with the visual control of either looking through the instrument or with viewing a TV monitor.

Why is colonoscopy done?

This test may be done for a variety of reasons. Most often it is done to investigate the finding of blood in the stool, abdominal pain, diarrhea, a change in the bowel habits, or an abnormality found on colon x-ray or a CT scan. Certain individuals with previous history of polyps or colon cancer and certain individuals with family history of particular malignancies or colon problems may be advised to have periodic colonoscopies because they are at a greater risk of polyps or colon cancer.

What bowel preparation is needed for colonoscopy?

If the procedure is to be complete and accurate, the colon must be completely clean. Patients are given detailed instructions about the cleansing of the colon procedure. In general this consists of a large volume of a special cleansing solution or several days of a clear liquid diet and laxatives or enemas prior to the examination. These instructions should be followed to the letter or the procedure may be unsatisfactory and have to be repeated later or a less accurate alternative chosen in its place.

What about current medications or diet before colonoscopy?

Most medications should be continued as usual, but some may interfere with the examination. It is best that the physician is informed of all current prescription or over the counter medications. Aspirin products, blood thinners (Coumadin, etc.), arthritis medications, insulin, and iron preparations are examples of medications that may require special instructions. The physician will also want to be aware of the patient's allergies and any other major illnesses. The examiner should be alerted if, in the past, patients have required antibiotics prior to surgical or dental procedures. Instructions may also be given to avoid certain foods for a couple of days prior to the procedure, such as stringy foods, foods with seeds, or red Jello.

What to expect during colonoscopy?

Prior to the procedure an IV is started and the patient is given a monitor for continuous monitoring of the heart, blood pressure, and oxygenation of the blood. Medication is often given through the vein to make the patient sleepy and relaxed. If needed, the patient may receive additional doses during the procedure. Colonoscopy often gives a feeling of pressure, cramping, and bloating; however, with the aid of the medication it is generally well tolerated and rarely causes any significant pain.

Patients will be lying on their left side or back as the instrument is slowly advanced. Once the tip of the colon, or the last portion of the small bowel, is reached the colonoscope is slowly withdrawn and the lining is again carefully examined. The procedure usually takes 15 to 60 minutes. If the entire colon, for some reason, cannot be visualized, the physician may decide to try it at a later date with a better bowel preparation or may decide to order an x-ray of the colon.

What if there are abnormalities detected during colonoscopy?

If an area needs to be better evaluated a forceps is passed through the instrument and a biopsy (a sample of the tissue) is obtained and is submitted to pathology for a microscopic exam. If infection is suspected a specimen may be obtained for culturing of any possible bacteria or viruses. If the exam is performed because of bleeding, the site can be identified, sample of tissue obtained (if indicated), and the bleeding controlled by several means. Should there be polyps (benign growths that can lead to cancer) they, almost always, can be removed through the colonoscope. Removal of these polyps is an important method of preventing colorectal cancer. None of these additional procedures typically produce pain. Biopsies are taken for many reasons and do not necessarily mean that cancer is suspected and the great majority of polyps are benign.
**COLONOSCOPY (Cont’d)**

**What to expect after a colonoscopy?**

Patients will be kept in an observation area for an hour or two, until any medication given adequately wears off. If they have been given sedation before or during the procedure, someone must take them home, even if they feel alert. The patient's reflexes and judgment may be impaired for the rest of the day, making it unsafe to drive or operate any machinery. Should patients have some cramping or bloating this should be relieved quickly with the passage of gas and they should be able to eat upon returning home. After the removal of polyps or certain manipulations, the diet or activities of patients may be restricted for a brief period of time.

Prior to the patient's departure, any findings can be explained. However, at times, a definitive diagnosis might have to wait for a microscopic analysis, which usually takes only a few days.

**What are the possible complications or alternatives?**

Colonoscopy complications are rare and usually minor when performed by physicians who have been specially trained and are experienced in these endoscopic procedures.

Bleeding may occur at the site of biopsy or polypectomy, is usually minor and self-limited, or can be controlled through the colonoscope. It is quite unusual to require transfusions or surgery. An even less common complication is a perforation or a tear through the bowel wall that could require surgery. Other potential complications are reaction to the sedatives used, localized irritation to the vein where medications were injected (leaving a tender lump lasting a number of days but going away eventually), or complications from heart or lung disease. Hot towels or moist packs often help relieve the discomfort of an irritated vein. The incidence of all of these, together, is less than one percent.

While these complications are rare, it is important for patients to recognize any early signs. The physician that performed the colonoscopy should be contacted if patients notice any of the following symptoms: severe abdominal pain, rectal bleeding of more than half a cup, or fever and chills.

Colonoscopy is the best test available to detect and treat abnormalities within the colon. The alternatives to colonoscopy are quite limited. Barium enema is a less accurate test performed with x-ray. It misses lesions more often than a colonoscopy, and, if an abnormality is found, a colonoscopy may still be required to biopsy or remove the abnormality. At times, an abnormality or lesion detected with a barium enema is actually stool or residual food in a poorly cleansed colon. Colonoscopy may then be necessary to clarify the issue. Flexible sigmoidoscopy is a limited examination that examines only the last third of the colon.

**Final Word**

You have been given this information so you would be knowledgeable about colonoscopy. If you have further questions about the need for the procedure, alternative methods, the cost of the procedure and whether covered by your insurance, do not hesitate to speak to your doctor or his/her staff. Most endoscopists are highly trained specialists and welcome your questions regarding their training, credentials, or any other questions you might have.

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**YOGA CLASSES**

Yoga is a great wellness tool for the mind and body. The Yoga Class is taught by Debbie Tompkins. Classes are held on Tuesdays & Thursdays from 5:15pm to 6:30pm. The cost is $30 for 8 sessions to be used within 60 days. Contact Caryn Vorsas for more information at ext. 7293
20 Healthy, Low-Calorie, Stress-Fighting Snacks

All of these snacks were designed with flavor and stress-busting nutrition in mind, so you get the biggest nutritional bang for your bite while protecting your body and brain from the ravages of stress.

1. **THE EUROPEAN SNACK** Top a piece of toasted nut bread with an ounce of low-fat cheese and slices of a Granny Smith apple. Serve with orange juice.

2. **SWEET 'N' CREAMY** Spread fat-free cream cheese over fat-free whole-wheat crackers and top with mango chutney. Serve with a glass of calcium-fortified soy milk.

3. **VEGGIE DIP** Dip raw vegetables (bell peppers, broccoli, baby carrots, zucchini) in fat-free ranch dressing. Serve with sparkling apple juice.

4. **FRUIT TORTILLA** Spread soy butter and a little all-fruit jam on a heated tortilla; fill it with fresh fruit, such as peach slices and strawberries; and roll it into a burrito.

5. **TROPICAL PARFAIT** Layer tropical fruits like banana, mango, pineapple or papaya with low-fat yogurt and low-fat granola in a parfait glass.

6. **HEALTHY DIPPERS** Cut corn tortillas into 8 wedges and bake at 350° F for 9 minutes or until crisp.

7. **APPLE SNACK** Drizzle apple wedges with nonfat caramel sauce.

8. **MINI-TOMATO BOWL** Fill hollowed-out cherry tomatoes with tuna salad, hummus or leftover couscous.

9. **CELERY LOG** Stuff celery stalks with almond butter; sprinkle with cranberries.

10. **ONE-MINUTE BAGEL** Top half a toasted whole-wheat bagel with hummus and thin slices of red pepper.

11. **SHRIMP ROUND** Dollop cucumber slices with fat-free cream cheese, a cooked shrimp and a drizzle of cocktail sauce.

12. **SWEET 'N' CRUNCH** Stuff almonds into dates or pitted dried plums.

13. **SALT 'N' CRUNCH** Top a wheat cracker with tuna mixed with fat-free mayonnaise and a sweet-pickle slice.

14. **PEANUT BUTTER CANDY** Mix equal amounts of peanut butter, toasted wheat germ and honey. Spread on whole-wheat crackers and serve with orange juice.

15. **DOUBLE CINNAMON** Dunk a toasted slice of cinnamon-raisin bread in low-fat apple-cinnamon yogurt. Serve with kiwi slices.

16. **MELON BOWL** Fill half a cantaloupe with lemon yogurt and top with whole-grain cereal.

17. **ZESTY ORANGE** Sprinkle crystallized ginger over mandarin orange slices. Serve with soy milk.

18. **MINI-PIZZA** Toast a whole-wheat English muffin; top with pizza sauce, low-fat cheese and steamed veggies. Broil for 1 minute or until the cheese bubbles.

19. **PINA COLADA SHAKE** In a blender, whip 1 frozen banana, ½ cup pineapple, 1 cup nonfat plain yogurt, ¼ teaspoon coconut extract and ¼ cup nonfat milk. Serve with graham crackers.

20. **NATURE'S SORBET** Pour two cups of frozen blueberries into a bowl. Serve with a cup of fat-free hot chocolate.
Pilgrim’s Pride Boneless Chicken Breast with Pecan-Pesto

12 Pilgrim’s Pride chicken breasts (boneless and skinless)
3/4 c pecans
1 c fresh parmesan cheese, finely grated
2-3 tablespoons minced garlic
1 1/2 cups basil leaves (fresh)
1 c extra virgin olive oil
Salt and pepper to taste (black pepper with a touch of white pepper mixed in)
1/2 c vegetable oil
1 c flour with 4 tablespoon pecans mixed in
1/2 shallots, diced thin
1 c sliced mushrooms
1 t smashed or minced roasted garlic
3 T flour
1 c dry white wine (room temp)
1 pint chicken broth
1 pint heavy cream

Preheat oven to 225 degrees. Use a food processor to make pecan pesto by combining pecans, Parmesan, 2 T minced garlic and the basil leaves. Chop about 2 minutes with pulse until well blended. Run processor slowly, adding olive oil until it is the consistency of a paste. Do not over process! Add salt and pepper to taste, then set aside. In skillet, heat vegetable oil to medium high heat. Rinse and dry breast, season with salt and pepper, then lightly coat with flour. Sauté chicken breast 3-6 minutes per side, until almost done. Place chicken on baking pan in warmed oven. Use the same skillet and sauté the shallots, remaining garlic and mushrooms until slightly wilted. Add in 1 t flour and blend well. Whisk in white wine and chicken stock. Take to slow boil and immediately reduce to a simmer. Allow to thicken, careful not to scorch. Add 2 oz of peco made earlier and the heavy whipping cream. Blend well with a whisk and add pepper to enhance flavor. The combination of the fresh chicken and sauce will delight you. Add fresh shredded basil leaves for color, aroma and presentation. Serve with noodles or rice. For more recipes, see www.pilgrimspride.com.

Pilgrim’s Pride Corporation
Pitiburg, Texas

www.pilgrimspride.com

HR/Benefits Staff:

Georgia Melton (Assoc. VP of HR) Jeanette Turner (HR & Benefits Manager)
Ext: 7022 Ext: 7749
Sherry Shipley (Benefits Specialist II) Tammye McCollum (Benefits Analyst)
Ext: 7741 Ext: 7784

Office Hours: Monday – Friday 8am – 5pm

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1-800-818-0155 or www.medcohealth.com
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