How To Read Your Eyeglass Prescription

By Gary Heiting, OD

See also: The basics of eyeglasses • What's new in eyeglass lenses • Understanding your contact lens prescription

So, you've just had an eye exam and your optometrist or ophthalmologist has given you an eyeglass prescription. He or she probably mentioned that you are nearsighted or farsighted, or perhaps that you have astigmatism. (If that's not the case, and you need to see an eye doctor, click here to find one near you.)

But what do all those numbers on your eyeglass prescription mean? And what about all those abbreviated terms, such as OD, OS, SPH and CYL?

This article will help you decipher all parts of your prescription and discuss it knowledgeably with an optician when you're buying eyeglasses.

What OD And OS Mean

The first step to understanding your eyeglass prescription is knowing what "OD" and OS" mean. They are abbreviations for *oculus dexter* and *oculus sinister*, which are Latin terms for right eye and left eye.

Your eyeglass prescription also may have a column labeled "OU." This is the abbreviation for the Latin term *oculus uterque*, which means "both eyes."

Though the use of these abbreviated Latin terms is traditional for prescriptions written for eyeglasses, contact lenses and eye medicines, some doctors and clinics have opted to modernize their prescriptions and use RE (right eye) and LE (left eye) instead of OD and OS.

On your eyeglasses prescription, the information for your right eye (OD) comes before the information for your left eye (OS). Eye doctors write prescriptions this way because when they face you, they see your right eye on their left (first) and your left eye on their right (second).

Other Terms On Your Eyeglass Prescription

Your eyeglass prescription contains other terms and abbreviations as well. These include:

Sphere (**SPH**). This indicates the amount of lens power, measured in diopters (D), prescribed to correct nearsightedness or farsightedness. If the number appearing under this heading has a minus sign (–), you are

nearsighted; if the number has a plus sign (+) or is not preceded by a plus sign or a minus sign, you are farsighted.

The term "sphere" means that the correction for nearsightedness or farsightedness is "spherical," or equal in all meridians of the eye.

Cylinder (**CYL**). This indicates the amount of lens power for astigmatism. If nothing appears in this column, either you have no astigmatism, or your astigmatism is so slight that it is not really necessary to correct it with your eyeglass lenses.

The term "cylinder" means that this lens power added to correct astigmatism is not spherical, but instead is shaped so one meridian has no added curvature, and the meridian perpendicular to this "no added power" meridian contains the maximum power and lens curvature to correct astigmatism.

The number in the cylinder column may be preceded with a minus sign (for the correction of nearsighted astigmatism) or a plus sign (for farsighted astigmatism). Cylinder power always follows sphere power in an eyeglass prescription.

Axis. This describes the lens meridian that contains no cylinder power to correct astigmatism. The axis is defined with a number from 1 to 180. The number 90 corresponds to the vertical meridian of the eye, and the number 180 corresponds to the horizontal meridian.

If an eyeglass prescription includes cylinder power, it also must include an axis value, which follows the cyl power and is preceded by an "x" when written freehand.

The axis is the lens meridian that is 90 degrees away from the meridian that contains the cylinder power.

Add. This is the added magnifying power applied to the bottom part of multifocal lenses to correct presbyopia. The number appearing in this section of the prescription is always a "plus" power, even if it is not preceded by a plus sign. Generally, it will range from +0.75 to +3.00 D and will be the same power for both eyes.

Prism. This is the amount of prismatic power, measured in prism diopters ("p.d." or a superscript triangle when written freehand), prescribed to compensate for eye alignment problems. Only a small percentage of eyeglass prescriptions include prism.

When present, the amount of prism is indicated in either metric or fractional English units (0.5 or ½, for example), and the direction of the prism is indicated by noting the relative position of its "base" or thickest edge. Four abbreviations are used for prism direction: BU = base up; BD = base down; BI = base in (toward the wearer's nose); BO = base out (toward the wearer's ear).

Sphere power, cylinder power and add power always appear in diopters. They are in decimal form and generally are written in quarter-diopter (0.25 D) increments. Axis values are whole numbers from 1 to 180 and signify only a meridional location, not a power. When prism diopters are indicated in decimal form, typically only one digit appears after the period (e.g., 0.5).

Additional Information. Your eye doctor also might write specific lens recommendations on your eyeglass prescription — such as anti-reflective coating, photochromic lenses and/or progressive lenses — to give you the most comfortable vision correction possible.

An Example Of An Eyeglass Prescription

Confused? Let's use an example to clear things up. (Pun intended.)

Here is a sample eyeglass prescription:

OD	-2.00 SPH	+2.00 add	0.5 p.d. BD
OS	-1.00 -0.50 x 180	+2.00 add	0.5 p.d. BU

In this case, the eye doctor has prescribed -2.00 D sphere for the correction of myopia in the right eye (OD). There is no astigmatism correction for this eye, so no cylinder power or axis is noted. This doctor has elected to add "SPH," to confirm the right eye is being prescribed only spherical power. (Some doctors will add "DS" for "diopters sphere;" others will leave this area blank.)

The left eye (OS) is being prescribed -1.00 D sphere for myopia plus -0.50 D cylinder for the correction of astigmatism. The cyl power has its axis at the 180 meridian, meaning the horizontal (180-degree) meridian of the eye has no added power for astigmatism and the vertical (90-degree) meridian gets the added -0.50 D.

Both eyes are being prescribed an "add power" of +2.00 D for the correction of presbyopia, and this eyeglass prescription includes a prismatic correction of 0.5 prism diopter in each eye. In the right eye, the prism is base down (BD); in the left eye, it's base up (BU).

An Eyeglass Prescription Is Not A Contact Lens Prescription

Eyeglass and contact lens prescriptions aren't the same. An eyeglass prescription is for the purchase of eyeglasses only. It does not contain certain information that is crucial to a contact lens prescription and that can be obtained only during a contact lens consultation and fitting.

In addition to the information in an eyeglass prescription, a contact lens prescription must specify the base (central) curve of the back surface of the contact lens, the lens diameter, and the specific manufacturer and brand name of the lens.

Also, the power of an eyeglass prescription frequently is modified when determining the best contact lens power. One reason is that eyeglass lenses are worn some distance (usually about 12 millimeters) from the surface of the eye, whereas contact lenses rest directly on the eye's cornea.

An accurate contact lens prescription can be written only after a contact lens fitting has been performed and the prescribing doctor has evaluated your eyes' response to the lenses and to contact lens wear in general.

SEE ALSO: Differences Between Contact Lens and Eyeglass Prescriptions >

Your Eyeglass Prescription: It's Yours To Keep

The Federal Trade Commission is the U.S. government's consumer protection agency, and in 1980 the FTC's Prescription Release Rule became law. The rule requires eye doctors (both optometrists and ophthalmologists) to give patients a copy of their eyeglass prescription at the end of an eye exam that includes a refraction.

The rule is intended to protect the "portability" of your eyeglass prescription, allowing you to use it to buy glasses from the vendor of your choice.

Your eye doctor must give you a copy of the prescription whether or not you ask for it. Eye doctors may not condition the release of your prescription on your agreement to purchase eyeglasses from them, nor may they charge you an extra fee to release your prescription. They also may not disclaim liability for the accuracy of the prescription if you purchase eyeglasses elsewhere.

The FTC enforces the Prescription Release Rule, and eye doctors who violate the rule are subject to a civil penalty of $10,000.

If you feel your eye doctor has violated the rule or you want free information on other consumer issues, you can contact the FTC at 1-877-FTC-HELP (1-877-382-4357).

Back to top ⤴

About the Author: Gary Heiting, OD, is senior editor of AllAboutVision.com. Dr. Heiting has more than 25 years of experience as an eye care provider, health educator and consultant to the eyewear industry. His special interests include contact lenses, nutrition and preventive vision care.

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