



# How to prescribe spectacles for presbyopia

## What is presbyopia?

As we grow older, the lens loses the ability to focus at close distances. Starting around the age of 40, near vision will slowly become worse, but distance vision will not be affected. Spectacles for near vision can help a person see clearly for tasks such as sewing, carving or reading.

### Indications

People with presbyopia usually say that their near vision has slowly become worse.

### You will need

- Distance and near vision charts with letters, Es or shapes
- Pinhole (optional)
- A trial set of lenses or a selection of ready-made spectacles (RMS). Most people with presbyopia do not need spectacles with powers of less than +1.00 or more than +3.00. See Table 1 for suggested powers.

**Table 1. Suggested lens powers for correction of presbyopia**

+1.00	Weaker power
+1.50	
+2.00	
+2.50	
+3.00	
+3.50	
+4.00	Stronger power

### Preparation

Before prescribing spectacles, make sure there is nothing else wrong with the person's eyes.

- **Measure distance vision.** If presenting vision is 6/18 (6/12 if they drive) or worse in either eye, do not prescribe spectacles without further tests. If vision does NOT improve to at least 6/9 with pinhole, the person needs an eye health check. If vision DOES improve to at least 6/9 with pinhole,

the person needs an eye test for distance vision

- **Ask about health.** Several diseases pose related eye problems. Affected patients should always have an eye health check.

### Method

The correct power of spectacles for presbyopia depends on the person's age, the distance at which they want to see for near work, and how well they can see.

- 1 Take a detailed history.** Write down the person's age and medical history and symptoms. Find out if there is a general medical history of diabetes, hypertension, thyroid disease, rheumatoid arthritis, or other eye disease.
- 2 Find out the person's working distance,** that is the distance at which they would like to do most of their near work.
  - Find out what kind of near work (see Figure 1) the person does
  - Ask him or her to hold a near vision chart at the distance they do most near tasks. Around 40 cm is a comfortable distance for most people.
- 3 Measure near vision**
  - The person holds the near chart at their working distance with both eyes open. Ask them to read the smallest line or show the smallest shapes they can see clearly. Write this down as their near visual acuity (e.g. N8 or J6)
  - If the person already has spectacles for presbyopia, measure their near vision with these being worn. Write this down as 'near visual acuity with spectacles'
  - If the person is able to see N8 or better without any spectacles, they might not need spectacles for presbyopia. If they can see N8 or better with their old spectacles, they might not need new spectacles.
- 4 Identify the correct lens power**
  - Look up the person's age in Table 2 and select the power to try first.

**Table 2. Suggested lens power for different ages**

Person's age	Lens power
35 to 45	+1.00
45 to 50	+1.50
50 to 55	+2.00
Over 55	+2.50 or higher

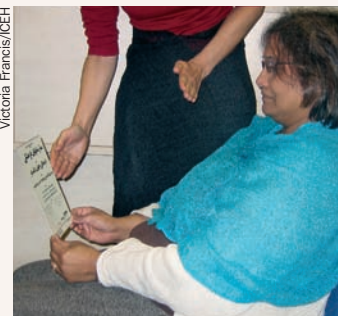
- **Measure near vision with the selected power** spectacles or trial lenses. Give the person the near chart to hold at the distance they would like to see clearly. Ask him or her to show the smallest line they can see. If the person cannot see at least the N8 line, try the next stronger power
- **Check the range of clear vision.** Many people will have good vision using the approximate power, but some may not. If you want to make sure that the lens power is suitable for that individual, check that the person's range of clear vision with the lens power is correct. The range of clear vision is the distance between the closest that a person can see clearly and the furthest that they can see clearly. The range is achieved by trying out the testing at various distances
  - Ask the person to look at the smallest line they can see on the near chart and then bring the chart closer until the letters become blurred. Hold one hand to mark the closest distance (Figure 2a), then ask the person to move the chart further away until the letters become blurred. Mark the furthest distance (Figure 2b)
  - Ask the person to hold the chart at the distance they want to see clearly. This is the working distance. If the range is correct, the working distance should be in the middle of this range, for example at about 40 cm (Figure 2c). This means that a person will be able to see clearly for the same distance in front and behind their working distance
  - The power is correct if the middle point of the range is the same as the working distance. If the middle point of the range is further away than the person's preferred working distance, try one stronger (higher)



**Figure 1.** Woman demonstrates her working distance



**Figure 2a.**



**Figure 2b.**



**Figure 2c.**

Checking the range of clear vision



**Rènée du Toit**

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power to move the range (and working distance) closer. If the middle point of the range is closer than the person's preferred working distance, try one weaker (lower) power to move the range (and working distance) further away. Test the range again, until the power is correct, i.e. the middle point of the range = working distance. Write down the power of the lenses and the near visual acuity with these lenses

- If the person cannot read N10 on the near vision chart with any power lenses, they need further eye checks.

**5 Before prescribing spectacles, note:**

- **Approximate lens powers, based on age, will not be suitable for all.** A weaker lens power than expected for a person's age, or no presbyopic lenses, might be needed if a person has myopia (short-sightedness). They should remove their distance spectacles if they want to see at a close distance. A lens power stronger than expected for the person's age may be needed if the person has hyperopia (far-sightedness), low vision, wants to work at a distance closer than 40 cm, or to see very small objects, for example, a 48 year-old man may like to make jewellery at 25 cm, so might need +2.00
- **Do not prescribe a power that is too high.** If there is no difference in the near vision when a person looks through a +0.50 stronger power, do not prescribe the stronger power. This is because if the power is stronger than needed, the person will have to hold things too close to their eyes. Also, most people would like to see at their near working distance as well as a little further away. For example, a woman may mainly want to see her sewing at 40 cm, but holds a book at 50 cm and chops vegetables at 60 cm
- **A change in spectacles** is usually only necessary if the person needs at least 0.50 stronger than their old spectacles, has received spectacles for presbyopia about two years ago, or can see better with the new spectacles than their old spectacles.

**6 Select the type of lenses** that would be best for the person. Table 3 describes the options.

**Table 3. Types of lenses**

Types of lenses	Advantages	Disadvantages
Single vision (Ready-made, near or reading spectacles)	Less expensive	The person will see clearly at near but their distance vision will be blurred when they look up
Bifocal lenses and Multifocal lenses (varifocal)	Useful if a person has a distance refractive error and presbyopia, or if they need to see clearly at distance and near	Usually more expensive than single vision spectacles for presbyopia, and may take longer to acquire

**7 Adjust the spectacles and explain how to use them.** Before the person leaves with their new spectacles:

- Adjust spectacles to fit properly and feel comfortable
- Explain the use of spectacles for presbyopia and that it may take a little time to get used to them. Tell them to come back if they experience any problems
- Explain how to look after the spectacles so that the lenses do not become scratched. Advise them to wash the spectacles daily with soap and water and wipe with a clean cloth.

**8 Remind them to return in about two years** to check if they need new spectacles to see more clearly at close distances.



**EXCHANGE**

**An inexpensive tool for routine fundus examination at primary eye care centres**

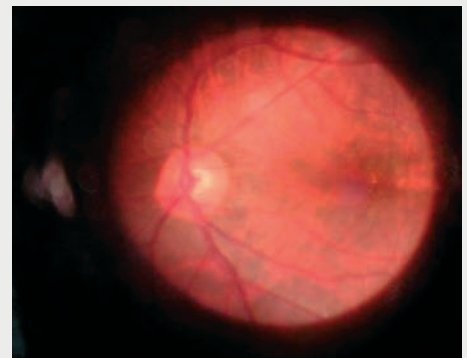
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Conventional fundus photography uses a fundus camera. It is very expensive and found only in tertiary care eye hospitals. If changes in the retina, due to diabetic retinopathy, and changes in optic disc, due to glaucoma, can be detected early, treatment will prevent further loss of vision. To provide an inexpensive tool for the routine examination of the fundus at primary eye care centres, we use a simple attachment to mount a modern digital camera on a slit lamp. Using the slit lamp and a 78 or 90 dioptre lens we can get good fundus pictures. The arrangement is so simple that a trained paramedic can take the picture, copy it onto a computer, and transmit it to a retina specialist through email for further examination and follow up action that may be required.

The picture shown in Figure 1 was taken at the Bodinayakanur Vision Centre and was transmitted to Aravind Eye Hospital, Madurai.

The picture was taken by Dr Veerabhadra Rao (Retina Fellow) while examining a patient at the Vision Centre. The attachment described was built in the instruments maintenance laboratory, with Dr Rao giving the necessary suggestions for improvement at various stages of development.



**Figure 1. Fundus photograph taken with a digital camera**

Veerabhadra Rao

**Knowledge and attitude of general practitioners towards diabetic retinopathy practice in South India**

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**Introduction:** General practitioners (GPs) are important members of the diabetic care network. Awareness levels of general practitioners are vital in planning strategies to prevent diabetic blindness. The present study was done to assess the knowledge, attitudes and practices (KAP) of urban GPs regarding the screening and management of diabetic retinopathy.

**Research design and methods:** A questionnaire was designed to assess the GPs' KAP in handling diabetic retinopathy. Questions related to referrals, direct ophthalmoscopy, and barriers to diabetic retinopathy screening. Urban GPs from Chennai were contacted through telephonic interview. GPs' telephone numbers were traced from the Yellow Pages and a random digit dialing strategy was used. Telephonic survey was done for 450 telephone numbers of GPs.

**Results:** Of the 450 telephone numbers of GPs that were dialled, only 187(41.6 per cent) responded to the questionnaire. 52 per cent of the GPs declined to answer questions. Among those who responded to the call, only 85 per cent (n =159) completed the tele-survey completely. Most of the GPs could not be contacted in the morning, as they were busy with their practice. Among those who successfully completed the survey, 46.6 per cent (n=74) of the

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