



# Presbyopia

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### Commentary

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## Introduction

The human aging process begins as we are born and continues until the day we die. However, aging is described differently by different groups of people and hence people age differently. On one hand graying of hair is considered as universal sign of aging and retirement is seen as another sign of aging. The retirement age is also different in different parts of the world. Hence people age chronologically at different times in their lives depending upon the retirement age in that country. In the US age is not considered a reason for retirement. People can continue to work if they choose to work and are productive in their profession. However, in the ophthalmic world, that is not the case. The onset of Presbyopia is considered the beginning of aging when the arms are too short to focus on the reading material. This is where the need of bifocals is considered necessary to focus both at distance and near, which happens any time after 40 years of age. Some sooner and some later, depend upon where one lives and how long their arms are.

## Discussion

For our discussion, we will look at the 40 plus population in the presbyopic range. This means that about 38% of people around the world currently need some type of presbyopic correction [1]. And these numbers will continue to increase. It is true that Benjamin Franklin is credited with inventing bifocals and while we have come a long way in this journey but most of the progress has taken place in the last 30 years. Currently we have the following modalities available for the correction of presbyopia.

## Spectacle Correction

We have graduated from the ben Franklin bifocal to executive bifocal, flat top bifocal, blended bifocal, progressive

bifocals and newer free form bifocals. The designs of these are changing everyday with the needs and demands of the public to perform various tasks at various distances.

## Contact Lenses

Even though contact lenses have been around for a long time and hydrophilic lenses were introduced in early seventies in single vision and some type of multifocal contact lenses have been around since eighties with limited success. The 21st century has given us many varieties of multifocal contact lens modalities with greater success. The majority of presbyopic patients now can be successfully prescribed multifocal contact lenses.

## Pharmacological Correction

The pharmacological companies have also realized the need to develop medication that can treat presbyopia. Use of pilocarpine for the treatment of glaucoma also demonstrated that pilocarpine use reduced the pupil size thereby increasing depth of focus and allowing patients to read better without correction. Low doses of pilocarpine have been developed in this process and more will be on the horizon soon. However, the current approved medication has limited use. Many people are not comfortable with the drops because of the side effects and other limitations. One of these being the need to put drops in every day. We will need to wait as new drugs are developed with minimal side effects, better ranges of correction and reduced frequency of use.

## Surgical Correction

Refractive surgery revolutionized visual correction modalities and was very successful in the correction of myopia. New surgical techniques are being developed to correct presbyopia and astigmatism. Similarly, IOL correction

of the phakic eyes during cataract surgery has made so much advancement that toric and multifocal IOL lenses are now becoming the norm of the day. There are many types of lenses available, and more are on the horizon.

### Commentary

The technological revolution in our daily lives has created many visual demands and hence the need to find solutions. The most important thing to keep in mind is our patients and their individualized needs. The decision of prescribing or treating presbyopia should be based on what works best for the patient. Not every patient is suitable for each modality. For example, a presbyope who is working on the computer and is not ready for therapeutic or surgical correction can be prescribed either glasses or contact lenses or a combination of the two. Very rarely one uses trifocal these days, which have been replaced with progressive lenses. There are a certain number of patients who are not comfortable with progressives and want separate pairs of glasses. This means they will need a pair for distance, a pair for reading and a pair for computer use. If you prescribe three pairs of glasses, they will be miserable as they will have the wrong pair on for each of the activities. Such patients should be prescribed two pairs of bifocal glasses, one with the distance correction on the top and reading correction on the bottom and the second pair (computer pair) with computer correction on the top 2.

and reading correction on the bottom. These patients will be very happy as they can perform all tasks with the right correction.

Mono-vision correction should also be mentioned as some practitioners and patients are happy with that arrangement. It must be kept in mind that mono-vision works better with patients who don't have a strong vocational need. For example, a truck driver should not be prescribed mono vision, nor somebody who spends most of the time reading or working on computers. Mono vision correction is a compromise correction and will not satisfy a patient who is looking for sharp vision at every activity.

### Conclusion

In summary, we have a lot of choices and whatever correction you decide to provide, should be based on an extensive patient history, discussion of all available modalities for the correction of presbyopia followed by educating the patients with pros and cons of each type of correction.

### Reference

1. United Nations (2022) World population prospectus 2019 and 2022. Department of Economic and Social Affairs, Population Division.

