Care of the Patient with Presbyopia

American Optometric Association

A. DESCRIPTION AND CLASSIFICATION

Presbyopia is an irreversible, normal physiologic condition that impairs the ability to see clearly at near. It is the result of a gradual decrease in accommodative amplitude (i.e., from about 15 diopters in early childhood to 1 diopter before the age of 60 years) due to changes in the elasticity of the capsule and lens and to changes in the overall size and shape of the lens.

Classification of presbyopia, described in Table 1, includes:

❑ Incipient presbyopia
❑ Functional presbyopia
❑ Absolute presbyopia
❑ Premature presbyopia
❑ Nocturnal presbyopia

B. RISK FACTORS

❑ Age (e.g., usually occurring at or after age 40)
❑ Uncorrected hyperopia
❑ Occupations involving near visual demands
❑ Gender (earlier onset in females)
❑ Ocular disease or trauma (e.g., removal or damage to lens, zonules or ciliary muscle)
❑ Systemic disease (e.g., diabetes mellitus, multiple sclerosis, cardiovascular accidents, vascular insufficiency, myasthenia gravis, anemia, influenza, measles)

❑ Side effect of both prescription and nonprescription drugs (e.g., alcohol, antianxiety agents, antidepressants, antipsychotics, antispasmodics, antihistamines, diuretics)
❑ Iatrogenic factors (e.g., scatter laser photocoagulation, intraocular surgery)
❑ Geographic proximity to equator (e.g., higher average annual temperatures, greater exposure to ultraviolet radiation)
❑ Poor nutrition, decompression sickness, ambient temperature

C. COMMON SIGNS, SYMPTOMS, AND COMPLICATIONS

The onset of presbyopia is gradual with symptoms reaching significance only when the patient's accommodative amplitude becomes inadequate for his or her individual vocational or avocational needs. Table 1 summarizes the signs, symptoms and complications of presbyopia.

D. EARLY DETECTION AND PREVENTION

Because presbyopia is part of the normal aging process, the condition cannot be prevented. Emphasis must be on detection, diagnosis and management of its consequences as optical correction can successfully remediate presbyopia no matter when the patient seeks treatment. Public education and health promotion of the symptoms and management opti
ons for presbyopia can

NOTE: This <u>Quick Reference Guide</u> should be used in conjunction with the <u>Optometric Clinical Practice Guideline on Care of the Patient with Presbyopia</u> (Reviewed 2006). It provides summary information and is not intended to stand alone in assisting the clinician in making patient care decisions.

contribute to persons seeking treatment for their symptoms at an earlier age, resulting in the early detection and intervention of other diseases associated with aging (e.g., glaucoma, cataract, macular degeneration, diabetes mellitus, hypertension).

E. EVALUATION

The evaluation of patients with signs and symptoms suggestive of presbyopia or patients diagnosed with presbyopia includes all areas of a comprehensive adult eye and vision examination with particular emphasis on the following areas:

1. Patient History

❑ Nature of the presenting symptoms and chief complaint

❑ Visual, ocular and general health histories

❑ Medication usage and medication allergies

❑ Family eye and health histories

❑ Vocational and avocational vision requirements

2. Ocular Examination

❑ Visual acuity testing (distance and near)

❑ Refraction (retinoscopy, keratometry, subjective refraction, trial frame or trial lens clips)

❑ Binocular vision and accommodation (plus lens to clear near vision, balanced range of accommodation, amplitude of accommodation, crossed cylinder test, accommodative convergence/accommodation ratio, phoria, and vergence, vertical imbalance)

❑ Ocular health assessment and systemic health screening

3. Supplemental Testing

❑ Near retinoscopy

❑ Intermediate distance testing

F. MANAGEMENT

Appropriate management of the patient with presbyopia depends on the type of presbyopia and on the patient's specific vocational and avocational needs. Table 2 (adapted from Figure 3 in the Guideline) provides an overview of patient management.

1. Basis for Treatment

The goals for management of presbyopia are clear, comfortable, efficient binocular vision and good ocular health.

2. Available Treatment Options

❑ Optical correction with spectacle lenses – single vision, bifocal, trifocal, blended bifocals, progressive addition or occupational lenses

❑ Optical correction with contact lenses – monovision or bifocal lenses (e.g., alternating vision, simultaneous vision, aspheric design, concentric design or diffraction design bifocals)

❑ Optical correction with a combination of contact lenses and spectacle lenses

❑ Refractive surgery

❑ Experimental surgical techniques

3. Patient Education

The clinician should inform the patient about the signs, symptoms, clinical course and management options for presbyopia. Information should be provided about the potential visual implications of alternative types of optical correction and their use. Education should begin at the time of the examination, be reinforced at the time of dispensing, and continued, as appropriate, at subsequent visits for follow-up evaluation or spectacle adjustment.

4. Prognosis and Followup

Virtually all presbyopic patients can succeed with one or more of the available treatment options. Occasionally, changes in lens design or prescription power may be required. Presbyopia results in a gradual loss of accommodation that may require annual or biannual visits, especially during the period of need for increases in near addition power. Regular follow-up over an extended period of time is generally required for patients with contact lenses. Additional follow-up visits may be required for some patients (e.g., patients new to optical correction, patients who have a history of difficulties adapting to visual correction). The frequency and composition of follow-up visits for the various forms of presbyopia are summarized in Table 2 (adapted from Figure 3 in the Guideline).

TABLE 1*

Clinical Classification of Presbyopia

Type of Patient	Description	Etiology	Signs, Symptoms and Complications
Incipient presbyopia	Patient performs well visually on testing but requires extra effort to read small print Also known as borderline presbyopia, beginning presbyopia, early presbyopia or pre-presbyopia	Changes in elasticity of capsule and lens Changes in overall size and shape of lens	Small print is read with effort Beginning gradual decease in accommodative ability One or more of the symptoms listed below in the functional presbyopia section may be reported on an occasional basis.
Functional presbyopia	Patient reports visual difficulties confirmed by clinical findings The extent of vision demands in relation to the patient's amplitude of accommodation is a critical factor contributing to visual difficulties The age at which presbyopia becomes symptomatic varies due to variations in environment, task requirements, nutrition or disease state	Continuous gradual decline in accommodative amplitude Continued near task demands	Blurred vision and inability to see fine details at customary working distance Delays in focusing at near or distance Ocular discomfort, headache or asthenopia Squinting Fatigue or drowsiness from near work Need for increased working distance Need for brighter light for reading Diplopia Decreased amplitude of accommodation Increased exophoria and reduced positive fusional vergence
Absolute presbyopia	Occurs when functional presbyopia progresses until virtually no accommodative ability remains	Functional presbyopia	Exacerbation of same signs and symptoms as above Lack of accommodative ability If untreated, a significant visual disability is likely to develop
Premature presbyopia	Accommodative ability becomes insufficient for patient's usual near vision tasks at an earlier age than expected	Environmental, nutritional, disease-related or drug-induced causes	Same signs and symptoms for functional presbyopia but developing earlier than age 40 Insufficient accommodative ability to perform usual tasks
Nocturnal presbyopia	Decrease in accommodative ability in dim light conditions	Increased pupil size Decreased depth of field	Reduction in clear range of near vision and in accommodative ability in dim light

TABLE 2*

Frequency and Composition of Evaluation and Management Visits for Presbyopia

Type of Patient	Number of Evaluation Visits	Treatment Options	Frequency of Followup Visits**	Composition of Followup Evaluations				Management Plan
				Visual Acuity	Refraction	Accommoda-tion/Vergence Testing	Ocular Health Evaluation	
Incipient presbyopia	1-2	Optical correction; modify habits and environment	Every 1-2 yrs	Each visit	Each visit	Each visit	Each visit	No treatment or provide refractive correction; educate patient
Functional presbyopia	1-2	Optical correction	Every 1-2 yrs	Each visit	Each visit	Each visit	Each visit	Provide refractive correction; Educate patient
Absolute presbyopia	1	Optical correction	Annually	Each visit	Each visit	Each visit	Each visit	Provide refractive correction; Educate patient
Premature presbyopia	2-3	Optical correction; Medical management	3-6 mo	Each visit	p.r.n.	Each visit	p.r.n.	Address ocular or general health issues; Provide refractive correction; Educate patient; Monitor
Nocturnal presbyopia	1-2	Optical correction; Modify habits and environment	Every 1-2 yrs	Each visit	Each visit	Each visit	Each visit	No treatment or provide refractive correction; Educate patient

p.r.n. = as necessary
*Adapted from Figure 3 in the Optometric Clinical Practice Guideline on Care of the Patient with Presbyopia.
**Patients prescribed contact lenses may require more frequent followup to monitor eye health and lens performance.