Introduction

Presbyopia is a visual condition in which the crystalline lens of the eye loses its flexibility, which makes it difficult to focus on close objects. Presbyopia may seem to occur suddenly, but the actual loss of flexibility takes place over a number of years. Presbyopia usually becomes noticeable in the early to mid-40s. Presbyopia is a natural part of the aging process of the eye. It is not a disease, and it cannot be prevented. Some signs of presbyopia include the tendency to hold reading materials at arm's length, blurred vision at normal reading distance and eye fatigue alongwith headaches when doing close work. A comprehensive optometric examination will include testing for presbyopia ***(American Optometric Association 2006)***.

Since the early years of refractive surgery, new procedures for minimal invasive correction of ametropia were investigated ***(Machat, 1996)*** and several attempts have been directed towards the surgical correction of presbyopia ***(Alió et al., 2006)***. However, current techniques for correction of presbyopia have certain limitations, although more than 26 million people alone in the US suffer from this disease and almost everyone over the age of 51 is affected ***(Ruiz et al., 2008)***.

A refractive laser correction performed completely intrastromally is desirable because it does not impact the epithelium, maintains the structural integrity of the cornea, has a low risk of infection, and promotes wound healing. Intrastromal correction of presbyopia does not produce any flap- or surface-related complications, does not induce dry eye, and provides a faster visual recovery. What this procedure aims to do is change the biomechanics of the cornea by working completely in the stroma. In turn, the epithelium, Bowman's membrane, and Descemet's endothelium are preserved. Alternatively, Bowman's membrane is cut during flap creation and destroyed during PRK and surface ablation. The only thing the laser touches during an intrastromal correction is the stromal tissue, and therefore has added protection compared with these other techniques ***(Ruiz, 2008)***.

All efforts to restore accommodation by the use of surgery have not led to a generally accepted therapy. However, there is evidence from an animal model that the use of a femtosecond (fs) laser might influence the modulus of elasticity in the lens. Fs-laser impulses can create intralenticular disruption in animal eyes as well as human cadaver lenses and improve elasticity. The concept of treating presbyopia with fs-laser requires a new, complex theory combining the optical and the mechanical aspects of accommodation in the eye. Diagnostic tools for measuring optical change in power and geometrical modification as the eye views from far to near are needed to obtain objective clinical data. A non-invasive treatment of presbyopia to restore accommodation might be possible in the future ***(Blum et al., 2006)***.