

AMNIOTIC MEMBRANE THERAPY IN OCULAR SURFACE DISEASE: INTRODUCTION

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The ocular surface unit is a dynamic complex system that includes the eye lids, tear film, conjunctiva and cornea which function as a single system where each of the individual components reflects and influences one another.¹ It represents the interface between the external environment and the eye. With the goals of maintaining a clear optical surface to direct light to the retina, and to provide protection for the inner structures of the eye. To do this it must be able to quickly adapt to the changing conditions of the environment or pathologic stresses, and generate functional and anatomical responses to maintain homeostasis. An integration among neural, cellular, immune, and tear film related responses is the basis of its ability to react and adapt quickly. Proper function of the tear film, lids and conjunctiva and their neural, hormonal, and immune connections are all essential in maintenance of the cornea.² The inability to adapt or failure of one or more of its components gives rise to vicious cycles of inflammation and damage, which if not properly controlled, will initiate and perpetuate ocular surface disease. Ocular surface disease is therefore the result of a progressive cascade of events involving simultaneous or sequential failure of one or more of the different components of the ocular surface unit that is unable to compensate, respond and heal.^{1,3}

Amniotic membrane (AM) therapy has a long history of use in the treatment of ocular surface disease. It contains pluripotent cells, highly organized collagen, anti-fibrotic and anti-inflammatory cytokines, immunomodulators, growth factors, and matrix proteins. It is used to promote corneal healing in severely damaged eyes, and has been shown to help restore homeostasis of the ocular surface.⁴

The goal of this publication is to show the many uses for AMs in treating ocular surface disease and to provide a resource for their use in clinical practice.

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