

Map-Dot-Fingerprint Dystrophy: (also known as **Epithelial Basement Membrane Dystrophy**)

This corneal dystrophy is very common and tends to occur in both eyes. It typically affects adults between the ages of 40 and 70, although it can develop earlier in life. Map-dot-fingerprint dystrophy occurs when the epithelium's basement membrane (foundation layer) develops abnormally. When this happens, the corneal epithelial (surface) cells do not adhere or “stick” to it properly. This results in recurrent epithelial erosions because the epithelium's outermost layer rises slightly, exposing a small gap between the outermost layer and the rest of the cornea.

As the name implies, recurrent epithelial erosions can be an ongoing, chronic problem. In addition to causing periodic blurred vision, they may also expose the nerve endings that line the cornea, resulting in moderate to severe pain. Typically the pain is the worst upon awakening in the morning. Patients may also experience include sensitivity to light, excessive tearing, and foreign body sensation in the eye.

Map-dot-fingerprint dystrophy is named after the unusual appearance of the cornea during an eye examination. The affected corneal epithelium will have a ‘map-like’ appearance, with large, slightly gray outlines that resemble a continent on a map. There may also be clusters of opaque ‘dots’ underneath or close to the map-like patches. Occasionally, the irregular basement membrane will form concentric lines in the cornea that resemble fingerprints.

Usually, map-dot-fingerprint dystrophy will flare up occasionally for a few years and then go away on its own, with no lasting loss of vision. The majority of affected individuals never know that they have a problem, as they do not have any pain or vision loss. If treatment is needed, eye doctors will try to control the pain associated with the epithelial erosions. They may prescribe lubricating eye drops and ointments and/or patch the eye to immobilize the eyelid. These erosions usually heal within three days, although periodic episodes of pain may occur for several weeks. Other treatments include anterior corneal punctures to improve epithelial cell adherence; corneal scraping to remove eroded areas of the cornea and allow regeneration of healthier epithelial tissue; and use of the excimer laser to remove surface irregularities.