Identifying Patients Who Benefit from Serum Tears

Serum Tears – Not Just for Dry Eye

Serum tears have the potential to improve the signs and symptoms of a range of ocular surface conditions.[1,2] They are derived from the patient's own blood and are similar in composition to natural tears. ASTs are rich in nerve growth factor and transforming growth factor-beta (TGF-β), which help to maintain a healthy ocular surface.[3]

The 2025 TFOS DEWS III Management and Therapy Report highlights the need for a personalized, multifaceted approach that addresses the underlying drivers of dry eye symptoms. Autologous serum tears are highlighted in DEWS III for their ability to address multiple drivers of dry dry eye symptoms, which have been grouped into four pathogenic pathways: neural dysfunction, cellular damage, and inflammation.[4]

Pathogenic Pathway	Why Serum Tears Help
Tear film insufficiency	Serum tears most closely mimic natural tears and include proteins, cytokines, antibodies, and growth factors.[2,3]
Cellular damage	Serum tears promote cell growth and migration by supplying a combination of EGF, Vitamins A and E, and fibronectin to the ocular surface.[9]
Inflammation	Serum tears have anti-inflammatory cytokines, such as TGB-β and IL-1Ra that help to reduce ocular surface inflammation.[10]
Neural dysfunction	A number of growth factors found in serum tears (NGF, EGF, TGF-β, etc.) support nerve healing and nerve regeneration.[4,5]

Serum tears represent a vital tool in the ocular surface disease treatment landscape—one that addresses most of the core drivers of ocular surface disease.[3] As clinical experience continues to expand, serum tears are playing a meaningful role earlier in the treatment journey—offering an additional option for patients who need more than conventional therapies can provide.

WHO	WHY
Incomplete symptom control despite artificial tears and other standard treatments	Regenerative growth factors act directly on the surface for rapid symptom relief [2]
Neurotrophic keratitis (NK)	Multiple growth factors (NGF, EGF, TGF-β) support nerve healing and epithelial repair [4]
Neuropathic corneal pain	Combines nerve-regenerative and anti-inflammatory actions [5]
Autoimmune-related dry eye (e.g., Sjögren's, GVHD, Stevens–Johnson)	Anti-inflammatory and regenerative properties help in high-inflammation environments [6,7]
Epithelial cell regenerative issues (e.g., limbal stem cell dysfunction)	Growth factors support proliferation and differentiation of stem cells [8]

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