

Policy Name	Clinical Policy - Amniotic Membrane
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Department	Clinical Product & Development
Subcategory	Medical Management
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Company Entities Supported (Select All that Apply) <input checked="" type="checkbox"/> Superior Vision Benefit Management <input checked="" type="checkbox"/> Superior Vision Services <input checked="" type="checkbox"/> Superior Vision of New Jersey, Inc. <input checked="" type="checkbox"/> Block Vision of Texas, Inc. d/b/a Superior Vision of Texas <input checked="" type="checkbox"/> Davis Vision (Collectively referred to as 'Versant Health' or 'the Company')

ACRONYMS	
AM	Amniotic membrane

PURPOSE

To provide the medical necessity criteria to support the indication(s) for use of amniotic membrane. Applicable procedure codes are also defined.

POLICY

A. BACKGROUND

Amniotic membrane (AM) is used as a surgical graft and as a biological bandage. The properties of AM that are advantageous to ophthalmologists and optometrists include anti-inflammatory, anti-microbial, and low immunogenicity.

B. Medically Necessary

1. Amniotic membrane grafting (65426, 65778, 65779, 65780, 65781, 65782, and 66999) is indicated for the following conditions:

- a. Chemical or thermal burns of the ocular surface;¹
 - b. Cicatricial pemphigoid;²
 - c. Corneal or scleral ulcer;³
 - d. Limbal stem cell deficiency;⁴
 - e. Persistent corneal epithelial defects;⁵ resulting from diseases such as epithelial membrane dystrophy,
 - f. Stevens-Johnson syndrome;⁶
 - g. As a graft in pterygium surgery or after ocular surface tumor removal;⁷
 - h. High risk keratoplasty or keratectomy;⁸
 - i. Scarring after strabismus surgery;⁹
 - j. High risk trabeculectomy;¹⁰
 - k. Patch graft to cover all or part of an extraocular aqueous shunt;¹¹
 - l. Persistent ocular surface disease after application of a bandage contact lens;¹²
 - m. Symblepharon and fornix reconstruction;¹³
 - n. Conjunctivochalasis¹⁴
2. Amniotic membrane grafting (65778) for keratitis sicca syndrome requires demonstration of unresponsiveness to the following trial treatments:
- a. A two-month trial of artificial tears; and,
 - b. Punctal plugs; and,
 - c. A three-month trial of topical cyclosporine-A 0.05% or .09% ophthalmic emulsion (e.g., Restasis or Cequa); or
 - d. A three-month trial of a lymphocyte function associated antigen-1 receptor blocker (e.g., Lifitegrast).
3. Repeat or multiple applications of AM to the same site are sometimes necessary. Chart documentation must describe the medical rationale for a repeat AM.

C. Documentation

Medical necessity must be supported by adequate and complete documentation in the patient's medical record that describes the procedure and the medical rationale for it as in the requirements above. All items must be available upon request to initiate or sustain previous payments. For any retrospective review, a full operative report is needed.

¹ Clare, 2022

² Tsai, 2015

³ Dang, 2022

⁴ Ssabater, 2017.

⁵ Thevi, 2024.

⁶ Nirtebsebm 2923,

⁷ Paganelli, 2023.

⁸ Ke, 2020.

⁹ Kassem, 2019.

¹⁰ Wang, 2015.

¹¹ Gizzi, 2024.

¹² Miller, 2019.

¹³ Kheirkhah, 2013.

¹⁴ Meller, 2000

Every page of the record must be legible and include appropriate patient identification information (e.g., complete name, date(s) of service). Services provided/ordered must be authenticated by the physician, in a handwritten or electronic signature. Stamped signatures are not acceptable.

Medical justification for amniotic membrane use includes documentation of the patient's eye exam with treatment goals for AM that are consistent with the manufacturer's directions for use in the product insert.

D. Procedural Detail

CPT / HCPCS Codes	
65426	Excision or transposition of pterygium; with graft
65778	Placement of amniotic membrane on the ocular surface; without sutures; do not use with tissue glue
65779	Placement of amniotic membrane on the ocular surface; single layer, sutured
65780	Ocular surface reconstruction; amniotic membrane transplantation, multiple layers; do not use tissue glue
65781	Ocular surface reconstruction; limbal stem cell allograft (e.g., cadaveric or living donor)
65782	Ocular surface reconstruction: limbal conjunctival autograft (includes obtaining graft)
66999	Unlisted procedure, anterior segment of eye (when glue is used in the placement of amniotic membrane)
V2790	Amniotic membrane for surgical reconstruction, per procedure. (Can be used with 65426 and 66999)
Required Modifiers	
Anatomical Modifiers	RT, LT, or 50
Invalid Modifiers	
Diagnostic Modifiers	TC and 26 There is no technical component of a surgical code because this service cannot be delegated to a medical assistant or ophthalmic technician; TC and 26 are not valid modifiers to append to any of the codes above.
EM Modifiers	Surgery codes do not allow for EM modifiers. Modifiers 24, 25, 57, and 95 are not allowed to be appended to any surgery code.

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RELATED POLICIES AND PROCEDURES	
1311	Adult Strabismus Surgery
1332	Punctal Plugs

DOCUMENT HISTORY		
<i>Approval Date</i>	<i>Revision</i>	<i>Effective Date</i>
03/21/2018	Initial Policy	03/21/2018
03/29/2019	Annual review; no criteria changes.	03/29/2019
02/19/2020	Annual review; no criteria changes.	04/01/2020
01/06/2021	Annual review; no criteria changes.	04/01/2021
01/05/2022	Annual review; addition of CPT codes 65781 and 65782	04/01/2022

01/04/2023	Annual review; added indications for scleral ulcer, ocular surface tumor removal, scarring after strabismus surgery; added range in drug strength; added separate criteria for keratitis sicca; differentiated criteria for surgical and nonsurgical uses of amniotic membrane.	07/01/2023
09/20/2023	Administrative review for CMS 2024 final rule Medicare Part C equity: no changes.	n/a
01/03/2024	Annual review; no criteria changes; add new HCPCS codes Q4280 and Q4283.	05/01/2024
01/08/2025	Annual review with criteria changes. Added example of endothelial membrane dystrophy; added indication conjunctivochalasis; adding CPT codes: 66779 and 66999; deleted HCPCS codes: Q4280 and Q4283.	05/01/2025

REFERENCES

1. Anton-Sales I, D'Antin JC, Fernández-Engroba J, et.al. Bacterial nanocellulose as a corneal bandage material: a comparison with amniotic membrane. *Biomater Sci.* 2020 May 21;8(10):2921-2930. doi: 10.1039/d0bm00083c. Epub 2020 Apr 21. Erratum in: *Biomater Sci.* 2020 Nov 21;8(22):6414. PMID: 32314754.
2. Boroumand S, Rahmani M, Sigaroodi F, et.al. The landscape of clinical trials in corneal regeneration: A systematic review of tissue engineering approaches in corneal disease. *J Biomed Mater Res B Appl Biomater.* 2024 Aug;112(8): e35449. doi: 10.1002/jbm.b.35449. PMID: 39032135.
3. Clare G, Bunce C, Tuft S. Amniotic membrane transplantation for acute ocular burns. *Cochrane Database Syst Rev.* 2022 Sep 1;9(9):CD009379. doi: 10.1002/14651858.CD009379.pub3. PMID: 36047788; PMCID: PMC9435439.
4. Clearfield E, Hawkins BS, Kuo IC. Conjunctival Autograft Versus Amniotic Membrane Transplantation for Treatment of Pterygium: Findings from a Cochrane Systematic Review. *Am J Ophthalmol.* 2017 Oct; 182:8-17. doi: 10.1016/j.ajo.2017.07.004. Epub 2017 Jul 19. PMID: 28734814; PMCID: PMC5610642.
5. Dang DH, Riaz KM, Karamichos D. Treatment of Non-Infectious Corneal Injury: Review of Diagnostic Agents, Therapeutic Medications, and Future Targets. *Drugs.* 2022;82(2):145-167. doi:10.1007/s40265-021-01660-5.
6. Dhillon HK, Bahadur H, Raj A. A comparative study of tarsorrhaphy and amniotic membrane transplantation in the healing of persistent corneal epithelial defects. *Indian J Ophthalmol.* 2020 Jan;68(1):29-33. doi: 10.4103/ijo.IJO_617_19. PMID: 31856460; PMCID: PMC6951142.
7. Finger PT, Jain P, Mukkamala SK. Super-Thick Amniotic Membrane Graft for Ocular Surface Reconstruction. *Am J Ophthalmol.* 2019 Feb; 198:45-53. doi: 10.1016/j.ajo.2018.09.035. Epub 2018 Oct 9. PMID: 30312574.
8. Galareh S, et.al., The Use of Dry Amniotic Membrane in Pterygium Surgery, *Clinical Ophthalmology*, 10: 705-712, 2016.
9. Galvis V, Tello A, Laverde C, et.al. Amniotic membrane transplantation in Stevens-Johnson syndrome. *Survey of Ophthalmol.* 62(2):248–249; 2017.

10. Gizzi C, Rai P, Barton K. Aqueous shunt exposure repair: outcomes and risk factors for recurrence. *Eye (Lond)*. Published online July 9, 2024. doi:10.1038/s41433-024-03219-6.
11. Jones, L, Downie, LE, Korb, D, et.al. TFOS DEWS II Management and Therapy Report. *The ocular surface*, 15(3), 575–628; 2017.
12. Kassem RR, El-Mofty RMA. Amniotic Membrane Transplantation in Strabismus Surgery. *Curr Eye Res*. 2019 May;44(5):451-464. doi: 10.1080/02713683.2018.1562555. Epub 2019 Jan 28. PMID: 30575427.
13. Kaufman SC, Jacobs DS, et.al. Options and adjuvants in surgery for pterygium: a report by The American academy of Ophthalmology. *Ophthalmology*; 120(1):201-208; Jan 2013.
14. Ke L, Shen D, Wang H, et.al. Lamellar Keratoplasty Combined with Amniotic Membrane Transplantation for the Treatment of Corneal Perforations: A Clinical and In Vivo Confocal Microscopy Study. *Biomed Res Int*. 2020 Feb 28; 2020:7403842. doi: 10.1155/2020/7403842. PMID: 32190677; PMCID: PMC7064853.
15. Kheirkhah A, Ghaffari R, Kaghazkanani R, Hashemi H, Behrouz MJ, Raju VK. A combined approach of amniotic membrane and oral mucosa transplantation for fornix reconstruction in severe symblepharon. *Cornea*. 2013;32(2):155-160. doi:10.1097/ICO.0b013e318247983d.
16. Koga, S, Sood A, Granick, MS. Amniotic Membrane Adjuncts and Clinical Applications in Wound Healing: A Review of the Literature. *Wounds: a compendium of clinical research and practice*, 30(6), 168–173, 2018.
17. Le Q, Deng SX. The application of human amniotic membrane in the surgical management of limbal stem cell deficiency. *Ocul Surf*. 2019 Apr;17(2):221-229. doi: 10.1016/j.jtos.2019.01.003. Epub 2019 Jan 8. PMID: 30633967; PMCID: PMC6529245.
18. Mejia LF, Santamaria JP, Acosta C., Symptomatic management of postoperative bullous keratopathy with nonpreserved human amniotic membrane. *Cornea*; 21(4): 342-345; 2002.
19. Meller D, Maskin SL, Pires RT, et.al. Amniotic membrane transplantation for symptomatic conjunctivochalasis refractory to medical treatments. *Cornea*. 2000;19(6):796-803. doi:10.1097/00003226-200011000-00008.
20. Milan PB, Amini N, Joghataei MT, et.al. Decellularized human amniotic membrane: From animal models to clinical trials. *Methods*. 2020 Jan 15; 171:11-19. doi: 10.1016/j.ymeth.2019.07.018. Epub 2019 Jul 19. PMID: 31326597.
21. Miller DD, Hasan SA, Simmons NL, et.al. Recurrent corneal erosion: a comprehensive review. *Clin Ophthalmol*. 2019; 13:325-335. Published 2019 Feb 11. doi:10.2147/OPHTH.S157430.
22. Mortensen XM, Shenkute NT, Zhang AY, et.al. Clinical Outcome of Amniotic Membrane Transplant in Ocular Stevens-Johnson Syndrome/Toxic Epidermal Necrolysis at a Major Burn Unit. *Am J Ophthalmol*. 2023; 256:80-89. doi: 10.1016/j.ajo.2023.07.026.
23. Paganelli B, Sahyoun M, Gabison E. Conjunctival and Limbal Conjunctival Autograft vs. Amniotic Membrane Graft in Primary Pterygium Surgery: A 30-Year Comprehensive Review. *Ophthalmol Ther*. 2023;12(3):1501-1517. doi:10.1007/s40123-023-00689.
24. RöckT, Bartz-Schmidt KU, Landenberger I, et.al. Amniotic Membrane Transplantation in Reconstructive and Regenerative Ophthalmology. *Annals of transplantation*, 23, 160–165; 2018.
25. Röck T, Bramkamp M, Bartz-Schmidt KU, et.al. A Retrospective Study to Compare the Recurrence Rate After Treatment of Pterygium by Conjunctival Autograft, Primary Closure, and Amniotic Membrane Transplantation. *Med Sci Monit*. 2019 Oct 24; 25:7976-7981. doi: 10.12659/MSM.915629. PMID: 31647055; PMCID: PMC6824190.
26. Rosen R. Amniotic Membrane Grafts to Reduce Pterygium Recurrence. *Cornea*. 2018 Feb;37(2):189-193. doi: 10.1097/ICO.0000000000001407. PMID: 28976415; PMCID: PMC5768221.

27. Sabater AL, Perez VL. Amniotic membrane use for management of corneal limbal stem cell deficiency. *Curr Opin Ophthalmol.* 2017;28(4):363-369. doi:10.1097/ICU.0000000000000386.
28. Sabater-Cruz N, Figueras-Roca M, González Ventosa A, et.al. Current clinical application of sclera and amniotic membrane for ocular tissue bio-replacement. *Cell Tissue Bank.* 2020 Dec;21(4):597-603. doi: 10.1007/s10561-020-09848-x. Epub 2020 Jul 13. PMID: 32661595.
29. Sahay P, Goel S, Maharana PK, et.al. Amniotic Membrane Transplantation in Acute Severe Ocular Chemical Injury: A Randomized Clinical Trial. *Am J Ophthalmol.* 2019 Sep; 205:202-203. doi: 10.1016/j.ajo.2019.04.030. Epub 2019 Jun 29. PMID: 31262436.
30. Shay E, Kheirhah A, Liang L, et al. Amniotic membrane transplantation as a new therapy for the acute ocular manifestations of Stevens-Johnson syndrome and toxic epidermal necrolysis. *Surv Ophthalmol.*; 54(6):686-96; 2009.
31. Suri, K, Kosker, M, Raber, I, et.al. *Sutureless Amniotic Membrane ProKera for Ocular Surface Disorders: Short Term Results*, Eye & Contact Lens Volume 39, Number 5, September 2013.
32. Tabatabaei SA, Soleimani M, Behrouz MJ, et.al. A randomized clinical trial to evaluate the usefulness of amniotic membrane transplantation in bacterial keratitis healing. *Ocul Surf.*; 15(2):218–226; 2017.
33. Thevi T, Abas AL, Dua HS. Amniotic membrane graft (AMG) for persistent epithelial defects following infective corneal ulcers and keratitis - A systematic review. *Indian J Ophthalmol.* Published online September 10, 2024. doi: 10.4103/IJO.IJO_300_24.
34. Ting DSJ, Henein C, Said DG, et.al. Amniotic membrane transplantation for infectious keratitis: a systematic review and meta-analysis. *Sci Rep.* 2021 Jun 21;11(1):13007. doi: 10.1038/s41598-021-92366-x. PMID: 34155280; PMCID: PMC8217254.
35. Travé-Huarte S, Wolffsohn JS. Sutureless Dehydrated Amniotic Membrane (Omnigen) Application Using a Specialised Bandage Contact Lens (OmniLenz) for the Treatment of Dry Eye Disease: A 6-Month Randomised Control Trial. *Medicina (Kaunas).* 2024 Jun 15;60(6):985. doi: 10.3390/medicina60060985. PMID: 38929602; PMCID: PMC11205730.
36. Tsai IL, Hsu CC, Hung KH, et.al. Applications of biomaterials in corneal wound healing. *J Chin Med Assoc.* 2015;78(4):212-217. doi: 10.1016/j.jcma.2014.09.011.
37. Vlasov A, Sia RK, Ryan DS, et al. Sutureless cryopreserved amniotic membrane graft and wound healing after photorefractive keratectomy. *J Cataract Refract Surgery*; 42(3):435–443; 2016.
38. Wang X, Khan R, Coleman A. Device-modified trabeculectomy for glaucoma. *Cochrane Database Syst Rev.* 2015;2015(12):CD010472. Published 2015 Dec 1. doi: 10.1002/14651858.CD010472.pub2.
39. Zhang C, Du T, Mu G, et.al. Evaluation and ultrastructural changes of amniotic membrane fragility after UVA/riboflavin cross-linking and its effects on biodegradation. *Medicine (Baltimore).* 2020 May;99(20): e20091. doi: 10.1097/MD.00000000000020091. PMID: 32443319; PMCID: PMC7254827.
40. Zhang H, Li Y, Chen G, et.al. Human amniotic membrane graft for refractory macular hole: A single-arm meta-analysis and systematic review. *J Fr Ophtalmol.* 2023 Mar;46(3):276-286. doi: 10.1016/j.jfo.2022.07.001. Epub 2023 Feb 2. PMID: 36739260.

SOURCES

1. American Academy of Ophthalmology®, Corneal Ectasia, Preferred Practice Pattern, 2023.. <https://www.aao.org/education/preferred-practice-pattern/corneal-ectasia-ppp-2023>. Accessed 11/2024.

2. American Academy of Ophthalmology®. Corneal Edema and Opacification Preferred Practice Patterns - 2023. <https://www.aao.org/education/preferred-practice-pattern/corneal-edema-opacification-ppp-2023> Accessed 11/2024.
3. AAO EyeWiki®. Management of Descemetocele and Corneal Perforation October, 2023. https://eyewiki.org/Management_of_Descemetocele_and_Corneal_Perforation Accessed 11/2024.
4. AAO EyeWiki®. Can amniotic membrane be used for dry eye? Dec. 2020. <https://www.aao.org/eye-health/ask-ophthalmologist-q/can-amniotic-membrane-be-used-dry-eye>. Accessed 11/2024.
5. BioTissue Ocular. Reimbursement Resource Guide: Prokera, AmnioGraft. <https://biotissue.com/wp-content/uploads/2023/07/US-PK-220001-2023-BioTissue-Ocular-Resource-Guide-Prokera.pdf>. Accessed 11/2024.