

Understanding *Acanthamoeba* and the efficacy of multi-purpose solutions against it.

What is *Acanthamoeba*?

A predominantly water-borne organism – common in the environment – that normally feeds on bacteria and fungi.

- Characterized by two life cycle stages, both of which can be resistant to some disinfection solutions and antimicrobial agents:¹
 - Cysts: dormant stage when environmentally stressed.
 - Trophozoites: active stage – free-moving, feeds and replicates.

What is *Acanthamoeba* keratitis?

An uncommon[†], yet potentially devastating, corneal infection caused by the *Acanthamoeba* organism.

- Rare because the body’s normal defense mechanisms prevent the organism from taking hold.
- Symptoms may include eye pain or redness, blurred vision, light sensitivity, sensation of something in the eye, and excessive tearing.

What are the risk factors?

- **Contact lens wear** – Up to 93% of patients diagnosed are lens wearers.²
- **Environmental factors** – *Acanthamoeba* has been isolated from virtually all water sources.³
- **Poor compliance** – Most lens wearers diagnosed have been exposed to contaminated water.³

Have lens-care solutions been tested for efficacy against *Acanthamoeba*?

Recent studies have tested the efficacy of multi-purpose solutions against *Acanthamoeba*. Although no FDA/ISO guidelines currently exist, trophozoites have been proposed as the preferred stage for development of a standardized test.⁴ The following data demonstrates the efficacy of Bausch & Lomb ReNu MultiPlus® Multi-Purpose Solution against both trophozoites and cysts.

ReNu MultiPlus Solution effectively eliminates *Acanthamoeba* from tested silicone hydrogel lenses⁴

	<i>Acanthamoeba castellanii</i>		<i>Acanthamoeba polyphaga</i>	
	Trophozoites remaining	Cysts remaining	Trophozoites remaining	Cysts remaining
ReNu MultiPlus				
Lens 1	0	0	0	0
Lens 2	0	0	0	0
Lens 3	0	0	0	0
Lens 4	0	0	0	0
Saline Control				
Lens 1	1,000	560	> 3,200	1,000
Lens 2	3,200	100	> 3,200	1,800
Lens 3	1,800	316	> 3,200	560
Lens 4	1,000	1,000	> 3,200	1,800

Even under rigorous conditions (high amount of *Acanthamoeba* and organic soil) ReNu MultiPlus Solution:

- Eliminates 100% of *Acanthamoeba* with a 5-second rinse and a 4-hour soak time.
- Readily removes *Acanthamoeba* – in both trophozoite and resistant cyst stages.

[†] Estimated incidence of 0.5 to 3.0 per 100,000 soft contact lens wearers.

¹ R. Borazjani, S. Kilvington: Efficacy of multipurpose solutions against *Acanthamoeba* species. *Contact Lens & Anterior Eye* 28: 169-175, 2005. Hydrogel lens no-rub/rinse regimen tests were performed with four multi-purpose solutions using two types of conventional hydrogel lenses – Bausch & Lomb SoftLens® 38 contact lenses (Lens 1) and SUREVUE contact lenses (Lens 2). 3 lots of each solution were tested using four lenses from each group. Tests were performed in the presence of organic soil with an inoculum of *Acanthamoeba polyphaga* (Ros) and *castellanii* (ATCC 30868) trophozoites and cysts.

² C. Radford, D. Minassian, J.K. Dart: *Acanthamoeba* keratitis in England and Wales: incidence, outcome, and risk factors. *Br J Ophthalmol* 86: 536-542, 2002.

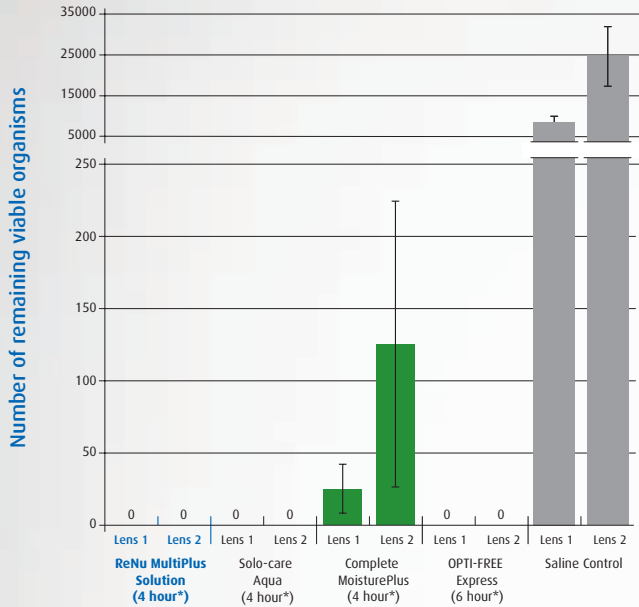
³ S. Awwad, W. Petroll, J. McCulley, H. Cavanagh: Updates in *Acanthamoeba* Keratitis. *Eye & Contact Lens* 33(1): 1-8, 2007.

⁴ R. Borazjani, S. Kilvington: Effect of a Multipurpose Contact Lens Solution on the Survival and Binding of *Acanthamoeba* Species on Contact Lenses Examined With a No-Rub Regimen. *Eye & Contact Lens* 3(11): 39-45, 2005. Silicone hydrogel lens regimen tests were performed with Bausch & Lomb PureVision® contact lenses separately inoculated with each of four separate preparations of *Acanthamoeba polyphaga* (Ros) and *castellanii* (ATCC 30868) trophozoites and cysts in the presence of organic soil.

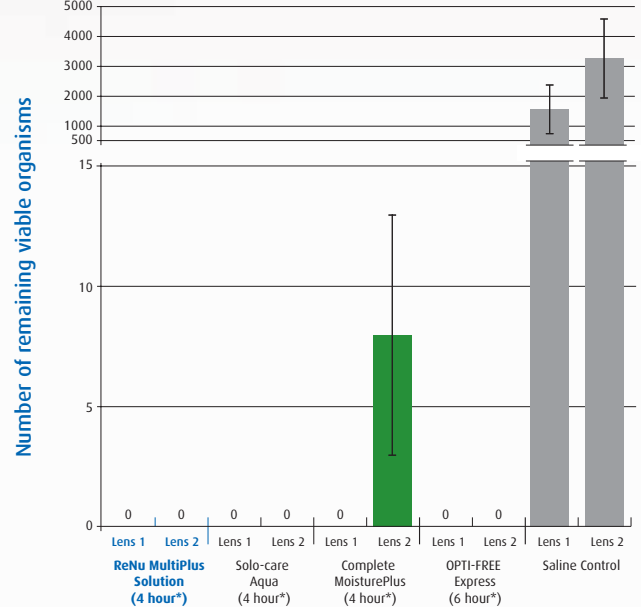
ReNu MultiPlus Solution: Proven disinfection even under rigorous testing.¹

When tested in a no-rub/rinse regimen — with organic soil present to mimic natural tear fluid — ReNu MultiPlus Solution is consistently effective at eliminating *Acanthamoeba* from conventional hydrogel lenses with a 4-hour soak time.¹

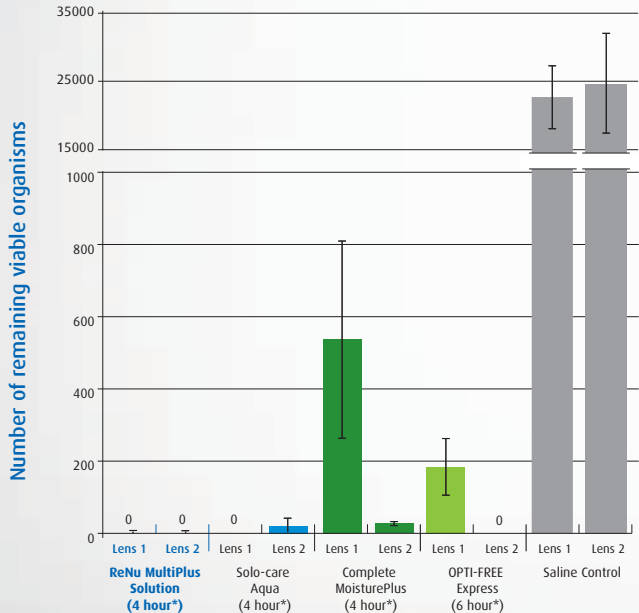
Total elimination of *Acanthamoeba polyphaga* trophozoites¹



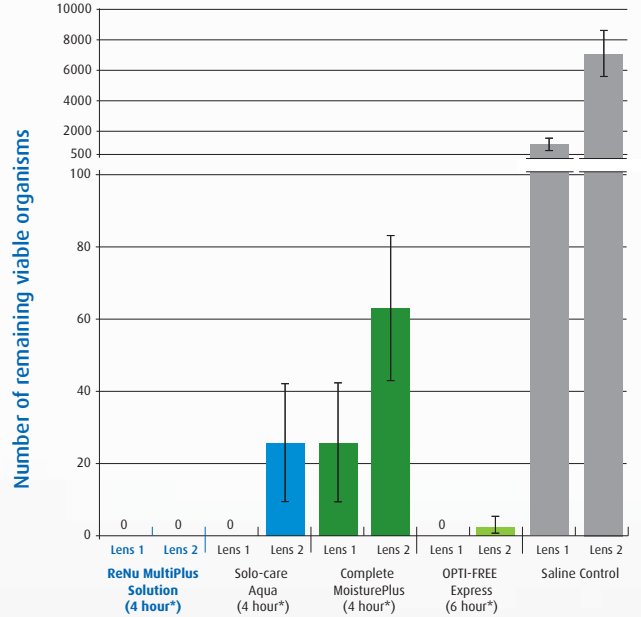
Total elimination of *Acanthamoeba castellanii* trophozoites¹



Consistent elimination of *Acanthamoeba polyphaga* cysts¹



Consistent elimination of *Acanthamoeba castellanii* cysts¹



* Manufacturers' recommended soak time.

Graphs depict the mean (bar) and the range (lines) recovery of *Acanthamoeba* following no-rub/rinse regimen testing.

Recommend ReNu MultiPlus Solution with confidence – and remind your patients to keep proper lens wear and care top-of-mind.

