



# University Researchers Find CIDEX® OPA *ortho*-Phthalaldehyde Solution Does Not Damage Endoscopes But STERIS® 1™ Sterilization Renders Them Unusable After Repeated Reprocessing.

## Talking Points

“Effects of STERIS 1™ Sterilization and CIDEX® *Ortho*-Phthalaldehyde High-Level Disinfection on Durability of New-Generation Flexible Ureterscopes.” Written by JBA Abraham, CS Abdelshehid, HJ Lee, GN Box, LA Deane, T Le, F Jellison, JF Borin, A Manipon, EM McDougall, RV Clayman, September 2007, *Journal of Endourology*.

## Purpose of Experiment

- Independent researchers at the University of California conducted an experiment designed to evaluate the effects of CIDEX® OPA Solution and STERIS 1™ reprocessing on flexible ureterscopes.
- It was a lab study, so there were no differences in how the scopes were used between reprocessing cycles.

## Methods

- Two new, identical endoscopes (Scopes 1 and 2) were reprocessed 200 times.
  - Scope 1: 100 cycles in STERIS 1™ and then 100 cycles in CIDEX® OPA Solution.
  - Scope 2: 100 cycles in CIDEX® OPA Solution and then 100 cycles in STERIS 1™.
- The physical condition and function of the endoscope was checked frequently.

## Results

# of Cycles Run	Results for Tests on Scope 1		Results for Tests on Scope 2	
	Solution Used	Impact on Scope	Solution Used	Impact on Scope
17 (17 Total)	STERIS 1™	The scope developed a 12 millimeter tear.	CIDEX® OPA Solution	N/A
50 (50 Total)	STERIS 1™	The scope had more than 70 fibers damaged.	CIDEX® OPA Solution	Less than 10 fibers were damaged.
50 (100 Total)	STERIS 1™	297 fibers were damaged and there was a 37% drop in resolution	CIDEX® OPA Solution	Only 10 fibers were damaged and there was a 0% change in resolution
100 (200 Total)	CIDEX® OPA Solution	CIDEX® OPA Solution produced no additional damage	STERIS 1™	The subsequent 100 reprocessing cycles in STERIS 1™ resulted in damage to 167 fibers

## Analysis and Conclusions

The authors suggested that STERIS 1™ may cause damage to scopes through several mechanisms:

- Pressure
- The chemical effect of the acid
- High temperature
- The authors believe STERIS 1™ would also damage other brands of flexible, fiberoptic ureterscopes.
- According to these researchers, a STERIS 1™ reprocessor is expensive to buy and maintain. The damage was attributed to STERIS 1™ and required expensive repairs of the ureterscopes.
- Based in part on the findings of this study, these researchers are using CIDEX® OPA Solution to disinfect ureterscopes in their own practices.

**The researchers conclude:**  
**“After 100 cycles, the STERIS™ 1 system rendered the flexible ureteroscope unusable, whereas HLD with CIDEX® OPA Solution had minimal adverse impact.”**

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