

IVF success rate in mind

EXPOSURE TO TOXIC DISINFECTANT CAN IMPACT IVF SUCCESS RATE



The risk of exposure to toxic residuals can impact oocyte retrieval, embryo transfer and other IVF applications during pelvis ultrasound probe procedures.¹⁻⁹

In a study conducted at FDA's Office of Science and Technology, it measured the integrity on cellular membrane, metabolic activity or cell growth and found that there was several-hundredfold difference in the relative toxicity of various disinfecting substances. The liquid disinfecting agents were classified into three main groups according to their relative toxicity²:

Mild (TC(50) > 1 mM, including phenol, hydrogen peroxide (30% w/v), and formaldehyde (37% w/v))

Moderate (1mM > TC(50) > 0.1 mM, Sodium hypochlorite (4% w/v))

Severe (TC(50) < 0.1 mM, glutaraldehyde (50% w/v), cupric ascorbate, and peracetic acid (32% w/v)) toxicity.

The hydrogen peroxide (80ml; 35% w/w) is a higher concentration to the chemicals tested in the study.

A recent sonographer user study,⁵ found the following concerns with high concentrated hydrogen peroxide:

At least 1-in-3 sonographers are concerned about the risk of exposure to hazardous chemicals, and other potential risks associated with hydrogen peroxide exposure.

47% of sonographers have personally experienced an adverse event from using the highly concentrated hydrogen peroxide system most commonly skin burns.

Probes are difficult to dry completely the highly concentrated hydrogen peroxide residuals, left on the probe after disinfection e.g. in needle guide grooves lead to chemical burns.

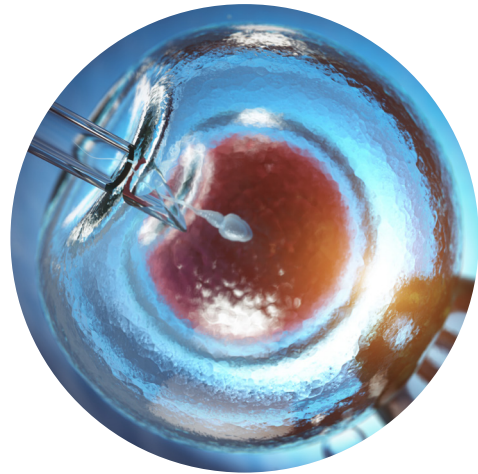
Don't risk your IVF success rate!

All chemicals require a rinsing step to remove disinfectant residue toxicity from the probe – a crucial step that could be forgotten.

Remove the risk of chemical toxicity in selecting Chronos UV-C High Level Disinfection for pelvic ultrasound examinations that is chemical-free and ultrafast, thus improving quality patient care.

While it is clear that UV-C HLD technology has many favourable characteristics for disinfection in IVF applications, it also removes other issues caused by chemicals:⁶⁻¹⁰

- **Respiratory problems**
- **Anaphylaxis**
- **Skin reactivity, irritation**
- **Dermatitis**
- **Systemic antibody production**
- **Chemical burns to staff and patients**



References: **1.** Rutala WA, Weber DJ, HICPAC. 2008. Guideline for Disinfection and Sterilization in Healthcare Facilities. In Control CfD (ed.), USA. **2.** Sagripanti JL, Bonifacino A. 2000. Cytotoxicity of liquid disinfectants. *Surgical infections* 1:3-14. **3.** Ackerman, S.B., et al., Toxicity testing for human in vitro fertilization programs. *J In Vitro Fert Embryo Transf*, 1985. 2(3): p. 132-7. **4.** Lawson CC, Rocheleau CM, Whelan EA, Lividoti Hibert EN, Grajewski B, Spiegelman D, et al. Occupational exposures among nurses and risk of spontaneous abortion. *Am J Obstet Gynecol*. 2012;206(4):327 e1-8. **5.** METIS Healthcare Research 2019. **6.** H. Fujita, M. Ogawa, and Y. Endo. A case of occupational bronchial asthma and contact dermatitis caused by ortho-phthalaldehyde exposure in a medical worker,” *J Occupational Health*, vol. 48, pp. 413–416, 2006. **7.** W. N. Sokol. Nine episodes of anaphylaxis following cystoscopy caused by Cidex OPA (orthophthalaldehyde) high level disinfectant in 4 patients after cystoscopy. *J Allergy and Clinical Immunology*, vol. 114, pp. 392–397, 2004. **8.** Cooper DE, White AA, Werkema AN, Auge BK. Anaphylaxis following cystoscopy with equipment sterilized with Cidex OPA (ortho-phthalaldehyde): a review of two cases. *J Endourol*. 2008;22(9):2181-4. **9.** Suzukawa M, Yamaguchi M, Komiya A, Kimura M, Nito T, Yamamoto K. Ortho-phthalaldehyde-induced anaphylaxis after laryngoscopy. *J Allergy Clin Immunol*. 2006;117(6):1500-1. **10.** Suzukawa M, Komiya A, Koketsu R, Kawakami A, Kimura M, Nito T, et al. Three cases of ortho-phthalaldehyde-induced anaphylaxis after laryngoscopy: detection of specific IgE in serum. *Allergol Int*. 2007;56(3):313-6. **11.** Anderson SE, Umbright C, Sellamuthu R, Fluharty K, Kashon M, Franko J, et al. Irritancy and allergic responses induced by topical application of ortho-phthalaldehyde. *Toxicol Sci*. 2010;115(2):435-43.

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