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**Disclosures:** *W.G. Myers is a consultant for Leiters and Carl Zeiss Meditec AG. No other disclosures were reported.*

### Reply: Effect of anti-inflammatory regimen on early postoperative inflammation after cataract surgery.

We appreciate the interest in our article by Myers and Shorstein, who are concerned that readers of our article may generalize our results regarding the inferior anti-inflammatory effect of a dropless approach using a sub-Tenon depot of dexamethasone phosphate and conclude that all dropless approaches are inferior.

We agree with Myers and Shorstein that triamcinolone acetate would have a much longer lasting effect than dexamethasone phosphate. We chose dexamethasone phosphate for its potency and short period of action to avoid elevations of intraocular pressure. Given our results, we must agree that sub-Tenon depot of dexamethasone phosphate is not appropriate as a dropless approach to anti-inflammatory prophylactic treatment. We did not use triamcinolone acetate, and our study cannot be used to evaluate the effect of this agent. We hope that the readers of JCRS will not extrapolate from one dropless approach to another, and we trust that readers of our article will not “throw the baby out with the bath water” and conclude that all dropless approaches are inferior based on our results.

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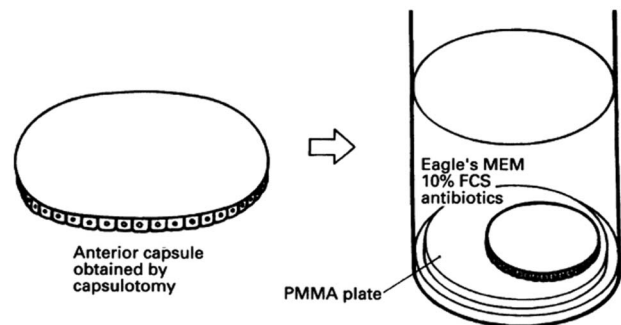
**Disclosures:** *None reported.*

### Comment on: Intraindividual comparison of cytokine and prostaglandin levels with and without low-energy, high-frequency femtosecond laser cataract pretreatment after single-dose topical NSAID application



I read with great interest the article by Schwarzenbacher et al.<sup>1</sup> The authors report, with supporting references, the concept that the release of prostaglandins and other inflammatory cytokines from iris, trabecular meshwork, and ciliary body tissues into the anterior chamber results as a consequence of vibrations and shockwaves induced by the femtosecond laser pulse or by the bubbles created with femtosecond laser use.

Nishi et al. have reported that lens epithelial cells (LECs) of cultured LECs harvested during manual cataract surgery with circular capsulorhexis, release a significant amount of PGE<sub>2</sub>, cytokines interleukin (IL)-1, IL-6, and IL-8, transforming growth factor-β, fibroblast growth factor, and epidermal growth factor into the culture media (Figure 1).<sup>2–5</sup> LECs are directly injured by femtosecond laser-assisted cataract surgery. They may well prove to be the cells primarily responsible for the subsequent release of inflammatory agents into the ocular media.



**Figure 1.** Schematic representation of the culture of human cataract lens epithelial cells. Reprinted with permission from the *British Journal of Ophthalmology*.<sup>2</sup> FCS = fetal calf serum; MEM = minimum essential medium; PMMA = poly(methyl methacrylate)

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**Disclosures:** None reported.

### Reply: Intraindividual comparison of cytokine and prostaglandin levels with and without low-energy, high-frequency femtosecond laser cataract pretreatment after single-dose topical NSAID application.



We appreciate the comment by Dr. Nishi. In fact, it is not fully known what share of cytokines originates from which tissues. The iris is one source, and even moderate traumatization such as pupil expansion device insertion may cause cytokine release significant enough to result in cystoid macular edema.<sup>1</sup> As evidenced by the extensive work by Dr. Nishi, the anterior LECs are another source of cytokine depletion, which may be particularly important for femtosecond laser-assisted cataract surgery (FLACS). FLACS directly impacts the anterior LEC layer during capsulotomy. As demonstrated in a recent publication,<sup>2</sup> the disruptive effect of laser pulses on the integrity of the cell layer along the cutting line increases with laser-pulse energy. In fact, laser capsulotomy has been shown to be the true source of cytokine level rise in the aqueous during FLACS.<sup>3</sup> As a result, a multiple increase of aqueous prostaglandin and interleukin levels was reported with high-energy pulse lasers.<sup>4,5</sup> Our study with a low-energy pulse laser did not show such increase. In another own study to be published soon comparing the prostaglandin and interleukin release after laser capsulotomy and lens fragmentation performed in a different sequence (capsulotomy first vs lens fragmentation first) with a low-pulse laser, again no increase of prostaglandin and interleukin was found as with manual capsulorhexis. In conclusion, the direct mechanical damage to the anterior LECs bordering the capsulotomy seems to be the main source of inflammatory cytokine release during FLACS. The amount of cytokine release depends on the severity of collateral LEC damage induced by the intensity of the shock waves, which increases with laser spot energy. Low-energy lasers produce only minor LEC damage and do not provoke a significant rise of aqueous cytokine levels. Although cytokine release can be blocked by nonsteroidal antiinflammatory drug premedication, it mirrors the potential traumatic effect of high-energy femtosecond laser pulses.

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**Disclosures:** None reported.

### Comment on: Post-cataract surgery hyperreflective lesions within corneal incisions suspected to be silicone oil from disposable blades.



I read with interest the article published by Raevis et al. in which the authors have hypothesized that the hyperreflective particles observed in the incision during and after cataract surgery represent silicone oil.<sup>1</sup> For the past 4 decades, I have been acutely aware of reflective particles that can be seen in the incision and inside the eye associated with cataract surgery. In the early 1980s, it was very common to see a shower of hyperreflective titanium particles scattered on the iris during the phacoemulsification. I met with the engineers at Alcon Laboratories, and we concluded that the particles came from the inside of the ultrasound needles. Consequently, a new method of polishing the inner lumen was developed and the particles vanished.

During the ensuing decades, I continued to observe reflective particulate that could be shed from any metal instrument. It was not uncommon to notice that hyperreflective particles could be wiped off metallic blades during incision construction (Figure 1, top). It was also possible to see tiny particles injected into the eye through metal cannulas. Occasionally, these tiny reflective particles would adhere to the surface of an acrylic intraocular lens when injected by using the incision as an extension of the cartridge (Figure 1, middle). It was exasperating to try to remove these tiny particles because they could neither be vacuumed off the lens with the irrigation/aspiration tip nor grasped with a forceps. Rarely, they can be observed on the iris (Figure 1, bottom). High magnification revealed irregular edges consistent with metal.