

# Practical guidance to optimize outcomes with AviClear, a novel laser treatment for acne

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Acne vulgaris, a common inflammatory condition with a multifactorial pathogenesis, can occur at any life stage and profoundly impacts quality of life. While offering substantial improvement to many patients, current topical and systemic therapies are not effective or tolerated in all cases.<sup>1</sup> Lack of early effective treatment raises the risk of lasting erythema, post-inflammatory hyperpigmentation (PIH), and scarring.<sup>2</sup> In addition, the use of antibiotics for acne has raised well-founded concerns about antibiotic resistance.

Light-based therapies represent an innovative, evidence-based alternative to acne medications. For example, 407-420-nm blue-light treatment has a bactericidal effect on *C. acnes*, while green-/yellow-light lasers and intense pulsed light (IPL) devices kill *C. acnes* directly.<sup>3</sup> However, these modalities may not penetrate the skin deeply enough to have significant impact. Short-wave infrared (SWIR) lasers in the 1320-1450 nm range decrease sebaceous gland activity, but their lack of selectivity may lead to highly undesirable side effects.<sup>3</sup>

that can optimize therapy. To this end, four dermatologists with international research and clinical experience (the authors) held a meeting in December 2023 to address common questions about best practices with AviClear. This review summarizes their expert consensus on the real-world use of the device.

## Selecting and communicating with patients

Identifying suitable patients and managing their expectations are key to optimizing clinical outcomes and patient satisfaction.

### Which patients are most and least suitable for AviClear?

The technology is suitable for all adults with acne and has also been used successfully in adolescents, with the caveat that teenagers may require a different approach to managing discomfort. Patients on isotretinoin who respond poorly or do not wish to continue the medication constitute another niche for the device. On the other hand, the device may not

all) patients and involves some discomfort. To provide context for the pain, it may be helpful to liken it to other types of pain. As an example, if we rate the pain from laser tattoo removal as a 9 out of 10 on a visual pain scale, the pain associated with AviClear generally falls between 5 and 6 (see Figure 1). The pain ceases immediately after the treatment concludes.

### How should the expected course of AviClear treatment be communicated to patients?

It generally takes a few months for AviClear treatment to yield noticeable improvement, so it is critical to “educate patients to be patient.” Most patients notice significant improvement with 3 months of completing treatment, but for a small subset of patients it may take 6 months. Clinicians should avoid creating unrealistic expectations for patients who show little improvement within 3 months. Clinicians should also advise patients that they may experience a purge and/or flare over the course of treatment.

## Treatment protocol and pain mitigation

With proper preparation and pain management strategies, it is rare for AviClear to cause a degree of discomfort that leads to patient discontinuation or dissatisfaction.

### How should the face be prepared for treatment?

Wiping with acetone prior to treatment degreases the face, which may reduce pain. The skin should also be prepared with a cleanser. For patients with erythema (for example, from rosacea), pretreatment with modalities such as 532nm, 585 nm, 595 nm, 1,064 nm lasers, or intense pulsed light sources may improve overall clinical outcomes. During treatment, continual use of water acts as a conductor and helps mitigate pain.

### Is there an optimal number of pulses and fluence for AviClear treatment?

On average, patients achieve optimal results within the range of 250 to 300 pulses. Some anecdotal evidence suggests that pulse counts below 250 carry a greater risk of treatment failure. Equally important is how the pulses are used. Clinicians should avoid “pulse stacking.” Instead, they should allow for some cooling time before returning to the same area and

TABLE 1: Efficacy of the novel contact-cooled 1726-nm laser for acne after 3 treatments<sup>4,5</sup>

Efficacy measure	% patients showing improvement		
	12 weeks later	26 weeks later	52 weeks later
IGA improvement: 1 grade	88%	90%	93%
IGA improvement: 2 grades	46%	52%	73%
IGA improvement: clear or almost clear	36%	42%	66%
ILC improvement	91%	97%	96%
Reduction in comedones	65%	81%	82%

AviClear, a novel 1726-nm laser acne treatment, directly targets sebaceous glands, in contrast to other FDA cleared light-based acne treatments.<sup>4</sup> In the AviClear trial that led to FDA clearance, 104 patients with moderate-to-severe acne received three 30-minute treatments at 2-to-5-week intervals. A per-protocol analysis of the trial (Table 1) showed significant improvements in both inflammatory lesion count (ILC) and investigator global assessment (IGA).

The incorporation of AviClear into dermatologic practices has yielded additional learnings

be suitable as prevention for prepubescent teenagers or children.

### Can AviClear be used to treat oily skin?

The FDA indication for AviClear does not include oiliness, but many patients have reported a significant decrease in oiliness, for up to a year after treatment, along with improved acne.

### What is the best way to prepare patients for AviClear treatment?

Transparency is the cornerstone of expectation management. The clinician should communicate that AviClear works well for most (but not

performing a second pass. Surplus pulses, if any, should be devoted to problem areas. Within the available fluence range of 18 to 21 joules, the middle range (19-20 joules) is generally reliable, though the back area may require higher fluences.

### Is pain medication recommended?

AviClear typically causes the most discomfort on the forehead, lip area, and chin. Pretreatment with oil/cream-based numbing agents is contraindicated and may lead to an adverse event. Relaxing agents are not routinely required, and clinical judgment should direct their use. Pretreatment acetaminophen and/or ibuprofen may lessen pain without posing a significant inflammation risk. Benzodiazepines are rarely used and reserved for the most anxious patients.

### Are there other ways to mitigate or distract patients from pain during the procedure?

Periprocedural pain can be reduced by covering different sections of the face with gauze dipped in ice water. Stress balls, devices with push-buttons, or vibrating objects may help distract from pain. Many patients also respond to calming music in the room or to distracting talk ("talkesthesia"). If a suitable assistant is available, massage of the scalp or legs may serve as additional distraction.

### Outcomes and complications of treatment

Most patients can expect a highly satisfactory response to treatment, but they should be prepared for individual variations in response and for transient flares.

### Is it possible to predict which patients will respond best to AviClear?

While there is no definitive way to predict response to AviClear treatment, patients tend to obtain the best results if AviClear is part of a multipronged regimen that also includes topical (and possibly oral) acne medications and skin care. For premenopausal women, fluctuations in hormonal status at different stages of the menstrual cycle may also impact results.

### How should nonresponders be managed?

If a patient shows no response after the third treatment, the clinician should consider other

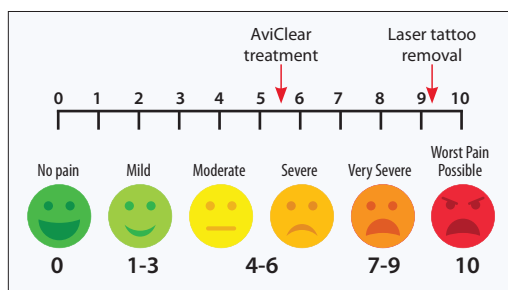


Figure 1: Putting pain in context

factors that may contribute the lack of response, such as lack of consistent medication/skincare regimen. If such factors have been ruled out or if the patient's acne has worsened after the third treatment, which is rare, different or concomitant therapies may be advised.

### Is it possible to prevent purges and flares?

An acne purge during treatment should not raise any concerns and may even (based on some observations) predict a better overall result. Oral antihistamines, which are known to reduce flares associated with isotretinoin, may also have value as an adjunct to AviClear.

### When and how should antibiotics be used to manage flares?

It should be noted that treating patients before/during AviClear treatment with topical and/or oral medications such as antibiotics and spiro-lactone may help prevent flares. If a patient does experience a flare, oral antibiotics such as doxycycline are the recommended treatment.

### Concomitant and subsequent treatment modalities

Concomitant and post-procedure medical treatment of acne enhances treatment outcomes from AviClear.

### What is the value of co-treating patients with prescription acne and skincare agents?

Topical retinoids have multiple anti-acne benefits and are advised for virtually all AviClear patients. They also hasten the resolution of comedones (which have been shown to improve following AviClear treatment (Table 1), but more slowly than inflammatory lesions). While safe to use during AviClear therapy, oral antibiotics may

be tapered after lesions begin to clear, to maintain good antibiotic stewardship.

### What acne treatment regimen should patients follow after AviClear?

Following completion of AviClear treatment, the pretreatment topical regimen (active treatments, moisturizer, sunscreen) should be continued to optimize outcomes and patient satisfaction. If not a component of prior treatment, a retinoid should be added.

### How long do patients need to wait before undergoing other laser procedures?

Superficial aesthetic treatments are acceptable before, during, or after treatment with AviClear. Ablative procedures should be avoided for several weeks after the final AviClear treatment.

### Conclusions

Until recently, the lack of selectivity for sebaceous glands has limited the value of laser therapy for acne, with most laser treatments focusing on temporary reduction of lesions. Selective photothermolysis with AviClear ensures effectiveness, durable response, and safety. The high-powered contact cooling system not only improves the safety margin but also helps to manage discomfort during the treatments. As detailed in the foregoing consensus guidance, appropriate patient selection and simple pre- and periprocedural strategies can optimize the patient experience. It is hoped that the recommendations will help clinicians gain comfort with the modality and use it to expand the clinical scope and success of their practices.

### REFERENCES

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