



## Kaiser Foundation Health Plan of Washington

### Clinical Review Criteria Intense Pulsed Light (IPL) for Meibomian Gland Dysfunction

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#### Criteria

##### For Medicare Members

Source	Policy
CMS Coverage Manuals	None
National Coverage Determinations (NCD)	None
Local Coverage Determinations (LCD)	None
Local Coverage Article	None
Kaiser Permanente Medical Policy	Due to the absence of a NCD, LCD, or other coverage guidance, Kaiser Permanente has chosen to use their own Clinical Review Criteria, <b>Intense Pulsed Light (IPL) for Meibomian Gland Dysfunction</b> , for medical necessity determinations. Use the Non-Medicare criteria below.

##### For Non-Medicare Members

There is insufficient evidence in the published medical literature to show that this service/therapy is as safe as standard services/therapies and/or provides better long-term outcomes than current standard services/therapies.

##### If requesting review for this service, please send the following documentation:

- Last 6 months of clinical notes from requesting provider &/or specialist

The following information was used in the development of this document and is provided as background only. It is provided for historical purposes and does not necessarily reflect the most current published literature. When significant new articles are published that impact treatment option, Kaiser Permanente will review as needed. This information is not to be used as coverage criteria. Please only refer to the criteria listed above for coverage determinations.

#### Background

Meibomian glands are located in the eyelids and secrete lipids into the surface of the eye. These lipids prevent the tears from evaporating rapidly. Meibomian gland dysfunction (MGD) is an abnormality or obstruction of meibomian glands leading to evaporation of the tears which in turn results in dry eye. Increased evaporative loss results in tear film instability, hyperosmolarity and lacrimal system inflammation (<https://www.uptodate.com/contents/dry-eye-disease>).

Meibomian gland dysfunction affects 70% of the population in some parts of the world (Craig, Chen, & Turnbull, 2015). Risk factors include age (the risk of MGD increases with age), ethnicity (Asians have high risk of MGD), eye makeup, contact lenses. The pathophysiology of MGD is multifactorial; it includes inflammation, bacterial overgrowth, abnormal blood vessel growth around the meibomian gland, and abnormal meibum production (Sabeti, Kheirkhah, Yin, & Dana, 2019).

Clinical symptoms include dryness, red eyes, general irritation, gritty sensation, burning, paradoxical excessive tearing, and decreased visual acuity (<https://www.uptodate.com/contents/dry-eye-disease>).

Treatment of MGD includes artificial tears, heat application, manual gland expression, warm compresses, lubricants with fatty acids, omega-3 supplementation, topical antibiotics, oral antibiotics, corticosteroids, or topical cyclosporine (Craig et al., 2015; Dell, Gaster, Barbarino, & Cunningham, 2017). However, these therapies come with adverse events, are temporarily effective and both physicians and patients are unsatisfied (Craig et al., 2015). IPL has garnered interest due to its concomitant effectiveness on ocular and dermatological manifestations in patients with rosacea. However, the mechanism by which this occurs is not well understood (Rennick & Adcock, 2018).

The most common indication for IPL has been skin disorders such as rosacea and acne. Regarding this treatment, the skin is exposed to the light with wavelengths from 500 to 1200 nm. The targeted tissue absorbed the light. This generates heat which destroys the lesions (Craig et al., 2015). In addition, the wavelengths stimulate melanin and hemoglobin in the skin causing coagulation and ablation of blood vessels ((Gao et al., 2019); Rennick & Adcock, 2018) and suppressing inflammation. IPL can also eliminate bacteria on treated zones of the skin. The theory is that IPL should improve MGD. There are several mechanisms by which IPL enhances MGD: heating, occlusion of abnormal blood vessels, liquefaction of meibum improving secretion and excretion, reduction in epithelial turnover, local photomodulation, activation of fibroblasts, enhancement of collagen synthesis, and destruction of Demodex mites (Sabeti et al., 2019).

The procedure starts with placement of shields over the eyes. This serves as protection from the light. A cooling gel is then applied to the area followed by administration of pulsed light around the eyelids. Manual gland expression is then performed, and normal oil flow is restored in the tear film. The procedure lasts approximately 20 minutes and is performed once a month for four months (<https://www.theeyeinstitute.com/dry-eye/intense-pulsed-light-ipl-treatment/>). Gao et al., 2019 (Gao et al., 2019) applied lidocaine cream for anesthesia for 30 minutes before placing the protective shield and administering IPL. Indications include rosacea, acne, MGD. Other indications include hypertrichosis, benign cavernous hemangiomas, benign venous malformations, telangiectasia, and pigmented lesions. It is also used in the cosmetic industry (Craig et al., 2015). IPL can only be used for patients whose skin is Fitzgerald type four or below (<https://www.reviewofophthalmology.com/article/intense-pulsed-light-for-treating-dry-eye>).

## Medical Technology Assessment Committee (MTAC)

### *Intense Pulsed Light (IPL) for the treatment of meibomian gland dysfunction (MGD)*

#### 01/13/2020: MTAC REVIEW

##### **Evidence Conclusion:**

The evidence consists of six small randomized controlled trials. One RCT compared intense pulsed light (IPL) to tobramycin/dexamethasone, three RCTs compared IPL plus meibomian gland expression to meibomian gland expression alone, and two other RCTs compared IPL vs sham. Statistically significant reduction of symptoms was found in each study. In addition, IPL appears to be safe as no serious adverse events were reported. However, the studies have small sample size, short follow-up, the risk of bias is not low, power calculations were not consistently provided. High-quality studies with large sample size and long-term follow-up are warranted. The findings are promising.

Overall, the evidence is not sufficient to draw overarching conclusions on the effectiveness and safety of intense pulsed light for the treatment of meibomian gland dysfunction.

**Articles:** PubMed search was conducted up to December 2, 2019 with the search terms (intense pulsed light OR intense-pulsed-light OR intense pulse light OR intense-pulse-light OR IPL) AND (dry eye OR DED OR meibomian OR MGD OR meibomian gland dysfunction). The search was limited to English language publications and human populations. The reference lists of relevant studies were reviewed to identify additional publications. Non-randomized controlled trials were excluded. Only randomized controlled trials were included in the review. The search yielded several articles. However, seven RCTs were retained and reviewed. See [Evidence Table](#).

The use of Intense Pulsed Light (IPL) for the treatment of meibomian gland dysfunction (MGD) does not meet the *Kaiser Permanente Medical Technology Assessment Criteria*.

## Applicable Codes

### Considered Not Medically Necessary:

CPT® Codes	Description
0207T	Evacuation of meibomian glands, automated, using heat and intermittent pressure, unilateral

<b>0507T</b>	Near-infrared dual imaging (ie, simultaneous reflective and trans-illuminated light) of meibomian glands, unilateral or bilateral, with interpretation and report
<b>0563T</b>	Evacuation of meibomian glands, using heat delivered through wearable, open-eye eyelid treatment devices and manual gland expression, bilateral
<i>May be submitted with unlisted code 17999 and ICD-10 codes H02.88-H02.88B</i>	Unlisted procedure, skin, mucous membrane and subcutaneous tissue
	Meibomian gland dysfunction of eyelid

**\*Note:** Codes may not be all-inclusive. Deleted codes and codes not in effect at the time of service may not be covered.

\*\*To verify authorization requirements for a specific code by plan type, please use the [Pre-authorization Code Check](#).

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Date Created	Date Reviewed	Date Last Revised
03/03/2020	03/03/2020 <sup>MPC</sup> , 03/02/2021 <sup>MPC</sup> , 03/01/2022 <sup>MPC</sup> , 03/07/2023 <sup>MPC</sup> , 03/12/2024 <sup>MPC</sup>	09/11/2020

<sup>MPC</sup> Medical Policy Committee

Revision History	Description
03/03/2020	MPC approved to endorse a non-coverage policy for IPL.
09/11/2020	Added CPT codes 0207T, 0507T, 0563T and 17999 w dx codes H02.88-H02.88B