Introduction
Eyelid surgery, or blepharoplasty, is a procedure to remove excess skin, muscle, or fat from the upper and lower eyelids. Blepharoplasty can correct drooping upper lids as well as puffy bags below the eyes – features that make individuals appear older and more tired and that may also interfere with vision. However, it does not remove crow’s feet or other wrinkles, eliminate dark circles under the eyes, or lift sagging eyebrows. Blepharoplasty can be performed alone or in conjunction with other facial surgery procedures such as a facelift or brow lift.

Conditions Associated With Blepharoplasty
Blepharoplasty is performed for various functional or cosmetic indications. The upper eyelids protect the globe, distribute tears on the surface of the eye, and facilitate the drainage of tears through the lacrimal apparatus. If any of these functions is impaired or significant ptosis (drooping) of the upper eyelid blocks vision, a surgical procedure may be indicated. The goal of functional blepharoplasty is to restore to normal a structure that has been altered by infection, trauma, degeneration, inflammation, developmental errors, and/or neoplasia. On the other hand, lower eyelid blepharoplasty is almost always performed for cosmetic reasons, to improve puffy lower eyelid “bags” and reduce the wrinkling of skin. Please see the table below for conditions associated with blepharoplasty.

<table>
<thead>
<tr>
<th>Condition</th>
<th>Description</th>
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<tbody>
<tr>
<td>Blepharochalasis</td>
<td>Redundant skin of the upper eyelid hangs down, impairing the visual field</td>
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<tr>
<td>Blepharospasm</td>
<td>Muscles in the eyelids and around the eyes twitch uncontrollably</td>
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<tr>
<td>Dermatochalasis</td>
<td>Excess of eyelid skin; underlying muscle, connective tissue, and fat can also be excessive; most often results from natural aging, but can result from specific disorders (for example, thyroid eye disease, floppy eyelid syndrome, blepharochalasis syndrome, trauma)</td>
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<tr>
<td>Ectropion</td>
<td>Abnormal inward rotation of the eyelid; occurs most commonly as a result of aging, but may occur after trauma and scar contraction or after surgery</td>
</tr>
<tr>
<td>Entropion</td>
<td>Abnormal inward rotation of the eyelid; occurs most commonly as a result of aging, but may occur after trauma and scar contraction or after surgery</td>
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<tr>
<td>Epiblepharon</td>
<td>A congenital horizontal fold of skin stretches across the border of the eyelid, pressing the eyelashes inward against the eyelid</td>
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<tr>
<td>Thyroid disease</td>
<td>May cause unilateral or bilateral upper eyelid retraction and ptosis (protruding eye)</td>
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Preoperative Evaluation for Blepharoplasty

Preoperative consultation should evaluate the patient’s reasons for seeking surgery. Patients present with a variety of symptoms or a combination of symptoms.

Medical and Ocular History and Ophthalmologic Examination

The medical history should include any illnesses, dry eye, medications, allergies and history of eyelid swelling, thyroid disease, heart failure, and bleeding tendencies. Contraindications to eyelid surgery include active eye disease, dry eyes, and thyroid disease. A thorough ophthalmologic examination should include fine examination of the lid margin for chronic blepharitis, evidence of lid retraction or laxity, and signs of systemic disease (for example, thyroid disease).

Physical Examination

The physical examination should include tear film break-up time, visual acuity with and without correction, and visual field testing, as well as evaluation of the amount of skin on the upper and lower eyelids, distribution of orbital fat, vector of the lower eyelid, and physical characteristics of the skin, including degree of elasticity and pigmentation. It may be necessary for patients with a history of dry eye to undergo Schirmer’s test, which uses paper strips inserted into the eye for several minutes to measure the production of tears. Ptosis of the upper eyelid is determined by measuring the palpebral fissure width (the separation between the upper and lower eyelids) and margin reflex distance (distance from the corneal light reflex to the lid margin). Levator excursion is also assessed by having the patient look down and up, with measurement of the excursion of the upper lid in millimeters. The forehead and eyebrow should be evaluated for brow ptosis.

Visual Field Testing

Visual field testing is used to measure the severity of eyelid and brow defects. The most significant visual field measurement associated with determining the need for blepharoplasty, blepharoptosis repair, and/or brow lift is the superior visual field. The normal extent of the superior visual field is approximately 55 to 60 degrees at the 90-degree meridian. Impairment of the superior visual field can range from 20%, considered mild ptosis, to 64% in more severe cases where the eyelid crosses the middle of the pupil.

In general, mild to moderate impairment of the visual field is of no clinical significance and requires no intervention. When obstruction of the visual field becomes severe or significant enough to interfere with the patient’s ability to perform activities of daily living, surgical intervention may be warranted.

It is recommended that visual field testing demonstrate a minimum of at least 12 degrees or 30% loss of upper field vision with upper lid skin and/or upper lid margin in repose and elevated (by taping of the lid) to demonstrate potential correction by the proposed procedure or procedures.

Additional Documentation Using Photography

Preoperative photographs may be taken to meet healthcare plan requirements and used in patient assessment and to help the surgeon in planning surgery. Additional photographs may include upward and downward gaze and oblique views.

A Closer Look at Visual Field Testing

There are two basic types of visual field, or perimetry, tests that are commonly used to measure the severity of eyelid and brow defects. Depending on whether the stimulus moves, the test can be classified as static or kinetic. Static perimetry tests different locations throughout the field, one at a time; kinetic perimetry uses a mobile stimulus moved by an operator. Although many techniques are available for measuring the visual field, many health insurance plans require testing on either a Goldmann perimeter or a programmable automated perimeter (for example, Humphrey Field Analyzer).
Both the Goldmann and Humphrey perimeters are capable of performing both types of tests, but they are commonly used for kinetic and static perimetry, respectively. Perimeters can also be classified as manual or automated, depending on whether the stimulus location is moved by hand (Goldmann) or changed by a computer (Humphrey).

Goldmann Perimetry

The Goldmann visual field testing equipment provided the first standardized measurement technique. Testing is done in a bowl-shaped instrument called a perimeter, so that all testing distances are equal while the background and stimulus luminances can be tightly controlled. During Goldmann perimetry, dimmer stimuli are used for testing the very center of vision, with the intensity increasing as more peripheral portions of the field are tested. The test results are reported as isopters, which are contour lines that are drawn by the operator to outline the areas where stimuli of various intensity can be perceived. Each isopter is color-coded to the size and intensity of the stimulus used.

The use of an operator introduces the potential for operator bias but has the advantage of allowing further exploration of certain areas of interest. Some patients might prefer Goldmann perimetry to automated testing because there is human interaction. However, Goldmann visual field testing is very much operator-dependent. Results may not be reproducible by a different operator, and it does not have the advantages of a computerized system for storage and comparison to normative data.

Indications for Goldmann visual field testing include:

- The patient cannot reliably perform an automated visual field. Some patients fall asleep or become disinterested if left unmonitored during automated testing. Goldmann perimetry cannot be performed without an operator, so constant patient monitoring is present;
- The full extent of the visual field needs to be tested. Goldmann visual field testing can be a reliable, reproducible test for the full field and can usually be performed in a short amount of time; and
- A visual field defect found on an automated visual field needs to be confirmed. In routine practice, the automated field is usually just repeated in these cases. However, if the results must be confirmed on the same day as the original automated field and the patient is tired, then Goldmann visual field testing may be appropriate. In addition, a new visual field defect found on automated testing that also manifests on Goldmann field testing is more likely a true visual field defect than an artifact of the test.

Automated Perimetry

In recent decades, there has been a move from manual to automated perimetry. Common brands of equipment include Humphrey, Octopus, and Dicon. Since kinetic perimetry is not easily automated, these machines generally perform threshold static perimetry.

In static perimetry, the stimulus size and intensity are varied, while presentation is limited to various fixed locations. First, a dim light is presented at a particular location. If the patient does not see the light, it is gradually made brighter until it can be seen. The minimum brightness required for the detection of a light stimulus is called the threshold sensitivity level of that location. This procedure is repeated at several other locations until the entire visual field is tested. The sensitivity found at each point can be presented in a matrix of numbers or as a gray-scale pattern with interpolation for the points that were not tested.

Result printouts usually include the patient’s name, identification number, and date of birth at the top, as well as the date and time of testing, visual acuity, pupil size, and eye tested. The printout also shows the test pattern and strategy used, test duration, stimulus size, and background brightness.
Professional Society Guidelines for Blepharoplasty

The American Society of Plastic Surgeons (ASPS)

The ASPS practice parameter for blepharoplasty and the ASPS recommended insurance coverage criteria for third-party payers state that blepharoplasty procedures are considered to be reconstructive when there is a visual field impairment. The ASPS considers blepharoplasty reconstructive when it is performed to correct visual impairment caused by ptosis or blepharochalasis or repair congenital abnormalities or defects caused by trauma or tumor-ablative surgery. If the patient is experiencing visual field impairment, formal visual field testing by an optometrist or ophthalmologist is recommended.

The ASPS states that blepharoplasty is considered cosmetic when it is performed to improve a patient’s appearance in the absence of any signs and/or symptoms of functional abnormalities. There have been no updates to the practice parameter or recommended insurance coverage criteria since 2007.

The American Academy of Ophthalmology (AAO)

According to the AAO, blepharoplasty procedures and repairs of blepharoptosis are considered functional or reconstructive surgery to correct any of the following:

- Visual impairment with near or far vision due to dermatochalasis, blepharochalasis, or blepharoptosis;
- Symptomatic redundant skin weighing down the upper lashes;
- Chronic, symptomatic dermatitis of pretarsal skin caused by redundant upper lid skin; and
- Prosthesis difficulties in an anophthalmic socket.

Documented patient complaints that justify functional surgery and are commonly found in patients with ptosis, pseudoptosis, or dermatochalasis include:

- Interference with vision or visual field;
- Difficulty reading due to upper eyelid drooping;
- Looking through the eyelashes or seeing the upper eyelid skin; and
- Chronic blepharitis.

Photographs should demonstrate one or more of the following:

- The upper eyelid margin approaches to within 2.5 mm (one-fourth of the diameter of the visible iris) of the corneal light reflex;
- The upper eyelid skin rests on the eyelashes;
- The upper eyelid indicates the presence of dermatitis;
- The upper eyelid position contributes to difficulty tolerating a prosthesis in an anophthalmic socket; and
- Visual fields recorded to demonstrate a minimum of 12 degrees or 30% loss of the upper field of vision with upper lid skin and/or upper margin in repose and elevated (by taping of the lid) to demonstrate potential correction by proposed procedure or procedures.
Health Plan Coverage

Medicare and other health plans generally view blepharoplasty as cosmetic. Many health plans require visual field testing, but these results alone do not provide enough evidence. Documentation must be thorough and include a detailed medical history, physical examination findings, and preoperative photographs. Most health plans do not cover blepharoplasty when performed solely for the purpose of improving or altering appearance or self-esteem or treating psychological symptomatology or psychosocial complaints related to appearance. In addition, blepharoplasty is specifically excluded under some plans.

For blepharoplasty to be considered medically necessary, many plans require specific criteria be met and well documented. For example, some plans consider blepharoplasty medically necessary for any of the following indications when the associated criteria are met:

- **Blepharochalasis, dermatochalasis or pseudoptosis with upper visual field loss of at least 20 degrees or 30% on visual field testing that is corrected when the upper lid margin is elevated by taping the eyelid and preoperative frontal photographs demonstrate both of the following:**
  - Light reflex in the cornea with the head perpendicular to the plane of the camera (that is, not tilted); and
  - Findings consistent with visual field loss documented on visual field testing;
- **Difficulty tolerating a prosthesis in an anophthalmic socket;**
- **Epiphora (that is, excessive tearing) due to ectropion and/or punctual eversion;**
- **Painful blepharospasm that is refractory to medical management (for example, botulinum toxin injections);**
- **Orbital sequelae of thyroid disease or nerve palsy (for example, exposure keratitis); and**
- **Upper eyelid defect caused by trauma, tumor, or ablative surgery resulting in a severe physical deformity or disfigurement that is causing functional visual impairment as confirmed by preoperative frontal photographs.**

The Role of External Independent Medical Review in Determining Medical Necessity for Blepharoplasty

The versatility of blepharoplasty for both cosmetic and medical conditions complicates the process of determining medical necessity for the procedure. Medical necessity must be supported by thorough clinical documentation, including detailed medical history, physical examination, visual field testing, and photographs. An independent medical review, which is normally used by healthcare payers, looks at whether a specific procedure was medically necessary.

The board-certified physician specialists who work with independent review organizations (IROs) keep up to date with the latest medical research literature and standard of care. These specialists allow healthcare plans to make sure that the requested procedures fall within the medical necessity requirements before approving a course of treatment. Independent medical review also avoids conflicts of interest, which can relate to economics, lack of specialists to review cases, or having the same doctor who denied a case review an appeal.

Conclusions

Blepharoplasty is probably best known for its cosmetic indication to create a more youthful, wide-eyed appearance, but the procedure is also used for numerous functional indications that require restoration of impaired vision. Although new technologies continue to alter and refine blepharoplasty techniques, the indications for blepharoplasty have remained unchanged for a number of years. By providing unbiased evaluation of medical need, external independent medical review facilitates effective use of blepharoplasty, which can result in both functional and cosmetic benefits.
Bibliography


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