Parameters of Care:
Clinical Practice Guidelines
for Oral and Maxillofacial Surgery
(AAOMS ParCare 2017)

FACIAL COSMETIC SURGERY

©Copyright 2017 by the American Association of Oral and Maxillofacial Surgeons.
This document may not be copied or reproduced
without the express written permission of the
American Association of Oral and Maxillofacial Surgeons.
All rights reserved.
J Oral Maxillofac Surg

THIS SECTION IS 1 OF 11 CLINICAL SECTIONS INCLUDED IN AAOMS
PARCARE 2017, WHICH IS VIEWED AS A LIVING DOCUMENT APPLICABLE
TO THE PRACTICE OF ORAL AND MAXILLOFACIAL SURGERY. IT WILL BE UPDATED
AT DESIGNATED INTERVALS TO REFLECT NEW INFORMATION CONCERNING THE
PRACTICE OF ORAL AND MAXILLOFACIAL SURGERY.
INTRODUCTION

Cosmetic maxillofacial surgery, or facial cosmetic surgery, encompasses procedures designed to enhance and improve the form and appearance of the maxillofacial region. Facial cosmetic surgery is utilized to correct the adverse effects of aging, adiposity, facial asymmetries and congenital and acquired facial deformities. Facial cosmetic surgery may be performed on both hard and soft tissues of the chin, maxillofacial contour, eyelids, nasal structures, soft tissue of face and neck, skin surface contour, hair, and ear.

Perceptions of facial deformities, like all aesthetics, are highly subjective. Therefore, this document has made no attempt to evaluate form and appearance objectively or to assess them quantitatively. Applicable treatment is selected after a comprehensive dialogue between the facial cosmetic surgeon and the patient in which both subjective and objective evaluations are used to determine the necessity for treatment and to estimate and discuss a reasonable risk-benefit ratio.

Although many different procedures are available for the management of patients with aesthetic concerns, this document may serve as a guide. It will be useful in identifying factors that affect risk and establishing parameters of therapy, indicators of favorable therapeutic outcomes, and known risks and complications associated with therapy for many maxillofacial cosmetic procedures.

Facial cosmetic surgery, as presented, is an integral and fundamental aspect of Oral and Maxillofacial Surgery parameters and is best addressed as a separate section. It is recognized that cosmetic surgery principles may be applied in the performance of other types of Oral and Maxillofacial Surgery. Fellows and members of the specialty are granted privileges to perform cosmetic maxillofacial surgery based on individual training, experience, and demonstrated current competence.

GENERAL CRITERIA, PARAMETERS, AND CONSIDERATIONS FOR FACIAL COSMETIC SURGERY

INFORMED CONSENT: All surgery must be preceded by the patient’s or legal guardian’s consent, unless an emergent situation dictates otherwise. These circumstances should be documented in the patient’s record. Informed consent is obtained after the patient or the legal guardian has been informed of the indications for the procedure(s), the goals of treatment, the known benefits and risks of the procedure(s), the factors that may affect the risk, the treatment options, and the favorable and unfavorable outcomes.

PERIOPERATIVE ANTIBIOTIC THERAPY: In certain circumstances, the use of antimicrobial rinses and systemic antibiotics may be indicated to minimize infections related to surgery. The decision to employ prophylactic perioperative antibiotics is at the discretion of the treating surgeon and should be based on the patient’s clinical condition as well as other comorbidities which may be present.

DEALING WITH NEUROLOGIC DEFECITS: Injuries to the terminal branches of the trigeminal nerve (eg, lingual, inferior alveolar, long buccal nerves), as well as the facial nerve, are known risks of oral and maxillofacial surgery. It should be noted that the presence of a pathologic craniomaxillofacial condition, dentoskeletal or craniofacial abnormality, or traumatic craniomaxillofacial injury may result in nerve injury prior to surgical management. In addition, the use of local anesthesia (eg, mandibular block) may increase the risk of nerve injury. Most nerve injuries resolve spontaneously, but some do not, and these may require consideration for non-surgical and/or surgical intervention. Microneurosurgical repair should be considered when the disability is of concern to the patient, and there is clinical evidence of moderate, severe, or complete neurosensory impairment of various areas of the orofacial region (eg, lips, chin, tongue); paresis or paralysis of facial muscles; loss, decreased, or abnormal taste sensation; or neuropathic pain of peripheral origin. Surgical repair should incorporate specialized microsurgical techniques (eg, operating magnification, nerve grafting), when indicated. Also see the Reconstructive Surgery chapter.
USE OF IMAGING MODALITIES: Imaging modalities may include panoramic radiograph, periapical and/or occlusal radiographs, maxillary and/or mandibular radiographs, computed tomography, cone beam computed tomography, positron emission tomography, positron emission tomography/computed tomography, and magnetic resonance imaging. In determining studies to be performed for imaging purposes, principles of ALARA (as low as reasonably achievable) should be followed.

DOCUMENTATION: The AAOMS ParCare 2017 includes documentation of objective findings, diagnoses, and patient management considerations. The ultimate judgment regarding the appropriateness of any specific procedure must be made by the individual surgeon in light of the circumstances presented by each patient. Understandably, there may be good clinical reasons to deviate from these parameters. When a surgeon chooses to deviate from an applicable parameter based on the circumstances of a particular patient, the facial cosmetic surgeon is well advised to note in the patient’s record the reason for the procedure followed. Moreover, it should be understood that adherence to the parameters does not guarantee a favorable outcome.

GENERAL THERAPEUTIC GOALS FOR FACIAL COSMETIC SURGERY:

A. Appropriate understanding by patient (family) of treatment options and acceptance of treatment plan
B. Appropriate understanding and acceptance by patient (family) of favorable outcomes and known risks and complications
C. Correction of functional deformities that affect appearance
D. Satisfaction of the patient’s desire for improved facial contour
E. Enhancement of the patient’s self-esteem and quality of life
F. Achievement of the desired change in maxillofacial bone and/or soft tissue facial contour, symmetry and/or form
G. Stable and predictable clinical results

GENERAL FACTORS AFFECTING RISK DURING FACIAL COSMETIC SURGERY:

A. Degree of patient and/or family understanding of the origin and natural course of the condition or disorder and therapeutic goals and acceptance of proposed treatment
B. Presence of coexisting major systemic disease (eg, disease that increases a patient’s American Society of Anesthesiologists classification to II, III, or IV), as detailed in the Patient Assessment chapter
C. Age of patient
D. Presence of abnormal neural, vascular, or muscular anatomy
E. Presence of infection
F. History of previous surgery in the same anatomical region
G. Presence of local or systemic conditions that may interfere with the normal healing process and subsequent tissue homeostasis (eg, previously irradiated tissue, diabetes mellitus, chronic renal disease, liver disease, blood disorder, steroid therapy, contraceptive medication, immunosuppression, malnutrition, bisphosphonate therapy)
H. Presence of behavioral, psychological, neurologic, and/or psychiatric disorders, including habits (eg, substance abuse, including tobacco and alcohol), seizure disorders, body dysmorphic disorder, self-mutilation that may affect surgery, healing, and/or response to therapy
I. Degree of patient’s and/or family’s cooperation and/or compliance
J. Regulatory and/or third-party decisions concerning access to care, indicated therapy, drugs, devices, and/or materials
K. History of exposure to harmful environmental influences (eg, radiation, sun)

GENERAL FAVORABLE THERAPEUTIC OUTCOMES FOR FACIAL COSMETIC SURGERY:

A. Patient’s satisfaction with clinical outcome
B. Enhancement of patient’s self-esteem and quality of life
C. Clinical evidence of healing
D. Imaging evidence of healing
E. Unchanged preoperative neurosensory and/or neuromotor function
F. Achievement of desired change in osseous and/or soft tissue contours
G. Imaging evidence of improvement in osseous and/or soft tissue contours
H. Patient (family) acceptance of procedure and understanding of outcomes

GENERAL KNOWN RISKS AND COMPLICATIONS FOR FACIAL COSMETIC SURGERY:

A. Unplanned admission after elective surgery
B. Unplanned intubation
C. Reintubation or tracheostomy after surgery
D. Use of parenteral drugs and/or fluids for longer than 72 hours after elective surgery
E. Failure to ambulate within a reasonable of time
F. Facial and/or trigeminal nerve dysfunction after surgery
G. Facial fracture during or after surgery
H. Unplanned Caldwell-Luc, bronchoscopy, or other exploratory procedures associated with surgery
I. Dental injury during surgery
J. Ocular injury during surgery
K. Repeat surgery within 6 months of original surgery
L. Revision Surgery
M. Core temperature of greater than 101°F 72 hours after elective surgery
N. Postsurgical radiograph indicating presence of foreign body
O. Unplanned transfusion(s) of blood or blood components during or after surgery
P. Readmission for complications or incomplete management of problems on previous hospitalization
Q. Respiratory and/or cardiac arrest
R. Expressions of patient dissatisfaction
S. Evidence of patient’s diminished self-esteem and quality of life
T. Infection of bone and soft tissue
U. Soft tissue necrosis
V. Formation of hypertrophic scar or keloid
W. Hematoma
X. Death

SPECIAL CONSIDERATIONS FOR PEDIATRIC FACIAL COSMETIC SURGERY

Facial cosmetic surgery procedures were once thought to be reserved only for the adult patient, but recent reports from public polls, media and cosmetic surgery literature demonstrate that more children (mostly adolescents) are seeking cosmetic procedures.

Generally, three areas of cosmetic surgical problems may present to the Oral and Maxillofacial Surgeon in a pediatric patient: skin health issues, septorhinoplasty, and the correction of congenital or acquired deformities of the craniomaxillofacial region.

Skin care and health have become a public health issue, even for the pediatric population. The sharp increase in skin malignant tumors due to long-term sun exposure has alarmed public health officials and practitioners nationwide. Skin cancer originates in early childhood, when the skin is most susceptible to damage. Parents should be instructed in skin protection (eg, coverage, sunscreens of Sun Protection Factor [SPF] 30 or higher with ultraviolet A [UV-A] and ultraviolet B [UV-B] protection, and vigilance) for their children. Children with Spitz nevi, large melanotic patches (hairy), multiple or variable nevi, or a family history of skin cancer should be referred for dermatologic surveillance.

Acne and acne scarring are also important issues in skin care for the adolescent patient. Chemical epidermal and dermal skin rejuvenation procedures are available, which intend to improve or control comedone formation, sebaceous inflammatory conditions, and some mild forms of cystic acne. Dermabrasion and soft tissue augmentation procedures with injection of materials for acne scarring should be reserved for late adolescence and early adulthood. Resurfacing procedures should be avoided in patients who are using isotretinoin medications for acne control.
Septorhinoplasty is usually delayed until adolescence. An obvious exception is the cleft patient for whom a nasal revision may be beneficial at any point with appropriate indications present. Nasal obstruction may be due to developmental factors, such as allergic rhinitis and other inflammatory conditions, trauma, and neoplastic disease. Inflammatory and allergic phenomena are common in children and are usually controlled through a combination of antihistamines, nasal topical steroids, decongestants, and antibiotics if sinusitis ensues. Corrective nasal surgery was previously deferred due to growth considerations but recent reports suggest that early reconstruction allows optimal nasal development, form, and function. Autogenous osseous, cartilaginous, and fascial grafts are generally indicated. Complaints of nasal obstruction after septorhinoplasty in the young patient may be due to the nasal cycle (alternating nasal air inflow), which is more active in children, or to exacerbated allergic and inflammatory conditions.

Other functional problem areas may demand consideration of early cosmetic-like procedures. Eyelid function is important to the normal development and health of the vision. Functional eyelid surgery and blepharoplasty techniques may be appropriately considered for the pediatric patient in these situations. Elective augmentation or reduction procedures in pediatric patients should be performed after growth has slowed or ceased. Patients with craniofacial anomalies where serial fat graft augmentations might improve the long-term outcome, are sometimes exceptions to awaiting completion of growth.

Oral and Maxillofacial Surgeons are well aware of the benefit of orthognathic procedures in achieving aesthetic balance and appearance in the face. This is easily expanded to malar and chin procedures, where osteotomies and autogenous grafts or alloplastic materials may be safely used.

**CHIN DEFORMITIES**

I. Indications for Therapy for Chin Deformities

*May include one or more of the following:*

A. Patient’s desire for change in chin contour and/or position
B. Clinical evidence of bone and/or soft tissue chin deformity
C. Imaging evidence of bone and/or soft tissue deformity

II. Specific Therapeutic Goals for Chin Deformities

The goal of therapy is to improve form and/or function. However, risk factors and potential complications may preclude complete restoration of form and/or function.

A. Presence of a general therapeutic goal, as listed in the section entitled General Criteria, Parameters, and Considerations for Facial Cosmetic Surgery
B. Satisfaction of the patient’s desire for change in chin contour and/or position
C. Enhancement of the patient’s self-esteem and quality of life
D. Achievement of the desired change in chin contour and/or position (bone and/or soft tissue)
E. Long-term fixation
F. Enhanced appearance resulting from surgical correction of functional deformities

III. Specific Factors Affecting Risk for Chin Deformities

Severity factors that increase risk and the potential for known complications:

A. Presence of a general factor affecting risk, as listed in the section entitled General Criteria, Parameters, and Considerations for Facial Cosmetic Surgery
B. Presence of abnormal dental anatomy
C. Presence of bone pathology
D. Inferior alveolar nerve position

IV. Indicated Therapeutic Parameters for Chin Deformities

The presurgical assessment includes, at a minimum, a history, a clinical evaluation, and imaging evaluation if indicated by clinical presentation. Also see the Patient Assessment chapter.
A. Mandibular osteotomy
B. Mandibular ostectomy
C. Mandibular osteoplasty
D. Autografts
E. Alloplasts
F. Combinations thereof
G. Instructions for posttreatment care and follow-up
H. Stabilization method (plates, screws, wires)

V. Outcome Assessment Indices for Chin Deformities

Indices are used by the specialty to assess aggregate outcomes of care. Outcomes are assessed through clinical evaluation and may include an imaging evaluation.

A. Favorable therapeutic outcomes
   1. General favorable therapeutic outcomes, as listed in the section entitled General Criteria, Parameters, and Considerations for Facial Cosmetic Surgery
B. Known risks and complications associated with therapy
   1. Presence of a general known risk and/or complication, as listed in the section entitled General Criteria, Parameters, and Considerations for Facial Cosmetic Surgery
   2. Failure to achieve desired change in chin contour and/or position
   3. Clinical and/or imaging evidence of malunion of osteotomy and/or ostectomy
   4. Clinical and/or imaging evidence of nonunion of osteotomy and/or ostectomy
   5. Infection of bone, soft tissue, and/or alloplast
   6. Hematoma formation
   7. Resorption of hard and/or soft tissues secondary to alloplast implant
   8. Injuries to dental structures
   9. Clinical failure of implant material (eg, autograft, allograft, alloplast)
   10. Anomalies associated with donor site
   11. Dysfunction (eg, lip incompetence)
   12. Disfigurement (eg, witches chin, asymmetric chin)
   13. Neurosensory damage to lip, chin, mandibular teeth, and gingiva
   14. Development or worsening of obstructive sleep apnea (level of the hypopharynx)

FACIAL CONTOUR DEFORMITIES

This section includes but is not limited to forehead deformities, supraorbital rim anomalies, malar and/or zygomatic arch hypo/hyperplasia, mandibular angular deformity, nasal dorsum, and nasal deformity.

I. Indications for Therapy for Facial Contour Deformities

May include one or more of the following:

A. Patient’s desire for change in contour
B. Need to improve patient’s self-esteem and quality of life
C. Clinical evidence of bone and/or soft tissue deformity
D. Imaging evidence of bone and/or soft tissue deformity
E. Correction of functional deformities that affect appearance

II. Specific Therapeutic Goals for Facial Contour Deformities

The goal of therapy is to restore form and/or function. However, risk factors and potential complications may preclude complete restoration of form and/or function.
A. Presence of a general therapeutic goal, as listed in the section entitled General Criteria, Parameters, and Considerations for Facial Cosmetic Surgery

III. Specific Factors Affecting Risk for Facial Contour Deformities

Severity factors that increase risk and the potential for known complications:

A. Presence of a general factor affecting risk, as listed in the section entitled General Criteria, Parameters, and Considerations for Facial Cosmetic Surgery

B. Presence of local or regional pathology

IV. Indicated Therapeutic Parameters for Facial Contour Deformities

The presurgical assessment includes, at a minimum, a history, a clinical evaluation, and imaging evaluation if indicated by clinical presentation. Also see the Patient Assessment chapter.

The following procedures for the management of maxillofacial contour deformities are not listed in order of preference:

A. Autograft and/or alloplast augmentation
B. Soft tissue reduction or augmentation
C. Osseous tissue reduction or augmentation
D. Osteotomy and/or ostectomy and/or osteoplasty
E. Injectable autografts, allografts, and/or synthetics
F. Instructions for posttreatment care and follow-up

V. Outcome Assessment Indices for Facial Contour Deformities

Indices are used by the specialty to assess aggregate outcomes of care. Outcomes are assessed through clinical evaluation and may include an imaging evaluation.

A. Favorable therapeutic outcomes
   1. General favorable therapeutic outcomes, as listed in the section entitled General Criteria, Parameters, and Considerations for Facial Cosmetic Surgery

B. Known risks and complications associated with therapy
   1. Presence of a general known risk and/or complication, as listed in the section entitled General Criteria, Parameters, and Considerations for Facial Cosmetic Surgery
   2. Failure to achieve desired change in facial contour
   3. Clinical and/or imaging evidence of malunion of osteotomy and/or ostectomy
   4. Clinical and/or imaging evidence of nonunion of osteotomy and/or ostectomy
   5. Infection of bone, soft tissue, and/or alloplast
   6. Resorption of hard and/or soft tissues secondary to alloplast implant
   7. Clinical failure of implant material (eg, autograft, allograft, alloplast)
   8. Anomalies associated with donor site
   9. Dysfunction (eg, ectropion, entropion, nasal airway dysfunction)
   10. Chronic sinusitis
   11. Neurosensory compromise in surgical area

EXTERNAL EAR DEFORMITIES

I. Indications for Therapy for External Ear Deformities

May include one or more of the following:

A. Patient’s desire for change in contour and appearance
B. Need to improve patient’s self-esteem and quality of life
C. Clinical evidence of cartilaginous or soft tissue deformity
D. Microtia, anotia
E. Imaging evidence of cartilaginous or soft tissue deformity
F. Correction of functional deformities that affect appearance

II. Specific Therapeutic Goals for External Ear Deformities

The goal of therapy is to restore form and/or function. However, risk factors and potential complications may preclude complete restoration of form and/or function.

A. Presence of a general therapeutic goal, as listed in the section entitled General Criteria, Parameters, and Considerations for Facial Cosmetic Surgery
B. Achievement of desired change in cartilaginous or soft tissue contour and appearance
C. Restored normal auricular anatomical relationships

III. Specific Factors Affecting Risk for External Ear Deformities

Severity factors that increase risk and the potential for known complications:

A. Presence of a general factor affecting risk, as listed in the section entitled General Criteria, Parameters, and Considerations for Facial Cosmetic Surgery
B. Craniofacial growth status
C. Presence of local or regional pathology
D. History of exposure to harmful environmental influences (eg, radiation, sun)
E. History of external or middle ear disease

IV. Indicated Therapeutic Parameters for External Ear Deformities

The presurgical assessment includes, at a minimum, a history, a clinical evaluation, and imaging evaluation if indicated by clinical presentation. Also see the Patient Assessment chapter.

A. Otoplasty
B. Instructions for posttreatment care and follow-up
C. Ear replacement; osseous implants with prosthesis vs autogenous cartilage vs alloplastic materials (Also see the Dental and Craniomaxillofacial Implant Surgery chapter)

V. Outcome Assessment Indices for External Ear Deformities

Indices are used by the specialty to assess aggregate outcomes of care. Outcomes are assessed through clinical evaluation and may include an imaging evaluation.

A. Favorable therapeutic outcomes
1. General favorable therapeutic outcomes, as listed in the section entitled General Criteria, Parameters, and Considerations for Facial Cosmetic Surgery
B. Known risks and complications associated with therapy
1. Presence of a general known risk and/or complication, as listed in the section entitled General Criteria, Parameters, and Considerations for Facial Cosmetic Surgery
2. Failure to achieve desired change in contour and appearance
3. Infection of bone, cartilage, soft tissue, graft, and/or alloplastic materials
4. Anomalies associated with donor site
5. Resorption of hard and/or soft tissues
6. Hypertrophic scar or keloid
7. Dysfunction (eg, auditory canal stenosis)
8. Failure of osseous implants

FACIAL LIPOMATOSIS
I. Indications for Therapy for Facial Lipomatosis

May include one or more of the following:

A. Patient’s desire for change in contour
B. Need to enhance patient’s self-esteem and quality of life
C. Clinical evidence of soft maxillofacial tissue deformity
D. Imaging evidence of soft tissue maxillofacial deformity
E. Correction of functional deformities that affect appearance

II. Specific Therapeutic Goals for Facial Lipomatosis

The goal of therapy is to restore form and/or function. However, risk factors and potential complications may preclude complete restoration of form and/or function.

A. Presence of a general therapeutic goal, as listed in the section entitled General Criteria, Parameters, and Considerations for Facial Cosmetic Surgery

III. Specific Factors Affecting Risk for Facial Lipomatosis

Severity factors that increase risk and the potential for known complications:

A. Presence of a general factor affecting risk, as listed in the section entitled General Criteria, Parameters, and Considerations for Facial Cosmetic Surgery
B. Presence of local or regional pathology
C. History of exposure to harmful environmental influences (eg, radiation, sun)

IV. Indicated Therapeutic Parameters for Facial Lipomatosis

The presurgical assessment includes, at a minimum, a history, a clinical evaluation, and imaging evaluation if indicated by clinical presentation. Also see the Patient Assessment chapter.

The following procedures for the management of maxillofacial adiposity are not listed in order of preference:

A. Closed or open suction-assisted lipectomy
B. Excisional lipectomy
C. Cryolipolysis, thermolypolysis, or chemolypolysis
D. Instructions for posttreatment care and follow-up

V. Outcome Assessment Indices for Facial Lipomatosis

Indices are used by the specialty to assess aggregate outcomes of care. Outcomes are assessed through clinical evaluation and may include an imaging evaluation.

A. Favorable therapeutic outcomes
   1. General favorable therapeutic outcomes, as listed in the section entitled General Criteria, Parameters, and Considerations for Facial Cosmetic Surgery
B. Known risks and complications associated with therapy
   1. Presence of a general known risk and/or complication, as listed in the section entitled General Criteria, Parameters, and Considerations for Facial Cosmetic Surgery
   2. Failure to achieve desired change in maxillofacial contour
   3. Formation of hypertrophic scar or keloid

EYELID DEFORMITIES

I. Indications for Therapy for Eyelid Deformities
May include one or more of the following:

A. Patient’s desire for change in periorbital contour
B. A need to enhance patient’s self-esteem and quality of life
C. Clinical evidence of undesirable periorbital soft tissue contour (e.g., dermatochalasis, blepharochalasis, herniated orbital fat)
D. Imaging evidence of periorbital deformity
E. Correction of functional deformities that affect appearance (e.g., ectropion)
F. Peripheral visual impairment secondary to soft tissue hooding
G. Ptosis of eyelid
H. Lower eyelid rhytids

II. Specific Therapeutic Goals for Eyelid Deformities

The goal of therapy is to restore or enhance form and function. However, risk factors and potential complications may preclude complete restoration of form and/or function.

A. Presence of a general therapeutic goal, as listed in the section entitled General Criteria, Parameters, and Considerations for Facial Cosmetic Surgery
B. Achievement of patient’s desire for change in periorbital contour (e.g., reduction of rhytids and skin/fat redundancy)
C. Improved peripheral vision
D. Elimination of ptosis
E. Elimination of ectropion

III. Specific Factors Affecting Risk for Eyelid Deformities

Factors that increase risk and the potential for complications:

A. Presence of a general factor affecting risk, as listed in the section entitled General Criteria, Parameters, and Considerations for Facial Cosmetic Surgery
B. Presence of local or regional pathology
C. History of exposure to harmful environmental influences (e.g., radiation, sun)
D. Medication history (e.g., steroids, isotretinoin)
E. Skin tone and texture (Fitzpatrick or Glogau classification)

IV. Indicated Therapeutic Parameters for Eyelid Deformities

The presurgical assessment includes, at a minimum, a history, a clinical evaluation, and imaging evaluation if indicated by clinical presentation. Also see the Patient Assessment chapter.

The following procedures are not listed in order of preference:

A. Blepharoplasty
B. Brow lift
C. Adjunctive procedures
D. Alteration of the periorbital osseous contour
E. Instructions for posttreatment care and follow-up
F. Laser resurfacing of rhytids

V. Outcome Assessment Indices for Eyelid Deformities

Indices are used by the specialty to assess aggregate outcomes of care. Outcomes are assessed through clinical evaluation and may include an imaging evaluation.

A. Favorable therapeutic outcomes
   1. General favorable therapeutic outcomes, as listed in the section entitled General Criteria, Parameters, and Considerations for Facial Cosmetic Surgery
   2. Improved peripheral vision
3. Corrected ptosis
4. Reduced periorbital rhytids
5. Improved periorbital esthetics

B. Known risks and complications associated with therapy
   1. Presence of a general known risk and/or complication, as listed in the section entitled General Criteria, Parameters, and Considerations for Facial Cosmetic Surgery
   2. Failure to achieve desired change in periorbital osseous and/or soft tissue contour
   3. Neurosensory and/or neuromotor abnormality
   4. Skin necrosis, unanticipated hypertrophic or undesirable scar, excessive scleral show, ectropion, epiphora, blindness, ptosis, and xerophthalmia

NASAL DEFORMITIES

I. Indications for Therapy for Nasal Deformities

May include one or more of the following:

A. Patient’s desire for change in nasal contour
B. Need to enhance patient’s self-esteem and quality of life
C. Clinical evidence of nasal deformity (eg, bone, cartilage, and/or soft tissue)
D. Imaging evidence of nasal deformity (eg, bone, cartilage, and/or soft tissue)
E. Correction of functional deformities

II. Specific Therapeutic Goals for Nasal Deformities

The goal of therapy is to restore or enhance form and function. However, risk factors and potential complications may preclude complete restoration of form and/or function.

A. Presence of a general therapeutic goal, as listed in the section entitled General Criteria, Parameters, and Considerations for Facial Cosmetic Surgery
B. Satisfaction of patient’s desire for change in nasal contour
C. Achievement of desired change in nasal contour

III. Specific Factors Affecting Risk for Nasal Deformities

Severity factors that increase risk and the potential for known complications:

A. Presence of a general factor affecting risk, as listed in the section entitled General Criteria, Parameters, and Considerations for Facial Cosmetic Surgery
B. Presence of abnormal bone, cartilage, and/or soft tissue (eg, deviated septum, turbinate, preexisting septal or palatal perforations)
C. History of previous nasal trauma or surgery
D. Presence of pathology (eg, nasal polyps, sinusitis)
E. History of exposure to harmful environmental influences (eg, radiation, sun)

IV. Indicated Therapeutic Parameters for Nasal Deformities

The presurgical assessment includes, at a minimum, a history, a clinical evaluation, and imaging evaluation if indicated by clinical presentation. Also see the Patient Assessment chapter.

The following procedures for the management of nasal deformities are not listed in order of preference:

A. Open rhinoplasty
B. Closed rhinoplasty
C. Septoplasty
D. Inferior turbinate surgery
E. Instructions for posttreatment care and follow-up

V. Outcome Assessment Indices for Nasal Deformities

Indices are used by the specialty to assess aggregate outcomes of care. Outcomes are assessed through clinical evaluation and may include an imaging evaluation.

A. Favorable therapeutic outcomes
   1. General favorable therapeutic outcomes, as listed in the section entitled General Criteria, Parameters, and Considerations for Facial Cosmetic Surgery
   2. Uncompromised nasal airway function

B. Known risks and complications associated with therapy
   1. Presence of a general known risk and/or complication, as listed in the section entitled General Criteria, Parameters, and Considerations for Facial Cosmetic Surgery
   2. Failure to achieve desired change in nasal contour (eg, “polly beak” deformity)
   3. Malunion of osteotomy
   4. Nonunion of osteotomy
   5. Presence of neurosensory and/or neuromotor abnormality
   6. Excessive soft tissue scarring (eg, keloid)
   7. Infection involving bone, cartilage, soft tissue, and/or grafts
   8. Resorption of hard and/or soft tissues secondary to alloplast implant
   9. Need for secondary procedures
   10. Clinical failure of autograft, allograft, or alloplast material
   11. Donor site complications
   12. Dysfunction (eg, nasal dyspnea, synechia)
   13. Sinusitis

CERVICOFAcial SOFT TISSUE REDUNDANCY

I. Indications for Therapy for Cervicofacial Soft Tissue Redundancy

May include one or more of the following:

A. Patient's desire for change in contour of face and/or neck
B. Need to enhance the patient's self-esteem and quality of life
C. Clinical evidence of soft tissue redundancy
D. Imaging evidence of soft tissue redundancy
E. Correction of functional deformities that affect appearance

II. Specific Therapeutic Goals for Cervicofacial Soft Tissue Redundancy

The goal of therapy is to restore or enhance form and function. However, risk factors and potential complications may preclude complete restoration of form and/or function.

A. Presence of a general therapeutic goal, as listed in the section entitled General Criteria, Parameters, and Considerations for Facial Cosmetic Surgery
B. Satisfaction of patient’s desire for change in cervicofacial contour
C. Achievement of desired change in cervicofacial contour

III. Specific Factors Affecting Risk for Cervicofacial Soft Tissue Redundancy

Factors that increase risk and the potential for known complications:

A. Presence of a general factor affecting risk, as listed in the section entitled General Criteria, Parameters, and Considerations for Facial Cosmetic Surgery
B. Presence of pathology
C. History of exposure to harmful environmental influences (e.g., radiation, sun)

IV. Indicated Therapeutic Parameters for Cervicofacial Soft Tissue Redundancy

The presurgical assessment includes, at a minimum, a history, a clinical evaluation, and imaging evaluation if indicated by clinical presentation. Also see the Patient Assessment chapter.

A. Rhytidectomy: the following procedures may or may not include specific modification of the subcutaneous musculoaponeurotic system
   1. Short flap
   2. Long flap
   3. Deep plane
   4. Composite
   5. Endoscopic
   6. Combinations thereof

B. Instructions for post-treatment care and follow-up

V. Outcome Assessment Indices for Cervicofacial Soft Tissue Redundancy

Indices are used by the specialty to assess aggregate outcomes of care. Outcomes are assessed through clinical evaluation and may include an imaging evaluation.

A. Favorable therapeutic outcomes
   1. General favorable therapeutic outcomes, as listed in the section entitled General Criteria, Parameters, and Considerations for Facial Cosmetic Surgery

B. Known risks and complications associated with therapy
   1. Presence of a general known risk and/or complication, as listed in the section entitled General Criteria, Parameters, and Considerations for Facial Cosmetic Surgery
   2. Failure to achieve desired change in cervicofacial contour
   3. Formation of hypertrophic scar or keloid
   4. Alopecia
   5. Loss of temporal hair tuft
   6. Hematoma
   7. Facial nerve palsy
   8. Pixy ear deformity
   9. Hairline alteration
   10. Beard pattern changes
   11. Skin necrosis

FOREHEAD AND BROW DEFORMITIES

I. Indications for Therapy for Forehead and Brow Deformities

May include one or more of the following:

A. Patient’s desire for change in appearance or position of brow and forehead
B. Need to enhance the patient’s self-esteem and quality of life
C. Clinical evidence of forehead rhytids or brow ptosis
D. Imaging evidence of forehead rhytids or brow ptosis
E. Evidence of supraorbital rim hyper/hypoplasia
F. Correction of functional deformities that affect appearance

II. Specific Therapeutic Goals for Forehead and Brow Deformities

The goal of therapy is to restore form and/or function. However, risk factors and potential complications may preclude complete restoration of form and/or function.
A. Presence of a general therapeutic goal, as listed in the section entitled General Criteria, Parameters, and Considerations for Facial Cosmetic Surgery
B. Satisfaction of patient’s desire for change in forehead rhytids and brow position
C. Achievement of desired change in forehead rhytids and brow position
D. Achievement of desired supraorbital rim contour

III. Specific Factors Affecting Risk for Forehead and Brow Deformities

Severity factors that increase risk and the potential for known complications:
A. Presence of a general factor affecting risk, as listed in the section entitled General Criteria, Parameters, and Considerations for Facial Cosmetic Surgery
B. Presence of pathology
C. History of exposure to harmful environmental influences (eg, radiation, sun)
D. Position of hairline
E. Follicular density of brow hair
F. Patient’s sex

IV. Indicated Therapeutic Parameters for Forehead and Brow Deformities

The presurgical assessment includes, at a minimum, a history, a clinical evaluation, and imaging evaluation if indicated by clinical presentation. Also see the Patient Assessment chapter.

The following procedures for the management of forehead and brow deformities are not listed in order of preference
A. Direct
B. Internal browpexy/browplasty
C. Midforehead
D. Trichophyllic
E. Hairline
F. Coronal
G. Endoscopic
H. Subperiosteal, subgaleal, or subcutaneous
I. Transblepharoplasty browpexy
J. Botulinum toxin therapy
K. Instructions for posttreatment care and follow-up

V. Outcome Assessment Indices for Forehead and Brow Deformities

Indices are used by the specialty to assess aggregate outcomes of care. Outcomes are assessed through clinical evaluation and may include an imaging evaluation.

A. Favorable therapeutic outcomes
1. General favorable therapeutic outcomes, as listed in the section entitled General Criteria, Parameters, and Considerations for Facial Cosmetic Surgery
2. Achievement of desired change in forehead rhytids and brow position

B. Known risks and complications associated with therapy
1. Presence of a general known risk and/or complication, as listed in the section entitled General Criteria, Parameters, and Considerations for Facial Cosmetic Surgery
2. Failure to achieve desired change in forehead rhytids and brow position
3. Alopecia
4. Neurosensory and/or neuromotor compromise
5. Anomalies associated with donor site
6. Alteration in position of hairline
7. Hypertrophic and keloid scarring
CUTANEOUS TISSUE DEFORMITIES

I. Indications for Therapy for Cutaneous Tissue Deformities

May include one or more of the following:

A. Patient’s desire for change in surface contour and/or pigmentation
B. A need to enhance patient’s self-esteem and quality of life
C. Clinical evidence of surface deformity (eg, cicatrix, rhytids, keloid, pigmentation)
D. Imaging evidence of surface deformity
E. Correction of functional deformity that affects appearance

II. Specific Therapeutic Goals for Cutaneous Tissue Deformities

The goal of therapy is to restore form and/or function. However, risk factors and potential complications may preclude complete restoration of form and/or function.

A. Presence of a general therapeutic goal, as listed in the section entitled General Criteria, Parameters, and Considerations for Facial Cosmetic Surgery
B. Satisfaction of patient’s desire for improved surface contour and/or pigmentation
C. Achievement of desired change in surface contour and/or pigmentation

III. Specific Factors Affecting Risk for Cutaneous Tissue Deformities

Severity factors that increase risk and the potential for known complications:

A. Presence of a general factor affecting risk, as listed in the section entitled General Criteria, Parameters, and Considerations for Facial Cosmetic Surgery
B. Skin tone and texture (eg, Fitzpatrick skin classification)
C. History of abnormal scarring
D. Medications (eg, steroids, isotretinoin, oral contraceptives)
E. Presence of pigmentary disorder
F. History of herpes simplex type 1 infection

IV. Indicated Therapeutic Parameters for Cutaneous Tissue Deformities

The presurgical assessment includes, at a minimum, a history, a clinical evaluation, and imaging evaluation if indicated by clinical presentation. Also see the Patient Assessment chapter.

The following procedures for the management of cutaneous tissue deformities are not listed in order of preference:

A. Dermabrasion
B. Chemical peel
C. Surgical excision of benign lesions (including scar revision)
D. Injectable materials
E. Topical retinoic acid
F. Topical lightening agents (eg, hydroquinone)
G. Topical exfoliants
H. Laser destruction and/or resurfacing
I. Cosmetic neuromuscular blocking agents
J. Radiofrequency skin tightening
K. Ultrasound skin tightening
L. Microneedling
M. Instructions for posttreatment care and follow-up

V. Outcome Assessment Indices for Cutaneous Tissue Deformities
Indices are used by the specialty to assess aggregate outcomes of care. Outcomes are assessed through clinical evaluation and may include an imaging evaluation.

A. Favorable therapeutic outcomes
   1. General favorable therapeutic outcomes, as listed in the section entitled General Criteria, Parameters, and Considerations for Facial Cosmetic Surgery
   2. Achievement of desired change in surface contour and/or pigmentation

B. Known risks and complications associated with therapy
   1. Presence of a general known risk and/or complication, as listed in the section entitled General Criteria, Parameters, and Considerations for Facial Cosmetic Surgery
   2. Failure to achieve desired change in surface contour and/or pigmentation
   3. Hypopigmentation or hyperpigmentation
   4. Clinical failure of injectable materials
   5. Prolonged erythema secondary to skin resurfacing procedures
   6. Allergic reaction to filler material
   7. Hypertrophic or keloid scarring
   8. Infection

HAIR PATTERN DEFORMITIES

I. Indications for Therapy for Hair Pattern Deformities
   May include one or more of the following:
   A. Patient’s desire to restore lost hair
   B. Need to enhance patient’s self-esteem and quality of life
   C. Postrumatic hair pattern deformity (eg, laceration, avulsion, burn)
   D. Male pattern facial hair deformity associated with a congenital deformity (eg, cleft lip)
   E. Congenital alopecia
   F. Alopecia of unknown origin
   G. Postsurgical alopecia and/or scarring
   H. Premature aging evidenced by premature hair loss

II. Specific Therapeutic Goals for Hair Pattern Deformities
    The goal of therapy is to restore form and/or function. However, risk factors and potential complications may preclude complete restoration of form and/or function.
    A. Presence of a general therapeutic goal, as listed in the section entitled General Criteria, Parameters, and Considerations for Facial Cosmetic Surgery
    B. Satisfaction of patient’s desire to improve hair pattern
    C. Achievement of desired change in hair pattern
    D. Restoration of youthful appearance and facial balance by restoring hairlines to within acceptable guidelines

III. Specific Factors Affecting Risk for Hair Pattern Deformities
    Severity factors that increase risk and the potential for known complications:
    A. Presence of a general factor affecting risk, as listed in the section entitled General Criteria, Parameters, and Considerations for Facial Cosmetic Surgery
    B. Quality and quantity of donor site
    C. Density of hair at donor site
    D. Classification of male pattern baldness for scalp deformities
    E. Magnitude and location of other facial hair loss (eg, eyebrow, lip)
IV. Indicated Therapeutic Parameters for Hair Pattern Deformities

The presurgical assessment includes, at a minimum, a history, a clinical evaluation, and imaging evaluation if indicated by clinical presentation. Also see the Patient Assessment chapter.

The following procedures for the management of hair pattern deformities are not listed in order of preference:

A. Micrografts
B. Minigrafts
C. Cylinder grafts or punched grafts
D. Free tissue grafts (eg, donor strips)
E. Rotational flaps
F. Follicular unit extraction
G. Robotic hair restoration

V. Outcome Assessment Indices for Hair Pattern Deformities

Indices are used by the specialty to assess aggregate outcomes of care. Outcomes are assessed through clinical evaluation and may include an imaging evaluation.

A. Favorable therapeutic outcomes
   1. General favorable therapeutic outcomes, as listed in the section entitled General Criteria, Parameters, and Considerations for Facial Cosmetic Surgery
   2. Achievement of desired change in hair pattern deformity

B. Known risks and complications associated with therapy
   1. Presence of a general known risk and/or complication, as listed in the section entitled General Criteria, Parameters, and Considerations for Facial Cosmetic Surgery
   2. Hemorrhage
   3. Edema
   4. Infection
   5. Surface contour irregularities
   6. Hypertrophic scars
   7. Loss of grafts
   8. Continued hair loss

SELECTED REFERENCES – FACIAL COSMETIC SURGERY

This list of selected references is intended only to acknowledge some of the sources of information drawn on in the preparation of this document. Citation of the reference material is not meant to imply endorsement of any statement contained in the reference material. The list is not an exhaustive compilation of information on the topic. Readers should consult other sources to obtain a complete bibliography.

SPECIAL CONSIDERATIONS FOR PEDIATRIC FACIAL COSMETIC SURGERY


CHIN DEFORMITIES


FACIAL CONTOUR DEFORMITIES

16:35, 2000
1993
1995
Otolaryngol Head Neck Surg 1989;115:96
70. Sarver DM, Johnston MW: Orthognathic surgery and aesthetics: planning treatment to achieve functional
71. Sarver DM, Matukas VJ, Weissman SM, et al: Incorporation of facial plastic surgery in the planning and
72. Satoh K, Watanabe K: Correction of prominent zygomata by tripod osteotomy of the malar bone. Ann Plast
Surg 31:462, 1993
73. Terino EO, Edwards MC: Alloplastic contouring for suborbital, maxillary, zygomatic deficiencies. Facial

EXTERNAL EAR DEFORMITIES

75. Converse SM, Wood-Smith D: Corrective and reconstructive surgery in deformities of the auricle. In:
Saunders Co, 1973, pp. 500-527
Plast Reconstr Surg 123:889, 2009
80. Mustarde JC: Cosmetic surgery II. The correction of prominent ears with buried mattress sutures. Mod
Trends Plast Surg 16:233, 1964
82. Mustarde JC: The treatment of prominent ears by buried mattress sutures: a ten-year survey. Plast Reconstr
Surg 39:382, 1967
2008
Reconstr Surg 91:1198, 1993
86. Sirmo R, Jones NS: Head bandaging following otoplasty—how we do it. J Laryngol Otol 108:410, 1994


**FACIAL LIPOMATOSIS**


102. Kilmer SL: Prototype CoolCup cryolipolysis applicator with over 40% reduced treatment time demonstrates equivalent safety and efficacy with greater patient preference. Lasers Surg Med Epub ahead of print, 2016


EYELID DEFORMITIES


NASCAL DEFORMITIES


144. Constantian MB: The boxy nasal tip, the ball tip, and alar cartilage malposition: variations on a theme--a study in 200 consecutive primary and secondary rhinoplasty patients. Plast Reconstr Surg 116:268, 2005

CERVICOFACIAL SOFT TISSUE REDUNDANCY

FOREHEAD AND BROW DEFORMITIES


226. Meldington F, Khooshabeh R: Brow ptosis: are we measuring the right thing? The impact of surgery and the correlation of objective and subjective measures with postoperative improvement in quality-of-life. Eye (Lond) 26:997, 2012


CUTANEOUS TISSUE DEFORMITIES


<table>
<thead>
<tr>
<th>Page</th>
<th>Reference</th>
</tr>
</thead>
</table>

HAIR PATTERN DEFORMITIES


