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Thirty Years of Deep Plane Facelifts: Characterizing Outcomes and Longevity

Marc Levin, MD, FRCSC* and Andrew Frankel, MD, FACS

Abstract

Background: Literature regarding the longevity of deep plane facelifts is limited.

Objective: To measure the time duration between initial deep plane facelifts and revision facelifts among patients treated in a single-surgeons practice over a 30-year period.

Methods: Chart review from a surgeon's 30-year experience performing revision facelifts. Patient demographics and motivation, timing for primary/revision facelifts, and adjunctive procedures were collected. Patients were stratified into groups ≤53 and >53 based on statistical assessment. *t*-Tests were used.

Results: A total of 93 revision facelifts on patients who underwent deep plane lifts were included. Seventy-seven patients had a second facelift, 14 had a third, and 2 had a fourth. Sex (female 73/77, 94.8%; male 4/77, 5.2%), age at time of first facelift (mean = 53.5 ± 6.85), second facelift (mean = 64.5 ± 6.5). Adjunctive procedures: Upper/lower blepharoplasty (18.18%, 7.8%), brow lift (15.5%), and rhinoplasty (7.8%). The mean interval between the primary deep plane facelift and the secondary lift was 10.9 years ± 5.1 Patients who underwent primary facelift surgery at ≤53 years of age returned for revision facelift after 12.4 years ± 5.6; patients >53 returned 9.3 years later ± 3.9 ($p = 0.004$).

Conclusion: Patients returning for revision surgery following deep plane facelifts do so after an average of 10.9 years. Patients who are younger at the time of their initial facelift may have greater longevity.

Introduction

The deep plane facelift technique was originally described by Hamra in 1990 as an adaptation of Skoog's initial subsuperficial musculoaponeurotic system (SMAS) facelift description.[1–3] Despite initial skepticism, it's advantages resulted in general acceptance and broad utilization among surgeons worldwide.[4] After recently gaining attention in the media,[5] its popularity soared to where prospective patients are now routinely requesting the deep plane facelift at their initial surgical consultation.[6] A search of #deepplanefacelift on Instagram yields over 150,000 posts. While there has been much published describing the deep plane facelift technique and short-term outcomes,[4,7–9] there have been limited available data regarding objective and long-term outcomes. This is curious because one of the deep plane's widely accepted virtues is that it allows for prolonged results.[8–12] In contrast, the literature does include articles aiming to quantify the longevity of SMAS flap, SMAS stacking, SMASectomy, SMAS plication, MACS Lift, composite, and subperiosteal facelifts.[13–18]

A meta-analysis on deep plane facelifts noted an average follow-up time of only 37 months.[19] Additionally, this article failed to quantify what occurred at follow-up, the reasons for those visits, whether or not patients received repeat surgery, and what the long-term outcomes were. Another systematic review and meta-analysis comparing deep plane facelifts with SMAS lifts evaluated long-term satisfaction for patients with "long-term" defined as greater than only 1 year since surgery.[4] There is a paucity of literature regarding quantification of long-term outcomes for deep plane facelifts.

As such, the objective of this study was to measure the time duration between initial deep plane facelifts and revision facelifts among patients treated in a single-surgeon practice over a 30-year period. The data herein will inform surgeons who wish to provide their patients with an evidence-based understanding of the longevity of deep plane facelifts.

Lasky Clinic Surgical Center, Beverly Hills, California, USA.

*Address correspondence to: *Marc Levin, MD, FRCSC, Lasky Clinic Surgical Center, 201 S Lasky Dr., Beverly Hills, CA 90212, USA,* Email: doctormarclevin@gmail.com

KEY POINTS

Question: Among patients who have a revision facelift, what is the typical period of time that they present after their initial deep plane facelift, which may reflect the duration of effect?

Findings: In this study encompassing 30 years of patients, they presented on average around 11 years after their initial deep plane facelift for revision.

Meaning: The common patient question as to how long they can expect their facelift to "last" is challenging to answer, yet findings in this study suggest that around 11 years is a reasonable answer.

Methods

A retrospective chart review was completed in accordance with the Declaration of Helsinki. All patients came from the senior author's (A.S.F.) facial plastic surgery practice at Lasky Clinic in Beverly Hills, CA, where he has employed the deep plane technique for the majority of his facelifts from 1995 to 2025.[20] Charts reviewed included all patients who underwent revision facelifts and for whom there were available medical records and photographs ranging from the period before their initial facelift to before their most recent aging face procedure. Patients included in this study were required to have undergone a primary deep plane facelift with or without other procedures (upper/lower blepharoplasty, brow lift, rhinoplasty, etc.). Male and female patients were included with no patient comorbidity exclusion criteria. Patients who received touch-up/adjunctive procedures, lasers, or skin-tightening procedures on their face/neck after their primary facelifts were excluded.

Data collected includes patient demographics of gender and age at the time of initial surgery and revision surgery. Data relevant to short-term outcomes, motivation to return for revision surgery, the technique used for revision surgery, and complications were evaluated. Statistical analysis was completed using Microsoft Excel and open-access statistical software. Statistical significance was defined as a p value of <0.05.

Deep plane facelift surgical technique

The main tenants of the surgical technique are similar to those described by Hamra via Skoog.[1–3] During the senior author's facial plastic surgery fellowship under Kamer in 1994, the technique was further refined and adopted.[20,21] The following are the salient aspects of the deep plane technique:

All cases are performed under IV Propofol sedation without intubation with the addition of local anesthetic. A submental incision is employed for skin undermining, conservative superficial lipectomy, platysmaplasty, and subplatysmal work (fat, muscle, or partial submandibular gland resection) as indicated. Platysmal plication uses interrupted 3-0 vicryl inverting mattress sutures if deep space contouring had been performed, or simple buried sutures if not. A short horizontal releasing incision is made below the hyoid to enhance the cervicomental angle.

Facelift incisions are placed in the retrotragal position and extended into the temporal and postauricular scalp in a curvilinear fashion. Subcutaneous dissection connects the postauricular and cervical areas. In front of the ear and above the level of the mandibular border, skin is undermined only enough to allow for subsequent excision once the composite flap is advanced (usually 4–6 cm from the incision). The superior aspect of the incision above the helix root is elevated beneath the superficial temporoparietal fascia on the deep temporal fascia surface to permit for added exposure and superior redraping without hairline distortion when redistributing mobilized skin and SMAS.

The deep plane is entered just lateral to the area of limited delamination. An incision is made along the posterior edge of the platysma, beginning just posterosuperior to the mandibular angle and extending obliquely upward toward the preauricular region, ending approximately at the level of the zygomatic arch. Dissection in the sub-platysmal/sub-SMAS plane is carried forward to approximately 4 cm below the mandibular angle inferiorly, where the facial artery crosses the mandible anteriorly, and superiorly beyond the zygomaticus muscle after first releasing the osteocutaneous ligaments at the malar eminence to facilitate flap mobility. At all times, the parotidomasseteric fascia is preserved as the deep limit of dissection, and dissection rarely ventures deeply into the buccal space, except to occasionally remove or reposition buccal fat. It should be noted that some of the elevated SMAS is what Jacono refers to as the "fixed SMAS," as the senior author prefers to maintain the greatest extent of the composite flap as possible and minimize subcutaneous dead space.[7] Prior to elevating and securing the composite flap, soft tissue is resected from the pre-tragal area extending inferiorly to the mastoid process to allow for smooth contour. The composite flap is fixed to the lateral zygomatic arch periosteum, pretragal soft tissue, Lore's fascia, and mastoid fascia. No permanent sutures are used. Once the deep plane flap is suspended, redundant SMAS and platysmal tissues are excised, the skin flaps are redraped, trimmed, and closed; leaving minimal subcutaneous dead space. A compressive, circumferential dressing is applied without drains.

Results

All patients included in this study were from the senior author's (A.S.F.) private practice in Beverly Hills, CA,

from 1995 to 2025. During this time the senior author performed 956 deep plane facelifts. Of these, 152 patients underwent a revision facelift by the senior author. Photographs and charts were available for 93 revision facelifts that had initially undergone a deep plane facelift and met inclusion criteria (Representative patients are shown in Figs. 1, 2 and 3). Seventy-seven of these patients had 1 revision facelift, 14 had a third facelift, and 2 had a fourth facelift (Table 1). Patients were 94.8% female and 5.2% male. The mean age of included patients at the time of their initial facelift was 53.5 years ± 6.85. The mean age of patients at the time of their second and third facelift was 64.5 years ± 6.5 and 68.5 years, respectively. Patients who underwent a third facelift originally presented for their first facelift at an average age of 53.8 years. 4% of the patients were smokers.

The earliest year of initial deep plane facelift included in the study was 1995, and the latest year of revision facelift was 2025. The mean time between the initial deep plane facelift and the first revision surgery was 10.9 years (3–30-year range, ± 5.1). The average time between the second and third facelift was 6.15 years. Patients who underwent primary facelift surgery at an age ≤53 (n = 40) returned for revision facelift on average 12.4 years later ± 5.6. This is compared to 9.3 years ± 3.9 for those who underwent initial facelift surgery >53 years (n = 37) (p = 0.004) (Table 2).

Thirty-six patients had documentation of their motivation for their first facelift. (Table 3) Thirty-four (94.4%) of those patients had documentation in their charts between 1 month and 1 year post initial facelift that they were satisfied and pleased with the result. The rest of the subjects did not have records of satisfaction or motivations for surgery in their charts.

Techniques employed for initial revision facelifts included: Limited deep plane facelift (n = 55,70.1%), facial tuck (skin only) (n = 8,10%), SMAS rhytidectomy (n = 6,7.8%), extended deep plane facelift (no platysmal plication) (n = 4,5.2%), SMASectomy (n = 3,3.9%), preexcision (S-Lift) (n = 1,1.3%).

Patients who initially had a midface lift with their facelift (n = 13) returned on average 10.9 years for revision surgery compared to 10.9 for those who did not have a midface lift (n = 64) (p = 0.47). Reasons this group returned included: lower face laxity (n = 3), jowls (n = 4), cervical skin laxity (n = 6), and aging face (n = 2). No patients who underwent a midface lift with their primary facelift required a revision midface lift.

Complications associated with the revision procedures included 5 (5.4%) transient frontal/buccal branch neuropraxias that all resolved within 6 weeks. It should be noted that each of those surgeries also involved a concomitant midface lift or brow lift. Four patients (4.3%) had postoperative hematomas requiring treatment. No other complications were reported.

Fig. 2. Patient pre-initial facelift (top row) and pre revision facelift 20 years later (bottom row).

Discussion

Findings from this study spanning 30 years inform us that patients choosing to return for a second facelift after initially having undergone a deep plane lift, return an average of 10.9 years later. Patients who were age 53 or younger at the time of their primary facelift returned for a second facelift significantly later than those who were older than 53 at the time of their surgery (12.4 vs. 9.3 years, p = 0.004). Patients seeking tertiary/quaternary facelifts returned sooner after their revisions than those returning after their primary deep plane lifts (6.15 years vs. 10.9 years). At consultation for their initial facelift, patients most sought improvements in neck skin/platysma laxity, followed by generalized facial aging/laxity. Similar patterns existed when patients returned for their

Fig. 1. Patient pre-initial facelift, midface lift (top row) and pre revision facelift 14 years later (bottom row).

Fig. 3. Patient pre lower blepharoplasty with transconjunctival fat repositioning, submentallipectomy, platysma plication and deep plane facelift (top row) and four years post surgery (bottom row).

Table 1. Baseline patient characteristics

Patients	*Initial facelift (N = 77)*	*Second facelift (N = 77)*	*Third/Fourth facelift (N = 16)*
Sex			
Male	4 (5.2%)	4 (5.2%)	3 (19%)
Female	73 (94.8%)	73 (94.8%)	13 (81%)
Age (years)			
Mean	53.5 ± 6.85	64.5 ± 6.5	68.5 ± 8.15
Range	36–76	52–83	60–88
Median	53	65	65
Smoker			
Yes	3 (4%)	3 (4%)	1 (6.2%)
No	74 (96%)	74 (96%)	15 (93.8%)

Table 3. Patient motivation to seek surgery

Reason for seeking surgery	*Initial facelift, N = 36 (%)*	*Second facelift, N = 77 (%)*
Facial aging/laxity	22 (59.5%)	30 (38.9%)
Platysmal/cervical skin laxity	29 (78.4%)	33 (42.8%)
Improve appearance of midface	3 (8.1%)	3 (4%)
Perioral aging	2 (5.4%)	4 (5.2%)
Jowls/Jawline	6 (16.2%)	23 (29.8%)
Periorbital aging	6 (16.2%)	5 (6.5%)
Previous surgery scarring	0 (0%)	2 (2.6%)

revision facelifts; however, there was increased focus on jowl rejuvenation compared to initial presentation (29.8% vs. 16.3%). There were 13 patients in this study who initially had a midface lift in addition to their deep plane facelift. This did not influence their facelift longevity (10.9 vs. 10.9 years, $p = 0.49$), nor did it impact the reasons why patients returned for their secondary lifts. To address patients' concerns at the time of revision surgery, a limited deep plane facelift technique (less extensive dissection) was used most frequently (70.1%).

These findings extend those from prior deep plane technique reports and compare favorably with studies regarding other facelift methods. While data exist supporting a lesser need for short-term corrections after deep plane facelifts than after SMAS lifts,[20] there is very little published regarding the overall longevity of deep plane facelifts.

While Jacono et al. described long-term follow-up for patients who underwent deep plane facelifts in the context of a three-dimensional midface volume, they did not assess anything longer than 3 years.[22] In a recent meta-analysis comparing superficial and deep plane facelifts, 264 patients pooled from four studies showed a mean follow-up time of only 37.5 months ± 21.5 months, and they did not report data regarding revisions rates or techniques.[19] Another recent systematic review and meta-analysis compared SMAS techniques versus deep plane facelifts, but this study did not address longevity, having defined long-term outcomes as those at 1 year.[4] Articles on SMAS techniques' longevity include a study by Beale et al. that looked at a single-surgeon's 20-year experience with secondary SMAS-lift-type facelifts (SMASectomy/SMAS-stacking).[18] They included 811 facelifts with a total of 60 secondary facelifts. Their average time between initial and secondary facelifts was 8 years.[18] Another study analyzed how anatomical features age over a 5.5-year period following facelifts.[15] They did not extend their follow-up past 5 years and did not describe their surgical technique in detail. Mirra et al. reported on their 40-year experience applying the high-SMAS technique for revisions. While they found an average interval of 10.7 years elapsed before their patients underwent revision surgeries, they had no information regarding who the initial surgeons were or what technique was used for the primary facelifts, thus making any conclusions regarding specific techniques impossible.[23] Sundine et al. evaluated the longevity of the SMAS facelift using a similar methodology to ours. They found that patients returned for secondary surgery on average 11.9 years after their primary SMAS facelift. Their sample size was 42, and the average age of included patients was 50.2 years. Within our study, a cohort of 40 patients below the age of 54 returned for secondary facelifts on average 12.4 years after their initial facelift, suggesting the deep plane lift lasts longer.[14]

Table 2. Other adjunct procedures that patients had with their initial surgery and their revision surgeries

Adjunct procedure	*Initial facelift, N = 77 (%)*	*Second facelift N = 77 (%)*	*Third/Fourth facelift N = 16 (%)*
Lip lift	3 (3.9%)	8 (10.4%)	2 (12.5%)
Rhinoplasty	6 (7.8%)	2 (2.6%)	1 (6.3%)
Upper blepharoplasty	14 (18.18%)	7 (9.1%)	0 (0%)
Lower blepharoplasty	6 (7.8%)	5 (6.5%)	1 (6.3%)
Brow lift	12 (15.5%)	8 (10.4%)	0 (0%)
Chin implant	2 (2.6%)	0 (0%)	0 (0%)
Platysma plication	77 (100%)	25 (32.5)	3 (18.8%)
Fat grafting	1 (1.3%)	1 (1.2%)	1 (6.3%)
CO2 laser	4 (5.2%)	14 (18.18%)	5 (31%)
Midface lift	13 (17%)	13 (17%)	5 (31%)
Earlobe reconstruction	1 (1.3%)	5 (6.5%)	0 (0%)
Partial submandibular gland removal	0 (0%)	4 (5.2%)	1 (6.3%)
Submental liposuction	0 (0%)	1 (1.3%)	0 (0%)
Microneedling	0 (0%)	1 (1.3%)	0 (0%)
Chemical peel	0 (0%)	1 (1.3%)	0 (0%)

Another study on MACS lifts limited their patient satisfaction follow-up to 46 months.[16] Finally, a 10-year follow-up discussion article on the identical twin facelift study comments on these lifts holding up but does not present any objective data to support that.[17]

One of the most common questions asked during facelift consultation is "how long will my face lift last?" This question is difficult to answer because there are no objective endpoints, and it is highly subjective when an individual "needs" a facelift. Patients have different levels of tolerance for manifestations of aging, and many patients are motivated by social or psycho-emotional factors.[24] For example, patients commonly seek facial rejuvenation surgery before a child's wedding, in anticipation of a new job, or following a divorce. Notwithstanding motivational reasons for revision surgery, patients also commonly employ a myriad of non-surgical treatments such as laser resurfacing, skin tightening, fillers, and fat injections to maintain and optimize their appearance even after a face lift. This makes it nearly impossible to control for facelifts alone as an age-defying intervention. To answer the question of deep plane longevity, we quantified how long our patients waited before returning for a secondary facelift after their initial deep plane facelift. This is the most relevant measure, if not also the most definitive objective measure, of how long a deep plane facelift "lasts." The common trope amongst surgeons that the deep plane facelift provides longer-lasting outcomes than other facelift techniques is one of the reasons for its popularity.[9,25] However, there are limited objective data on how well deep plane results hold up over a generation. The uniqueness of our study stems from the availability of documentation from a single center over an extended period. This latter point is substantial, because there were virtually no electronic medical records (EMRs) being used in 1995, and paper charts were often kept no longer than 7 years.[26] Given that the deep plane technique was described 35 years ago, our 30-year experience is significant.

We attribute the finding that younger patients return for secondary lifts later than older patients to the fact that manifestations of facial aging accelerate as a person ages. Facial analysis studies demonstrate that the severity and rate of progression of wrinkles, skin sagging, and loss of tissue elasticity increase with age, with a notable acceleration in women after menopause due to hormonal changes and bone resorption.[27–31] The cumulative damage to the skin's extracellular matrix that occurs with age, redistribution and atrophy of facial fat pads, and remodeling of the facial skeleton contribute to this acceleration.[32] Congruent with these findings, our data also support a law of limiting returns for repetitive lifts. Because the revision facelifts were done using various techniques, no definitive conclusions regarding methodology can be drawn. However, this finding would be consistent with the idea that surgical interventions hold up less well as one ages, supported by a previous article from Beale et al.[18] As per Lambros and Stuzin, the longevity of facelifts is impacted by patient age, and facelifts work best in patients who need them least.[33] Liu and Owsley also found that patients who had their facelifts at a younger age were more likely to be satisfied at follow-up compared with older patients.[34]

All neuropraxias (5.4%) occurred during revisions. This compares favorably with the reported rate for overall nerve injury associated with revision facelifts of 7.1%.[35] Additionally, each of the revision facelifts where a neuropraxia occurred also involved a midface lift or brow lift; and these procedures have reported incidences of neuropraxias of 5.6% and 5.8%, respectively.[36,37]

These data must be interpreted in the context of the study design. This is a single-center, single-surgeon retrospective review, and generalized application may be limited. Because the majority of patients who had deep plane facelifts completed by the senior author never returned for revision surgery, data were collected retrospectively only on the group that did, which may have inherently biased results. While the same deep plane technique was utilized for all primary lifts, four patients had their initial facelifts performed by Kamer with the senior author assisting during his fellowship. Only a single effectiveness measure for facelift longevity (years to revision) was used, and patient satisfaction was subjectively described/collected from the patients' charts. Finally, the senior author's surgical technique subtly evolved over the years in an effort to improve outcomes. It is possible that today's facelift might be expected to hold up longer because of modifications and the desire to satisfy ever more extreme patient aesthetic goals. Despite these changes, the core features of the deep plane facelift as discussed in the methods section have remained the same.

Future directions for research would be to include patient-reported outcome measures to understand patients' perspectives on facelift outcomes. More robust longitudinal studies may be facilitated by widespread use of EMRs, which will enable surgeons to maintain databases for their entire career. As the popularity of "biohacking" to improve overall health, skin quality, and aging increases (i.e., peptides, meformin, and GLP-1 receptor agonists), we might see longer-lasting facelift results. This must be considered against a backdrop of greater patient expectations with less tolerance for any signs of aging. As society embraces the idea of facelifting as a right-of-passage, and surgeons promote the idea of more beautiful outcomes with little downtime or risk, patients might be lining up to have secondary lifts after shorter intervals.

Conclusions

While not definitive, this study provides objective evidence that supports the belief that the deep plane facelift

offers durable long-term results and compares favorably to other facelift techniques that have been similarly evaluated. Facelift surgery is costly, and many people consider such an endeavor to be an investment. These findings might be useful for patients seeking evidence-based information upon which they can base decisions.

Authors' Contributions

Conceptualization: M.L. and A.F. Data curation: M.L. Project administration: M.L. Writing—original draft: M.L. and A.F. Writing—review and editing: M.L. and A.F. Supervision: A.F.

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References

1. Hamra ST. The deep-plane rhytidectomy. *Plast Reconstr Surg*. 1990;86(1):53–61; discussion 62–63.
2. Lemmon ML, Hamra ST. Skoog rhytidectomy: A five-year experience with 577 patients. *Plast Reconstr Surg*. 1980;65(3):283–297.
3. Cannon B. Plastic surgery: New methods and refinements. *JAMA*. 1975;234(12):1273; doi: 10.1001/jama.1975.03260250065038
4. Khoury S, Almubarak Z, Khan H, et al. The deep plane versus SMAS facelift: A systematic review and meta-analysis. *Aesthetic Plast Surg*. 2025;49(21):5895–5903; doi: 10.1007/s00266-025-05118-x
5. Solutions TKI, Reconstructiv AA, of FP. &. American Academy of Facial Plastic and Reconstructive Surgery. American Academy of Facial Plastic and Reconstructive Surgery. Available from: https://www.aafprs.org/ [Last accessed: September 22, 2025].
6. Read B. The Forever-35 Face. The Cut. September 4, 2025. Available from: https://www.thecut.com/article/undetectable-facelifts-trend-popularity-deep-plane-face-lift-vs-smas.html [Last accessed: October 4, 2025].
7. Jacono A, Bryant LM. Extended deep plane facelift: Incorporating facial retaining ligament release and composite flap shifts to maximize midface, jawline and neck rejuvenation. *Clin Plast Surg*. 2018;45(4):527–554; doi: 10.1016/j.cps.2018.06.007
8. Miller AJ, Graham HD. Comparison of conventional and deep plane facelift. *J La State Med Soc Off Organ La State Med Soc*. 1997;149(11):406–411.
9. Alsarraf R, To WC, Johnson CM. The deep plane facelift. *Facial Plast Surg*. 2003;19(1):95–106; doi: 10.1055/s-2003-39133
10. Cohen D. Deep Plane Facelift Longevity: What to Expect. Cohen Clinic. March 18, 2025. Available from: https://cohenclinicdc.com/deep-plane-facelift-longevity-what-to-expect/ [Last accessed: October 4, 2025].
11. Deep Plane Facelift In Rancho Mirage. Facial Rejuvenation Palm Desert. The Plastic Surgery Institute. Available from: https://www.plasticsurgeryranchomirage.com/ [Last accessed: October 4, 2025].
12. How Long Do Different Types of Facelifts Last?. Available from: https://www.jessesmithmd.com/how-long-do-different-types-of-facelifts-last/ [Last accessed: October 4, 2025].
13. Friel MT, Shaw RE, Trovato MJ, et al. The measure of face-lift patient satisfaction: The Owsley Facelift Satisfaction Survey with a long-term follow-up study. *Plast Reconstr Surg*. 2010;126(1):245–257; doi: 10.1097/PRS.0b013e3181dbc2f0
14. Sundine MJ, Kretsis V, Connell BF. Longevity of SMAS facial rejuvenation and support. *Plast Reconstr Surg*. 2010;126(1):229–237; doi: 10.1097/PRS.0b013e3181ce1806
15. Jones BM, Lo SJ. How long does a face lift last? Objective and subjective measurements over a 5-year period. *Plast Reconstr Surg*. 2012;130(6):1317–1327.
16. Hijkoop LF, Stevens HPJD, van der Lei B. The Minimal Access Cranial Suspension (MACS) lift: A systematic review of literature 18 years after its introduction. *J Plast Reconstr Aesthet Surg*. 2022;75(3):1187–1196; doi: 10.1016/j.bjps.2021.11.051
17. Alpert BS, Baker DC, Hamra ST, et al. Identical twin face lifts with differing techniques: A 10-year follow-up. *Plast Reconstr Surg*. 2009;123(3):1025–1033; doi: 10.1097/PRS.0b013e31819ba755
18. Beale EW, Rasko Y, Rohrich RJ. A 20-year experience with secondary rhytidectomy: A review of technique, longevity, and outcomes. *Plast Reconstr Surg*. 2013;131(3):625–634; doi: 10.1097/PRS.0b013e31827c70f1
19. Awad YZ, Nasr MA, Ahmed El-Sayed MN. Comparison between superficial and deep plane facelift: Meta-Analysis study. *Zagazig Univ Med J*. 2025;0(0):0–0; doi: 10.21608/zumj.2025.352792.3795
20. Kamer FM, Frankel AS. SMAS rhytidectomy versus deep plane rhytidectomy: An objective comparison. *Plast Reconstr Surg*. 1998;102(3):878–881; doi: 10.1097/00006534-199809030-00041
21. Kamer FM. One hundred consecutive deep plane face-lifts. *Arch Otolaryngol Head Neck Surg*. 1996;122(1):17–22; doi: 10.1001/archotol.1996.01890130013002
22. Jacono AA, Malone MH, Talei B. Three-Dimensional analysis of long-term midface volume change after vertical vector deep-plane rhytidectomy. *Aesthet Surg J*. 2015;35(5):491–503; doi: 10.1093/asj/sju171
23. Mirra C, Savani L, Botti C, et al. Our 40 years' experience on face and neck lift procedures with High-SMAS flap techniques: How to manage secondary and tertiary surgeries. *Aesthetic Plast Surg*. 2025;49(2):462–469; doi: 10.1007/s00266-024-04400-8
24. Huynh MN, Habib A, Zoumaras J. Motivating factors for patients seeking rhytidectomies: An exploratory qualitative analysis. *J Plast Reconstr Aesthet Surg*. 2025;109:34–36; doi: 10.1016/j.bjps.2025.07.019
25. Sykes JM, Liang J, Kim JE. Contemporary deep plane rhytidectomy. *Facial Plast Surg*. 2011;27(1):124–132; doi: 10.1055/s-0030-1270426
26. Alder S. HIPAA Retention Requirements - 2025 Update. *The HIPAA Journal*. 2025. Available from: https://www.hipaajournal.com/hipaa-retention-requirements/
27. Flament F, Zhang Y, Jiang R, et al. Objective and automatic grading system of facial signs from selfie pictures of South African women: Characterization of changes with age and sun-exposures. *Skin Res Technol*. 2022;28(4):596–603; doi: 10.1111/srt.13153
28. Windhager S, Mitteroecker P, Rupić I, et al. Facial aging trajectories: A common shape pattern in male and female faces is disrupted after menopause. *Am J Phys Anthropol*. 2019;169(4):678–688; doi: 10.1002/ajpa.23878
29. Flament F, Prunel A, Keufer B, et al. Changes in facial signs due to age and their respective weights on the perception of age and skin plumpness among differently aged Korean women. *Skin Res Technol Off J Int Soc Bioeng Skin ISBS Int Soc Digit Imaging Skin ISDIS Int Soc Skin Imaging ISSI*. 2021;27(4):526–536; doi: 10.1111/srt.12980
30. Velemínská J, Jaklová LK, Kočandrlová K, et al. Three-dimensional analysis of modeled facial aging and sexual dimorphism from juvenile to elderly age. *Sci Rep*. 2022;12(1):21821; doi: 10.1038/s41598-022-26376-8
31. Henry F, Piérard-Franchimont C, Cauwenbergh G, et al. Age-related changes in facial skin contours and rheology. *J Am Geriatr Soc*. 1997;45(2):220–222; doi: 10.1111/j.1532-5415.1997.tb04512.x
32. Dorf N, Maciejczyk M. Skin senescence-from basic research to clinical practice. *Front Med (Lausanne)*. 2024;11:1484345; doi: 10.3389/fmed.2024.1484345
33. Stuzin JM. Discussion: How long does a face lift last? Objective and subjective measurements over a 5-year period. *Plast Reconstr Surg*. 2012;130(6):1328–1329; doi: 10.1097/PRS.0b013e31826d9d94
34. Liu TS, Owsley JQ. Long-term results of face lift surgery: Patient photographs compared with patient satisfaction ratings. *Plast Reconstr Surg*. 2012;129(1):253–262; doi: 10.1097/PRS.0b013e3182362b55
35. Chang KN. Analysis of the outcome of reoperative face lifts using Sub-SMAS techniques. *Plast Reconstr Surg*. 2022;150(1):47–56; doi: 10.1097/PRS.0000000000009199
36. Şirinoglu H, Ergün Tatar B, Güvercin E. Long terms results of temporal facelift: 6 years of experience in 250 cases. *J Craniofac Surg*. 2025;36(2):e188–e192; doi: 10.1097/SCS.0000000000010946
37. Kashkouli MB, Abdolalizadeh P, Mansour S, et al. Short- and Long-term patient satisfaction and complications in 650 endoscopic forehead lift procedures. *Ophthalmic Plast Reconstr Surg*. 2022;38(2):138–145; doi: 10.1097/IOP.0000000000002003