

CONCLUSION: The present study is the first to objectively assess evolving trends in the clinical practice of liposuction over the last sixteen years. These data illustrate an increase in outpatient procedures, a shift in technique towards power-assisted liposuction, and greater surgical focus on the trunk (abdomen, flanks, and back).

33. THE DECLINE OF MD/PHD SURGEON-SCIENTISTS IN PLASTIC AND RECONSTRUCTIVE SURGERY

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PURPOSE: Surgeon-scientists play a critical role in innovation in plastic and reconstructive surgery (PRS). Despite recent calls to develop the pipeline for PRS surgeon-scientists, trends in recruitment of MD-PhD surgery residents remain unknown.

METHODS: We obtained data of PGY1 and total MD-PhD residents from the Association of American Medical Colleges Reports on Residents from 2012 to 2019. Surgical specialties include PRS, General Surgery, Neurological Surgery, Orthopaedic Surgery, Ophthalmology, Otolaryngology, Vascular Surgery, Thoracic Surgery, and Urology. Descriptive statistics and Pearson correlations were performed to determine significant changes in proportion of MD-PhD residents in surgery and PRS over time.

RESULTS: Between 2012 and 2019, the proportion of MD-PhD PGY1 residents in surgery increased slightly from 10.5% to 12.5% ($p=0.13$), while the overall proportion of MD-PhD residents in surgery across all PGYs remained the same (14.0% vs. 14.9%). Despite a consistent representation of MD-PhD residents in surgery, the proportion of MD-PhD PGY1 PRS residents decreased more than 3-fold over the same period (5.5% in 2012 vs. 1.5% in 2019, $p=0.03$). As a result, among the nine surgical specialties, PRS had the 3rd-lowest number of MD-PhD residents across all PGYs in 2019.

CONCLUSION: There has been a dramatic decline in proportion of PRS MD-PhD residents in recent years, which raises concerns for the future of innovative discovery that has been a cornerstone of PRS legacy.

34. FRACTIONAL RADIOFREQUENCY MICRONEEDLING: A NOVEL AND NON-INVASIVE TREATMENT FOR FESTOONS

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PURPOSE: Festoons are characterized by laxity of the skin and orbicularis muscle between the medial and lateral canthi. There are numerous surgical and nonsurgical options for the treatment of festoons with varying efficacy. Recently, fractional radiofrequency microneedling (FRM) has gained popularity as an efficacious treatment option for facial rejuvenation and skin tightening, but has only been described in small case reports for the treatment of festoons. Our study is the largest to demonstrate the safety and efficacy of FRM in the treatment of festoons.

METHODS: We performed a retrospective chart review of patients treated with FRM at a single-surgeon private practice from 2010 to 2021. Photographs of festoons pre- and post-treatment were scored individually by four separate physicians. Scoring of festoons was based on previously described classification system.

RESULTS: 25 patients and 50 individual festoons were included in this study. 92% (23/25) patients were female. All patients had a history of prior festoon treatment including toxin, filler, or both. 44% (11/25) had prior surgical intervention for festoon treatment including blepharoplasty, facelift, ptosis repair, or liposculpture. The mean (SD) pre- and post-treatment festoon scores were 1.35 (0.95) and 0.46 (0.60) ($p < 0.05$). The mean time between the most recent FRM treatment and post-treatment follow-up was 70 days.

CONCLUSION: Non-invasive cosmetic treatments and technologies have recently gained immense popularity. FRM represents a novel technology with many applications including festoons. This is the largest study to detail the safety and efficacy of FRM in the treatment of festoons.

35. BROWLIFT: CORRELATION OF ARTIFICIAL INTELLIGENCE WITH EXCURSION MEASUREMENTS IN IDENTIFYING SURGICAL EFFICACY

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PURPOSE: We analyze the correlated manual browlift measurements with emotional measurements done using artificial intelligence. We aim to assess the efficacy of browlifts while minimizing undesired expressions such as surprise.

METHODS: Pre and Post-operative photos of browlift and upper blepharoplasty patients between January of 2006 and December of 2018 were analyzed manually to measure brow excursion at three locations on each eye; the medial tip, mid-pupillary line, and highest lateral point, standardized by the iris diameter (12mm). The same photos were analyzed using the FaceReader artificial intelligence (AI) software for emotional expression.

RESULTS: Pre/post- surgery brow measurements (mm) were significantly changed ($p < 0.05$, left lateral 19.8->23.1, left center 18.7->21.5, left medial 13.5->15.8; right lateral 19.1->22.8, right center from 18.3->21.6, and right medial from 13.4->15.8). The AI showed decreased perceived sadness (14.3% to 7.4%) and anger (13.6% ->5.7%) and increased happiness (1.77%->9.9%) after surgical intervention (all $p < 0.05$). Surprise expression was not significantly changed (0.9%->1.8%, $p = 0.2915$). Among a subgroup of patients with a change in Anger score pre/post, a correlation of -0.749 was identified between changes in left central brow position and anger score with an effect estimate of -7.185 ($r = -0.749$, $\beta = -7.185$, $p = 0.00000682$), and for right brow ($r = -0.697$, $\beta = -7.838$, $p = 0.0000543$).

CONCLUSION: Browlift resulted in increased appearance of happiness without significantly increasing the appearance of surprise. These findings correlated to the manual measurements demonstrated that even modest changes in

brow position resulted in dramatic alterations in artificial intelligence observed emotion. Future implementation of this work should be aimed at finding the optimal brow elevation for the desired emotional alterations.

36. FACIAL EXPRESSION AFTER FACE TRANSPLANT: THE FIRST INTERNATIONAL FACE TRANSPLANT COHORT COMPARISON

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PURPOSE: Assessment of motor function restoration following face transplant (FT) is difficult as standardized, bilateral tests are lacking. This study aims to bolster support for software-based analysis through international collaboration.

METHODS: FaceReader (Noldus, Wageningen, Netherlands), a facial expression analysis software, was used to analyze 77 post-transplant videos of 8 FT patients from Boston, USA (range, 1-9 years), 2 FT patients from Helsinki, FIN (range, 3-4 years), and 3 FT patients from Antalya, TUR (range, 6.5-8.5 years). Age-matched healthy controls from respective countries had no history of prior facial procedures. Videos contained patients and controls performing facial expressions evaluated by software analysis using the Facial Action Coding System. Facial movements were assigned intensity score values between 0 (absent) and 1 (fully present). Maximum values were compared to respective healthy controls to calculate percent restoration.