Managing Complication of GLP-1s

South Beach Symposium
Loews Miami Beach Hotel
Miami Beach, FL

February 5-7, 2026

Presented by Michael H. Gold, MD
Gold Skin Care Center
Tennessee Clinical Research Center
Nashville, TN 37215

Academic Appointments

01. Assistant Clinical Professor

- Department of Medicine, Division of Dermatology, Nashville, TN USA
- Vanderbilt University School of Medicine: 2006-2014
- Vanderbilt University School of Nursing: 2006-2020

02. Adjunct Assistant Professor

- Meharry Medical College: 2013 – Present
- School of Medicine, Nashville, TN

03. Visiting Professor of Dermatology

- Huashan Hospital, Fudan University (Shanghai Medical University), Shanghai, China
- The First Hospital of China Medical University, Shenyang, China:
- Guangdong Provincial People's Hospital, Guangzhou, Zhejiang

04. Visiting Professor of Plastic Surgery

- First People's Hospital of Foshan University, Guangdong, China
- The First Affiliated Hospital of Zhejiang University, Hangzhou, Zhejiang
- Rongjun Hospital, Jiaxing, China
- The People's Hospital of Hunan Province, Changsha, China

05.

- Editor-in-Chief – Journal of Cosmetic Dermatology – Wiley: 2016-Present
- Editor-in-Chief- Dermatological Reviews – Wiley: 2019 - Present

Conflict of Interest

01. Consultant to many pharmaceutical, cosmeceutical, laser and energy-based device companies

02. Consultant, performs research and speaks on behalf of numerous pharmaceutical and medical device companies

03. For the benefit of this presentation, consultant, Investigator, Speaker for almost every company in this space

Implications of Ozempic and Other Semaglutide Medications for Facial Plastic Surgeons
Facial Plast Surg. 2023 Dec;39(6):719-721

Implications of Ozempic and Other GLP-1 Receptor Agonists for Facial Plastic Surgeons

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Facial Plast Surg 2023;39:719–721.

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Abstract

Obesity is a growing global health concern. Glucagon-like peptide-1 (GLP-1) receptor agonists, such as Ozempic, have emerged as potential treatments. GLP-1 receptor agonists regulate appetite and can promote weight loss. Some GLP-1 receptor agonists, though Food and Drug Administration (FDA)-approved for diabetes, are also used off-label for weight loss alone. Rapid weight and fat loss with these medications can lead to what has been called "Ozempic Face" on social media and in the lay press, where facial volume and fat are depleted, resulting in wrinkles and sagging skin. Prescribers rarely counsel patients about the potential impact on the face, and the plastic surgery community faces a challenge in managing the facial changes associated with rapid weight loss. Dermal fillers, skin tightening techniques, and surgical interventions are useful for both restoration of facial volume and to manage excess skin. Discontinuation of GLP-1 receptor agonists should be considered prior to general anesthesia due to delayed gastric emptying while on these medications. As the popularity of GLP-1 receptor agonists grows, facial plastic surgeons must be aware of both the impact on facial appearance and perioperative considerations.

Keywords

- facial aging
- weight loss
- fat loss
- semaglutide
- Ozempic face

Assessing Muscle Strength Following Massive Weight Loss: A Preliminary Study in Patients Who Desired Body Contouring Surgery
European Journal of Physiotherapy, 27(1), 31–37

RESEARCH ARTICLE

Check for updates

Assessing muscle strength following massive weight loss: a preliminary study in patients who desired body contouring surgery

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ABSTRACT

Background: Sarcopenia, which is commonly associated with ageing, is increasingly prevalent among individuals with significant obesity and massive weight loss (MWL). This study aimed to evaluate the muscle strength of MWL patients who desired body contouring surgery (BCS) due to the excess skin.

Methods: This prospective study enrolled 23 patients with MWL who were eligible for BCS. Participants underwent three distinct muscle strength tests with age- and gender-related references: the hand grip strength test (HGS), the squatting test, and the dynamic muscle strength of the body (DMSoB).

Results: The cohort comprised 18 (78.3%) women and five (21.8%) men with a mean age of 45.7 years and body mass index (BMI) of 26.9 kg/m^2. Among the participants, 17 (73.9%) had previously undergone bariatric surgery (BS group), while six (26.1%) had achieved weight loss through the non-surgery method (non-BS-group). In the HGS test, 87% of the participants reached only the lowest (poor) or second lowest (fair) fitness levels. In the squatting test, 73.8% of the participants reached above the intermediate level or better. Only 8.7% of the participants had a lower fitness level. In the dynamic muscle strength test, 69.7% of the participants reached the lowest (poor) level.

Conclusions: This preliminary study showed that patients with prior MWL exhibited lower muscle strength than the age- and gender-matched general population. In particular, the HGS results suggested the possibility of sarcopenia.

ARTICLE HISTORY
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KEYWORDS
Sarcopenia; muscle strength; massive weight loss; obesity; body contouring surgery

The Emerging Role of Injectable Weight Loss Medications in Plastic Surgery: A Systematic Review
Aesthet Surg J. 2023 Dec 14;44(1):68-79

Review Article

The Emerging Role of Injectable Weight Loss Medications in Plastic Surgery: A Systematic Review

Aesthetic Surgery Journal
2024, Vol 44(1) 68–79

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www.aestheticsurgeryjournal.com

OXFORD
UNIVERSITY PRESS

Sachin M. Shridharani, MD, FACS; and Joshua Kohan, BA

Abstract

Obesity is a multifactorial disease that represents a substantial global health concern. As of 2016, the World Health Organization (WHO) estimated that over 650 million adults were obese, and more than 1.9 billion were overweight. Surgical interventions or lifestyle changes are typically suggested to patients who experience comorbidities as a result of their weight; however, more recently, antidiabetic medications have been proposed, specifically sodium-glucose co-transporter-2 (SGLT-2) inhibitors and glucagon-like peptide-1 receptor agonists (GLP-1RAs). This is the first systematic review to evaluate the safety, efficacy, and future role of SGLT-2 inhibitors and GLP-1RAs for weight loss in the world of aesthetic plastic surgery. Sixteen randomized controlled trials were identified that met the eligibility criteria for this systematic review and comprised data from 10,492 patients. All studies reported a decline in body weight following treatment with SGLT-2 inhibitors or GLP-1RAs, ranging from 1.5 to 5 kg. Although adverse events were reported in a large proportion of patients, primarily gastrointestinal manifestations, the literature reports that these were mild to moderate in severity and tended to subside following treatment adjustment. Future research is warranted to determine the ideal SGLT-2 inhibitor or GLP-1RA for weight loss management, and additional randomized controlled trials (RCTs) are needed to determine the efficacy and tolerability of potential combination therapies with SGLT-2 inhibitors and GLP-1RAs.

Prevalence Patterns of Body Contouring Procedures Among Injectable Glucagon-like Peptide-1 Receptor Agonist Users
Aesthet Surg J. 2024 Sep 16;44(10):1072-1079

Prevalence Patterns of Body Contouring Procedures Among Injectable Glucagon-like Peptide-1 Receptor Agonist Users

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Aesthetic Surgery Journal
2024, Vol 44(10) 1072–1079

https://doi.org/10.1093/asj/sjae085
www.aestheticsurgeryjournal.com

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Abstract

Background: The introduction of injectable glucagon-like peptide-1 (GLP-1) receptor agonists such as Ozempic (Novo Nordisk, Plainsboro, NJ) and Wegovy (Novo Nordisk Inc.) has transformed weight loss in plastic surgery patients, often leading to excess skin and soft tissue amenable to body contouring procedures.

Objectives: The aim of this study was to examine the relationship between injectable GLP-1 receptor agonist use and the growing need for body contouring surgeries, focusing on trunk and extremity procedures.

Methods: A retrospective analysis of the PearlDiver database (PearlDiver, Inc., Colorado Springs, CO) was conducted, examining prescription data for Ozempic, Wegovy, and liraglutide, and correlating these with body contouring procedures across 30 US states from 2011 to 2022. Multimodal statistics were used to compare surgery rates and assess dosage and time interval patterns among GLP-1 receptor agonist users and nonusers.

Results: Significant correlations between GLP-1 receptor agonist use (881 Ozempic, 59 Wegovy, and 4655 liraglutide users) and increased body contouring surgeries were found. Ozempic showed weak correlations with brachioplasty ($r = 0.23$) and panniculectomy ($r = 0.21$), and Wegovy with breast procedures ($r = 0.28$), while liraglutide showed consistent correlations across surgeries. Time to surgery varied from 87 days (Wegovy) to 1018 days (liraglutide), with higher surgery rates among users ($P < .01$) and dose-related differences, especially in Ozempic and Wegovy users.

Conclusions: This study demonstrates a dose-dependent link between the use of GLP-1 receptor agonists and an increase in subsequent aesthetic body contouring surgeries, highlighting the need for surgeons to adapt to the merging of medicinal body transformation and aesthetic plastic surgery.

Decoding the Implications of Glucagon-like Peptide-1 Receptor Agonists o n Accelerated Facial and Skin Aging
Aesthet Surg J. 2024 Oct 15;44(11):NP809-NP818

Review Article

Decoding the Implications of Glucagon-like Peptide-1 Receptor Agonists on Accelerated Facial and Skin Aging

Zainab Ridha, MD*; Sabrina Guillen Fabi, MD; Raheel Zubar, MD; and Steven H. Dayan, MD

Aesthetic Surgery Journal
2024, Vol 44(11) NP809–NP818

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OXFORD
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Abstract

Following the advent of glucagon-like peptide-1 receptor agonists (GLP-1RAs), subsequent unintended effects such as accelerated facial aging and altered skin health have been noted. This review delves deeper into the causative underlying mechanisms and provides insights into the intricate relationship between GLP-1RAs, adipose tissue, and premature facial aging, thereby highlighting the need for a nuanced understanding of their effects on facial alterations and skin health. Studies exploring the potential effects of GLP-1RAs on facial alterations and offering insights into the possible underlying mechanisms, causes, and clinical implications were included. The accelerated facial aging and altered skin health observed in GLP-1RA patients appears to be multifactorial, involving loss of dermal and subcutaneous white adipose tissue, and altered proliferation and differentiation of adipose-derived stem cells (ADSCs), and impacts on the production and secretion of hormonal and metabolic factors. These changes compromise the structural integrity and barrier function of the skin and may lead to diminished facial muscle mass, further exacerbating the appearance of aging. The insights presented call for a paradigm shift in the clinical management of facial changes induced by GLP-1RAs, with a focus on treatment strategies aimed at targeting ADSC stimulation. These include autologous fat transfers to reintroduce cells rich in ADSCs for rejuvenation, composite fat grafting combining autologous fat with/without stromal vascular fraction, and the strategic use of soft tissue fillers for volume restoration and biostimulation. This review highlights the potential role of GLP-1RAs in modulating adipose tissue dynamics, thereby contributing to accelerated aging through metabolic, structural, and hormonal pathways.

A Review of Glucagon-like Peptide-1 in Dermatology
J Clin Aesthet Dermatol. 2025;18(3):42-50

A Review of Glucagon-like Peptide-1 in Dermatology

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J Clin Aesthet Dermatol. 2025;18(3):42–50.

OBJECTIVE: Glucagon-like peptide-1 (GLP-1) is a hormone produced in response to meal intake by endocrine intestinal cells. GLP-1 binds to its receptors which are expressed on various cells throughout the body. GLP-1 receptors (GLP-1R) have become a target for the treatment of diabetes mellitus and weight loss, and GLP-1 receptor agonist (GLP-1RA) use has become more common among patients. In addition to the anti-hyperglycemic effects, recent studies have exhibited anti-inflammatory effects of GLP-1RAs. Current research surrounding GLP-1Rs and GLP-1R agonism in dermatology is limited. This review aims to describe the current knowledge of GLP-1Rs and GLP-1RA use in dermatology and suggest future directions. **METHODS:** A literature search focused on GLP-1RAs and their effect on cutaneous disease processes was performed across various databases. The databases were searched through May 2024. **RESULTS:** The use of GLP-1RAs have shown promising anti-inflammatory effects and improvement in wound healing, psoriasis, and hidradenitis suppurativa. Several cutaneous adverse reactions to GLP-1RAs were also identified with injection site pruritus, erythema, and rash being the most commonly reported. **LIMITATIONS:** Current literature is limited to case reports and small-scale studies. **CONCLUSION:** The literature suggests anti-inflammatory effects of GLP-1RAs may provide direct benefit in the treatment of dermatologic conditions independent of glucose control in addition to indirect improvement via modulation of blood glucose and weight loss. Further studies investigating the implications of GLP-1RA use and the possible therapeutic potential of GLP-1RAs in inflammatory skin conditions are warranted. **KEYWORDS:** GLP-1 receptor agonists, psoriasis, wound healing, hidradenitis suppurativa, cutaneous adverse effects

Consensus Statements on Managing Aesthetic Needs in Prescription Medication-Driven Weight Loss Patients: An International, Multidisciplinary…
J Cosmet Dermatol, 24: Issue 4; April 2025

ORIGINAL ARTICLE OPEN ACCESS

Consensus Statements on Managing Aesthetic Needs in Prescription Medication-Driven Weight Loss Patients: An International, Multidisciplinary Delphi Study

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Funding: This research was supported by an unrestricted educational grant from Galderma (Uppsala, Sweden). Panelists were reimbursed for their time.

Keywords: anti-obesity drugs | glucose-lowering drugs | obesity | ozempic-face | type 2 diabetes

ABSTRACT

Background: To handle the increasing influx of prescription medication-driven weight loss (mdWL) patients in aesthetic practices, clinicians must be aligned on identifying discerning factors and strategies for managing this unique patient population.

Objectives: (1) Define the mdWL patient; (2) describe the mdWL patient's aesthetic expectations; (3) determine the most relevant methods of assessing mdWL patients in clinical practice; (4) determine the effects of mdWL on specific facial tissue layers; (5) identify important treatment considerations for the mdWL patient; and (6) identify the temporal sequencing of non-surgical options in the mdWL patient.

Methods: Preparatory research included patient interviews, market research, and a systematic literature review. Following this, an international, multidisciplinary three-round Delphi study was conducted to collect information on practice setting, physician and patient demographics, and previous experience, and for panelists to vote on consensus statements regarding managing mdWL patients in aesthetics.

Results: mdWL is best defined by the percent of BMI lost within ≤6 months. Three-dimensional volumetric analysis is an effective quantitative assessment, while photo-numeric scales and patient-reported outcome measures are relevant qualitative measures. Tissue layers most affected by mdWL include the skin and superficial and deep fat pads. A major concern for aesthetic mdWL patients seeking aesthetic treatments is the fear of appearing to have gained weight following treatments, while for physicians it is ensuring their mdWL patients look healthy and natural. The key selection and critical timing of aesthetic treatments throughout the mdWL journey are described.

Conclusions: The first global consensus-based guidelines for understanding and managing the aesthetic needs of mdWL patients are presented.

GLP-1 Receptor Agonists in Hidradenitis Suppurativa: A Novel Therapeutic Approach for Hidradenitis Suppurativa and Its Comorbidities
J Drugs Dermatol. 2025;24(12)

DECEMBER 2025 VOLUME 24 • ISSUE 12

ORIGINAL ARTICLE
JOURNAL OF DRUGS IN DERMATOLOGY

GLP-1 Receptor Agonists in Hidradenitis Suppurativa: A Novel Therapeutic Approach for Hidradenitis Suppurativa and Its Comorbidities

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ABSTRACT

Background: Hidradenitis suppurativa (HS) is a chronic inflammatory skin disorder associated with many comorbidities, including obesity, diabetes, cardiovascular risk factors, mental health issues, and many more disorders. Current treatments including biologics, topicals, and surgical interventions often fall short in terms of patient satisfaction, demonstrating a need for additional innovative approaches that address HS-related comorbidities.

Objective: This review explores the novel application of glucagon-like peptide-1 receptor agonists (GLP-1 RAs) in HS treatment, particularly for patients with comorbid conditions such as metabolic syndrome, diabetes, and obesity. Emphasis is placed on combination therapy and the potential for GLP-1 RAs to address both HS symptoms and associated comorbidities, with careful consideration of patient selection.

Methods: A review of emerging evidence and existing literature on GLP-1 RAs and their applications for weight loss, metabolic regulation, and anti-inflammatory effects was conducted.

Findings: GLP-1 RAs offer dual benefits for HS patients by modulating inflammatory pathways and addressing associated comorbid conditions. Case studies and preliminary data suggest that GLP-1 RAs may reduce lesion severity, systemic inflammation, and morbidity, either as monotherapy or in conjunction with existing treatments. However, high-quality randomized controlled trials are indicated to confirm these findings.

Conclusion: GLP-1 RAs represent a promising adjunctive or standalone treatment choice for those with HS and its related comorbidities. Further research is needed to establish their safety and efficacy in HS treatment.

J Drugs Dermatol. 2025;24(12): doi:10.36849/JDD.9062

What GLP – 1 Drugs Are Available?
DERMATOLOGY WORLD// November 2025 15

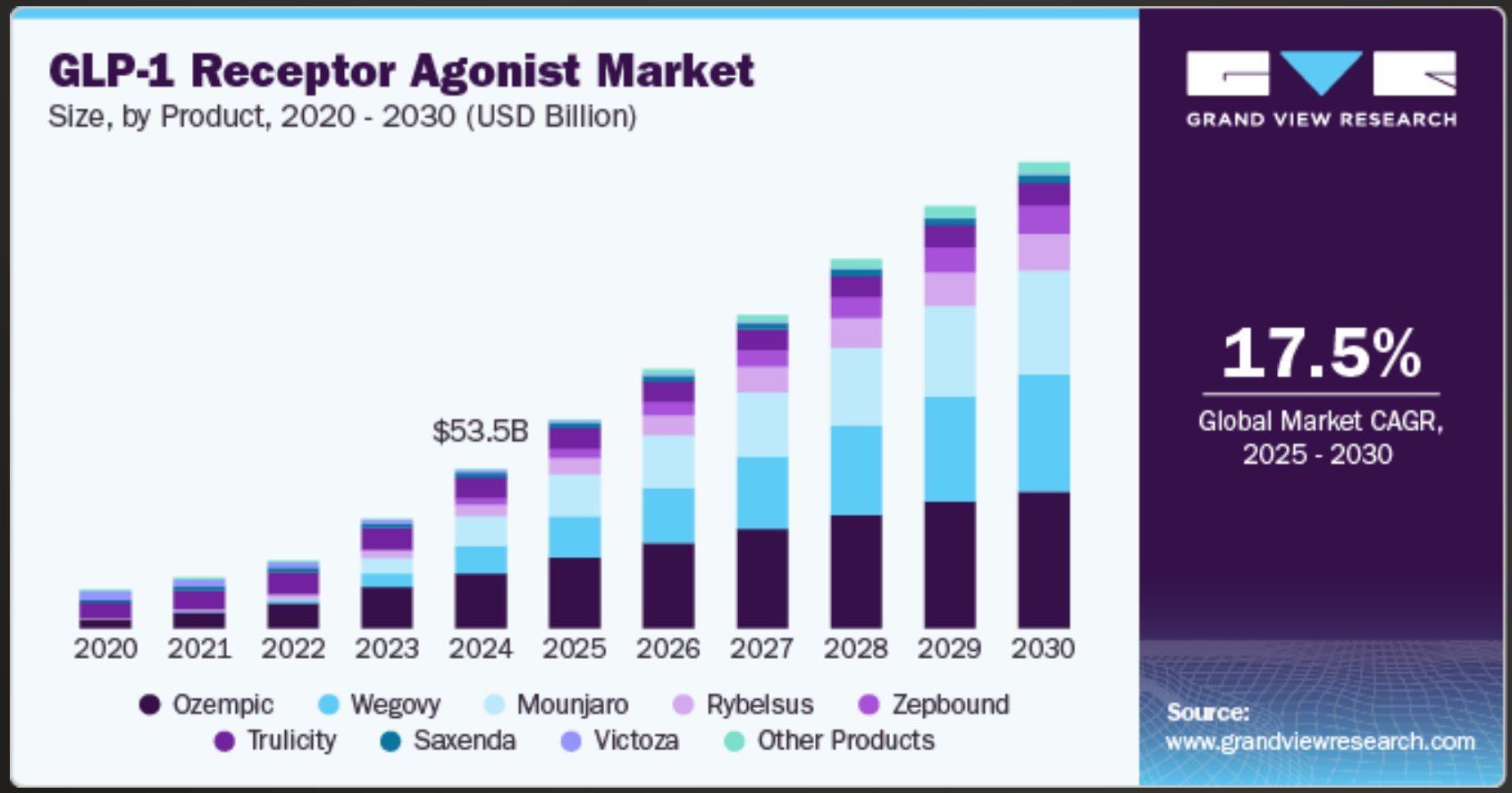
What GLP-1 drugs are available?

Generic name	Brand name	Approved use
Semaglutide injection	Ozempic	Type 2 diabetes
Semaglutide injection	Wegovy	Weight loss
Semaglutide tablets	Rybelsus	Type 2 diabetes
Liraglutide	Victoza	Type 2 diabetes
Liraglutide	Saxenda	Weight loss
Tirzepatide	Mounjaro	Type 2 diabetes
Tirzepatide	Zepbound	Weight loss
Dulaglutide	Trulicity	Type 2 diabetes
Exenatide	Byetta	Type 2 diabetes
Exenatide extended release	Bydureon	Type 2 diabetes

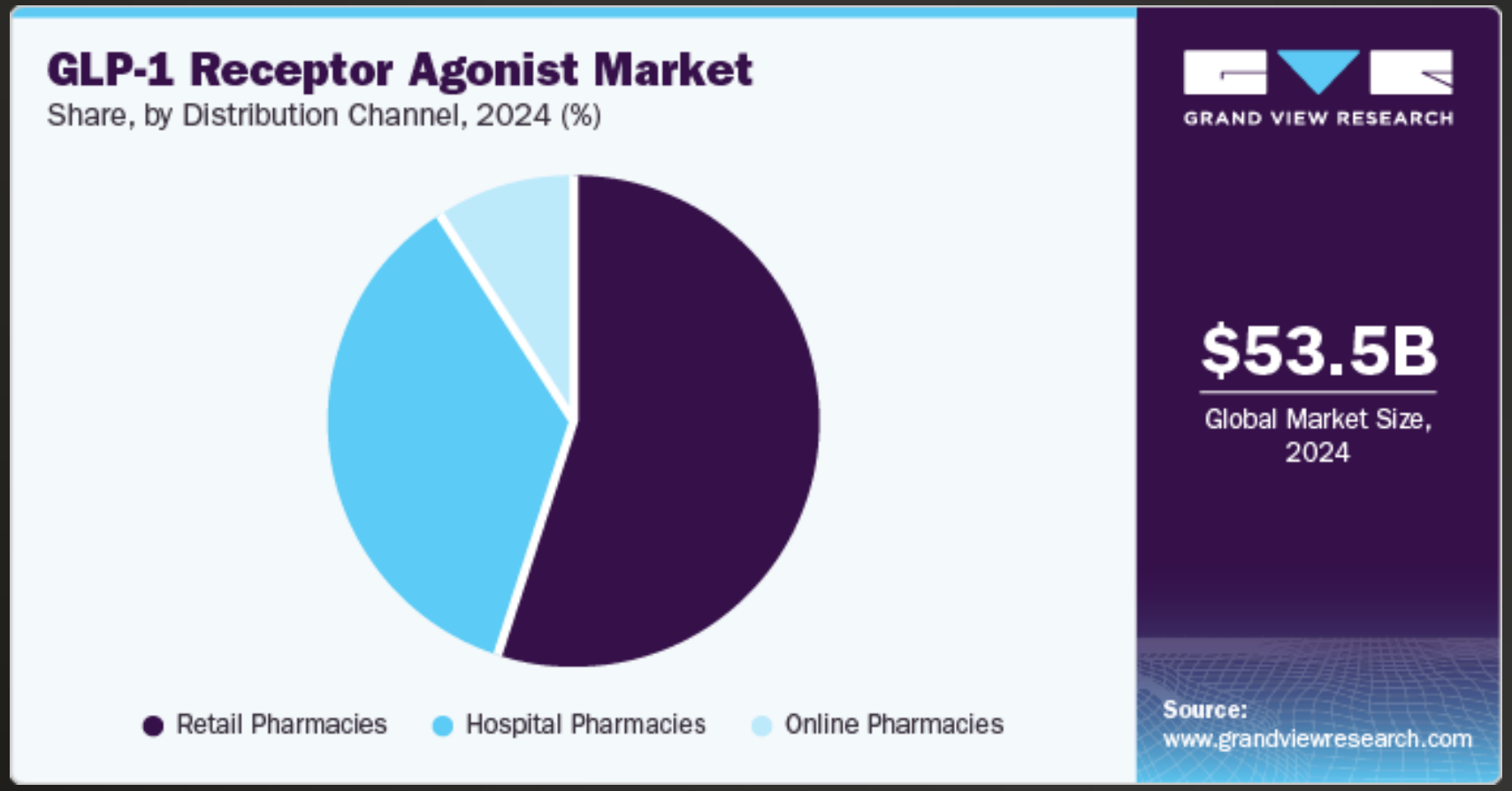
GLP-1 Agonists in Aesthetics

Wegovy® pill was approved on December 22, 2025 and is used with a reduced calorie diet and increased physical activity for adults with obesity, or with overweight who also have weight-related medical problems, to help them lose weight and keep it off.

GLP-1 Agonists in Aesthetics



GLP-1 Agonists in Aesthetics



GLP-1 Agonists in Aesthetics

GLP-1 Agonists in Aesthetics

Figure 1: Semaglutide Prescription Rates in the U.S. (2019 – 2023)

Approximately 1.7% of people in the U.S. who attended a health care visit were prescribed a semaglutide medication in 2023...

% of people in the U.S. with a health care visit who were prescribed semaglutide

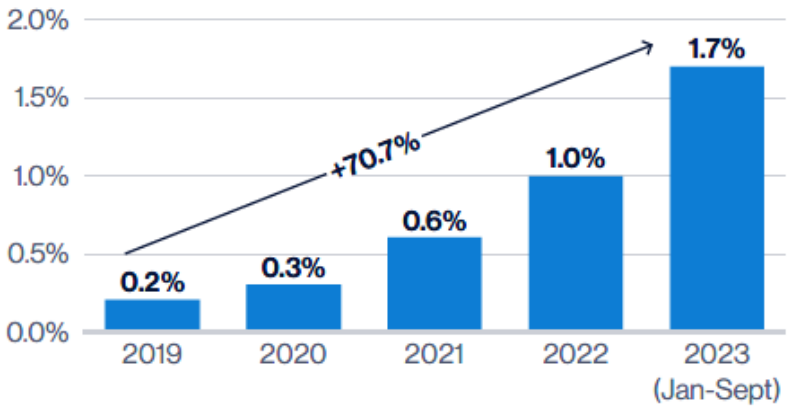
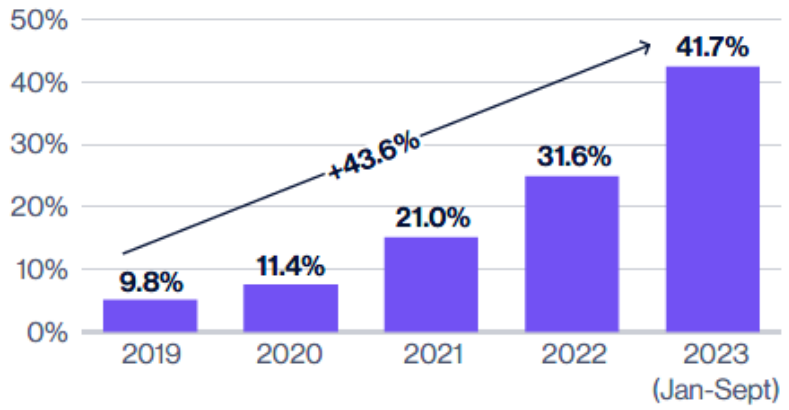


Figure 2: Proportion of Semaglutide Prescription for Non-T2DM Indication (2019 – 2023)

... with an increasing proportion of prescriptions going to patients without T2DM – principally to support with weight loss management.

% of patients in the U.S. prescribed semaglutide who do not have a diagnosis of T2DM



Source(s): CNN, Epic Research

Note(s): Figure 1: Includes Ozempic and Rybelsus approved for T2DM and Wegovy approved for chronic weight management
Figure 2: 2023 data as of September 21, 2023

GLP1 RA: Adverse Effects & Long-Term Benefits

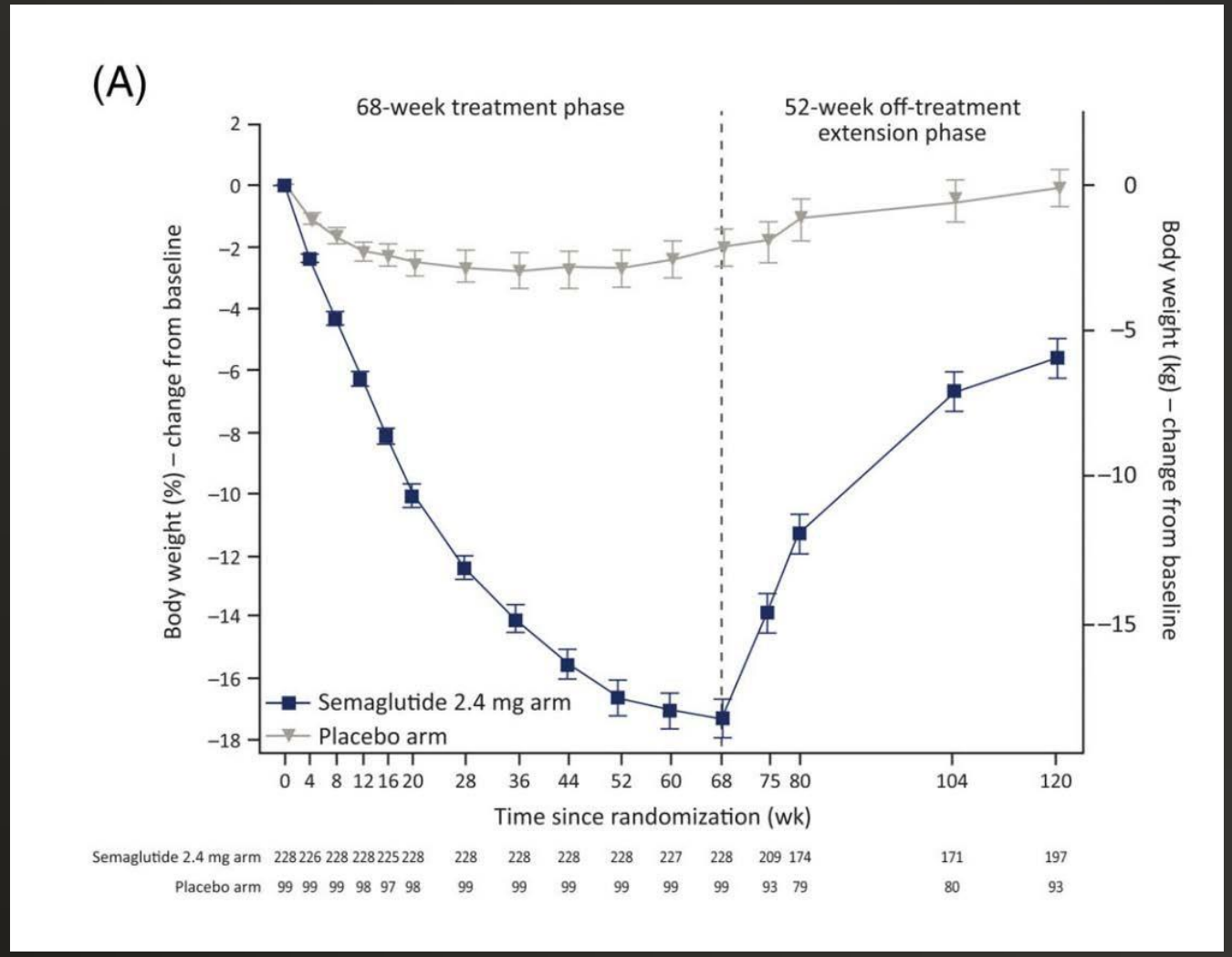
Possible Adverse Effects

- Nausea/Diarrhea
- Pancreatitis
- Gastroparesis
- Bowel Obstruction
- Decreased muscle mass
- Facial lipoatrophy ("Ozempic Face")
- ~~Suicidal ideation~~ (Wang, Nat Med, 2024)
- ? Medullary thyroid cancer
- ? Decreased effectiveness of oral co ntraceptives (tirzepatide)

Possible Long-term Benefits

- Diabetes Prevention

Weight Rebound After Semaglutide Discontinuation



Wilding, Diab Obes Metab, 2022

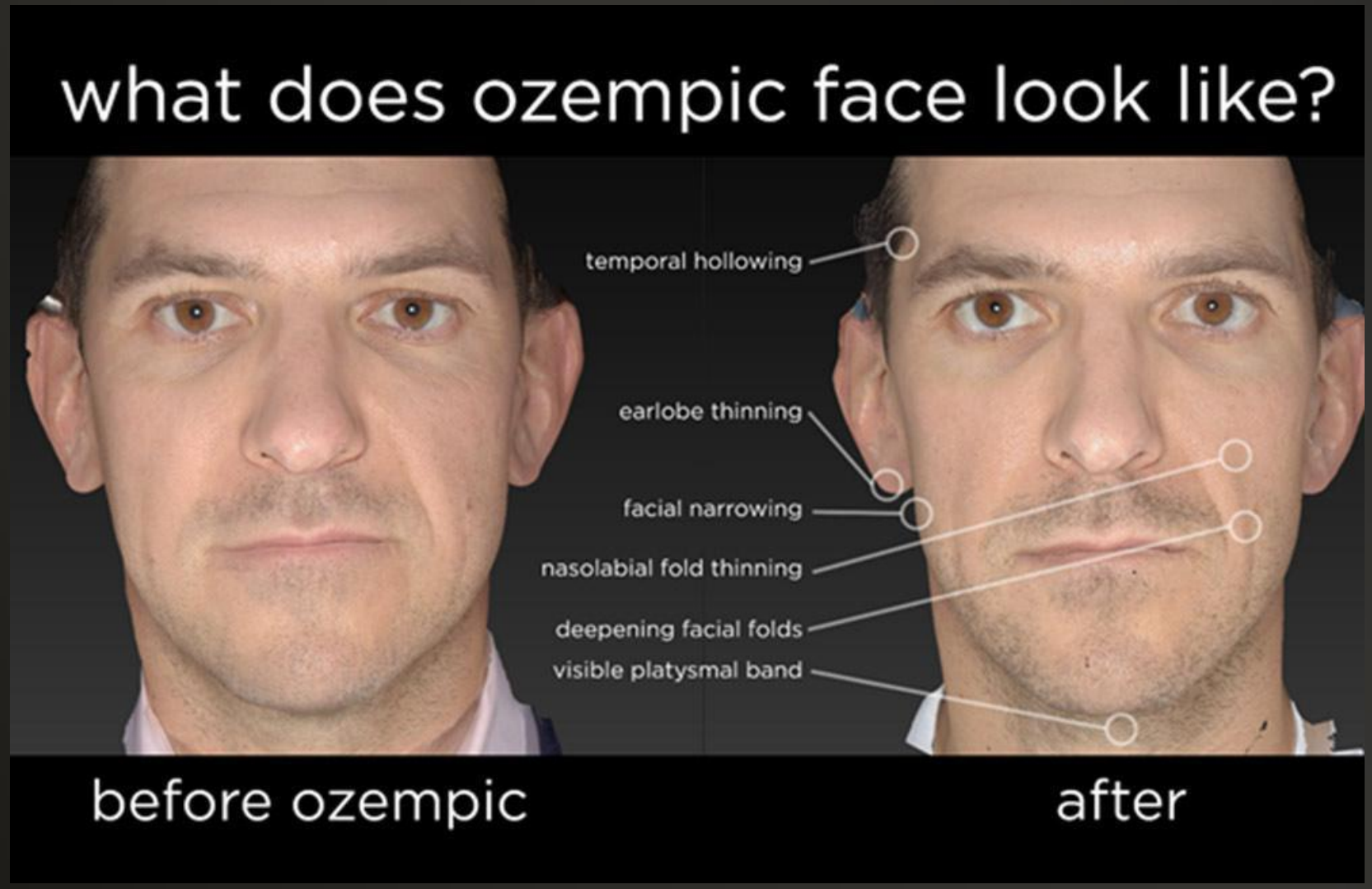
GLP-1 Agonists in Aesthetics

- While the effects of GLP-1 agonists in metabolic health are well-established, their aesthetic effects, particularly in the context of fat redistribution and skin integrity lack expansive research

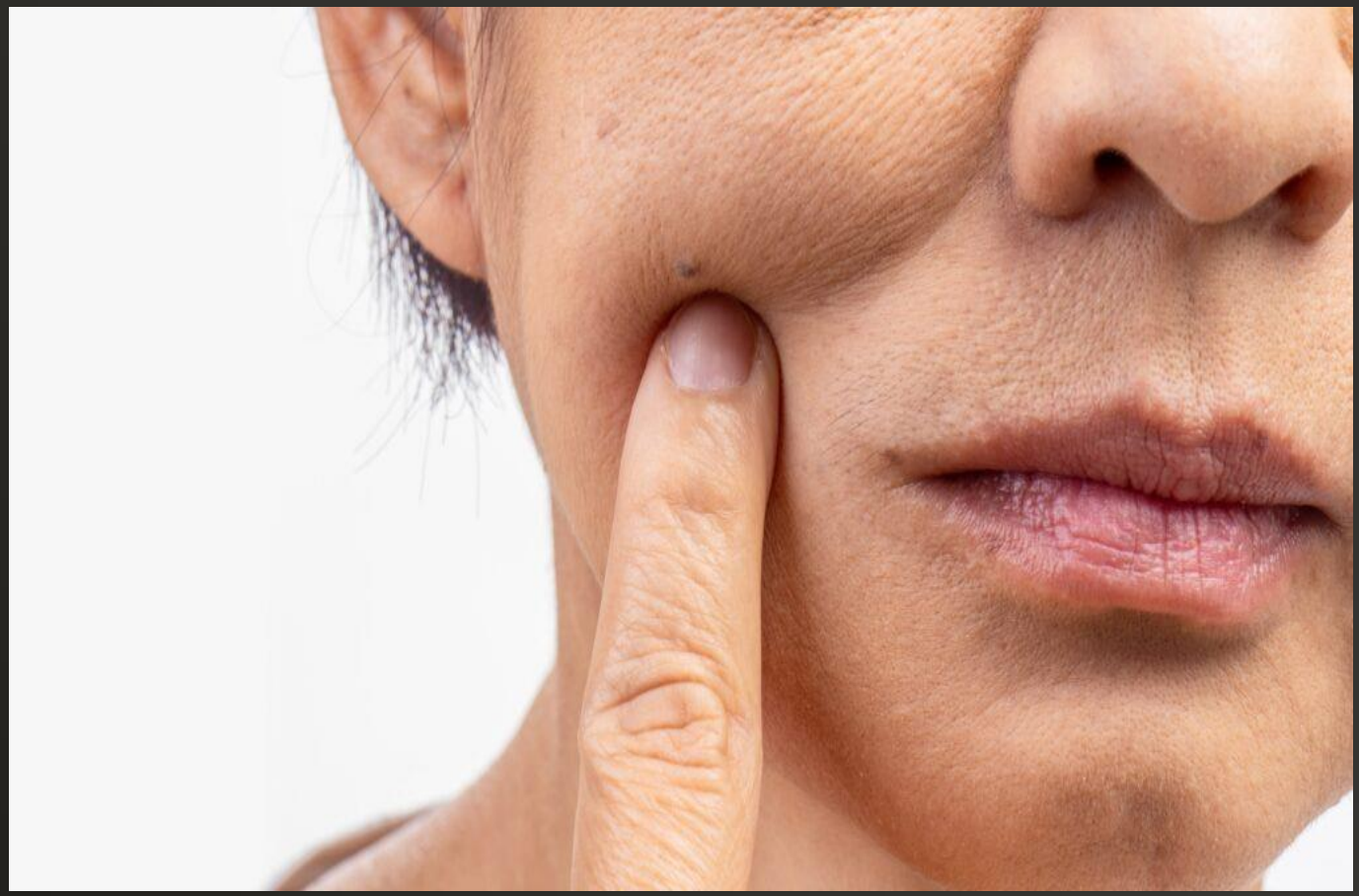
GLP-1 Agonists in Aesthetics

- The following are examples of concerns that we may see or have seen with the use of GLP-1 agonists in aesthetics

GLP-1 Agonists in Aesthetics



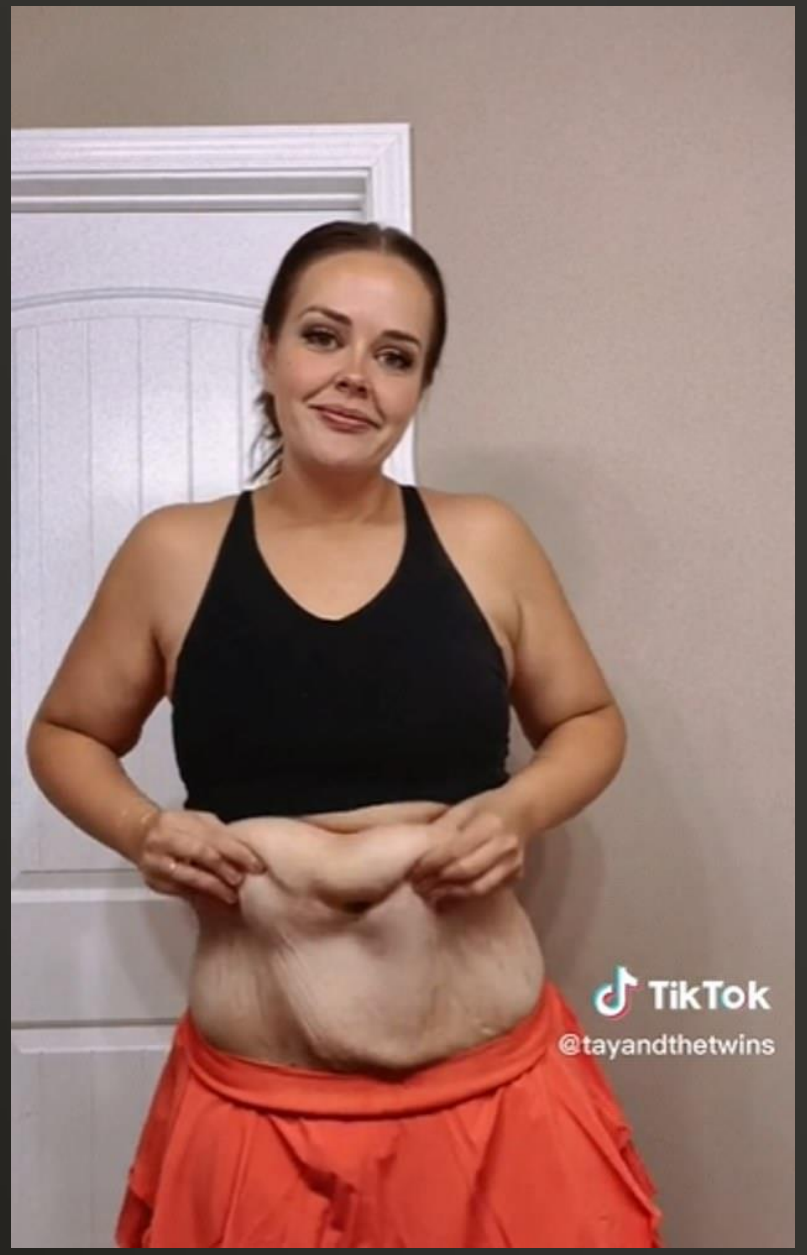
GLP-1 Agonists in Aesthetics



GLP-1 Agonists in Aesthetics

GLP-1 Agonists in Aesthetics

GLP-1 Agonists in Aesthetics



GLP-1 Agonists in Aesthetics

GLP-1 Agonists in Aesthetics

- Facial Aging & Volume Loss

- Often referred to as the Semiglutide or Ozempic Face

- The face loses its natural volume leading to a hollow or gaunt appearance, especially around the midface, temples, and periorbital areas

- Fat pads also diminish which causes youthful contour support to diminish also exacerbating sagging skin, particularly in and around the mouth, leading to jowling and a less defined facial structure (4,5)

4. Mansour MR, Hannawa OM, Yaldo MM, Nageeb EM, Chaiyasate K. The rise of "Ozempic Face": Analyzing trends and treatment challenges associated with rapid facial weight loss induced by GLP-1 agonists. *J Plast Reconstr Aesthetic Surg JPRAS.* 2024;96:225-227. doi:10.1016/j.bjps.2024.07.051
5. Carboni A, Woessner S, Martini O, Marroquin NA, Waller J. Natural Weight Loss or "Ozempic Face": Demystifying A Social Media Phenomenon. *J Drugs Dermatol JDD.* 2024;23(1):1367-1368. doi:10.36849/JDD.7613

GLP-1 Agonists in Aesthetics

- This facial volume loss often results in patients appearing older than their biological age, creating a psychological impact that can be discerning, especially for those who have worked so hard to achieve their desired weight goals (10)

- The gaunt appearance, associated with the Semiglutide face, contrasts with the expected benefits of feeling healthier, leaving patients concerned about their facial aesthetics (11)

10. Haykal D, Cartier H. Unveiling the psychological and ethical journey of cosmetic dermatology procedures. *J Eur Acad Dermatol Venereol JEADV*. Published online September 20, 2023. doi:10.1111/jdv.19522

11. Mailhac A, Pedersen L, Pottegård A, et al. Semaglutide (Ozempic®) Use in Denmark 2018 Through 2023 ‒ User Trends and off-Label Prescribing for Weight Loss. *Clin Epidemiol*. 2024;16:307-318. doi:10.2147/CLEP.S456170

GLP-1 Agonists in Aesthetics

GLP-1 Agonists in Aesthetics

- How to Treat the Semiglutide Face:

- For Restoration of Volume Loss –
  - Dermal Fillers
    - HA Fillers
    - Biostimulatory Fillers, such as Calcium Hydroxylapatite (CaHA) and Poly-L- Lactic Acid (PLLA)
  - Fat Grafting or Adipose Derived Matrix (Renuva)

- For Tightening of Lose or Sagging Skin –
  - Energy Based Devices including lasers, MFUS (Ulthera and Ulthera Prime), and PRECISE by SofWave
  - RF Microneedling
  - Threads

GLP-1 Agonists in Aesthetics

Biostimulatory Fillers

GLP-1 Agonists in Aesthetics

Surgery

A multi-center, open-label study to evaluate the synergistic effects of biostimulator and dermal fillers for cheek augmentation and correction of contour deficiencies

- Interim 3-Month Topline Results

- GLI.04.US.SL.036
- MA-2025-0045

Rise of Glucagon-like peptide-1 receptor (GLP-1R) agonists for Weight loss

- Obesity is a chronic disease with high prevalence and associated comorbidities.[1]

- Glucagon-like peptide-1 receptor (GLP-1R) agonists, used to treat type 2 diabetes, have been shown to be effective in promoting weight loss in preclinical and clinical studies.[1]

- GLP-1R agonist examples:
  - Exenatide (Byetta)
  - Lixisenatide (Adlyxin)
  - Liraglutide (Victoza)
  - Semaglutide (Ozempic, Wegovy)
  - Dulaglutide (Trulicity)

BMI categories for adults 20 and older

BMI Category	BMI Range (kg/m^2)
Underweight	Less then 18.5
Healthy Weight	18.5-24.9
Overweight	25- 29.9
Obesity	30 or greater
Class 1 Obesity	30- 34.9
Class 2 Obesity	35- 39.9
Class 3 Obesity	40 or greater

Table adapted from CDC

1. Popoviciu MS, Păduraru L, Yahya G, Metwally K, Cavalu S. Emerging Role of GLP-1 Agonists in Obesity: A Comprehensive Review of Randomised Controlled Trials. *Int J Mol Sci*. 2023;24(13):10449. Published 2023 Jun 21. doi:10.3390/ijms241310449

Rapid Weight Loss and Effects on Skin Aging

Prominent Wrinkles

Wrinkles become more prominent, the skin starts to sag in areas such as the temples, cheeks, tear troughs, jawline, marionette lines, and nasolabial folds[1]

Disrupted Facial Balance

Size of the lips, cheeks, and chin may change after rapid weight loss, resulting in the disruption of facial balance[1]

Loss of Collagen

Changes in the facial skin due to loss of collagen, elastin, and essential nutrients[1]

Lackluster skin

Loss of fatty acids can affect the skin barrier, leading to dryness and a lackluster appearance[1]

Older Appearance

Patients who experience massive weight loss appear up to 5 years older than those of similar ages without a history of extensive weight loss[2]

Challenge: Minimally invasive injectables are recommended, but lack data & prospective clinical evidence in this population[1]

1.Humphrey CD, Lawrence AC. Implications of Ozempic and Other Semaglutide Medications for Facial Plastic Surgeons [published correction appears in Facial Plast Surg. 2023 Dec;39(6):e1. doi: 10.1055/s-0044-1779676]. Facial Plast Surg. 2023;39(6):719-721. doi:10.1055/a-2148-6321. 2.Couto RA, Waltzman JT, Tadisina KK. et al. Objective assessment of facial rejuvenation after massive weight loss. Aesthetic Plast Surg 2015; 39 (06) 847-855.

PLLA-SCA regenerative MOA & HA-LYF or HA-CON volumizing : an ideal regimen to address these patients' aesthetic concerns

PLLA-SCA

- Indicated for correction of shallow to deep nasolabial fold contour deficiencies, fine lines and wrinkles in the cheek region and other facial wrinkles for use in immune-competent subjects.[1]

- Regenerates collagen, elastin and adipocytes.[2-4]

AND

HA-LYF or HA-CON

- Indicated for the correction of moderate to severe facial folds and wrinkles, such as nasolabial fold (HA-LYF), cheek augmentation and correction of age-related midface contour deficiencies (HA-LYF, HA-CON).[5-6]

- Gel pushes up the deeper layers of the skin.[7]

1.Sculptra. Instructions for Use. Galderma Laboratories, L.P., 2023. 2.Goldberg D, Guana A, Volk A, Daro- Kaftan EDermatol Surg. 2013;39(6):915-922. 3. Waibel, Jill MD*; Ziegler, Mary PhD†; Nguyen, Thu Q. PhD‡; Le, Jennifer H. T. D. PharmD, RPh‡; Qureshi, Aamir MD, MBA‡; Widgerow, Alan MBBCh, MMed, FCS, FACS†,‡; Meckfessel, Matthew PhD‡. Comparative Bulk RNA-Seq Analysis of Poly-l-Lactic Acid Versus Calcium Hydroxylapatite Reveals a Novel, Adipocyte-Mediated Regenerative Mechanism of Action Unique to PLLA. Dermatologic Surgery 50(11S):p S166-S171, November 2024. | DOI: 10.1097/DSS.0000000000004425. 4. Waibel J, Nguyen TQ, Le JHTD, et al. Gene Analysis of Biostimulators: Poly-L-Lactic Acid Triggers Regeneration While Calcium Hydroxylapatite Induces Inflammation Upon Facial Injection. J Drugs Dermatol. 2025;24(1):34-40. doi:10.36849/JDD.8464. 5. Restylane Lyft, Instructions for Use. Galderma Laboratories, L.P., 2023. 6. Restylane Contour, Instructions for Use. Galderma Laboratories, L.P., 2024. 7. Mayo Clinic. Facial fillers for wrinkles. Available at https://www.mayoclinic.org/tests-procedures/facial-fillers/about/pac-20394072. Accessed February 5, 2019.

Clinical Study Overview

Objective

To assess efficacy, safety, and subject satisfaction of biostimulator, poly-L-lactic acid (PLLA-SCA), and hyaluronic acid dermal fillers, HA-LYF or HA-CON, for cheek augmentation and correction of contour deficiencies

Multi-center, open-label, prospective study

Key Inclusion

- Men & women 22 years and older of all races, ethnicities, & FST
- Moderate to severe cheek wrinkles & mild to moderate midface contour deficiencies
- History of taking, or currently taking GLP-1 receptor agonist medications
- Stable BMI within 4-6 weeks before study start and willing to maintain BMI throughout the study

Treatments done on-label per US PI

- Two to three PLLA-SCA treatments 4 weeks apart
- HA-LYF or HA-CON at baseline with touchup at 4 weeks

Investigators

- Michael Somenek, MD – Washington DC
  - PLLA-SCA + HA-CON Site
- Z. Paul Lorenc, MD – New York, NY
  - PLLA-SCA + HA- LYF & Bioinstrumentation Site

Clinical Improvements in Facial Definition and Contour

PLLA-SCA 54 ml total both cheeks
HA-CON 4 ml total both cheeks

Female, aged 59 years, White/ Caucasian, FST 2

Standard light

Baseline

Week 20

Clinical Improvements in Facial Definition and Contour

PLLA-SCA 51.25 ml total both cheeks
HA-CON 3.7 ml total both cheeks

Female, aged 59 years, Black/ African American, FST 5

Standard light

Baseline	Week 20
	

Clinical Improvements in Facial Definition and Contour

PLLA-SCA 53 ml total both cheeks
HA-CON 4 ml total both cheeks

Female, aged 62 years, White/ Caucasian, FST 2

Standard light

Baseline

Week 20

Clinical Improvements in Facial Definition and Contour

PLLA-SCA 54 ml total both cheeks
HA-LYF 4 ml total both cheeks

Female, aged 69 years, White/ Caucasian, FST 2

Standard light

Baseline

Week 20

Study Summary and Clinical Key Takeaways

The combination of PLLA-SCA + HA-CON or HA-LYF effectively improved the aesthetic appearance of subjects experiencing facial volume loss following use of GLP-1 receptor agonists for weight loss

- Injection volumes similar between HA-LYF or HA-CON products and consistent with pivotal trial data
- Further supports regimen of PLLA-SCA + HA-CON or HA-LYF

The PLLA-SCA + HA-CON or HA-LYF regimen demonstrated skin quality improvements beyond volumization

- HA-LYF significantly improved skin hydration
- PLLA-SCA significantly improved skin radiance & skin thickness

Subjects reported high satisfaction as early week 4 that was maintained through Week 16/20

- 88.6 % felt more attractive and happier with their appearance and agreed it provided natural looking results at Week 16/20
- 83.3% noticed more radiant skin & an overall tighter skin appearance at Week 8

Safety was in line with pivotal data for all products with no related AEs reported

GLP-1 Agonists in Aesthetics

- Skin Laxity

- The skin's ability to retract and conform to a new body image is limited by factors such as age, genetics, and the rate of weight loss

- When weight is lost quickly, the skin does not have time to adjust, leading to sagging areas that are most noticeable in the:

  - Face
  - Neck
  - Arms
  - Abdomen
  - Thighs

GLP-1 Agonists in Aesthetics

- In the face, skin laxity manifests as drooping cheeks, deepened nasolabial folds, and neck sagging
- For the body, patients may experience skin folds that hinder mobility or cause discomfort, particularly in the arms, thighs, and abdominal region
- Can lead to functional challenges (12)

12. Jafar AB, Jacob J, Kao WK, Ho T. Soft Tissue Facial Changes Following Massive Weight Loss Secondary to Medical and Surgical Bariatric Interventions: A Systematic Review. *Aesthetic Surg J Open Forum*. 2024;6:ojae069 doi:10.1093/asjof/ojae069

GLP-1 Agonists in Aesthetics

- Treatment Options for Skin Laxity

- Non-surgical skin tightening treatments, such as RF, HIFU or PRECISE ultrasound, or fractional lasers
  - Help stimulate collagen and elastin to improve skin firmness and elasticity

- Surgical approaches

GLP-1 Agonists in Aesthetics

- Body Contouring
- Body contouring has become an essential part of the post-weight loss transformation
- Non-invasive and surgical options exist

GLP-1 Agonists in Aesthetics

- Non-Invasive Options for Body Contouring

  - Cryolipolysis
  - HIFU or SUPERP
  - RF Skin Tightening

  - These treatments work by breaking down fat cells or by stimulating collagen production to tighten and firm the skin or fat deposits
  - Often need combination therapies for an appropriate effect
  - Usually always need multiple treatment sessions

GLP-1 Agonists in Aesthetics

- Surgical Treatment Options for Body Contouring

- For patients with more severe skin laxity issues or large amounts of excess skin

  - Abdominoplasty
  - Body Lifts
  - Thigh Lifts
  - Liposuction (?)

  - Often, surgical and non-surgical approaches work for many

GLP-1 Agonists in Aesthetics

Surgery

GLP-1 Agonists in Aesthetics

Surgery

GLP-1 Agonists in Aesthetics

Surgery

Synchronous Parallel Ultrasound Induces Long-Term Extracellular Matrix Remodeling of Human Skin
Dermatol Surg. 2025 Jul 9;51(9S): p S58-S64

Original Article

Synchronous Parallel Ultrasound Induces Long-Term Extracellular Matrix Remodeling of Human Skin

Jean Carruthers, MD,* Virginia Benitez Roig, MD,†‡§ David H. McDaniel, MD, FAAD,‖¶ Brooke Jackson, MD, FAAD,** Oleg Bedich, MSc,†† Ruthie Amir, MD,†† and Shimon Eckhouse, PhD‡‡

BACKGROUND Energy-based interventions improve signs of skin aging by inducing controlled thermal injury and activating regenerative wound healing pathways.

OBJECTIVE This study investigates the underlying mechanism of acute and long-term extracellular matrix (ECM) remodeling induced by Synchronous Parallel Ultrasound technology leading to skin regeneration.

METHODS/MATERIALS An in vivo porcine model was used to investigate the acute thermal injury. In vivo human skin biopsies were obtained from subjects at baseline and at 1, 4, 7, and 10 months post-treatment. Histological evaluation was performed using Hematoxylin and Eosin, Masson's Trichome, Verhoeff–Van Gieson, Unna Taenzer, and Alcian Blue stains to assess changes in ECM protein expression.

RESULTS Thermal injury was restricted to the dermal layer. Histological analysis revealed a gradual increase in connective tissue collagen and elastin with unique reorganization and parallel realignment of the dermal fibers. Increased expression of glycosaminoglycans (GAGs) was also observed, indicating sustained fibroblast activity and matrix regeneration across all time points.

CONCLUSION These findings provide histological evidence of continuing and long-lasting dermal remodeling after Synchronous Parallel Ultrasound treatment, characterized by neocollagenesis, neoelastogenesis, and GAGs production. The study supports the efficacy of Synchronous Parallel Ultrasound in the long-term induction of skin regeneration.

APPLICATORS

Improvement in the Appearance of Cellulite

Anne Chapas, MD; Girish S. Munavalli, MD; Paul M. Friedman, MD;
Roy G. Geronemus, MD; Suzanne Kilmer, MD

STUDY DESIGN

68 subjects

Double treatment protocol, 4 body zones
Evaluation by Cellulite Severity Scale (CSS), Laxity Scale (LS), and Blinded Review

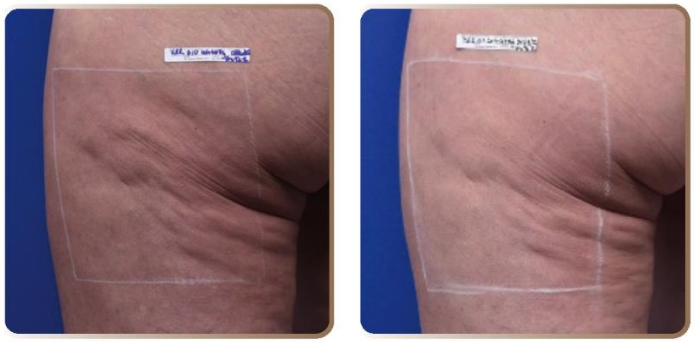
RESULTS AT 3 MONTHS POST-TREATMENT

89%	57%	44%
improvement rate for both cellulite and skin laxity per blinded evaluation	cellulite reduction based on CSS assessment	laxity improvement based on LS assessment

Courtesy of Martha H. Viera, MD

BASELINE | 3-MONTH FOLLOW UP

Courtesy of Gilly Munavalli, MD



BASELINE | 5-WEEK FOLLOW UP

High-Intensity, High-Frequency, Parallel Ultrasound Beams for Cellulite of the Buttocks and Thighs
Dermatol Surg. 2024 Oct 1;50(10):922-925

Original Article

High-Intensity, High-Frequency, Parallel Ultrasound Beams for Cellulite of the Buttocks and Thighs

Jordan V. Wang, MD, MBE, MBA,* Nkem Ugonabo, MD,† Shirin Bajaj, MD,* Neil Jairath, MD,‡ Girish Munavalli, MD, MHS,§ Anne Chapas, MD,† Roy G. Geronemus, MD,*‡ and Suzanne Kilmer, MD||

BACKGROUND Ultrasound energy can successfully treat fine lines and wrinkles, as well as lift the eyebrow and submentum. Ultrasound waves of high intensity induce thermal injury in the dermis with subsequent tissue remodeling.

OBJECTIVE To examine the utility of a novel ultrasound device that utilizes high-intensity, high-frequency, parallel ultrasound beams to improve the clinical appearance of cellulite on the thighs and buttocks.

MATERIALS AND METHODS A prospective, multicenter, clinical study investigated this novel ultrasound device using 2 treatments.

RESULTS Sixty-five subjects completed both treatments. The mean age was 46 years, and 100% were women. Fitzpatrick skin types I to VI were represented. Assessments compared 3-month follow-up with baseline. Two blinded reviewers agreed in identifying pretreatment and post-treatment photographs for 89.2%. For Cellulite Severity Scale rating, there was significant improvement of 1.61 units ($p < .001$). For cellulite Global Aesthetic Improvement Scale (GAIS), 89.2% had improvement, with a mean of 0.87 units ($p < .001$). For Laxity Scale rating, there was significant improvement of 0.70 units ($p < .001$). For skin laxity GAIS, 89.2% had improvement, with a mean of 0.76 units ($p < .001$). No device-related adverse events occurred.

CONCLUSION A novel ultrasound device that utilizes high-intensity, high-frequency, parallel ultrasound beams can safely and effectively improve the clinical appearance of cellulite on the thighs and buttocks.

Baseline

4 weeks after

Photo's courtesy of David Goldberg, MD

Baseline

4 weeks after

Photo's courtesy of David Goldberg, MD

Baseline

4 weeks after

Photo's courtesy of Michael Gold, MD

Baseline

4 weeks after

Photo's courtesy of Michael Gold, MD

Improvement in the Appearance of Lax Upper Arms

Eric Bernstein, MD; Amy Taub, MD; Suzanne Kilmer, MD; Roy G. Geronemus, MD

STUDY DESIGN

46 subjects

Double treatment protocol
by Global Aesthetic Improvement Scale (GAIS)
and Blinded Review

RESULTS AT 3 MONTHS POST-TREATMENT

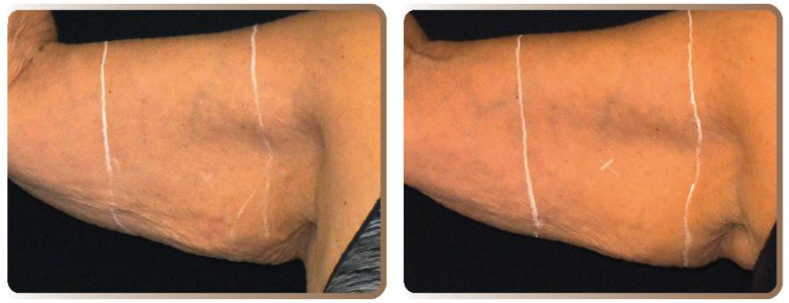
93%

of treated arms showed improved upper arm skin laxity per blinded evaluation

93%

of treated arms were improved in appearance based on GAIS

Courtesy of Suzanne Kilmer, MD



BASELINE | 3-MONTH FOLLOW UP

Courtesy of Amy Taub, MD

BASELINE | 3-MONTH FOLLOW UP

Sofwave Performance- Upper Arms

Baseline **3 months FU**

Photos Courtesy of Roy Geronemus, MD

BASELINE

4-WEEKS FU

Photos Courtesy of Virginia Benitez, MD

BASELINE

4-WEEKS FU

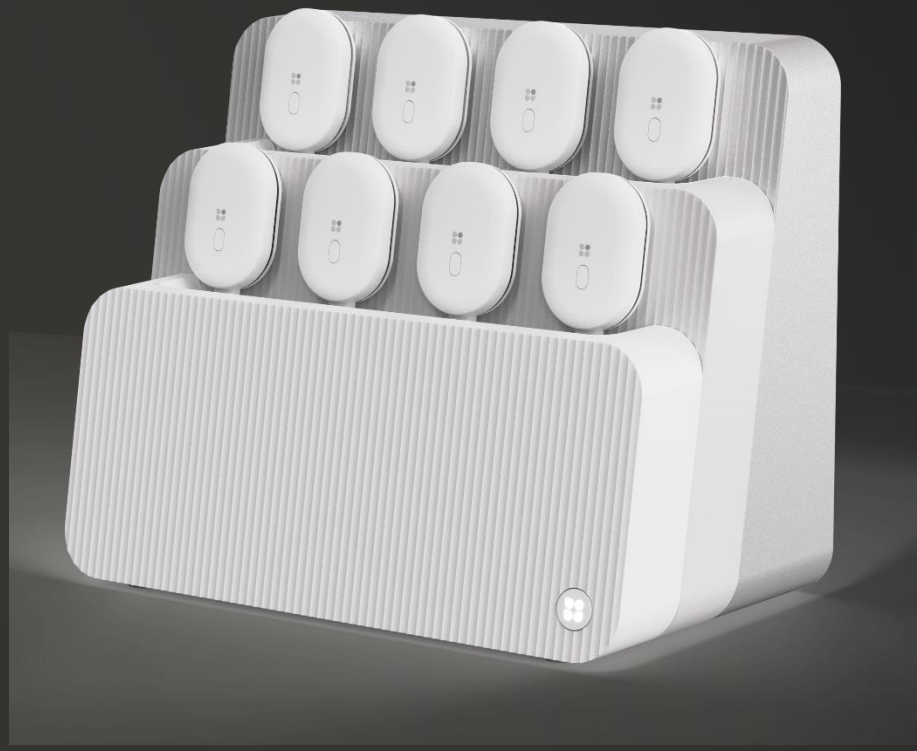
Photos Courtesy of Suzanne Kilmer, MD FAAD

BASELINE

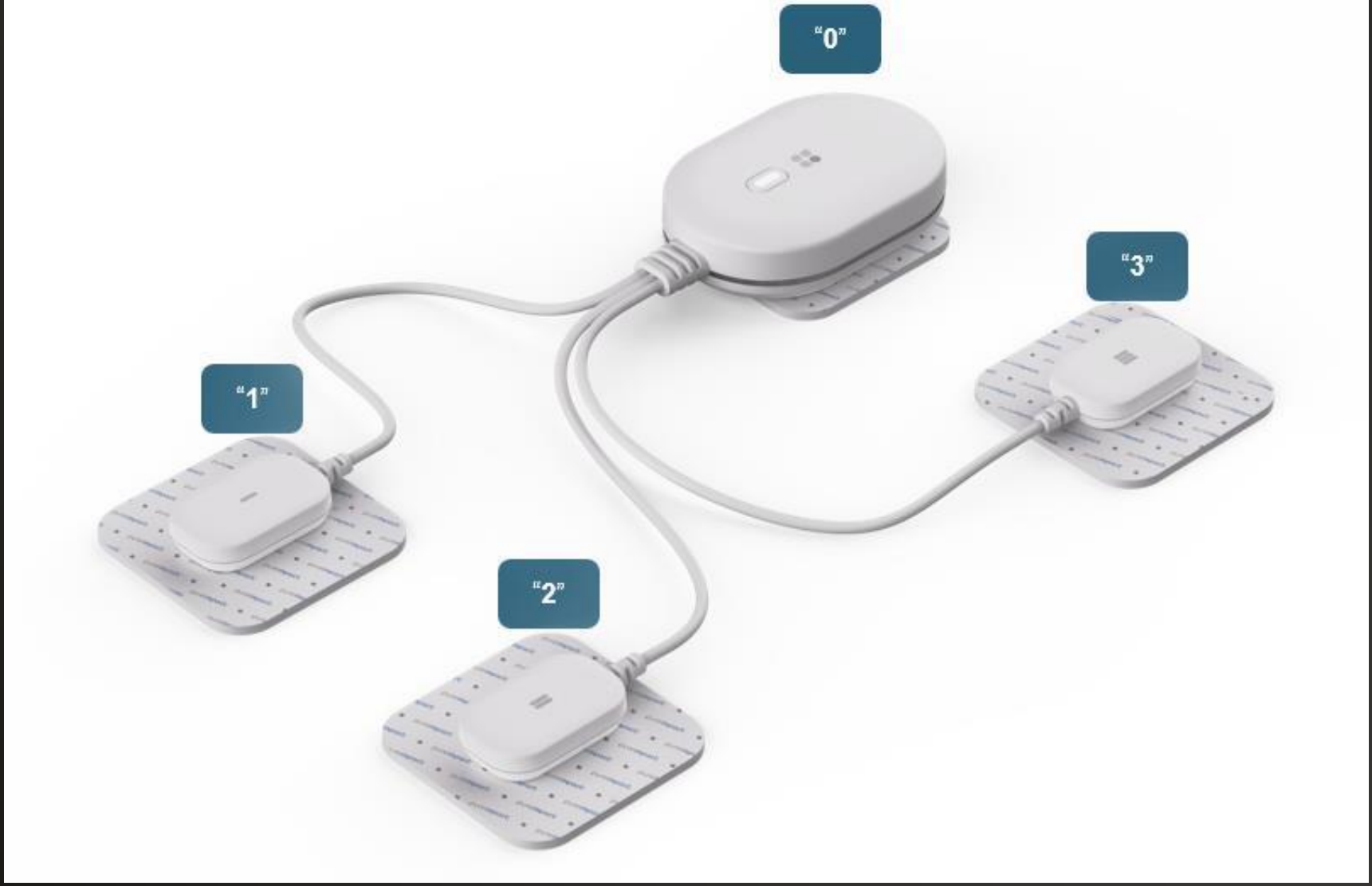
4-WEEKS FU

Photos Courtesy of Amy Taub, MD FAAD

- A sleek, easy-to-handle tabletop add-on module, enhancing space efficiency and maintaining a cost-effective investment.
- Up to 16 synchronized electrodes to deliver more effective, faster, and superior muscle strengthening and toning results.
- Stimulate multiple muscle groups and body areas simultaneously.
- Seamless 30-minute operation with a unique experience for both practitioners and users.



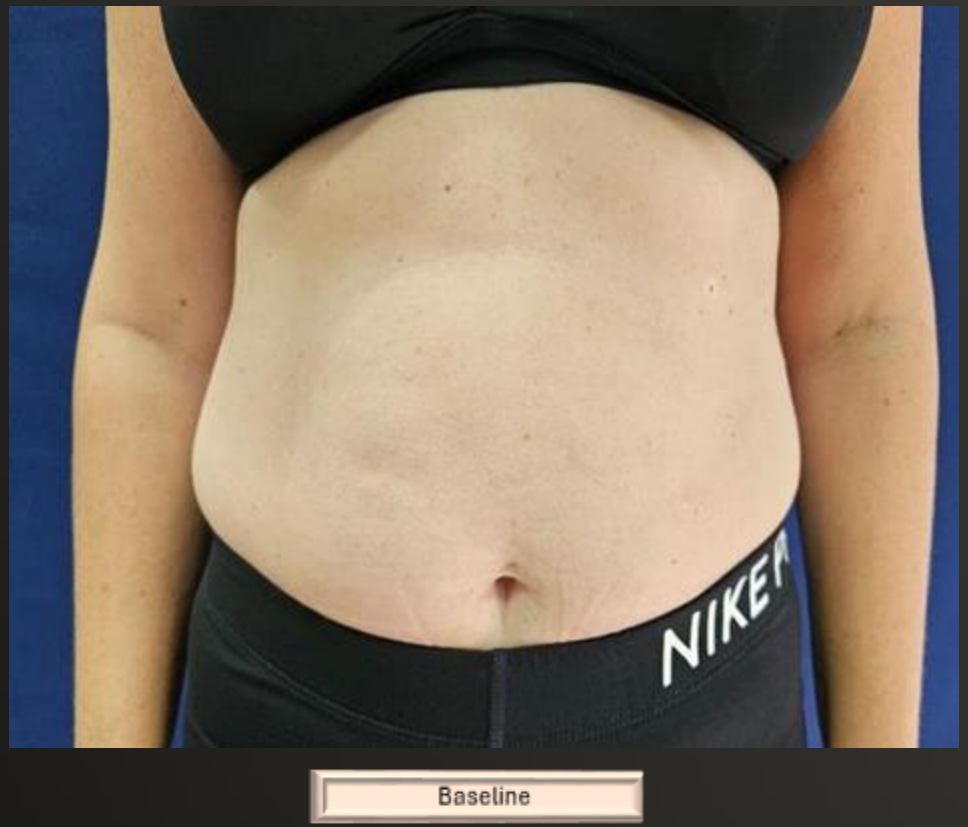
PLYOPODS™

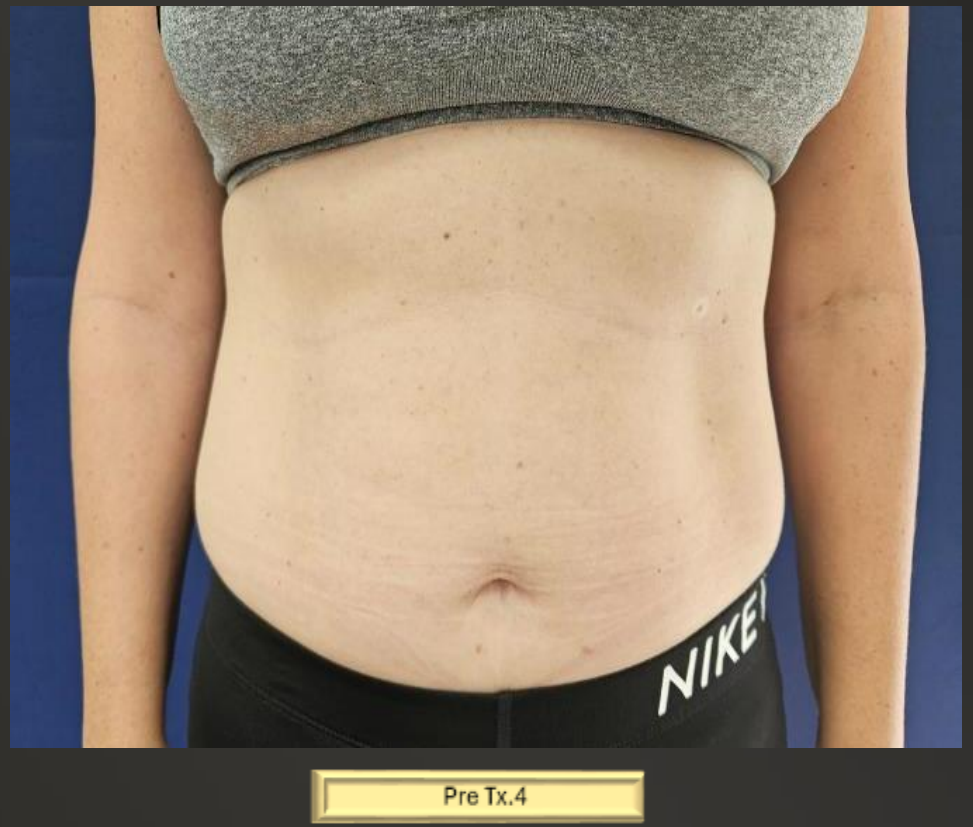


• Innovative Approach To Muscle Toning

- The FIRST-OF-ITS-KIND EMS system to emulate the advanced power of PLYOMETRICS:
  - Usually known as ‘Jump Training’ that builds muscle power through strength and speed.
  - Harnesses the sheer force of EXPLOSIVENESS to build maximum muscle force in minimum time.
  - Muscles are being contracted in synchronization to emulate real plyometrics exercises like jump squats.
- FDA-cleared to strengthen, tone, and firm the abdomen, buttocks, and thighs.

- Before And After 4 Sessions





Courtesy of Sofwave™ clinic

- Before And After 4 Sessions

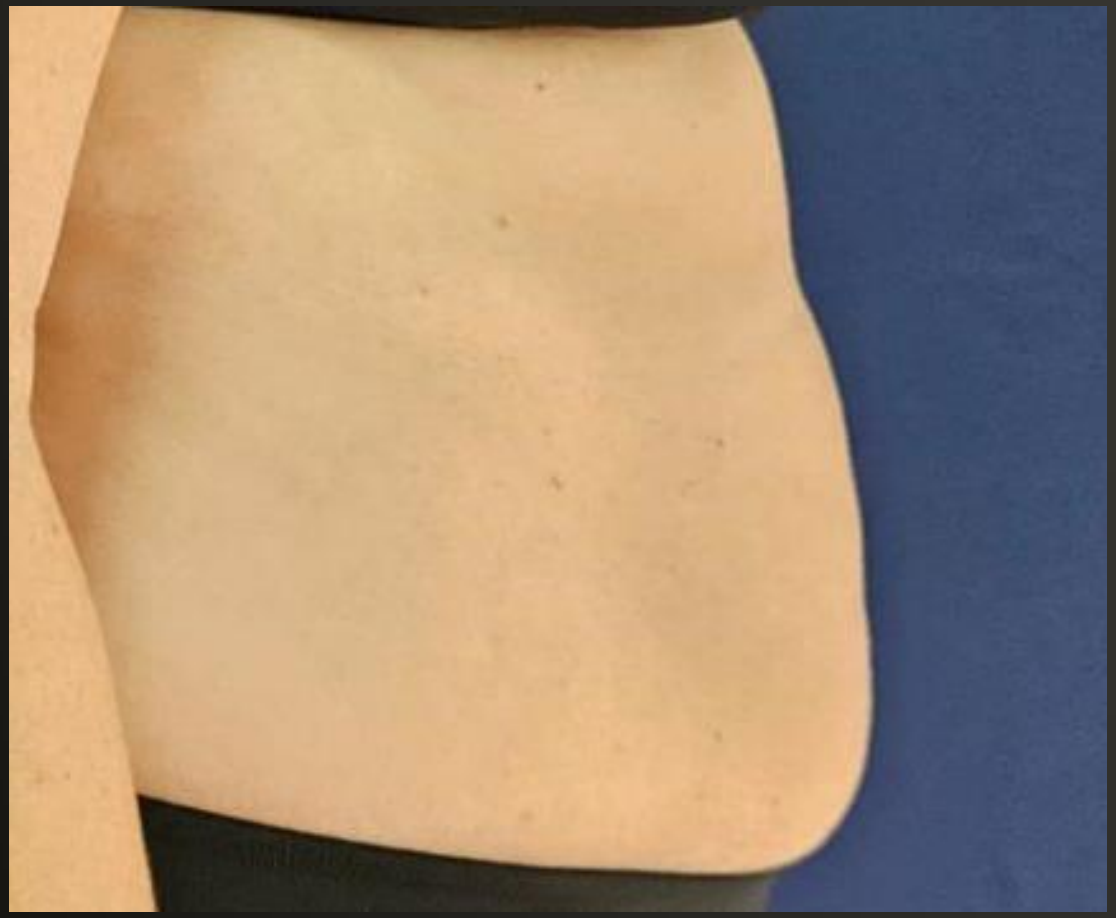
Courtesy of Sofwave™ clinic

Before and After – During Treatment sessions

Before Treatment

Immediately Before 4th Session

Before and After – During Treatment sessions



Before Treatment

Immediately Before 4th Session

GLP-1 Agonists in Aesthetics

- GLP-1 agonists are great drugs that are gaining prominence in the me dical space
- They are also in our space
- How we deal with them is something that is still an open debate
- Treat your patients – we have aesthetic options when needed
- If you dispense or want to dispense – make sure you have checked all of your boxes