FACE-Q | Aesthetics©

A Guide for Researchers and Clinicians

USER'S GUIDE
VERSION 1.0
January 2015

Table of Contents

1. **What is the FACE-Q | Aesthetics©?**

The FACE-Q© is a patient-reported outcome (PRO) measure that can be used to measure outcomes of aesthetic facial procedures and products from the patient's perspective. The FACE-Q© can be used to measure outcomes for any type of surgical or minimally invasive facial aesthetic treatment. This PRO instrument has been used to evaluate the safety and effectiveness of facial aesthetic treatments in numerous clinical trial settings and to inform patient care in clinical practice. The FACE-Q© is composed of a set of 39 independently functioning scales/checklists that measure 3 overarching domains: Facial Appearance, Health-Related Quality of Life, and Adverse Effects. These domains form the basis of the FACE-Q© conceptual framework shown below. The FACE-Q© modular approach means that only the subset of scales most relevant to a specific research objective or clinical patient population need be administered.

2. **How was the FACE-Q | Aesthetics© Developed?**

We followed internationally recommended guidelines for patient-reported outcome instrument development to ensure that the FACE-Q© meets requirements of regulatory bodies. In Phase 1, qualitative interviews (n=50) were conducted between January 2008 and February 2009. These interviews were audio recorded, transcribed, and coded using a line-by-line approach. The sample were aged 20 to 79 years, 88% female and 70% Caucasian. Participants had one or more of the following surgical or minimally invasive treatments: Botulinum toxin, skin resurfacing, fillers, blepharoplasty, facelift, rhinoplasty, neck lift, brow lift and chin implants. The data were used to develop the FACE-Q© conceptual framework and comprehensive item pool. The item pool was used to develop scales that were refined through 35 cognitive interviews with people aged 20 to 68 years, 86% female and 59% Caucasian. To ensure the scales captured all clinically relevant content, they were shown to 15 plastic surgeons, 4 dermatologists, 3 psychologist and 4 office staff. Feedback was obtained via 43 telephone and 3 face-to-face interviews, and used to finalize the FACE-Q© field-test version.

FACE-Q | AESTHETICS CONCEPTUAL FRAMEWORK

APPEARANCE		QUALITY OF LIFE	ADVERSE EFFECTS
Area Under Chin	Cheekbones	Aging Appraisal	Cheeks, Lower Face, & Neck
Cheeks	Chin	Age Visual Analogue	Eyes
Crows' Feet	Eyelashes	Appearance-Related Distress	Forehead, Eyebrows, & Scalp
Eyes	Face Overall	Early Life Impact of Treatment	Lips
Forehead & Eyebrows	Forehead Lines	Expectations	Nose
Lines Between Eyebrows	Lines Overall	Psychological Function	Skin
Lip Lines	Lips	Recovery Early Symptoms	
Lower Eyelids	Lower Face & Jawline	Decision Satisfaction	
Marionette Line	Nasolabial Folds	Outcome Satisfaction	
Neck	Nose	Social Function	
Nostrils	Skin		
Upper Eyelids			

In the Phase 2 international field-test study, participants were recruited between June 2010 and March 2015 from plastic surgery and dermatology clinics in Canada, United Kingdom and the USA. Participants were aged 18 years and older having any form of minimally invasive or facial cosmetic surgery. Participants were asked to complete the FACE-Q© scales relevant to evaluating outcomes for their particular procedure(s). Given the large number of scales tested, the psychometric results were published in a series of articles as follows:

FACE-Q | AESTHETICS PSYCHOMETRIC PUBLICATIONS

SCALES	PUBLICATIONS
Face Overall	Pusic A, Klassen AF, Scott AM, Cano SJ. Development and psychometric evaluation of the FACE-Q Satisfaction with Appearance Scale: A new patient-reported outcome instrument for facial aesthetics patients. Clin Plast Surg. 2013; 40(2):249-60.
Age Appraisal; Age Visual Analogue	Panchapakesan V, Klassen AF, Cano SJ, Scott AM, Pusic AL. Development and Psychometric Evaluation of the FACE-Q Aging Appraisal Scale and Patient-Perceived Age Visual Analog Scale. Aesth Surg J. 2013; 33(8):1099-1109.
Cheeks; Nasolabial Folds; Lower Face & Jawline; Area Under the Chin; Neck; Adverse Effects Cheeks, Lower Face & Neck	Klassen AF, Cano SJ, Scott AM, Pusic AL. Measuring Outcomes That Matter to Face-Lift Patients: Development and Validation of FACE-Q Appearance Appraisal Scales and Adverse Effects Checklist for the Lower Face and Neck. Plast Reconstr Surg. 2014; 133(1):21-30.
Psychological; Social; Outcome; Decision; Early Life Impact of Treatment; Recover Early Symptoms	Klassen AF, Cano SJ, Schwitzer J, Scott A, Pusic AL. FACE-Q scales for health-related quality of life, early life impact and satisfaction with outcomes and decision to have treatment: development and validation. Plast Reconstr Surg. 2015; 135(2):375-86.
Chin; Cheekbones; Forehead & Eyebrows, Adverse Effects Forehead, Eyebrows & Scalp	Schwitzer J, Klassen AF, Cano SJ, Baker SB, East C, Pusic AL Measuring satisfaction with appearance: Development and validation of the FACE-Q scales for the nose, nostrils, forehead, cheekbones, and chin. Plast Reconstr Surg. 2015. 136(4S-1):140-141.
Expectations; Appearance-Related Distress	Klassen AF, Cano SJ, Alderman A, East C, Badia L, Baker SB, Robson S, Pusic AL. Self-report scales to measure expectations and appearance-related psychosocial distress in patients seeking cosmetic treatments. Aesthet Surg J. 2016; 36(9):1068-78
Skin; Lips; Lines: Overall, Forehead, Between the Eyebrows, Crow's Feet, Lips, Marionette; Adverse Effects Skin; Adverse Effects Lips	Klassen AF, Cano SJ, Schwitzer JA, Baker SB, Carruthers A, Carruthers J, Chapas A, Pusic AL. Development and Psychometric Validation of the FACE-Q Skin, Lips, and Facial Rhytides Appearance Scales and Adverse Effects Checklists for Cosmetic Procedures. JAMA Dermatol 2016; 152(4): 443-451.
Nose; Nostrils; Adverse Effects Nose	Klassen AF, Cano SJ, East CA, Baker SB, Badia L, Schwitzer JA, Pusic AL. Development and Psychometric Evaluation of the FACE-Q Scales for Patients Undergoing Rhinoplasty. JAMA Facial Plast Surg. 2016; 18(1): 27-35.
Eyes Overall; Eyelashes; Lower Eyelids; Upper Eyelids; Adverse Effects Eyes	Klassen AF, Cano SJ, Grotting JC, Baker SB, Carruthers J, Carruthers A, Van Laeken N, Sykes JM, Schwitzer J, Pusic AL. FACE-Q Eye Module for measuring patient-reported outcomes following cosmetic eye treatments. JAMA Facial Plast Surg. 2017 ; 19(1):7-14.

The FACE-Q© represents a new generation of PRO measures developed using a modern psychometric approach called Rasch Measurement Theory (RMT). In RMT, scales that compose a PRO measure can be conceptualised as a "ruler" with an ordered arrangement or hierarchy of items from a low to high 'amount' of the construct. For example, the items of the Satisfaction with Facial Appearance scale measure appearance with a set of items that span a clinical hierarchy from "…how symmetric your face looks?" to "…how your face looks under bright lights?" RMT analysis provides interval-level measurement (a scale where the notches on the scale are evenly spaced) as opposed to ordinal-level measurement (a scale where the notches are not necessarily evenly spaced). Interval-level measurement allows for accurate tracking of change over time.

Each FACE-Q© scale is composed of a series of items (or questions) that evaluate a concept of interest. Patient responses to items are on a four-point scale and are asked to answer with their face/facial appearance in mind. Answers for a scale are summed and converted to a score from 0 to 100. For most FACE-Q© scales, a higher score indicates a better outcome. There is no total score for the FACE-Q©, only scores for each scale.

3. How is the FACE-Q | Aesthetics© Used?

In 2018, Americans spent more than 16.5 billion dollars on 1.8 million cosmetic surgical procedures and 15.5 million cosmetic minimally invasive procedures. This number represents steady growth in the past five years. The most common minimally invasive procedures were facial and included Botulinum Toxin Type A (7.4 million procedures up 3% from 2017) and soft tissue fillers (2.7 million up 2% from 2017). Surgical facial procedures were the fourth and fifth most common and included nose reshaping (213,780) and eyelid surgery (206,529).

An ever-growing range of facial cosmetic products and treatments are available, but very little clinical research has been done to understand treatment outcomes from the patient perspective. Prior to the development of the FACE-Q©, few PRO measures were available for facial aesthetic research. In 2009, we published a systematic review of PRO instruments for facial cosmetic surgery and/or nonsurgical facial rejuvenation [1]. From 442 articles, we identified 9 PRO measures, but none satisfied best practice guidelines for PRO measure development and validation. In a subsequent review commissioned by the UK Department of Health, 9 PRO measures for use in cosmetic surgery were identified, but only 3 followed recommendations for the development and validation of PRO measures. The FACE-Q© was one of the 3 recommended. See: http://phi.uhce.ox.ac.uk/pdf/Cosmetic%20Surgery%20PROMs%20Review2013.pdf

The FACE-Q© is meeting the demand for a PRO measure for facial aesthetics, providing researchers and clinicians around the world with a rigorously designed comprehensive PRO measure. The FACE-Q© is used to evaluate an ever-growing range of facial cosmetic products and treatments from the patient perspective. The FACE-Q© has been licensed for use by over 700 non-profit users for use in research and patient care. In industry sponsored trials, over 70 licenses have been signed representing use of FACE-Q© scales with >8000 patients undergoing a range of mostly minimally invasive treatments.

The FACE-Q© has been included in FDA approved label claims, including the following 2 examples:

1. *Juvederm VOLLURE XC*, an injectable gel indicted for injection into the mid to deep dermis for correction of moderate to serve facial wrinkles and folds (such as the nasolabial folds) in adults over age of 21 years. This label reported the findings from the FACE-Q | Aesthetics© Recovery Early Symptoms scale as part of their safety endpoint, and findings from the FACE-Q | Aesthetics© Appraisal of Nasolabial Folds scale as a secondary effectiveness endpoint. (Allergan, 2017).

2. *Juvederm VOLBELLA XC*, an injectable gel indicated for injection into the lips for lip augmentation and for the correction of perioral rhytids in adults over the age of 21 years. This label included 3 FACE-Q scales. Specifically, the label cites findings for the FACE-Q | Aesthetics© Recovery Early Life Impact module as a safety measure, and the FACE-Q | Aesthetics© Lip Lines and Satisfaction with Lips scale as secondary measures of effectiveness. (Allergan, 2017).

4. FACE-Q |Aesthetics© Scales

SCALES	ITEMS	RESPONSE OPTIONS	RECALL PERIOD	FK GRADE
Satisfaction with facial appearance	10	dissatisfied/ satisfied	past week	0.9
Satisfaction with skin	12	dissatisfied/ satisfied	past week	2.5
Satisfaction with forehead, eyebrows	6	dissatisfied/ satisfied	past week	6.2
Satisfaction with eyes	7	dissatisfied/ satisfied	past week	2.1
Satisfaction with eyelashes	7	dissatisfied/ satisfied	past week	6.2
Appraisal of lower eyelids	7	dissatisfied/ satisfied	past week	5.0
Appraisal of upper eyelids	7	dissatisfied/ satisfied	past week	5.7
Satisfaction with cheeks	5	dissatisfied/ satisfied	past week	2.6
Satisfaction with cheekbones	10	dissatisfied/ satisfied	past week	4.1
Satisfaction with nose	10	dissatisfied/ satisfied	past week	0.8
Satisfaction with nostrils	5	dissatisfied/ satisfied	past week	1.4
Satisfaction with lips	10	dissatisfied/ satisfied	past week	1.0
Satisfaction with lower face, jawline	5	dissatisfied/ satisfied	past week	3.0
Satisfaction with chin	10	dissatisfied/ satisfied	past week	1.1
Appraisal of area under the chin	5	not at all/extremely bothered	past week	2.8
Appraisal of neck	10	not at all/extremely bothered	past week	1.6
Appraisal of lines: overall	10	not at all/extremely bothered	past week	0.2
Appraisal of lines: forehead	7	not at all/extremely bothered	past week	3.5
Appraisal of lines: between eyebrows	7	not at all/extremely bothered	past week	5.6
Appraisal of lines: crow's feet	7	not at all/extremely bothered	past week	0.3
Appraisal of lines: lips	6	not at all/extremely bothered	past week	2.8
Appraisal of lines: marionette	7	not at all/extremely bothered	past week	4.8
Appraisal of lines: nasolabial folds	5	not at all/extremely bothered	past week	6.0
Aging appraisal	7	agree/ disagree	today	2.8
Age visual analogue scale	1	-15 years to + 15 years	n/a	3.6
Appearance-related psychosocial distress	8	agree/ disagree	n/a	2.7
Early life impact of treatment	12	not at all/most of the time	past 2 days	8.4
Expectations	8	agree/ disagree	n/a	1.5
Psychological function	10	agree/ disagree	past week	4.5
Recovery early symptoms	17	not at all/extremely bothered	past 2 days	6.3
Satisfaction with decision	6	agree/ disagree	n/a	0.2
Satisfaction with outcome	6	agree/ disagree	n/a	3.0
Social function	8	agree/ disagree	past week	4.9
Adverse effects: cheeks, lower face, neck	15	not at all/extremely bothered	n/a	4.7
Adverse effects: eyes	6	not at all/extremely bothered	n/a	9.7
Adverse effects: forehead, eyebrows, scalp	12	not at all/extremely bothered	n/a	7.3
Adverse effects: lips	8	not at all/extremely bothered	n/a	4.7
Adverse effects: nose	4	not at all/extremely bothered	n/a	6.2
Adverse effects: skin	10	not at all/extremely bothered	n/a	3.0

FK = Flesch-Kincaid grade level.

APPEARANCE SCALES

Satisfaction with facial appearance: This scale measures the appearance of the entire face with items that ask about symmetry and proportion, as well as how the face looks in photos, bright lights and at the end of the day.

Satisfaction with skin: This scale measures the appearance of facial skin (complexion) with items that ask about tone, radiance and smoothness, as well as appearance upon waking up and at the end of the day.

Satisfaction with forehead and eyebrows: This scale measures the appearance of the forehead with items that ask about position and height of eyebrows, as well as how youthful and smooth the forehead looks.

Satisfaction with eyes: This scale measures the appearance of eyes with items that ask about how youthful, attractive and open the eyes look, as well as their shape.

Satisfaction with eyelashes: This scale measures the appearance of natural eyelashes with items that ask about fullness, length and color, as well as how attractive and feminine the eyelashes make the eyes look.

Appraisal of upper eyelids: This scale measures the appearance of the upper eyelids with items that ask about how droopy, saggy or heavy the eyelids look, as well as how tired or old they make someone look.

Appraisal of lower eyelids: This scale measures the appearance of the area under the eyes with items that ask about the bags and wrinkled skin located in this area, as well as how tired or old these features make someone look.

Satisfaction with cheeks: This scale measures the appearance of cheeks (side of the face below cheekbones) with items that ask about fullness, symmetry and attractiveness.

Satisfaction with cheekbones: This scale measures the appearance of cheekbones with items that ask about shape, contour and symmetry, as well as how attractive, high and well-defined the cheekbones look.

Satisfaction with nose: This scale measures the appearance of the nose with items that ask about size, length and width, as well as how the nose looks in profile and in photos.

Satisfaction with nostrils: This scale measures the appearance of nostrils with items that ask about size, shape and how well-matched they look.

Satisfaction with lips: This scale measures the appearance of the lips with items that ask about size, shape and fullness, as well as how their lips suit their face and how the lips look when smiling.

Satisfaction with lower face and jawline: This scale measures the appearance of the lower face (lower cheeks and jawline) with items that ask about how prominent and sculpted the jawline looks.

Satisfaction with chin: This scale measures the appearance of the chin with items that ask about size, width and shape, as well as how the chin looks from angles and in photos.

Appraisal of area under chin: This scale measures the appearance of the area under the chin with items that ask about loose and sagging skin, as well as how the chin looks in profile.

Appraisal of neck: This scale measures the appearance of the neck with items that ask about hanging and sagging skin, as well as how the neck looks in profile and in collared shirts.

Appraisal of lines: overall: This scale measures the appearance of lines on the entire face with items that ask about lines seen in photos, under bright lights, when smiling or frowning and how old the lines make a person look.

Appraisal of lines: forehead: This scale measures the appearance of horizontal forehead lines with items that ask about the quantity and deepness of the lines, as well as how old or tired they make a person look.

Appraisal of lines: between eyebrows: This scale measures the appearance of lines between eyebrows with items

that ask about the lines that can be seen when frowning, concentrating or when relaxed, as well as how old or angry these lines make a person look.

Appraisal of lines: crow's feet: This scale measures the appearance of crow's feet (lines at the outer corner of your eyes) with items that ask about the lines that can be seen when smiling or squinting, as well as how old or tired they make a person look.

Appraisal of lines: lips: This scale measures the appearance of lines around your lips with items that ask about the quantity and deepness of the lines, as well as how old they make a person look.

Appraisal of lines: marionette: This scale measures the appearance of marionette lines (lines that run downward from the corner of the lips to your chin) with items that ask about how old, tired, angry or sad they make a person look.

Appraisal of lines: nasolabial folds: This scale measures the appearance of nasolabial folds (deep lines that run downward from the sides of your nose) with items that ask about the lines seen when relaxed or smiling, as well as how old they make a person look.

HEALTH-RELATED QUALITY OF LIFE SCALES

Aging appraisal: This scale measures how a respondent feels about the age their face looks with items that ask about looking in the mirror and in photos.

Age appraisal visual analogue scale: This VAS provides a rating of perceived age in comparison to chronological age on a visual analogue scale that runs from -15 years to +15 years.

Appearance-related psychosocial distress: This scale measures appearance-related distress using a range of emotional responses to appearance, e.g., feeling anxious, stressed and unhappy.

Early life impact of treatment: This scale measures how a respondent feels after an aesthetic treatment with items asking about ability to eat, drink and sleep, as well as the impact of treatment on social situations.

Expectations: This scale measures how someone expects their appearance and life will change after a cosmetic procedure.

Psychological function: This scale asks respondents to answer, with their facial appearance in mind, items that measure concepts such as feeling happiness, confidence, self-acceptance, etc.

Recovery early symptoms: This scale measures post-treatment recovery with items that ask about discomfort, swelling, itching, tingling and pain.

Satisfaction with decision: This scale measures satisfaction with their decision to undergo a facial procedure, e.g., worth the time, effort and cost.

Satisfaction with outcome: This scale measures satisfaction with the result of a facial procedure, e.g., pleased with the result, result is fantastic.

Social function: This scale asks respondents to answer, with facial appearance in mind, items that measure social interactions with familiar people as well as strangers.

ADVERSE EFFECTS CHECKLISTS

Cheeks, lower face and neck: This checklist asks about problems related to the lower face (cheeks) and neck with items that ask about irritation, swelling, bruising and scars.

Eyes: This checklist asks about problems related to the eyes and their surrounding areas with items that ask about irritation, dryness and scars.

Forehead, scalp and eyebrows: This checklist asks about problems related to the forehead, scalp and eyebrows with items that ask about pain, tingling, hairline and scars.

Lips: This checklist asks about problems related to the lips with items that ask about asymmetry, swelling and difficulty smiling or laughing.

Nose: This checklist asks about problems related to the nose with items that ask about tenderness, swelling and difficulty breathing.

Skin: This checklist asks about problems related to facial skin with items that ask about redness, itching, burning and skin tone.

5. How Specific FACE-Q | Aesthetics© Scales Are Used

It is important to note that patients do not need to complete all of the available FACE-Q© scales in any given study or clinical encounter. Each scale is designed to function independently. Patients can thus be asked to complete a subset of scales relevant to their situation. The FACE-Q© scales that measure HR-QOL are relevant to _all_ facial aesthetic patients. The FACE-Q© scales that measure Satisfaction with Appearance and Adverse Effects are _specific_ to facial areas (e.g., eyes, nose, cheeks). You also have the ability to create your own custom combinations for your patients or research study.

6. Administration of the FACE-Q | Aesthetics© Scales

The FACE-Q© scales are self-administered. Each scale takes only a few minutes to complete. Patients are given instructions at the beginning of each scale. You may use the paper and pencil format or create your own online version of the FACE-Q© for ease of administration.

7. Scoring the FACE-Q | Aesthetics© Scales

There is no overall or total FACE-Q© score, only scores for each independent scale. FACE-Q© scales are easy to score. The raw scores for items that make up a scale are added to provide a total score. The total score is converted to a score from 0 to 100. Higher scores for all scales, with two exceptions, reflect a better outcome. The exceptions include the "Expectations" scale, where higher scores indicate higher (more unrealistic) expectations, and the "Appearance-related Distress" scale, where higher scores indicate more distress. If missing data is less than 50% of the scale's items, insert the mean of the completed items. Use the Conversion Tables to convert the raw summed scale score into a score from 0 (worst) to 100 (best).

8. Conditions of Use of the FACE-Q | Aesthetics© Scales

Memorial Sloan Kettering Cancer Center holds the copyright of the FACE-Q© and all of its translations (past, ongoing and future). To avoid any copyright infringement, a copyright notice shall be included on the original questionnaire and all of its derivatives (including, but not limited to translations) as follows: "FACE-Q© 2013 Memorial Sloan-Kettering Cancer Center, all rights reserved."

Use of the FACE-Q© questionnaire requires completion of a user's agreement. The use of the FACE-Q© and its modules in non-profit academic research and in clinical care is free of charge. Non-profit users can access the FACE-Q | Aesthetics here: https://fhspeds.mcmaster.ca/pedsCapOne/surveys/?s=7FCJR9XXMX

The use of the FACE-Q© by 'for-profit' organizations is subject to a fee per module per protocol. For questions regarding fees to be paid by 'for-profit' organizations, please contact:
Alexandra Buga, MS, MBA
Licensing Associate, Office of Technology Development
Memorial Sloan Kettering Cancer Center
1275 York Ave, New York, NY 10065
bugaa@mskcc.org

For questions regarding study design and optimal use of FACE-Q© scales contact:

Andrea Pusic, MD, MHS, FACS, FRCSC
Brigham and Women's Hospital
75 Francis St.
Boston, MA 02115
apusic@bwh.harvard.edu

or

Anne Klassen, DPhil (Oxon)
McMaster University
Hamilton, Ontario
Canada
aklass@mcmaster.ca

9. Frequently Asked Questions

Do I need to sign a license to use the FACE-Q | Aesthetics© scales?

Yes, you must sign a licensing agreement for any use of the questionnaires, whether it is commercial or academic. The questionnaires are protected by copyright and are the exclusive property of the universities where they were developed.

Does it cost money to use the FACE-Q | Aesthetics© scales?

Use of FACE-Q© scales is free for non-profit users. For-profit users need to pay a licensing fee through Memorial Sloan Kettering Cancer Centres (see conditions of use above).

Do I have to use all of the FACE-Q | Aesthetics© scales?

Each scale functions independently, therefore patients can be asked to complete some or all of the FACE-Q© scales. It is not necessary for a patient to complete all of the scales as there is no overall or total FACE-Q© score. A researcher or clinician may therefore select a subset of scales depending on the particular purpose of the study or use.

Can I delete, add or change any items or response options in any of the FACE-Q | Aesthetics© scales?

You cannot make any changes to the wording of any items or response options of the FACE-Q©. There are three main reasons why deleting or adding items is not allowed. The first is that deleting or adding items would nullify the psychometric properties of FACE-Q© scales. The second reason is that by deleting or adding items, it would then not be possible to score the FACE-Q© and you would not be able to compare findings with those of other FACE-Q© studies. Finally, adding or deleting items is prohibited under copyright laws.

Can I translate the FACE-Q | Aesthetics© scales into a new language?

Yes, you can translate the FACE-Q© into different languages. Check our table of translations available in REDCap (https://fhspeds.mcmaster.ca/pedsCapOne/surveys/?s=7FCJR9XXMX) to see if there is a translation in the language you need. If there is not a translation in the language you need, you will need to sign a licensing agreement prior to translating the FACE-Q©. Please note that the developers of the FACE-Q© own the copyright of all translations.

Are there specific time points when patients complete the scales?

A researcher or clinician can decide the time points they would like to administer the scales.

10. FACE-Q | Aesthetics© Publications

1. Kosowski TR, McCarthy C, Reavey PL, Scott AM, Wilkins EG, Cano SJ, Klassen AF, Carr N, Cordeiro PG, Pusic AL. A systematic review of patient-reported outcome measures after facial cosmetic surgery and/or nonsurgical facial rejuvenation. Plast Reconstr Surg. 2009 Jun;123(6):1819-27.

2. Klassen AF, Cano SJ, Scott A, Snell L, Pusic AL. Measuring patient-reported outcomes in facial aesthetic patients: development of the FACE-Q. Facial Plast Surg. 2010 Aug;26(4):303-9.

3. Pusic AL, Klassen AF, Scott AM, Cano SJ. Development and psychometric evaluation of the FACE-Q satisfaction with appearance scale: a new patient-reported outcome instrument for facial aesthetics patients. Clin Plast Surg. 2013 Apr;40(2):249-60.

4. Panchapakesan V, Klassen AF, Cano SJ, Scott AM, Pusic AL. Development and psychometric evaluation of the FACE-Q Aging Appraisal Scale and Patient-Perceived Age Visual Analog Scale. Aesthet Surg J. 2013 Nov 1;33(8):1099-109.

5. Klassen AF, Cano SJ, Scott AM, Pusic AL. Measuring outcomes that matter to face-lift patients: development and validation of FACE-Q appearance appraisal scales and adverse effects checklist for the lower face and neck. Plast Reconstr Surg. 2014 Jan;133(1):21-30.

6. Klassen AF, Cano SJ, Schwitzer JA, Scott AM, Pusic AL. FACE-Q scales for health-related quality of life, early life impact, satisfaction with outcomes, and decision to have treatment: development and validation. Plast Reconstr Surg. 2015 Feb;135(2):375-86.

7. Schwitzer JA, Klassen AF, Cano SJ, Baker SB, East C, Pusic AL. Measuring Satisfaction with Appearance: Validation of the FACE-Q Scales for the Nose, Forehead, Cheekbones, and Chin. Plast Reconstr Surg. 2015 Oct;136(4 Suppl):140-1.

8. Klassen AF, Cano SJ, East CA, Baker SB, Badia L, Schwitzer JA, Pusic AL. Development and Psychometric Evaluation of the FACE-Q Scales for Patients Undergoing Rhinoplasty. JAMA Facial Plast Surg. 2016 Jan-Feb;18(1):27-35.

9. Klassen AF, Cano SJ, Pusic AL. FACE-Q Satisfaction with Appearance Scores from Close to 1000 Facial Aesthetic Patients. Plast Reconstr Surg. 2016 Mar;137(3):651e-52e.

10. Klassen AF, Cano SJ, Schwitzer JA, Baker SB, Carruthers A, Carruthers J, Chapas A, Pusic AL. Development and Psychometric Validation of the FACE-Q Skin, Lips, and Facial Rhytids Appearance Scales and Adverse Effects Checklists for Cosmetic Procedures. JAMA Dermatol. 2016 Apr;152(4):443-51.

11. Klassen AF, Cano SJ, Alderman A, East C, Badia L, Baker SB, Robson S, Pusic AL. Self-Report Scales to Measure Expectations and Appearance-Related Psychosocial Distress in Patients Seeking Cosmetic Treatments. Aesthet Surg J. 2016 Oct;36(9):1068-78.

12. Klassen AF, Cano SJ, Grotting JC, Baker SB, Carruthers J, Carruthers A, Van Laeken N, Sykes JM, Schwitzer JA, Pusic AL. FACE-Q Eye Module for Measuring Patient-Reported Outcomes Following Cosmetic Eye Treatments. JAMA Facial Plast Surg. 2017 Jan 1;19(1):7-14.

13. East C, Badia L, Marsh D, Pusic A, Klassen AF. Measuring Patient-Reported Outcomes in Rhinoplasty Using the FACE-Q: A Single Site Study. Facial Plast Surg. 2017 Oct;33(5):461-9.

14. Kaur M, Pusic A, Gibbons C, Klassen AF. Implementing electronic patient-reported outcome measures in outpatient cosmetic surgery clinics: an exploratory qualitative study. Aesthet Surg J. 2018 Oct. [Epub ahead of print].