BODY-Q®

A User's Guide for Researchers and Clinicians

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1. What is the BODY-Q?

The BODY-Q is a rigorously developed patient-reported outcome measure (PROM) designed to evaluate outcomes for obesity, weight loss treatments (e.g., diet, exercise, medication, and bariatric surgery), and body contouring to remove excess skin after massive weight loss and for cosmetic reasons. The BODY-Q can be used in research and clinical care to precisely measure how people function and feel from the patient perspective. Due to the modular approach taken to develop the BODY-Q, only the subset of scales most relevant to a specific research objective or clinical population needs to be administered.

2. How was the BODY-Q Developed and Validated?

The BODY-Q represents a new generation of PROMs developed using a modern psychometric approach called Rasch Measurement Theory (RMT). In RMT, scales that compose a PROM are each designed to measure a unidimensional construct. In scale development, data that meet the requirement of the Rasch model provide interval-level measurement. When a scale has high content validity and is targeted to measure a concept as experienced by a sample, accurate tracking of clinical change can be achieved. In addition to their use in research studies, BODY-Q scales can be used with individual patients to inform clinical care.

Figure 1 shows the multiphase mixed methods approach used by our team to develop Q-Portfolio instruments. We followed internationally recommended guidelines for PROM development to ensure that the BODY-Q meets requirements of regulatory bodies.

The BODY-Q is composed of a series of independently functioning scales that measure four overarching domains (appearance, health-related quality of life (HRQOL), eating concerns, and experience of healthcare). Figure 2 shows the BODY-Q conceptual framework. The modular approach taken to develop the BODY-Q means that only the subset of scales/checklists most relevant to a specific research objective or clinical patient population needs to be administered. The modular approach also makes it possible to add in new scales to fill gaps that are identified.

To develop the BODY-Q, in Phase 1, a literature review [1] and 63 patient interviews were conducted to create the BODY-Q conceptual framework and a set of scales that measure concepts that matter to patients who undergo weight loss and/or body contouring [2-4]. The scales were further refined through 22 patient interviews and input from nine clinical experts. In phase 2, 18 BODY-Q scales were shown to evidence reliability, validity, and responsiveness in an international (Canada, USA, and UK) field-test study that involved 403 pre- and post-weight loss and 331 pre- and post-body contouring surgery patients [5-7]. The original BODY-Q field-test publications described the psychometric performance of these 18 scales and an obesity-specific symptoms checklist.

A separate publication describes two additional scales that were field-tested in an international sample of cosmetic patients having body contouring or a facial aesthetic procedure [8]. These scales measure expectations and appearance-related distress. The field-test sample included 90 body contouring and 278 facial aesthetics participants. The psychometric analysis for the two scales supported their reliability and validity.

We added 11 new scales since the original scales were developed. These scales were refined with feedback from patients and experts and field-tested in several surveys. First, we developed and tested scales to measure the appearance of the chest and nipples to provide a means to measure outcomes of chest contouring [9-10]. These scales were field-tested in a sample of 689 participants aged 16 years and older from Canada, USA, Denmark, and the Netherlands having chest surgery for different reasons, i.e., gynaecomastia (N=174), massive weight loss (N=224), and gender-affirming surgery (N=291). Since developing the BODY-Q Chest and Nipples scales, our team has created a new PROM for gender-affirming care called the GENDER-Q [11]. The GENDER-Q includes a Chest module with scales that measure satisfaction with the chest and nipples/areola as well as a chest scars scale. We recommend using the GENDER-Q Chest scales over the BODY-Q for assessing outcomes in masculinizing gender-affirming chest surgery.

Another scale was added to the BODY-Q to measure appearance of stretch marks. This scale was field-tested in an international field-test sample of 630 participants [12]. A scale to measure appearance of cellulite was developed and field-tested in a US sample of 2129 participants [13]. We also developed six scales to measure eating-related concerns for patients undergoing any form of weight loss, including bariatric surgery [14-15]. Content validity for the eating-related scales was established through input from 17 patients and 19 experts. The scales were field-tested in four countries (Denmark, the Netherlands, Canada, USA) with 4004 participants [15]. A scale to measure satisfaction with the belly button was added to the BODY-Q to provide a means to measure outcomes in procedures involving abdominal tissue (eg, abdominoplasty) [16]. Finally, we developed a BODY-Q scale to measure satisfaction with the décolletage [17]. Please see our publications for more information about the development and validation of BODY-Q scales [5-6, 8-10, 12-13, 15-17].

In summary, the BODY-Q currently has one checklist and 31 independently functioning scales (see Table 1). All BODY-Q scales have been shown to evidence strong psychometric performance in their respective field-test studies [8-13, 15-18]. In an independent systematic review of 24 quality of life measures developed or validated for use in bariatric and body contouring surgery, the BODY-Q was shown to possess the strongest evidence for quality of measurement properties [19].

3. What is the BODY-Q Obesity Module?

Six BODY-Q scales form the BODY-Q Obesity Module. These scales are included in the International Consortium for Health Outcomes Measurement (ICHOM) Set of Patient-Centered Outcome Measures for Adults living with Obesity [20]. ICHOM is an organization that seeks to promote value-based health care through the standardization of outcome measurement. The BODY-Q Obesity Module includes the following scales: Body Image, Physical Function, Psychological Function, Sexual Function, Social Function, and Eating Behavior. To use the BODY-Q Obesity Module as part of the ICHOM initiative, you must sign a licensing agreement (see Section 10 below). More information about the ICHOM Standard Set for Obesity is available on the ICHOM website: https://www.ichom.org/patient-centered-outcome-measure/adult-obesity/

Figure 1: The multiphase mixed methods approach our team follows to develop PRO measures. Reprinted from Poulsen L, McEvenue G, Klassen A, et al. Patient-Reported Outcome Measures: BODY-Q. Clin Plastic Surg. 2019; 46:15-24 [18].

Figure 2: BODY-Q Conceptual Framework

APPEARANCE

- Abdomen
- Arms
- Back
- Belly Button
- Body
- Buttocks
- Cellulite
- Chest
- Décolletage
- Hips & Outer Thighs
- Inner Thighs
- Nipples
- Scars
- Skin
- Stretchmarks

EATING CONCERNS

- Eating Behavior
- Eating-Related Distress
- Eating-Related Symptoms

HEALTH-RELATED QUALITY OF LIFE

- Appearance Distress
- Body Image
- Expectations: Cosmetic
- Expectations: Weight Loss
- Physical Function
- Physical Symptoms
- Psychological
- Sexual
- Social
- Work Life

EXPERIENCE OF CARE

- Doctor
- Information
- Medical Team
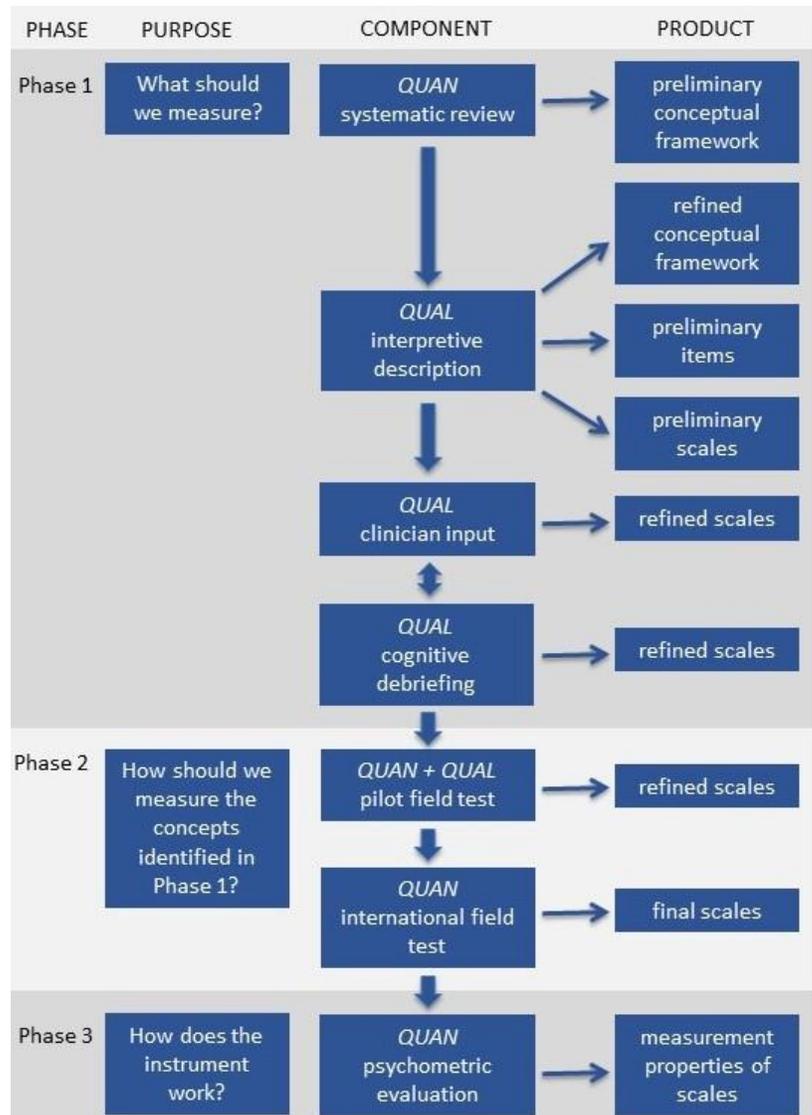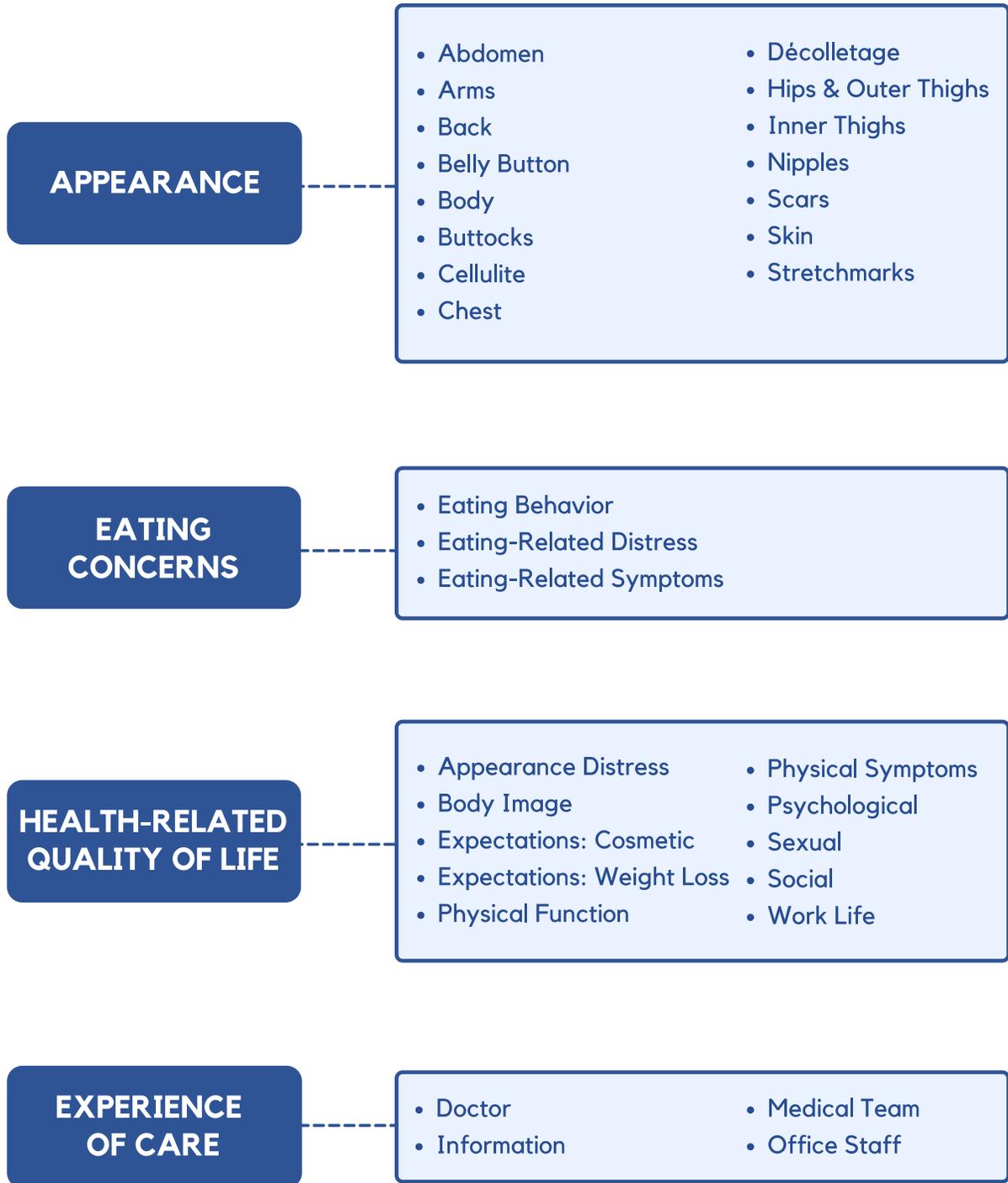- Office Staff

4. Is There Normative Data for the BODY-Q?

General population normative scores for the BODY-Q were published and based on a sample of 4051 participants from 12 European and North American countries [21]. These scores can be used to aid in the interpretation of BODY-Q scores in research and clinical practice. Participants were aged 18 years or older and were recruited through crowdsourcing platforms. The BODY-Q was completed by 4051 (2052 North American and 1999 European) participants. Normative reference values are available stratified by age, body mass index (BMI), and gender. These normative values can be used as reference values in research and clinical practice. In a separate publication using the normative sample, the psychometric properties of the BODY-Q scales were examined in detail and evidenced acceptable reliability and validity [22].

5. BODY-Q Scales

Table 1 shows the BODY-Q scales and checklist including the context of use, number of items, response options, recall period, and Flesch-Kincaid (FK) grade reading level. Below the table is a brief description of each scale.

Table 1: Description of BODY-Q scales

Name of scale	Context	Items	Response options	Recall	FK
Appearance					
Abdomen	1,2,3	7	dissatisfied/ satisfied	past week	3.1
Arms	1,2,3	7	dissatisfied/ satisfied	past week	1.4
Back	1,2,3	4	dissatisfied/ satisfied	past week	0
Belly Button	1,2,3	6	dissatisfied/ satisfied	past week	3.3
Body	1,2,3	10	dissatisfied/ satisfied	past week	2.1
Buttocks	1,2,3	5	dissatisfied/ satisfied	past week	1.2
Cellulite	1,2,3	11	not at all/ extremely bothered	past week	4.2
Chest	3	10	dissatisfied/ satisfied	past week	2.7
Décolletage	1,2,3	15	dissatisfied/ satisfied	now	3.5
Hips & Outer Thighs	1,2,3	5	dissatisfied/ satisfied	past week	1.2
Inner Thighs	1,2,3	4	dissatisfied/ satisfied	past week	0.6
Nipples	3	5	dissatisfied/ satisfied	past week	0.9
Scars	3	10	not at all/ extremely bothered	past week	1.2
Skin	3	7	not at all/ extremely bothered	past week	3.2
Stretch Marks	1,2,3	10	not at all/ extremely bothered	past week	1.4
Health-Related Quality of Life					
Appearance Distress	1,2,3	8	agree/ disagree	n/a	2.7
Body Image	1,2,3	7	agree/ disagree	past week	2.5
Expectations: Cosmetic	3	8	agree/ disagree	n/a	1.5
Expectations: Weight Loss	1,2	15	likely/unlikely	n/a	2.0
Physical Function	1,2,3	7	all the time/never	past week	2.7
Physical Symptoms	1,2,3	10	all the time/never	past week	2.8
Psychological Function	1,2,3	10	agree/ disagree	past week	3.5

Sexual Function	1,2,3	5	agree/ disagree	n/a	5.3
Social Function	1,2,3	10	agree/ disagree	past week	3.7
Work Life	1,2	10	agree/ disagree	last working	5.5
Eating-Related Concerns					
Eating Behavior	1,2	9	always/never	past week	3.0
Eating-Related Distress	1,2	10	always/never	past week	10.1
Eating-Related Symptoms	2	15	always/never	past week	6.5
Experience of Care					
Doctor	1,2,3	10	agree/ disagree	n/a	4.2
Information	1,2,3	10	dissatisfied/ satisfied	n/a	5.0
Medical Team	1,2,3	10	agree/ disagree	n/a	3.6
Office Staff	1,2,3	10	agree/ disagree	n/a	3.9

Context of Use: 1 = weight management programs; 2 = bariatric surgery; 3 = surgical and nonsurgical body contouring procedures performed after weight loss or for cosmetic purposes

APPEARANCE

Abdomen: This 7-item scale measures satisfaction with the appearance of the abdomen. Items ask about abdomen shape and size, how clothes fit, as well as how the abdomen looks from the side, in a swimsuit, and when naked.

Arms: This 7-item scale measures satisfaction with the appearance of the upper arms. Items ask about upper arm size, shape, skin, as well as how the upper arms look when lifted and when not covered.

Back: This 4-item scale measures satisfaction with the appearance of the back. Items ask about the back in terms of how toned and smooth the back looks, as well as how the back looks from different angles and when naked.

Belly Button: This 6-item scale measures satisfaction with the belly button. Items ask about how well the belly button suits the body, size, shape, and how it looks up close.

Body: This 10-item scale measures satisfaction with the appearance of the body. Items ask about the body in terms of size, shape, how clothes fit, as well as how the body looks from the side, behind, in a swimsuit, and when unclothed.

Buttocks: This 5-item scale measures satisfaction with the appearance of the buttocks. Items ask about the size, shape, and skin, as well as how the buttocks look from the side.

Cellulite: This 11-item scale measures how much someone is bothered by the appearance of cellulite. Items ask about being bothered by the amount of cellulite, how noticeable it is, as well as how it looks up close.

Chest: This 10-item scale measures satisfaction with the appearance of the chest in men and transmen. Items ask about how the chest looks in a loose and snug T-shirt, the shape of the chest, and how the chest looks in the mirror without a shirt on.

Décolletage: This 15-item scale measures satisfaction with the appearance of the upper chest area in women. Items ask about how smooth the skin on the upper chest looks, how it looks in a shirt with a low neckline, how youthful and attractive it looks, and how the skin looks when arms are crossed.

Hips and Outer Thighs: This 5-item scale measures satisfaction with the appearance of the hips and outer thighs. Items ask about size, shape, and skin, as well as how the hips and outer thighs look from behind.

Inner Thighs: This 4-item scale measures satisfaction with the appearance of the inner thighs. Items ask how smooth and toned the inner thighs are, as well as how the skin looks and how the inner thighs look when naked.

Nipples: This 5-item scale is a companion to the chest scale, for use with men and transmen. Items ask about satisfaction with the appearance of the nipples, including their size, shape, and how much they show through a snug T-shirt.

Scars: This 10-item scale measures how much someone is bothered by the appearance of body contouring scars. Items ask about their width, location, length, and color, as well as how noticeable they are and people seeing them.

Skin: This 7-item scale measures how much someone is bothered by the appearance of excess skin. Items ask about the amount of excess skin, how it hangs, having to dress in a way to hide the excess skin, and how the excess skin looks when naked.

Stretch Marks: This 10-item scale measures how much someone is bothered by the appearance of stretch marks. Items ask about being bothered by how wide they are, their length, their location, how noticeable they are, and how they look up close.

HEALTH-RELATED QUALITY OF LIFE

Appearance Distress: This 8-item scale measures appearance-related distress in people seeking cosmetic treatments for the body or the face. Respondents are asked to indicate how much they agree/disagree with feeling unhappy, stressed, down, or anxious about how they look, as well as avoiding being around people.

Body Image: This 7-item scale measures body image. Items ask respondents to indicate how much they agree/disagree that they are proud of their body, happy with their body, and feel positive towards their body.

Expectations: Cosmetic: This 8-item scale measures how people seeking cosmetic treatments for the body (e.g., liposuction) or face (e.g., facelift, Botox) expect their appearance and life might change after treatment, e.g., good things will happen to them and they will look fantastic.

Expectations: Weight Loss: This 15-item scale measures how people seeking weight loss treatment think their life will change after weight loss. Respondents are asked to imagine that two years have passed since treatment, and to indicate how likely a series of statements apply to them, e.g., have more energy, feel happier, and have self-control when eating.

Physical Function: This 7-item scale asks respondents to indicate how often they experience problems with physical activities, including getting up from a bed, standing for a long period of time, and doing moderate exercise.

Physical Symptoms: This 10-item checklist asks how often someone experiences a set of obesity-specific symptoms, including feeling tired during the day, back pain, shortness of breath with mild exercise, and excess perspiration.

Psychological Function: This 10-item scale measures psychological function. Items ask respondents to indicate how much they agree/disagree that they feel happy, confident, proud of themselves, and in control of their life.

Sexual Function: This 5-item scale measures sexual function. Items ask respondents to indicate how much they agree/disagree that they are satisfied with their sex life, comfortable having lights on during sex, and sexually attractive when undressed.

Social Function: This 10-item scale measures social function. Items ask respondents to indicate how much they agree/disagree that they feel accepted by people, that they make a good first impression, and feel confident in a group situation.

Work Life: This 10-item scale measures how much a person's weight affects their work life. Items ask respondents to indicate how much they agree/disagree that they feel accepted at work, have similar opportunities, and feel comfortable eating around other people.

EATING-RELATED CONCERNS

Eating Behavior: This 9-item scale measures eating habits. Items ask how often respondents feel satisfied after eating, eat healthy foods their body needs, show self-control when they eat, and eat the right amount of food.

Eating-Related Distress: This 10-item scale measures eating-related distress. Items ask respondents to indicate how often after eating they feel embarrassed, discouraged, ashamed, unhappy, and guilty.

Eating-Related Symptoms: This 15-item scale measures problems related to eating. Items ask how often someone experiences problems related to eating. Items include vomiting, dizziness, heartburn, pain, nausea, and bloating.

EXPERIENCE OF CARE

Doctor: This 10-item scale measures a patient's experience of care in terms of how they were treated by their doctor/surgeon. Items ask respondents to indicate how much they agree/disagree that the doctor treated them with respect, made them feel comfortable, and spent enough time with them.

Information: This 10-item scale measures the patient's experience of care in terms of the information they received from their medical team. Items ask respondents to indicate how satisfied they are with the information they received about how the surgery could be done, activities to avoid during recovery, and complications that could happen.

Medical Team: This 10-item scale measures a patient's experience of care in terms of how they were treated by members of the medical team. Items ask respondents to indicate how much they agree/disagree that the medical team were thorough, were easy to talk to, and worked together as a team.

Office Staff: This 10-item scale measures the patient experience of care in terms of how they were treated by members of the office staff. Items ask respondents to indicate how much they agree/disagree that the office staff were caring, were attentive to their needs, and welcomed them at the front desk.

6. Administration of the BODY-Q

The BODY-Q was designed to be completed by patients on their own (self-report). Each scale is independently functioning, which means that only scales relevant to the clinical situation or research question need be completed. Brief instructions and the timeframe for reporting are provided at the start of each scale. The original BODY-Q scales were field-tested using two modes of data collection as follows: paper-and-pencil and online using Research Electronic Data Capture System (REDCap). Data for the subsequent scales, including the new eating-related scales, were primarily collected using online options, including REDCap, Castor EDC, and crowd-working platforms, including Prolific Academic and Inspired Opinions. You may use the paper and pencil format or create an online version for ease of administration in non-profit academic research (e.g., REDCap) and in clinical care (e.g., hospital EMR such as Epic). If you plan to have an ePRO company capture and manage BODY-Q data collection, the ePRO company may need a license. If you have had or plan to have an ePRO company convert BODY-Q scales into an electronic format, e-conversion review and certification is required, please email qportfolioteam@gmail.com.

7. Scoring the BODY-Q

There is no overall or total BODY-Q score. Instead, the BODY-Q is composed of 31 independently functioning scales and a physical symptoms checklist.

To score a BODY-Q scale:

The raw scores for the set of items in a scale are added together to produce a total raw score. Once a total raw score for the scale is computed, the Conversion Table can be used to convert the raw score into a score that ranges from 0 (worst) to 100 (best). The conversion, which linearizes the scores, is based on the findings from the Rasch analysis.

For 28 of the 31 scales, higher scores reflect a better outcome. The exceptions include the two Expectations scales and the Appearance Distress scale. In these cases, higher scores are indicative of expectations that are high (unrealistic) and more distress. To ensure for all other scales that higher scores represent a better outcome, the raw data need to be scored as shown in the box on the next page. The Conversion Tables for changing raw scores into 0 to 100 scores are available after a licensing agreement is signed.

To score the physical symptoms checklist:

The BODY-Q has a 10-item Physical Symptoms checklist that can be used to identify problems experienced by a patient or a sample. The checklist provides descriptive data. Therefore, the choice of how to score a checklist is up to the end user. For example, the raw scores can be added to obtain a total score, or you can simply count the number of problems that the respondents experienced.

8. How to Deal with Missing Data

The choice of how to handle missing data, such as whether or not to impute the mean when there is missing data, is ultimately up to the end user of BODY-Q. Our suggestion follows the most common method for scoring when there is missing data, which is to impute a missing value using the mean value of responses to completed items if 50% or more of the items are answered. This method is recommended in the scoring manuals of numerous widely used PROMs, such as the SF-36 generic questionnaire used extensively in research for decades [23-24]. As such, BODY-Q scores can be computed if missing data is less than 50% of the scale's items. In this approach, the within person mean for the completed items can be imputed for the missing items prior to computing a total raw score. For example, if there is a 10-item scale and someone has not responded to all the items, but has responded to ≥5 items, all other items for that person can be imputed with a within-person mean (rounded to the nearest integer), and a summed score can be calculated. Alternatively, for a 10-item scale, if someone has responded to ≤4 items, the summed score for this person cannot be computed and is classified as missing data.

RAW SCORES FOR SCALE ITEMS

For scales that measure satisfaction, the raw data needs to be scored as follows: "Very dissatisfied" = 1; "Somewhat dissatisfied" = 2; "Somewhat satisfied" = 3; "Very satisfied" = 4. This includes the following scales: Abdomen, Back, Belly Button, Body, Buttocks, Chest, Décolletage, Hips & Outer Thighs, Inner Thighs, Nipples, and Upper Arms.

The one exception is Information, where items 3, 6, 7, 10 are scored as follows: "Very Dissatisfied" = 1; "Somewhat Dissatisfied" = 1"; "Somewhat Satisfied" = 2; "Very Satisfied" = 3. Remaining items are scored as 1, 2, 3, 4.

For scales that measure bothered by their appearance, the raw data needs to be scored as follows: "Extremely" = 1; "Moderately" = 2; "A little" = 3; "Not at all" = 4. This includes the following scales: Cellulite, Body Contouring Scars, Excess Skin, and Stretch Marks.

For scales that measure agree/disagree, the raw data needs to be scored as follows: "Definitely disagree" = 1, "Somewhat disagree" = 2; "Somewhat agree" = 3; "Definitely agree" = 4. This includes the following scales: Appearance-Related Distress, Body Image, Expectations: Cosmetic, Doctor, Medical Team, Office Staff, Psychological, Sexual, Social, and Work Life.

For scales that measure amount of time, the raw data needs to be scored as follows: "All of the time/Always" = 1; "Often" = 2; "Sometimes" = 3; "Never" = 4. This includes the following scales: Physical Function, Eating-Related Distress, and Eating-Related Symptoms.

The one exception is Eating Behavior, which needs to be scored as follows: "Never" = 1; "Sometimes" = 2; "Often" = 3; Always" = 4.

For the scale that measures how likely, the raw data needs to be scored as follows: "Very likely" = 3; "Somewhat likely" = 2; "Unlikely" = 1. This includes the following scale: Expectations: Weight Loss.

Below is an example of how to compute a scale score using the BODY-Q Inner Thighs scale. First, you compute the **sum score** by adding the raw scores for items 1 – 4. In the example below, the sum score = 10. Second, you will find the sum score for the BODY-Q Inner

Thighs Conversion Table, which is shown below. The sum score of 10 is then converted to 49.

BODY-Q® - SATISFACTION WITH INNER THIGHS

With your <u>inner thighs</u> in mind, in the past week, how <u>dissatisfied or satisfied</u> have you been with:

	Very Dissatisfied	Somewhat Dissatisfied	Somewhat Satisfied	Very Satisfied
1. How <u>smooth</u> your inner thighs look?	1	2	3	(4)
2. How the <u>skin</u> on your inner thighs looks?	1	(2)	3	4
3. How <u>toned</u> your inner thighs look?	1	2	(3)	4
4. How your inner thighs look when you are <u>naked</u>?	(1)	2	3	4

BODY-Q® - SATISFACTION WITH INNER THIGHS CONVERSION TABLE

Instructions: Higher scores reflect a better outcome. If missing data is less than 50% of the scale's items, for each missing item, we suggest you calculate and impute the within-person mean of the completed items. Use the Conversion Table below to convert the raw summed scale score into a score from 0 (worst) to 100 (best).

SUM SCORE	EQUIVALENT RASCH TRANSFORMED SCORE (0-100)
4	0
5	9
6	16
7	23
8	33
9	43
(10)	(49)
11	56
12	66
13	77
14	84
15	92
16	100

9. What is a Minimally Important Difference in BODY-Q Scores?

The ability of the BODY-Q to measure clinical change was examined by our team for bariatric surgery [25] and body contouring after weight loss [26]. For bariatric surgery, we collected prospective data from patients in Denmark and the Netherlands before and after bariatric surgery. Two distribution-based methods were used to estimate MID by 0.2 standard deviations of baseline scores and the mean standardized response change of scores from baseline to 3-years postoperatively. A total of 5476 assessments from 2253 participants were included. Participants underwent a variety of bariatric surgery methods, including Roux-en-Y gastric bypass, sleeve gastrectomy, and gastric banding. The baseline MID ranged from 1 to 4 for the HRQL scales and from 2 to 8 for the appearance scales. The mean change of scores ranged from 4 to 5 for the HRQL scales and from 4 to 7 for the appearance scales. The recommended MID for the change in BODY-Q scores for HRQL and appearance scales ranged from 3 to 8.

For body contouring, data were collected in an international, prospective cohort that included Denmark, Finland, Germany, Italy, the Netherlands, and Poland. Two distribution-based methods were used to estimate MID: 0.2 standard deviations of mean baseline scores and the mean standardized response change of BODY-Q scores from baseline to 3 years after surgery. A total of 3237 participants provided 12,554 assessments. The baseline MID ranged from 1 to 5 for the HRQL scales and 3 to 6 for the appearance scales. The estimated MID scores from baseline to 3-year follow-up ranged from 4 to 5 for HRQL and from 4 to 8 on the appearance scales.

When designing research studies, investigators can use the MID estimate for their domain of interest when calculating sample size. The authors acknowledge that distribution-based MID are estimates and may vary based on patient population and context.

10. Conditions of Use

Memorial Sloan-Kettering Cancer Center, Memorial Hospital for Cancer and Allied Diseases, Sloan-Kettering Institute for Cancer Research, McMaster University, Brigham and Women's Hospital, and Stefan Cano hold the copyright of the BODY-Q and all of its translations (past, ongoing, and future). To avoid any copyright infringement, please ensure that the copyright notice of the BODY-Q is included in the questionnaire. If you're unsure of the copyright notice for the BODY-Q, our website lists the copyright and trademark notice: https://qportfolio.org/copyright-information/

Use of the BODY-Q requires completion of a licensing agreement. The use of the BODY-Q in non-profit academic research and in clinical care is free of charge. The use of the BODY-Q by "for-profit" organizations (e.g., pharmaceutical companies or sponsored by pharmaceutical companies, contract research organizations, ePRO companies) is subject to a licensing fee.

Non-profit users can access the BODY-Q using the following link:
https://qteam.mcmaster.ca/surveys/?s=9X73E834MCH4LPY3

For questions regarding fees to be paid by 'for-profit' organizations, please contact:

Licensing Manager
Office of Technology Development
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PLEASE NOTE

When you sign a BODY-Q license, you agree to the following terms:

- **You will not modify, adapt, or create another derivative work from the BODY-Q**
- **You will not sell, sublicense, rent, loan, or transfer the BODY-Q to anyone**
- **You will not reproduce any BODY-Q scales in publications or other materials**
- **You will not translate the BODY-Q without permission from our team**

For questions regarding study design and optimal use of BODY-Q scales, contact:

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11. Frequently Asked Questions

Do I have to use all of the BODY-Q scales?

Each scale functions independently, therefore patients can be asked to complete one or all of the BODY-Q scales. It is not necessary for a patient to complete all of the scales as there is no overall or total BODY-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 or add or change any items or response options of the BODY-Q?

You cannot delete or add or change the wording of any items or response options of the BODY-Q. Any modification to the content of the BODY-Q is prohibited under copyright

laws. Also, making any changes to BODY-Q scales would invalidate their psychometric properties.

Can I reproduce BODY-Q scales in a publication or other public document (e.g., PhD thesis)?

According to the licensing agreement, you cannot reproduce the content of BODY-Q scales verbatim in a publication. However, it is possible to show shortened versions of items. The short forms of items that can be used in a publication are shown in Table 2 below.

Can I translate BODY-Q scales into a new language?

Yes, with permission, you can translate the BODY-Q into different languages. Before starting a translation, check our translations list on www.qportfolio.org 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 obtain permission from our team, sign a translation licensing agreement, and receive information on the method you need to follow. Email us at qportfolioteam@gmail.com for more information. Please note that the developers of the BODY-Q own the copyright of all translations of the BODY-Q.

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.

Does it cost money to use the BODY-Q?

Use of BODY-Q scales is free to non-profit users, including use by hospitals. For-profit users need to pay a licensing fee through Memorial Sloan-Kettering Cancer Center (see conditions of use above).

12. Acknowledgements

Table 2: Shortened items for BODY-Q scales/checklist to use in a publication

APPEARANCE	noticeable	NIPPLES	proud of body	PSYCHOLOGICAL	EATING DISTRESS
ABDOMEN	dimpling	shape	think body attractive	believe in myself	embarrassed
clothes fit	amount	size	feel good naked	proud of myself	out of control
size	skin	flat	have body I want	happy	unhappy
from side	people seeing	snug t-shirt	**EXPECT: COSMETIC**	like myself	ashamed
shape	up close	without shirt	look fantastic	emotionally strong	failure
in swimsuit	when naked	**SCARS**	tell me I look great	in control of my life	discouraged
toned	**CHEST**	dress to hide	people will be proud	confident	disappointed
when naked	loose t-shirt	wide	will be transformed	accept myself	guilty
ARMS	lie on back	location	good things happen	comfortable	frustrated
size	stand up	length	will feel like I fit in	feel great	willpower
smooth	masculine	noticeable	close relationships	**SEXUAL FUNCTION**	**EATING SYMPTOMS**
shape	when active	color	new people	fulfilling	vomiting
skin looks	snug t-shirt	thick	**EXPECT: WLOSS**	undress	rapid heart rate
toned	shape	crooked	feel better	satisfied sex life	regurgitation
lifted up	bend over	people seeing	energy	lights on	dizziness
not covered	profile	not covered	looks	attractive naked	low blood sugar
BACK	mirror	**SKIN**	exercise	**SOCIAL**	food getting stuck
smooth	scars	look bigger	happier	with people I know	heartburn upright
different angles	**DÉCOLLETAGE**	dress to hide	confident	people listen	food taste
toned	compared	certain clothes	goal weight	accepted by people	heartburn laying
when naked	smooth	hangs	control of life	included	pain
BELLY BUTTON	healthy	amount	new person	first impression	perspiration
suits body	age	people seeing	self-control	take part in life	nausea
size	photo	when naked	meeting people	make new friends	diarrhea
shape	low neckline	**STRETCH MARKS**	sex life	group situations	constipation
deep	texture	certain clothes	social life	people I don't know	bloating
mirror	morning	wide	skin	walk into a room	**EXPERIENCE**
up close	youthful	dress to hide	look undressed	**WORK LIFE**	**DOCTOR**
BODY	attractive	length	**PHYSICAL FUNCTION**	accepted at work	professional
dressed	breasts together	location	get up from bed	people listen	easy to understand
clothes fit	mirror	how old	bend side to side	treated the same	answered questions
size	cross arms	how noticeable	walk or move around	stand up for self	respectful
shape	up close	amount	bend over	same opportunities	feel comfortable
photos	lay on side	people seeing	moderate exercise	feel confident	involved decisions
behind	**HIPS/THIGHS**	look up close	up down stairs	eat around others	understood
from side	size	**HRQOL**	stand a long time	confident at events	what's best
summer clothes	shape	**APPEARANCE DISTRS**	**PHYSICAL SYMPTOMS**	comfortable weight	available concerns
swimsuit	skin looks	feel unhappy	tired during day	great about weight	spent enough time
unclothed	smooth	feel stressed	back pain	**EATING CONCERNS**	**INFORMATION**
BUTTOCKS	from behind	feel down	joint pain	**EATING BEHAVIOUR**	questions answered
size	**INNER THIGHS**	feel anxious	leg pain discomfort	feel satisfied	written information
from side	smooth	don't look normal	feeling off balance	eat healthy food	activities to avoid
shape	skin looks	worry I am ugly	feeling weak	show self-control	how surgery done
smooth	toned	avoid people	short of breath	feel in control	recovery time
skin looks	when naked	interest doing things	swollen feet	chew thoroughly	surgery options
CELLULITE		**BODY IMAGE**	skin rash infection	eat right amount	complications
deep		positive toward body	perspiration	eat at right speed	others experience
dress to hide		not perfect but like it		unhealthy foods	feel yourself
certain clothes		happy with body		stop before full	recovery pain
lumpy					

MEDICAL TEAM	answered questions	worked as team	OFFICE STAFF	attentive	caring
protected privacy	easy to talk to	knowledgeable	respectful	thorough	answered questions
friendly	attentive	available concerns	comfortable	worked as team	available concerns
respectful	thorough		knowledgeable	welcomed	

13. Publications Related to BODY-Q Development and Validation

1. Reavey PL, Klassen AF, Cano SJ, McCarthy C, Scott A, Rubin JP, Shermak M, Pusic AL. Measuring quality of life and patient satisfaction after body contouring: a systematic review of patient-reported outcome measures. Aesthet Surg J. 2011 Sep;31(7):807-13. doi: 10.1177/1090820X11417426. PMID: 21908812.

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