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Escaping from revulsion - disgust and escape in response to body-relevant autobiographical memories

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Abstract
The term Repulsive Body Image (RBI) refers to a schematic construct combining body-directed self-disgust and other negative body image features, that is assumed to bias information processing, including autobiographical memory retrieval. When specific memories about the own body are retrieved, intense self-disgust may arise and trigger urges to escape from those memories. We asked 133 women with high (HRBI; n = 63) and low (LRBI; n = 70) levels of habitual body-directed self-disgust to recall autobiographical memories in response to 11 concrete body-related cue words in a minimal instructions Autobiographical Memory Test (AMT). Despite an overall low level of memory specificity, we found that RBI levels were associated with stronger disgust reactions and stronger motivations to escape from body-related memories. In addition, disgust reactions to body-related memories accounted for the association between habitual levels of self-disgust and urges to escape from these memories. Thus, the findings indicated that women with body image concerns showed disgust-based urges to escape from body-related memories. This disgust-based urge to avert from body-related autobiographical memories might counteract the correction of an RBI, thereby contributing to the persistence of body image concerns and associated psychopathology.

Disgust is an emotion familiar to (almost) all of us and is commonly triggered by pathogenic cues (e.g., rotten food, body secretions; Tybur et al., 2009). A disgust reaction involves a subjective feeling of revulsion and an urge to distance oneself from a disgusting stimulus that may present a potential threat to the organism (Rozin et al., 2000). Because of this disease-avoidance function, disgust is considered to be of significant importance to the health and survival of humans (Oaten et al., 2009). However, the experience of disgust can also be extended to stimuli that are not as functional (Powell et al., 2013), like the self (Power & Dalgleish, 2008). Self-disgust describes disgust associated with aspects of the self that are considered to be stable and important to one’s self-evaluation (Powell et al., 2015). Those aspects of the self may refer to physical or characterological facets (Overton et al., 2008). The experience of self-disgust in response to own bodily aspects appears to be closely connected to body image concerns (Moncrieff-Boyd et al., 2014; Stasik-O’Brien & Schmidt, 2018; von Spreckelsen et al., 2018). A negative body image refers to a dissatisfaction with, over-evaluation of, and pre-occupation with one’s shape and weight, and is highly prevalent among young women (Cash, 2002).

Both self-disgust and a negative body image have been conceptualised as schematic constructs that include affective–cognitive components and influence information processing (Cash, 2002; Powell et al., 2015; Williamson et al., 2004). In the following, we use the term repulsive body image (RBI; von Spreckelsen et al., 2021) to describe body image concerns marked by heightened levels of body-directed self-disgust. Just like self-disgust and body image, the RBI is thought to represent a stable and dysfunctional schematic representation of the self that influences how information (about the self) is processed (cf. Powell et al., 2015). One type of information that is closely connected to a person’s self-concept is their autobiographical memories (Conway, 2005). Conway (2005) proposed that the processing of autobiographical memories is biased towards representations that are related to a dominating self-schema. In line with this notion,
earlier studies showed recall biases towards body-and eating-related information in patients with an eating disorder (e.g., Griffith et al., 2015; Hermans et al., 1998; Hunt & Cooper, 2001; Sebastian et al., 1996). Likewise, an RBI would therefore be expected to facilitate access to corresponding memories of disgust towards one’s own body.

Autobiographical memories can be retrieved through generative (strategic) or direct (automatic) retrieval processes (Conway, 2005). In generative retrieval the autobiographical memory hierarchy is accessed at more general levels (overarching life-themes, lifetime periods, thematic summaries of events). By contrast, during direct retrieval, the memory system is thought to be accessed at the more basic level of sensory-perceptual features of events through cues that closely match their representation in memory (Conway & Pleydell-Pearce, 2000). These episodic or specific autobiographical memories refer to particular moments, are accompanied by a sense of reliving, and are usually highly detailed and vivid (Conway & Pleydell-Pearce, 2000; Gardiner, 2001; Tulving, 2001). Due to these features, specific memories have a strong potential to elicit intense negative emotions (Conway & Pleydell-Pearce, 2000). Indeed, a substantial body of research on involuntary and on intrusive memories suggests that specific memories can be elicited in an automatic or associative manner, and that these memories are likely to elicit an emotional response (e.g., Berntsen, 1998; Berntsen, 2010; Berntsen & Hall, 2004; Schlagman & Kavilashvili, 2008; Watson et al., 2013).

In a previous study we aimed to trigger generative retrieval processes through the use of abstract body word-cues in women with high and low RBI levels (e.g., attractive, ugly; von Spreckelsen et al., 2021). In that study, we hypothesised that during generative retrieval, women with high RBI levels would try to avoid recalling specific memories in order to prevent experiencing intense revulsion. Although we found that women with an RBI recalled more autobiographical memories that involved disgusting appraisals of their own body than women with low RBI levels, we did not find support for our hypothesis on strategic avoidance of specific memories. In the present study, we are turning the focus to examining reactive avoidance of aversive body-related memories in women with high (vs. low) RBI levels. In order to do so, we attempted to disable strategic avoidance processes by promoting the automatic retrieval of highly episodic/specific memories. Research suggests that the use of concrete words may promote direct retrieval processes (Hauer et al., 2008; Williams et al., 1999). Through the use of concrete body words, we thus aim to facilitate the direct retrieval of specific body-related memories and hinder any disgust-driven avoidance processes from striking pre-emptively.

Due to the potency of specific memories to elicit emotional responses, women with elevated RBI levels would likely experience a strong disgust reaction to specific body-related memories. Because exposure to a disgusting stimulus typically elicits a compelling urge to distance the self from the disgust-eliciting stimulus (cf. Rozin et al., 2000), we would expect women with high RBI levels to try disengaging from the emotional memory through distraction or suppression in order to escape this acute feeling of disgust. Research indeed indicates that people attempt to cope reactively (e.g., through brooding, memory/emotional suppression) with the emotional effect of associatively-retrieved memories (Berntsen, 2010; del Palacio-Gonzalez et al., 2007). Ultimately, this could hamper the processing of potentially corrective information and prevent habituation to feelings of disgust (cf. Lader & Wing, 1966), thus decreasing the opportunity to challenge negative appraisals about the self (cf. Förster et al., 2006; Salakovskis, 1991). Such a bias towards disgust-evoking autobiographical memories and subsequent urges to escape might therefore contribute to the maintenance of body image concerns, which are prevalent, persistent, and associated with negative physical and psychological consequences (e.g., Davison & McCabe, 2005; Fallon et al., 2014; Tiggesmann, 2004; Wilson et al., 2013).

In the present study, women with high (HRBI) and low (LRBI) habitual levels of body-directed disgust retrieved autobiographical memories in response to concrete body-related cue words. The cue words were presented in a Minimal Instructions Autobiographical Memory Test (AMT) because this type of AMT appears to be most suitable for use in non-clinical populations (Debeer et al., 2009). First, we examined whether we successfully elicited a high number of specific memories. Given that Debeer et al. (2009) found that 50% of the memories were specific when using generic cues, we used this as an a priori benchmark and considered memory specificity to be high if at least more than half (i.e., 50%) of the memories were specific. Based on our assumption that concrete cues will promote automatic (i.e., direct) retrieval processes, specific memories should be elicited regardless of higher-order schematic representations such as RBI. In sum, we hypothesised that more than 50% of the memories would be specific in the overall sample and that the RBI groups would not differ in proportions of specific memories. Second, we examined our theory that women with high RBI levels would be motivated to escape from specific memories due to elevated disgust responses to these memories. We therefore tested (cross-sectionally) whether there was an association between RBI levels and escape motivations and whether this could be accounted for by increased disgust responses (see the mediation model in Figure 1). The hypothesised mediation model consisted of paths denoting positive associations between (a) RBI levels and disgust responses to specific memories; (b) disgust responses and escape motivations in response to specific memories, when accounting for RBI levels, (c) RBI levels and escape motivations in response to specific memories, and (c’) a weaker association between RBI levels and escape motivations when accounting for disgust responses to specific memories.
Method

Statement of transparency

We pre-registered the research questions, hypotheses, study method, data processing, and data analyses on the Open Science Framework (OSF; https://osf.io/x4q29/; we posted an amendment of the file before commencing data analyses). Changes/Additions to the pre-registration were as follows. First, we pre-registered to stop data collection upon reaching $n = 64$ per condition. In order to account for participant exclusion, we initially oversampled and collected complete data from $n = 70$ per condition. Second, we examined group differences in the EDE-Q total scores, and shape- and weight-concern subscale scores for a more comprehensive picture of body image concerns/eating symptomatology in our RBI groups and for comparability to an earlier study (von Spreckelsen et al., 2021). Third, we note that four questionnaires (the CESD-R, Self-Objectification Questionnaire, 1-item Feminist Identity Scale, and the Feminine Ideology Scale) and three memory rating scales (assessing detachment) were added, which were not relevant to the current project. These questionnaires/rating scales were not pre-registered because they were added in the context of a student project. The data can be found on the OSF. Fourth, in the exploratory analyses section "Regression Analyses Examining the Proportion of Specific Memories as a Predictor" we decided to be conservative in our alpha correction (by adjusting for 10 tests: $\alpha = .005$), because we did some more exploring than we reported here.

Study design and power analysis

The study had a cross-sectional natural groups design. We conducted several a-priori power calculations in G*Power (Faul et al., 2007) for our planned statistical analyses aiming to detect at least medium effect sizes. We decided to aim for a total sample size of $N = 128$ (64 per group), as this was the highest sample size obtained from all power calculations (based on an independent samples t-test with $d = 0.5$; $\alpha = .05$; Power = 80%). This sample size was thus sufficient for achieving at least 80% power for all hypothesis tests, specifically, two one-sample t-tests ($n = 68$; one-sided; Holm–Bonferroni corrected $\alpha = .025$), an equivalence test ($n = 90$; $d = 0.8$; $\alpha = .05$), and $R^2$ deviation from zero in a linear multiple regression with two predictors ($n = 98$; $\hat{\tau}^2 = 0.15$; Holm–Bonferroni corrected $\alpha = .001$).

Participants

The sample consisted of $N = 133$ women living in Groningen (The Netherlands), with high (HRBI: $n = 63$) and low (LRBI: $n = 70$) levels of habitual body-related disgust. Most participants were German (37.6%) or Dutch (18.8%), and the rest (39.8%) indicated a variety of other nationalities (e.g., other European; Asian; American). With a range from 18 to 37, the mean age of participants was 20.79 ($SD$: 2.86) years. For 5 participants, demographic information was missing due to a technical error.

Participant inclusion and exclusion

Participants were selected through an online screening and were included in the main study if they (a) indicated their gender as female, (b) had an average score of either $\geq 4$ ("high RBI"; H RBI) or $\leq 2$ ("low RBI"; L RBI) on two SDES-items (SDES items no. 1 & 13), (c) indicated that they understood English at a professional level, (d) gave a negative answer to the two simulation questions (SIM_1 & SIM_2) and (e) consented to be contacted for participation in the lab-based study. In total, 143 (H RBI: $n = 72$; L RBI: $n = 71$) participants came to the main study, of which 10 participants were excluded because they discontinued their participation in the study (H RBI: $n = 2$; L RBI: $n = 1$), indicated that they did not participate in the study seriously (H RBI: $n = 3$), failed on three or more out of 5 questions of the English language assessment (H RBI: $n = 2$) indicated not to understand English at a professional level when re-assessed in the lab (H RBI: $n = 1$), or participated in and correctly remembered the hypothesis of a previous study which was similar to the current study (von Spreckelsen et al., 2021; H RBI: $n = 1$).

Materials

The screening and main study were conducted in Qualtrics ©, Provo, UT. All materials were presented in English, with
the exception of the AMT for Dutch and German native speakers (see below for details).

Self-disgust eating disorders scale (SDES)
The SDES (Moncrieff-Boyd et al., 2014) is a 16-item self-report questionnaire that assesses levels of disgust towards the self, with a focus on the own body. The items are rated on a 7-point Likert scale ranging from strongly agree (1) to strongly disagree (7). After removing 6 filler items, 10 reverse-scored items remain for scoring. Thus, total scores can range from 10–70, with higher scores indicating higher levels of self-disgust. For the current purpose, two items were used to select the groups of interest: (1) “I find myself repulsive” (SDES item no. 1), and (2) “It sickens me to look at myself” (SDES item no. 13). We optimised the selection of RBI groups after previously using total SDES scores (von Spreckelsen et al., 2021). We decided to select two items (items 1 & 13) which focus on body-directed self-disgust compared to other items that are assessing the lack of self-acceptance (e.g., “I accept who I am”; items 2, 5), are focused on one’s behaviour (e.g., “I find the way I behave abhorrent”; items 3, 8, 11), are formulated quite strongly (“Parts of my body are foul”; item 6) or are focused on social aspects of self-disgust (e.g., “I don’t want to be seen”; items 9, 16). We reasoned that this sampling method would allow us to more directly select the groups of interest for our study. Our average item cut-off values of \( \geq 4 \) (HRBI) and \( \leq 2 \) (LRBI) were based on a previous study using cut-off values of \( \leq 20 \) and \( \geq 40 \) (on total SDES scores; von Spreckelsen et al., 2021) to select RBI groups, in which we found large group differences on several body image dimensions.

Computerised minimal instructions autobiographical memory task (AMT)
In the minimal instructions AMT (Debeer et al., 2009), participants were asked to recall personal experiences in response to 11 concrete body/weight-related cue words. They were given a time-limit of 1 min to write down a memory. They were instructed not to describe events that happened in the last 7 days, or to events that they wrote down in response to a previous word cue. The cue words were presented individually on the computer screen with the instruction “Can you write down a personal experience that the word ‘my _____’ reminds you of?” and a text box to type the answer. A statement below the textbox indicated that participants would automatically be forwarded to the next cue word after one minute. The time window to respond started as soon as the cue word appeared. Dutch and German participants completed the AMT in their native language; participants with other nationalities completed the AMT in English. Participants first practiced with a practice cue word before being presented with the 11 target cue words. Because our main goal was to select concrete body words, we decided on using body parts as cue words in the AMT (as they constitute tangible entities). We based our selection on the following criteria: (a) body parts for which appearance/body norms exist and (b) distinct body parts (no overlap), which were examined in the context of discussions between the authors and pilot testing. The cue words were translated into Dutch and German by native German and Dutch speakers. The cue words of the study (including the practice cue word) can be found in Appendix A (Table A1).

Memory ratings
After the AMT, participants saw a quote of each memory they provided in the AMT individually on the computer screen in the same sequence in which the cues were presented in the AMT. Below each quote, the instruction to retrieve the memory and to imagine the self in the experience and the following rating scales were presented. Because the memory dimensions of interest cannot be adequately assessed by an external (objective) rater, we used self-reported ratings, with the exception of the memory specificity rating, for which we used a hybrid of self-report and experimenter ratings (see below).

Disgust (Affect). Participants were asked to respond to the statement “Please indicate the extent to which the memory makes you feel the following emotions about your body right now” on slider scales (0: not at all – 100: very much) assessing disgust along with 5 distractor emotions (dissatisfaction, pride, acceptance, happiness, and shame).

Escape. Participants rated the extent to which they wanted to suppress and distract themselves from the memory (“I want to stop thinking about the memory”; “I want to distract myself from the memory”) on two slider scales ranging from 0 (not at all) to 100 (very much). The two slider scores were averaged to create one escape variable (Cronbach’s \( \alpha = .97 \)). We based the assessment of escape from memories on items of questionnaires that assess emotion regulation through suppression and distraction (e.g., adapted Emotion Regulation Response Scale [ERRS], Olatunji et al., 2017; Multidimensional Experiential Avoidance Questionnaire [MEAQ], Gámez et al., 2011; Cognitive Avoidance Questionnaire [CAQ]; Gosselin et al., 2002) and adapted the items to the current goal to assess people’s urge to engage in re-active avoidance of the memory. We also assessed to what extent participants detached from the memories using slider scales, which was not examined in the current project (for specifics, see the study materials on the OSF: https://osf.io/fgb9e/).

Specificity. Participants were asked to rate the specificity of the memory by categorising the memory into one of 4 categories, namely (a) a specific memory (memory of an event that occurred within the course of one day; e.g., “the visit to the beach with my friends a month ago”), (b) a categoric memory (memory of a summary of events; e.g., “visiting the beach with my friends”), (c) an extended memory (memory of an period longer than one day; e.g., “the last summer vacation at the beach”), or (d) an omission (no memory was recalled).
**Specificity Coding.** In addition to the self-reported coding of memories, the specificity of memories was coded by raters, following the procedure described by Debeer and colleagues (2009). One rater coded all memories into six categories. In addition to the four categories for the self-reported coding by the participants (specific, categoric, extended, omission), raters could categorise memories into (e) a semantic associate (verbal associations with the cue; e.g., “the beach”), or (f) rest (memory violating the instructions; e.g., referring to an event in the past 7 days). For each memory, the code of the first rater was compared to the self-reported code given by the participant. All memories for which the codes were diverging were coded by a second independent rater. In order for a memory to be classified, two out of the three codes (by the participant, the first rater, and the second rater) needed to be the same. If this was not the case, the memory was coded as “rest.” Memories assigned to the “rest” category due to diverging codes, were further categorised into “Rest – General” if all three codes fell within the general categories (categoric, extended, semantic associate), or “Rest – Other” if there was no consensus in the codes to whether the memory is specific or general. The coding procedure resulted in 87.5% (1280 out of 1463) categorised memories, with 12.5% uncategorised as rest-general (60) or rest-other (123) memories.

**Body image & eating disorder symptoms**

**Multidimensional Body-Self Relations Questionnaire – Appearance Scales (MBSRQ-AS).** The MBSRQ-AS (Cash, 2018) is a 34-item short version of the MBSRQ and includes five subscales which are specifically focused on appearance-related concerns. Appearance Evaluation (7 items), Appearance Orientation (12 items), Overweight Preoccupation (4 items), Self-Classified Weight (2 items), and the Body Areas Satisfaction Scale (BASS; 9 items). In the current study, we focused on the first three subscales: Appearance Evaluation (higher scores indicate higher satisfaction with appearance), Appearance Orientation (higher scores represent more investment in appearance), and Overweight Preoccupation (higher scores indicate more fat anxiety, dieting, and weight vigilance). Items are answered on a 5-point Likert scale ranging from definitely disagree (1) to definitely agree (5).

**Eating Disorder Examination-Questionnaire Version 6.0 (EDE-Q 6.0).** This 28-item self-report questionnaire assesses eating symptomatology on four subscales (weight concern, shape concern, restraint, eating concern). The weight and shape concern subscales of the EDE-Q version 6.0 (EDE-Q 6.0; Fairburn & Beglin, 1994) assess dimensions of a negative body image (e.g., body dissatisfaction, over-evaluation of and preoccupation with shape/weight). Items are answered on a 7-point Likert scale (0: no days – 6: every day). Subscale scores are calculated by averaging their respective item scores, and EDE-Q total scores are calculated by averaging the subscales scores.

**Body Part Satisfaction Rating.** Participants were presented with the body-parts that were used as cues in the AMT and asked to rate the extent to which they feel satisfied with each of the body parts in general on a 7-point Likert scale ranging from very dissatisfied (1) to very satisfied (7).

**Additional questionnaires**

**Demographic Assessment.** The demographic assessment included questions asking for participants’ age, nationality, primary language, and English language proficiency (“Do you understand English at a professional level?”).

**English Language Assessment.** To test participants English language abilities, the study included five questions/incomplete sentence that the participants had to answer or complete correctly (e.g., Question: Can I park here? Answers: (a) Sorry, I did that. (b) It’s the same place, (c) Only for an hour).

**Motivation.** Participants were asked whether they were able to stay motivated and engage in the study seriously (“Was it for any reasons not possible for you to stay motivated during the study? – I was not able to stay motivated and to properly engage in the study/I was able to stay motivated during the study.” “Did you answer all questions seriously? – Yes, I answered all questions seriously/ No, I did not answer all questions seriously”).

**Notes and Hypotheses.** Participants were asked to write down what they thought the hypothesis of the study was. In addition, they were given the possibility to write down any remarks/notes they had about the study. Participants were also asked whether they participated in a previous study similar to the current study. If they answered “Yes” or “I am not sure”, they were asked whether they could recall and state the hypothesis of that study.

**Distraction and Simulation Questions (Screening).** Two items of the Structured Inventory of Malingered Symptomatology (SIMS; Smith & Burger, 1997; “I never laugh” [SIM_1], “I have trouble remembering my date of birth” [SIM_2]) were included in the screening. Questions assessing self-efficacy and optimism were included to distract from the relevance of the SDES in selecting participants for the current study.

**Procedure**

**Ethics approval**

The study was approved by the Human Research Ethics committee of the University of Groningen (Ethics approval numbers: 18162-SP [Online screening] & 18161-SP [Main Study]). Informed consent was obtained from all individual participants included in the study.

**Online screening**

The screening was posted on two University-based participant platforms (Paid: Participation compensated by
payment; Course Credit: Participation compensated by course credit). The screening presented a short description of the use for the screening, an informed consent form, the demographic assessment, the SDES, and distraction and simulation questions. In the end, the main study was described and introduced as assessing relationships between autobiographical memory recall, emotions about and evaluations of people’s own bodies, and participants were asked for consent to being invited to it. Eligible participants were invited via an anonymous email in the recruitment platforms to sign up for the study. The email included information on the study’s research focus (including a cautionary notice that the study deals with negative body-related evaluations and emotions), set-up, the sign-up procedure and the invitation code.

**Main study**

The lab-based study took place at different locations in the Faculty of Behavioral and Social Sciences at the University of Groningen in the period between November 2018 and February 2019. Participants were tested individually or simultaneously with another participant in a room in which the experimenter was present. The study was conducted on a laptop. After reading the research information sheet and signing the informed consent forms, participants filled out the demographic assessment and the SDES, which was included to activate the RBI and act as a group categorisation check. Participants then engaged in the Min-AMT and subsequently in the memory rating in the following order: disgust (affect), escape (incl. detachment from the memories; not relevant to the current project), and memory specificity. Participants then completed the cue satisfaction rating, the English Language assessment, the EDE-Q, the MBSRQ-AS, four additional questionnaires not relevant to the current project (see Transparency Statement), and finally filled in the motivation check and the hypotheses and notes questions. Participants were debriefed about the purpose of the study and were asked to watch a short video clip conveying body positivity. Participants were neither told that they were selected based on SDES scores, nor were they told into which group they were categorised. The experimenter was blind to the group affiliation of the participants.

**Material and data availability statement**

The materials and data of this study are publicly available on the OSF at [https://osf.io/fgb9e/](https://osf.io/fgb9e/).

**Results**

We conducted all analyses in SPSS version 26 (IBM Corp., 2019) and JASP version 0.12.2 (JASP Team, 2020). All mediation analyses were conducted in PROCESS version 3 (Hayes, 2017).

**Table 1. Age, Participant Pool, Language of Completing the AMT for each RBI Group.**

<table>
<thead>
<tr>
<th>RBI Group</th>
<th>Participant Pool</th>
<th>AMT Language</th>
</tr>
</thead>
<tbody>
<tr>
<td>HRBI (n = 63)</td>
<td>Paid</td>
<td>English 47.6%</td>
</tr>
<tr>
<td></td>
<td>Course credit</td>
<td>33.3%</td>
</tr>
<tr>
<td></td>
<td>AMT Language</td>
<td>66.7%</td>
</tr>
<tr>
<td>L RBI (n = 70)</td>
<td>32.9%</td>
<td>German 33.3%</td>
</tr>
<tr>
<td></td>
<td>Course credit</td>
<td>67.1%</td>
</tr>
<tr>
<td></td>
<td>AMT Language</td>
<td>40.0%</td>
</tr>
<tr>
<td>Dutch 19.0%</td>
<td>18.6%</td>
<td></td>
</tr>
</tbody>
</table>

Note: a n = 65 (For 5 participants age information was missing due to a technical error); b Participation compensated with payment; c Participation compensated by course credit.

**Group descriptives**

The demographics (age, participant pool, AMT language) of the two RBI groups are given in Table 1.

**Body image & eating disorder symptoms**

We first examined RBI group differences on RBI dimensions (total SDES scores; MBSRQ-AS: Appearance Orientation, Overweight Preoccupation, Appearance Evaluation; EDE-Q: weight- and shape-concern subscales; Body Part Satisfaction Rating) and eating disorder symptoms (total EDE-Q scores) using Welch’s t-tests with Holm–Bonferroni adjusted alpha values (8 comparisons; α’s = .006, .007, .008, .01, .0125, .0167, .025, .05). Complementary to the null hypothesis significance tests we conducted Bayesian group comparisons (default priors). We evaluated Bayes Factors (BF) according to common guidelines (van Doorn et al., 2021).

Table 2 summarises RBI group descriptives, Welch’s t-tests, effect sizes, and Bayes Factors. In line with our expectations, the HRBI group showed higher body-directed self-disgust (SDES), higher investment in their appearance (MBSRQ-AS appearance orientation), higher shape- and weight-concern (EDE-Q shape- and weight-concern subscales), more fat anxiety, dieting, and weight vigilance (MBSRQ-AS overweight preoccupation), lower satisfaction with their overall appearance (MBSRQ-AS appearance evaluation) and with several bodily aspects (body part satisfaction), and a higher endorsement of eating disorder symptoms (EDE-Q total) than the L RBI group. With the exception of the MBSRQ-AS appearance orientation subscale, the effect sizes of all differences between RBI groups were large (Cohen’s d’s > 0.8). The Bayes Factors indicated strong evidence for the alternative (H₁ < H₀, |H₁ > H₀|) over the null hypotheses (H₁ = H₀).

**Hypothesis 1) memory specificity**

We set out to conduct two one-sample t-tests to test whether the proportion of specific memories was higher than 0.50 in each RBI group (with Holm–Bonferroni adjusted α’s: .025, .05). The distribution of specific
memories showed a strong right-skew in both RBI groups (see supplement S1, figures 1a-c & 2a-c; https://osf.io/fgb9e/). Following the preregistered analysis plan, we decided to conduct non-parametric tests. We thus conducted two Wilcoxon signed-rank tests in addition to the student’s t-tests, and adjusted the alphas to .0125, .0167, .025, .05. The BF values are based on the student’s t-test; Higher scores represent higher satisfaction; SDES = Self-Disgust in Eating Disorders Scale. MBSRQ-AS = Multidimensional Body-Self Relations Questionnaire – Appearance Scales; EDE-Q: Eating Disorder Examination Questionnaire.

In order to test whether memory specificity was similar in the two RBI groups, we examined whether there was a difference in memory specificity scores between the RBI groups that is large enough (Cohen’s d of 0.8 or higher) to be considered meaningful (Lakens et al., 2018). We therefore performed a Welch independent samples t-test (boundaries corresponding to a Cohen’s d of 0.8 ([−0.8 – 0.8])). In addition, we also performed a Mann–Whitney independent samples Bayesian test (1000 samples; with default priors). The equivalence test using two one-tailed Welch independent samples tests indicated that we could reject the hypothesis that there was a large difference (corresponding to a Cohen’s d of [0.8]) between the two RBI groups in memory specificity scores (Upper bound: t(131) = −5.52; p < .001; Lower bound: t(131) = 3.74; p < .001). The Mann–Whitney independent samples Bayesian test (1000 samples) examining RBI group differences on memory specificity indicated moderate evidence for the null (H_{RBI} = L_{RBI}) over the alternative (H_{RBI} ≠ L_{RBI}) hypothesis (U = 157; BF_{10} = 4.42 [1000 samples]). In sum, the data supported our hypothesis that the proportion of specific memories was comparable between the RBI groups. However, we did not find support for our hypothesis that the proportion of specific memories was higher than 0.5.

**Hypothesis 2) mediation model with SDES scores and disgust ratings on escape ratings**

We conducted a simple mediation analysis with SDES scores (IV), disgust (M) and escape ratings (DV). Following the preregistration, we conducted the mediation analysis based on all recalled memories instead of on specific memories only, because the proportion of specific memories was not found to be higher than 0.5. This meant that we calculated disgust and escape by averaging their respective scores across all recalled memories (11 – number of omissions). The residuals of a regression model with SDES scores and disgust ratings as predictors and escape ratings as the outcome seemed indicative of slight deviations from normality and homogeneity of error variance (see supplement S2; figure 1a-c; https://osf.io/fgb9e/). Because the deviations appeared minor and given the bootstrapping procedure (central limit theorem) used in this mediation method, we decided not to conduct any data-transformations. We tested the following relationships (paths) of the model: path a (regressing SDES on disgust), path b (regressing disgust on escape while accounting for SDES), path c (regressing SDES on escape; total effect), and path c’ (regressing SDES on escape while accounting for disgust; direct effect), and finally

| Table 2. RBI Group Means (SEs) and Comparisons on Self-disgust, Body Image, Memory Type Proportions, and Memory Ratings. |
|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|
|                  | M (SE)           | H_{RBI} (n = 63) | L_{RBI} (n = 70) | t_{Welch} | df | p^* | d | BF_{10} |
| **MBSRQ-AS**     |                 |                 |                 |           |    |     |    |        |
| SDES             | 41.43 (1.14)    | 20.87 (0.73)    | 15.25            | 107       | < .001 | 2.67 | 2.49x10^{28} |
| **EDE-Q**        |                 |                 |                 |           |    |     |    |        |
| Shape Concern    | 3.97 (0.20)     | 1.70 (0.14)     | 9.29             | 115       | < .001 | 1.63 | 4.46x10^{13} |
| Weight Concern   | 3.52 (0.21)     | 1.33 (0.14)     | 8.73             | 111       | < .001 | 1.53 | 2.31x10^{12} |
| Total            | 3.07 (0.18)     | 1.19 (0.12)     | 8.68             | 106       | < .001 | 1.52 | 2.05x10^{12} |
| **Body Part Satisfaction** | 43.86 (1.09) | 51.10 (0.76) | 5.46 | 113 | < .001 | 0.96 | 160254.35 |
| **Memory Type Proportions** | | | | | | | |
| Specific         | .21 (.02)       | .25 (.03)       | .24             | 103       | < .001 | 0.96 | 160254.35 |
| General          | .48 (.03)       | .47 (.03)       | .21             | 103       | < .001 | 0.96 | 160254.35 |
| Semantic Associate | .10 (.02) | .11 (.02) | .09             | 103       | < .001 | 0.96 | 160254.35 |
| Omission         | .08 (.01)       | .05 (.01)       | .03             | 103       | < .001 | 0.96 | 160254.35 |
| Rest             | .14 (.02)       | .12 (.02)       | .02             | 103       | < .001 | 0.96 | 160254.35 |
| **Memory Ratings** | | | | | | | |
| Disgust          | 34.63 (2.50)    | 12.47 (1.30)    | 9.29             | 86        | < .001 | 1.53 | 2.31x10^{12} |
| Escape           | 31.35 (2.70)    | 13.39 (1.63)    | 9.29             | 86        | < .001 | 1.53 | 2.31x10^{12} |

Note: ^one-sided p-value, Holm-Bonferroni adjusted α’s = 0.007 , 0.008 , 0.0125, 0.0167, 0.025 , 0.05. bThe BF values are based on the student’s t-test; cHigher scores represent higher satisfaction; SDES = Self-Disgust in Eating Disorders Scale. MBSRQ-AS = Multidimensional Body-Self Relations Questionnaire – Appearance Scales; EDE-Q: Eating Disorder Examination Questionnaire.
tested whether the bootstrap confidence interval of the indirect effect (path ab) included zero. For completeness sake, we also report the same mediation analysis on specific memories only. Because we calculated disgust and escape by averaging their respective scores across only specific memories (disgust/escape ratings of specific memories divided by the number of specific memories), we needed to exclude n = 36 participants who did not provide any specific memories from this analysis.

Table 2 presents total SDES scores, as well as average disgust and escape ratings (on all recalled memories) per RBI group. The results of the mediation analysis (on all recalled memories) are reported in Table 3 and illustrated in Figure 2. We found that SDES scores were predictive of disgust ratings (path a), and that disgust ratings were predictive of escape ratings (path b). SDES scores were a significant predictor of escape ratings (total effect; path c), which was no longer the case when disgust ratings were included as a predictor (direct effect; path c'). The bias-corrected bootstrap confidence interval of the indirect effect of SDES on escape ratings through disgust ratings (path ab) did not include zero. The proportion of mediation (ab/c = .48/.61) was 0.79. The results of the mediation analysis when limited to specific memories can be found in Table 4 and were comparable to the results obtained on all recalled memories. In sum, the results lend support to our hypothesised mediation model in which the association between RBI levels and a motivation to escape from memories is mediated by disgust responses to these memories.

### Exploratory analyses

#### Proportion of specific memories

Because the tests of whether the proportion of specific memories was higher than 0.5 were statistically nonsignificant, we explored whether these proportions were significantly lower than 0.5 in each RBI group. We therefore specified the alternative as Hₐ: μ < 0.5, and conducted Wilcoxon signed-rank tests and Wilcoxon signed-rank Bayes Factors (1000 samples; due to the skew in proportion of specific memories; see analysis section), as well as Student’s t-tests and Student’s Bayes Factors per RBI group. The Holm–Bonferroni corrected alpha values were .0125, .0167, .025, .05. The results indicated that the proportion of specific memories was lower than 0.5 in both the HRBI group (W = 51; p < .001; Matched rank biserial correlation = 0.91; BF₁₀ (W) = 79789.83; t(62) = 11.98; p < .001; d = 1.51; BF₁₀ (t)= 1.28x10¹⁵) and the LRBI group (W = 157; p < .001; Matched rank biserial correlation = 0.75; BF₁₀ (W) = 2.09x10⁵; t(69) = 9.51; p < .001; d = 1.14; BF₁₀ (t) = 4.13x10¹¹).

#### Regression analyses examining the proportion of specific memories as a predictor

We theorised that specific memories would be associated with increased disgust and escape ratings in women with elevated RBI levels. Given the inconclusive findings regarding memory specificity so far, we explored whether the proportion of specific memories, as a main effect and in interaction with SDES scores, was predictive

![Figure 2](image-url)
of disgust and escape ratings. We therefore conducted two regression analyses with SDES, proportion of specific memories, and their interaction on disgust ratings (Model 1) and on escape ratings (Model 2). All predictors were mean-centered and we adjusted the alpha to .005. The results of the regression models can be found in Table 5. The proportion of specific memories, as a main effect or in interaction with SDES, did not emerge as a statistically significant predictor of disgust or escape ratings.

Descriptives and distributions of measures not included in the analysis
A number of measures were assessed in the current study (as part of the study’s methodology, as distraction items, or as parts of student projects) but not analysed here because they would extend the scope of this project. These measures are the detachment assessment (3 items), other emotion ratings (dissatisfaction, shame, happiness, pride, acceptance), several questionnaires (CESD-R, Self-Objectification Questionnaire, 1-item Feminist Identity Scale, Feminine Ideology Scale) and AMT language settings (English/Dutch/German). For the interested reader, we provide more detail about these measures and report descriptives and distribution indices in the supplementary materials (see supplement S3; https://osf.io/fgb9e/).

Discussion
We theorised that feelings of body-directed self-disgust that dominate a person’s self-schema (RBI), could be triggered by specific autobiographical memories about the own body. As a response to the elicited self-disgust, the person would be expected to attempt escaping from the negative emotional state through suppression of or distraction from the memories. A group of 133 women, scoring either high (H_{RBI}) or low (L_{RBI}) on a measure of habitual body-directed self-disgust was asked to recall autobiographical memories in response to 11 concrete body-related cue words in a minimal instructions AMT. The proportion of specific memories appeared to be comparable in both RBI groups, yet was not found to be as high as predicted. Our subsequent mediation analyses on all recalled memories (as well as on only specific memories) provided support for our theoretical model on the relationship between habitual self-disgust, disgust reactions and escape urges to body-related autobiographical memories. More specifically, we found that higher habitual levels of self-disgust were associated with increased urges to escape from memories, and that this association could be accounted for by increased disgust responses towards the memories.

By using concrete cue words in the minimal instructions AMT, we aimed to promote the direct retrieval of specific autobiographical memories. Although we did not actually assess whether people employed direct retrieval processes, we expected to observe a high proportion of specific memories (≥ 0.5) as a result of associative retrieval processes. Following this reasoning, the low proportion of specific memories in the current study (H_{RBI}: 0.21; L_{RBI}: 0.25) might be indicative of failure to trigger direct retrieval processes. This could have been due to particular methodological features. For example, our cue words, namely concrete and generic body words, may have been

### Table 4. Simple Mediation Analysis with Self-disgust and Disgust Ratings on Escape Ratings of Specific Memories Only (n = 97).

<table>
<thead>
<tr>
<th>Regression Model &amp; Path</th>
<th>b^a</th>
<th>SE</th>
<th>t</th>
<th>p^b</th>
<th>CI</th>
</tr>
</thead>
<tbody>
<tr>
<td>(1) R^2 = .10; F(1,95) = 11.07; p = .001</td>
<td>0.21 (0.32)</td>
<td>0.06</td>
<td>3.33</td>
<td>.001</td>
<td>0.08 – 10.34</td>
</tr>
<tr>
<td>c (total effect of SD on Escape)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(2) R^2 = .19; F(1,95) = 22.39; p = .001</td>
<td>0.27 (0.44)</td>
<td>0.06</td>
<td>4.73</td>
<td>&lt; .001</td>
<td>0.16 – 0.38</td>
</tr>
<tr>
<td>a (SD on Disgust)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(3) R^2 = .35; F(2,94) = 35.58; p = .001</td>
<td>0.03 (0.05)</td>
<td>0.06</td>
<td>0.53</td>
<td>.60</td>
<td>-0.08 – 0.14</td>
</tr>
<tr>
<td>c’ (direct effect of SD on Escape)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>b (Disgust on Escape)</td>
<td>0.68 (0.64)</td>
<td>0.09</td>
<td>7.34</td>
<td>&lt; .001</td>
<td>0.49 – 0.86</td>
</tr>
<tr>
<td>(4) R^2 = .52; F(4,93) = 49.24; p = &lt; .001</td>
<td>0.18 (0.28)</td>
<td>0.05 (0.07)</td>
<td>0.09 – 0.28 (0.14 – 0.41)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>ab (indirect effect of SD on Escape via Disgust)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Note: *standardized values are given in brackets; Holm-Bonferroni adjusted α’s = .01, .0125, .0167, .025, .05; Bias-corrected bootstrap standard error/confidence interval (standardised values are given in brackets); SD = Self-Disgust in Eating Disorders Scale; Escape = escape memory ratings of specific memories; Disgust = disgust memory ratings of specific memories.

### Table 5. Regression Models with Proportion of Specific Memories and Self-disgust on Escape and Disgust Ratings.

<table>
<thead>
<tr>
<th>Model with Predictors</th>
<th>b^a</th>
<th>SE</th>
<th>t</th>
<th>p^b</th>
<th>CI</th>
</tr>
</thead>
<tbody>
<tr>
<td>Model 1) DV: Disgust; R^2 = .52; F(3,132) = 49.24; p &lt; .001</td>
<td>1.08 (.72)</td>
<td>0.09</td>
<td>11.85</td>
<td>&lt; .001</td>
<td>0.90 – 12.6</td>
</tr>
<tr>
<td>SD</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Memory Specificity</td>
<td>-6.69 (-0.07)</td>
<td>5.72</td>
<td>-1.27</td>
<td>.245</td>
<td>-18.01 – 4.63</td>
</tr>
<tr>
<td>SD* Memory Specificity</td>
<td>-0.33 (-0.05)</td>
<td>0.46</td>
<td>-0.73</td>
<td>.466</td>
<td>-1.24 – 0.57</td>
</tr>
<tr>
<td>Model 2) DV: Escape; R^2 = .38; F(3,132) = 28.29; p &lt; .001</td>
<td>0.95 (.61)</td>
<td>0.11</td>
<td>8.82</td>
<td>&lt; .001</td>
<td>0.73 – 1.16</td>
</tr>
<tr>
<td>SD</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Memory Specificity</td>
<td>-8.55 (-0.09)</td>
<td>6.71</td>
<td>-1.27</td>
<td>.205</td>
<td>-21.82 – 4.73</td>
</tr>
<tr>
<td>SD* Memory Specificity</td>
<td>-1.04 (-0.14)</td>
<td>0.54</td>
<td>-1.94</td>
<td>.055</td>
<td>-2.09 – 0.02</td>
</tr>
</tbody>
</table>

Note: *standardised values are given in brackets; SD = Self-Disgust in Eating Disorders Scale; Memory Specificity = proportion of specific memories; Disgust = disgust memory ratings; Escape = escape memory ratings; All predictors were mean-centered.
suboptimal to elicit direct retrieval processes. Although previous research supports the use of concrete cues to elicit direct retrieval (e.g., Hauer et al., 2008; Uzer, 2016; Williams et al., 1999), cue words tailored to the person may be more optimal than generic words (e.g., Uzer & Brown, 2017). Because we followed the procedure of the original study using the minimal instructions AMT (Debeer et al., 2009), which even used more general (and generic) cue words and found a proportion of specific memories around 0.5, we expected to observe a level of memory specificity at least as high as in that study. An important difference between the current study and the original minimal instructions AMT study however was that we used body-related cue words to examine memories of participants' own bodies. Of course, the current findings may indicate that our cue words or the type of test (the minimal AMT) or the combination of both were suboptimal for eliciting body-related specific memories. Alternatively, they may be taken to suggest the intriguing possibility that the operationalisation of specificity used in AMT studies does not adequately capture the episodic nature of body-related memories.

According to the theoretical framework regarding autobiographical memory, specific memories contain event-specific knowledge (ESK; Conway & Pleydell-Pearce, 2000). ESK refers to a record of sensory, perceptual, conceptual, and affective processing, that is represented through (visual) images, is experienced recollectively, and represents short time slices (Conway, 2005). In the AMT paradigm, a memory is identified as specific if it refers to one specific moment (i.e., a period shorter than 24 h; Williams et al., 2007), which captures one of the characteristics of ESK, that is, the representation of short time slices. This characteristic, however, might not be critical/adequate for determining the presence of ESK in certain memories. A memory such as “Every time I look in the mirror, I see my belly fat and how it protrudes from my pants. I feel nauseous and hate how it looks.” would qualify as a categoric memory because it does not represent one specific moment, yet it appears to be high in other aspects of ESK (i.e., visual imagery, reliving, visceral and affective details). Because in essence all our experiences involve our own bodies, people may have a vast amount of similar body-related experiences. Consequently, body-related memories might be more likely to be categorised as “general” memories (e.g., summarising multiple similar experiences) and thus as non-specific, even though they contain (a high amount of) ESK. Following this reasoning, it may be possible that the memories that were elicited in the current study did contain (high amounts of) ESK, despite low specificity levels. However, these speculations remain hypotheticals and we recommend future research on the retrieval of body-related autobiographical memories to assess the presence of ESK and more directly assess retrieval strategies (e.g., through the use of self-report; see Uzer et al., 2012).

In light of the low memory specificity, we conducted our mediation analysis on all recalled memories to examine our theoretical model that women with high RBI levels would show an increased disgust reaction and subsequent motivation to escape from body-related memories. We found that high habitual levels of body-related disgust were indeed associated with elevated feelings of disgust towards body-related memories. This is in line with our previous finding that women with high RBI levels rated their memories to be more in line with a repulsive body image (von Spreckelsen et al., 2021). The finding that autobiographical memories of the own body can elicit feelings of disgust in women with high RBI scores suggests that those memories represent potent triggers of revulsion towards the own body. Due to the reciprocal relationship between people's personal memories and their self-images (Conway, 2005; Conway & Pleydell-Pearce, 2000), the disgust-laden memories are likely to feedback into the RBI and contribute to its persistence and generality.

Our mediation analysis also showed that high RBI levels were associated with increased urges to escape from body-related memories (via distraction or suppression), which could be accounted for by increased disgust responses to the memories. This is again in line with our previous findings that women with high RBI levels showed higher habitual tendencies to avoid (prevent) body-related disgust than women with low RBI levels (von Spreckelsen et al., 2021). The results support our theorising that women with high RBI levels may try to abort exposure to body-related memories in order to escape from elicited disgust. Potential implications may be that these escape motivations can obstruct the proper processing of body-related autobiographical memories and of potentially corrective information within those memories (e.g., experience of positive emotions or supportive social interactions) thus decreasing the opportunity to challenge negative appraisals about the self (cf. Förster et al., 2006; Salkovskis, 1991). In addition, because the urges to escape may prevent full exposure to disgust-eliciting memories, they could prevent habituation to the feeling of disgust in response to the own body (cf. Lader & Wing, 1966), and possibly even sensitise (i.e., lowering the threshold) to the experience of disgust (cf. Marshall, 1985, 1988; Wilson & O'Leary, 1980). Therefore, a bias towards disgust-evoking autobiographical memories and subsequent escape urges might contribute to the maintenance of body image concerns.

We found that the results from the mediation analysis on all recalled memories were comparable with the results when relying on disgust- and escape ratings of specific memories only. We conducted a follow-up analysis to explore whether memory specificity could predict stronger disgust- or escape ratings. We did not find that the proportion of specific memories (as a main effect or in interaction with RBI levels) was a statistically significant predictor of disgust- or escape ratings. Taken together, we did not find evidence that memory specificity was associated with increased emotional valence (disgust ratings) or avoidance motivations (escape). This does not support our initial reasoning that a high level of memory specificity
Sample representativeness and limitations

In the present study, women with higher levels of body-related disgust showed significantly higher levels of negative body image concerns (e.g., body dissatisfaction, fat anxiety, preoccupation with appearance, weight control; MBSRQ-AS & EDE-Q scores) than women with low levels of body-related disgust. The differences between RBI groups in body image concerns was generally large and the EDE-Q weight- and shape-concern subscale scores in the HRB group fell within the 75th – 80th percentiles of these EDE-Q subscale scores in young women (e.g., Carter et al., 2001; Luce et al., 2008; Mond et al., 2006). Therefore, even though the criteria of selecting our RBI groups were somewhat arbitrary, they nonetheless were successful in selecting groups differing on critical body image dimensions. In addition, the total EDE-Q scores of the HRB group fell within the 80th – 85th percentiles of EDE-Q total scores (e.g., Carter et al., 2001; Luce et al., 2008; Mond et al., 2006), which may suggest that our findings could have implications for women at risk for an eating disorder.

Since our sample consisted only of women who were mainly Dutch or German young undergraduates, future research is needed to examine whether our findings replicate in groups of different genders, ages, educational levels, and ethnicities. A further limitation of the current project is its cross-sectional nature, which does not allow us to draw any directional conclusions from our mediation analysis. Experimental research is needed to examine the causal relationship between disgust and escape, as well as their effect on body image concerns. For example, one could investigate whether repeated exposure to disgust-eliciting vs. neutral memories reduces escape and body dissatisfaction. In the current study we included emotions other than disgust (e.g., shame, pride) as distractor items in the emotion rating of the memories. Because it was not within the scope of the study to analyse emotions other than disgust, we cannot make any statements about the specificity of the current findings to disgust relative to other emotions. Lastly, due to our reliance on the 24-hour AMT criterion to measure memory specificity, we were not able to say anything about the episodic quality of the memories recalled in the current study. We need future research to examine the role of episodic quality of body-related memories, especially in relation to disgust and escape responses.

Conclusion

The aim of the present study was to examine whether habitual levels of body-directed disgust were associated with increased disgust reactions and avoidance urges in response to specific/episodic autobiographical memories about the own body. Although memory specificity levels were low, we found an association between habitual levels of self-disgust and increased motivations to suppress and distract oneself from body-related memories, which could be accounted for by increased disgust reactions to the memories. These results point to the potency of body-related autobiographical memories to elicit disgust reactions and avoidance motivations, which may play a role in the persistence of body image concerns.

Notes

1. There were two exceptions to this rule: If the participant coded a certain memory as “omission”, the memory was coded as an omission even if the experimenter/rater assigned another code. If the first coder coded the memory as violating instructions, the memory was coded as violating instructions, even if the participant/rater assigned another code.
2. BF10 > 10: strong evidence for the alternative over the null; > 3: moderate evidence for the alternative over the null: 1/3 – 3: inconclusive evidence; < 1/3: moderate evidence for the null over the alternative; < 1/10: strong evidence for the null over the alternative.

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Appendix A

Table A1. Body Words Used as Cue Words in the Autobiographical Memory Test.

<table>
<thead>
<tr>
<th>Order</th>
<th>English</th>
<th>Language German</th>
<th>Dutch</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>my feet</td>
<td>meine Füße</td>
<td>mijn voeten</td>
</tr>
<tr>
<td>1</td>
<td>my belly</td>
<td>mein Bauch</td>
<td>mijn buik</td>
</tr>
<tr>
<td>2</td>
<td>my legs</td>
<td>meine Beine</td>
<td>mijn benen</td>
</tr>
<tr>
<td>3</td>
<td>my nose</td>
<td>meine Nase</td>
<td>mijn neus</td>
</tr>
<tr>
<td>4</td>
<td>my waist</td>
<td>meine Taille</td>
<td>mijn taille</td>
</tr>
<tr>
<td>5</td>
<td>my body hair</td>
<td>meine Körperbehaarung</td>
<td>lichaamsaar</td>
</tr>
<tr>
<td>6</td>
<td>my breast</td>
<td>meine Brust</td>
<td>mijn borst</td>
</tr>
<tr>
<td>7</td>
<td>my body</td>
<td>mein Körpergeruch</td>
<td>mijn</td>
</tr>
<tr>
<td>8</td>
<td>my cheeks</td>
<td>meine Wangen</td>
<td>mijn wangen</td>
</tr>
<tr>
<td>9</td>
<td>my butt</td>
<td>mein Po</td>
<td>mijn billen</td>
</tr>
<tr>
<td>10</td>
<td>my upper arms</td>
<td>meine Oberarme</td>
<td>mijn</td>
</tr>
<tr>
<td>11</td>
<td>my eyes</td>
<td>meine Augen</td>
<td>mijn ogen</td>
</tr>
</tbody>
</table>