

DOCUMENTATION

of

**Scales and Composite
Variables**

in

**MIDUS Refresher 1
Neuroscience Project (P5)**

University of Wisconsin ♦ Institute on Aging
February 2026

TABLE OF CONTENTS

INTRODUCTION	2
DISPOSITIONAL POSITIVE EMOTION SCALE (DPES)	3
EMOTION REGULATION QUESTIONNAIRE (ERQ)	8
INTERPERSONAL REACTIVITY INDEX (IRI)	10
POSITIVE AND NEGATIVE AFFECT SCHEDULE - GENERAL FORM (PANAS-GEN)	14
POSITIVE AND NEGATIVE AFFECT SCHEDULE – NOW FORM (PANAS-NOW)	15
SPIELBERGER STATE-TRAIT ANXIETY INVENTORY - GENERAL FORM (STAI-X2).....	20
SPIELBERGER STATE-TRAIT ANXIETY INVENTORY – NOW FORM (STAI-X1).....	22

INTRODUCTION

This document is a reference for psychological scales in the MIDUS Refresher 1 Neuroscience Project data sets. For each scale, items used to construct the scale, coding, and methods of scale construction are described. Information regarding scale source is also included.

The variable name of a scale is presented in brackets with uppercase letters (e.g., [RA5SPGP] for Positive and Negative Affect Schedule General: Positive Affect). The Neuroscience Project started at the second wave of data collection (MIDUS 2); therefore, the scale naming is applicable to MIDUS 2, MIDUS Refresher 1, and MIDUS 3. Scale name and description are followed by individual items and by the description of how the scale score is constructed.

Differences Between MIDUS Waves

The Reactivity to Affective Stimuli Questionnaire was removed after MIDUS 2, so it is not available in MIDUS Refresher 1 or MIDUS 3. The Interpersonal Reactivity Index (IRI), as well as the PANAS-Now and STAI-X1 at time points 3 and 4 (before and after the MRI scan) were added to MIDUS Refresher 1 and MIDUS 3. Additionally, the order that the scales were administered differs between waves. For the timing of the scales in MIDUS Refresher 1 please see [*MR1_P5_DOCUMENTATION_OF_PROCEDURES_20260206*](#).

DISPOSITIONAL POSITIVE EMOTION SCALE (DPES)

Instructions:

"In this series of questions we are interested in learning about your beliefs and feelings about the world, as well as some of your typical day-to-day actions. Each item below contains a statement. We want to know how strongly you agree or disagree with each of these statements. Think about each statement separately, and decide how much you agree with it. There are no right or wrong answers. For each statement, circle the number on the right for the number from 1 (strongly disagree) to 7 (strongly agree) that best represents your feelings."

Scales/Items:

DPES Contentment

[RA5SDPC]: A continuous variable based on 7 items

Items: 7 items – DPES - 1, 12, 23, 34, 45, 56, 67.

1. I am generally a contented person.
12. I am at peace with my life.
23. When I think about my life I experience a deep feeling of contentment.
34. I feel satisfied more often than most people.
45. My life is very fulfilling.
56. I slow down to enjoy the moment whenever I can.
67. I try to surround myself with pleasant sights, scents, and flavors.

Coding: 1 (Strongly Disagree)-2-3-4 (Neither Agree nor Disagree)-5-6-7 (Strongly Agree).

Scaling: [RA5SDPC] is constructed by taking the **mean** of responses to the items.

DPES Joy

[RA5SDPJ]: A continuous variable based on 7 items

Items: 7 items – DPES - 2, 13, 24, 35, 46, 57, 68.

2. I often feel bursts of joy.
13. I am an intensely cheerful person.
24. I am often completely overjoyed when something good happens.
35. If I see a chance to get something I want, I move on it right away.
46. On a typical day, many events make me happy.
57. Good things happen to me all the time.
68. My life is always improving.

Coding: 1 (Strongly Disagree)-2-3-4 (Neither Agree nor Disagree)-5-6-7 (Strongly Agree).

Scaling: [RA5SDPJ] is constructed by taking the **mean** of responses to the items.

DPES Hope

[RA5SDPH]: A continuous variable based on 7 items

Items: 7 items – DPES - 3, 14, 25, 36, 47, 58, 69.

3. In uncertain times, I usually expect the best.
14. When I think about the future, I have a strong feeling of hope.
25. I've found that things usually turn out for the best in the long run.
36. I am a very optimistic person.
47. I often feel hopeful.
58. I am not a quitter.
69. I tend to plan in terms of best-case scenarios.

Coding: 1 (Strongly Disagree)-2-3-4 (Neither Agree nor Disagree)-5-6-7 (Strongly Agree).

Scaling: [RA5SDPH] is constructed by taking the **mean** of responses to the items.

DPES Love/Attachment

[RA5SDPL]: A continuous variable based on 7 items

Items: 7 items – DPES - 4, 15, 26, 37, 48, 59, 70.

4. Other people are generally trustworthy.
15. I develop strong feelings of closeness to people easily.
26. I find it easy to trust others.
37. I can depend on people when I need help.
48. People are usually considerate of my needs and feelings.
59. I love many people.
70. I often ask people for help.

Coding: 1 (Strongly Disagree)-2-3-4 (Neither Agree nor Disagree)-5-6-7 (Strongly Agree).

Scaling: [RA5SDPL] is constructed by taking the **mean** of responses to the items.

DPES Desire

[RA5SDPD]: A continuous variable based on 7 items

Items: 7 items – DPES - 5, 16, 27, 38, 49, 60, 71.

5. I am a very flirtatious person.
16. When I'm attracted to someone, I am overwhelmed by desire.
27. A lot of the people I spend time with are very good-looking.
38. I can think of several personality traits that "turn me on" sexually.
49. I've often imagined being sexual with a friend, colleague or acquaintance.

60. Almost everybody has something sexy about them.
71. I have dated a lot of people.

Coding: 1 (Strongly Disagree)-2-3-4 (Neither Agree nor Disagree)-5-6-7 (Strongly Agree).

Scaling: [RA5SDPD] is constructed by taking the **mean** of responses to the items.

DPES Compassion

[RA5SDPO]: A continuous variable based on 7 items

Items: 7 items – DPES - 6, 17, 28, 39, 50, 61, 72.

6. My ideal job involves helping other people.
17. It's important to take care of people who are vulnerable.
28. When I see someone hurt or in need, I feel a powerful urge to take care of them.
39. Taking care of others gives me a warm feeling inside.
50. I often notice people who need help.
61. I am a very compassionate person.
72. I enjoy spending time with children.

Coding: 1 (Strongly Disagree)-2-3-4 (Neither Agree nor Disagree)-5-6-7 (Strongly Agree).

Scaling: [RA5SDPO] is constructed by taking the **mean** of responses to the items.

DPES Pride

[RA5SDPP]: A continuous variable based on 7 items

Items: 7 items – DPES - 7, 18, 29, 40, 51, 62, 73.

7. I feel good about myself.
18. I have a lot of confidence in my abilities.
29. I am proud of myself and my accomplishments.
40. Many people respect me.
51. I always stand up for what I believe.
62. People usually recognize my authority.
73. I receive a lot of compliments.

Coding: 1 (Strongly Disagree)-2-3-4 (Neither Agree nor Disagree)-5-6-7 (Strongly Agree).

Scaling: [RA5SDPP] is constructed by taking the **mean** of responses to the items.

DPES Gratitude

[RA5SDPG]: A continuous variable based on 6 items

Items: 6 items – DPES - 8, 19, 30, 41, 52, 63 (--8 and 19 are religious).

8. A higher power is looking out for me.
19. I regularly attend religious services.
30. I feel grateful when I think about my life.
41. I am full of gratitude.
52. I am very respectful toward people of higher status than myself.
63. I am a very lucky person.

Coding: 1 (Strongly Disagree)-2-3-4 (Neither Agree nor Disagree)-5-6-7 (Strongly Agree).

Scaling: [RA5SDPG] is constructed by taking the **mean** of responses to the items.

DPES Amusement

[RA5SDPA]: A continuous variable based on 6 items

Items: 6 items – DPES - 9, 20, 31, 42, 53, 64.

9. I find humor in almost everything.
20. I really enjoy teasing people I care about.
31. I am very easily amused.
42. The people around me make a lot of jokes.
53. I make jokes about everything.
64. I find it easy to understand multiple perspectives on an issue.

Coding: 1 (Strongly Disagree)-2-3-4 (Neither Agree nor Disagree)-5-6-7 (Strongly Agree).

Scaling: [RA5SDPA] is constructed by taking the **mean** of responses to the items.

DPES Awe

[RA5SDPW]: A continuous variable based on 7 items

Items: 7 items – DPES - 10, 21, 32, 43, 54, 65, 74.

10. I often feel awe.
21. I see beauty all around me.
32. A beautiful song can easily move me to tears.
43. I feel wonder almost every day.
54. I often look for patterns in the objects around me.
65. I have many opportunities to see the beauty of nature.
74. I seek out experiences that challenge my understanding of the world.

Coding: 1 (Strongly Disagree)-2-3-4 (Neither Agree nor Disagree)-5-6-7 (Strongly Agree).

Scaling: [RA5SDPW] is constructed by taking the **mean** of responses to the items.

DPES Interest

[RA5SDPI]: A continuous variable based on 7 items

Items: 7 items – DPES - 11, 22, 33, 44, 55, 66, 75.

11. Things around me often catch my attention.
22. I am usually interested in what's going on around me.
33. I enjoy gathering information about people and things.
44. I often feel curiosity.
55. I learn something new every day.
66. I am rarely bored.
75. I try to understand as many different topics as I can.

Coding: 1 (Strongly Disagree)-2-3-4 (Neither Agree nor Disagree)-5-6-7 (Strongly Agree).

Scaling: [RA5SDPI] is constructed by taking the **mean** of responses to the items.

DPES All

[RA5SDPT]: A continuous variable based on all 75 items

Items: 75 items – the entire DPES questionnaire – 1-75

Coding: 1 (Strongly Disagree)-2-3-4 (Neither Agree nor Disagree)-5-6-7 (Strongly Agree).

Scaling: [RA5SDPT] is constructed by taking the **mean** of responses to all items on the questionnaire.

Missing Values: A score for each scale/subscale was determined by taking an average of all unambiguously-completed items (i.e., skipped items and questions for which more than one response was indicated were dropped). An average was taken instead of a sum to simplify problems of missing items (a sum would be affected by missing items; an average is not). Scales for which fewer than 50% of items were completed were excluded.

Source:

Note that this scale was utilized in MIDUS 2 prior to the publication and refinement of the scale by Shiota and colleagues. The published version has reduced and removed some of the above questions. To maintain continuity between MIDUS cohorts and assessments, the early version of the scale is continued to be used, but the published version can be recreated with the given items.

Shiota, M. N., Keltner, D., & John O. P. (2006). Positive emotion dispositions differentially associated with Big Five personality and attachment style. *Journal of Positive Psychology*, 1, 61-71.

EMOTION REGULATION QUESTIONNAIRE (ERQ)

Instructions:

"We would like to ask you some questions about your emotional life, in particular, how you control (that is, regulate and manage) your emotions. The questions below involve two distinct aspects of your emotional life. One is your emotional experience, or what you feel like inside. The other is your emotional expression, or how you show your emotions in the way you talk, gesture, or behave. Although some of the following questions may seem similar to one another, they differ in important ways."

Scales/Items:

ERQ REAPPRAISAL

[RA5SER]: A continuous variable based on 6 items

Items: 6 items – ERQ - 1, 3, 5, 7, 8, 10

1. When I want to feel more *positive* emotion (such as joy or amusement), I *change what I'm thinking about*.
3. When I want to feel less *negative* emotion (such as sadness or anger), I *change what I'm thinking about*.
5. When I'm faced with a stressful situation, I make myself *think about it* in a way that helps me stay calm.
7. When I want to feel more *positive* emotion, I *change the way I'm thinking* about the situation.
8. I control my emotions by *changing the way I think* about the situation I'm in.
10. When I want to feel less *negative* emotion, I *change the way I'm thinking* about the situation.

Coding: 1 (Strongly Disagree)-2-3-4 (Neither Agree nor Disagree)-5-6-7 (Strongly Agree).

Scaling: [RA5SER] is constructed by taking the **mean** of responses to the items.

ERQ SUPPRESSION

[RA5SES]: A continuous variable based on 4 items

Items: 4 items – ERQ - 2, 4, 6, 9

2. I keep my emotions to myself.
4. When I am feeling *positive* emotions, I am careful not to express them.
6. I control my emotions by *not expressing them*.
9. When I am feeling *negative* emotions, I make sure not to express them.

Coding: 1 (Strongly Disagree)-2-3-4 (Neither Agree nor Disagree)-5-6-7 (Strongly Agree).

Scaling: [RA5SES] is constructed by taking the **mean** of responses to the items.

Missing Values: A score for each scale/subscale was determined by taking an average of all unambiguously-completed items (i.e., skipped items and questions for which more than one response was indicated were dropped). An average was taken instead of a sum to simplify problems of missing items (a sum would be affected by missing items; an average is not). Scales for which fewer than 50% of items were completed were excluded.

Source:

Gross, J.J., & John, O.P. (2003). Individual differences in two emotion regulation processes: Implications for affect, relationships, and well-being. *Journal of Personality and Social Psychology, 85*, 348-362.

INTERPERSONAL REACTIVITY INDEX (IRI)

Instructions:

"The following statements inquire about your thoughts and feelings in a variety of situations. For each item, indicate how well it describes you by choosing the appropriate letter on the scale at the top of the page: A, B, C, D, or E. When you have decided on your answer, fill in the letter next to the item number. READ EACH ITEM CAREFULLY BEFORE RESPONDING. Answer as honestly as you can. Thank you."

Scales/Items:

Fantasy Scale

[RA5SIRFS]: A continuous variable based on 7 items

Items: 7 items – IRI - 1, 5, 7, 12, 16, 23, 26.

1. I daydream and fantasize, with some regularity, about things that might happen to me.
5. I really get involved with the feelings of the characters in a novel.
7. I am usually objective when I watch a movie or play, and I don't often get completely caught up in it.
12. Becoming extremely involved in a good book or movie is somewhat rare for me.
16. After seeing a play or movie, I have felt as though I were one of the characters.
23. When I watch a good movie, I can very easily put myself in the place of a leading character.
26. When I am reading an interesting story or novel, I imagine how I would feel if the events in the story were happening to me.

Coding:

A	B	C	D	E
DOES NOT DESCRIBE ME WELL		DESCRIBES ME VERY WELL		

Responses are converted into a numeric format as follows: A = 0, B = 1, C = 2, D = 3, E = 4.

Scaling: [RA5SIRFS] is constructed by taking the **mean** of responses to the items.

The following questions are to be reverse-scored: 7 and 12. Reverse-scoring means that instead of giving the participants 0 points for answering "A – Statement does not describe me very well," you would give them 4 points. The reverse-scoring scale is as follows: A = 4, B = 3, C = 2, D = 1, and E = 0.

Empathic Concern Scale

[RA5SIREC]: A continuous variable based on 7 items

Items: 7 items – IRI - 2, 4, 9, 14, 18, 20, 22.

2. I often have tender, concerned feelings for people less fortunate than me.
4. Sometimes I don't feel very sorry for other people when they are having problems.
9. When I see someone being taken advantage of, I feel kind of protective towards them.
14. Other people's misfortunes do not usually disturb me a great deal.
18. When I see someone being treated unfairly, I sometimes don't feel very much pity for them.
20. I am often quite touched by things that I see happen.
22. I would describe myself as a pretty soft-hearted person.

Coding:

A	B	C	D	E
DOES NOT DESCRIBE ME WELL			DESCRIBES ME VERY WELL	

Responses are converted into a numeric format as follows: A = 0, B = 1, C = 2, D = 3, E = 4.

Scaling: [RA5SIREC] is constructed by taking the **mean** of responses to the items.

The following questions are to be reverse-scored: 4, 14, and 18. Reverse-scoring means that instead of giving the participants 0 points for answering "A – Statement does not describe me very well," you would give them 4 points. The reverse-scoring scale is as follows: A = 4, B = 3, C = 2, D = 1, and E = 0.

Perspective-Taking Scale

[RA5SIRPT]: A continuous variable based on 7 items

Items: 7 items – IRI - 3, 8, 11, 15, 21, 25, 28.

3. I sometimes find it difficult to see things from the "other guy's" point of view.
8. I try to look at everybody's side of a disagreement before I make a decision.
11. I sometimes try to understand my friends better by imagining how things look from their perspective.
15. If I'm sure I'm right about something, I don't waste much time listening to other people's arguments.

21. I believe that there are two sides to every question and try to look at them both.

25. When I'm upset at someone, I usually try to "put myself in his shoes" for a while.

28. Before criticizing somebody, I try to imagine how I would feel if I were in their place.

Coding:

A	B	C	D	E
DOES NOT DESCRIBE ME WELL			DESCRIBES ME VERY WELL	

Responses are converted into a numeric format as follows: A = 0, B = 1, C = 2, D = 3, E = 4.

Scaling: [RA5SIRPT] is constructed by taking the **mean** of responses to the items.

The following questions are to be reverse-scored: 3 and 15. Reverse-scoring means that instead of giving the participants 0 points for answering "A – Statement does not describe me very well," you would give them 4 points. The reverse-scoring scale is as follows: A = 4, B = 3, C = 2, D = 1, and E = 0.

Personal Distress Scale

[RA5SIRPD]: A continuous variable based on 7 items

Items: 7 items – IRI - 6, 10, 13, 17, 19, 24, 27.

6. In emergency situations, I feel apprehensive and ill-at-ease.
10. I sometimes feel helpless when I am in the middle of a very emotional situation.
13. When I see someone get hurt, I tend to remain calm.
17. Being in a tense emotional situation scares me.
19. I am usually pretty effective in dealing with emergencies.
24. I tend to lose control during emergencies.
27. When I see someone who badly needs help in an emergency, I go to pieces.

Coding:

A	B	C	D	E
DOES NOT DESCRIBE ME WELL			DESCRIBES ME VERY WELL	

Responses are converted into a numeric format as follows: A = 0, B = 1, C = 2, D = 3, E = 4.

Scaling: [RA5SIRPD] is constructed by taking the **mean** of responses to the items.

The following questions are to be reverse-scored: 13 and 19. Reverse-scoring means that instead of giving the participants 0 points for answering “A – Statement does not describe me very well,” you would give them 4 points. The reverse-scoring scale is as follows: A = 4, B = 3, C = 2, D = 1, and E = 0.

IRI All

[RA5SIR]: A continuous variable based on 28 items

Items: 28 items – the entire IRI questionnaire – 1-28

Coding:

A	B	C	D	E
DOES NOT DESCRIBE ME WELL			DESCRIBES ME VERY WELL	

Responses are converted into a numeric format as follows: A = 0, B = 1, C = 2, D = 3, E = 4.

Scaling: [RA5SIR] is constructed by taking the **mean** of responses to all items on the IRI questionnaire.

The following questions are to be reverse-scored: 3, 4, 7, 12, 13, 14, 15, 18, and 19. Reverse-scoring means that instead of giving the participants 0 points for answering “A – Statement does not describe me very well,” you would give them 4 points. The reverse-scoring scale is as follows: A = 4, B = 3, C = 2, D = 1, and E = 0.

Missing Values: A score for each scale/subscale was determined by taking an average of all unambiguously-completed items (i.e., skipped items and questions for which more than one response was indicated were dropped). An average was taken instead of a sum to simplify problems of missing items (a sum would be affected by missing items; an average is not). Scales for which fewer than 50% of items were completed were excluded.

Sources:

Davis, M. H. (1980). A multidimensional approach to individual differences in empathy. *JSAS Catalog of Selected Documents in Psychology, 10*, 85.

Davis, M. H. (1983). Measuring individual differences in empathy: Evidence for a multidimensional approach. *Journal of Personality and Social Psychology, 44*, 113-126.

POSITIVE AND NEGATIVE AFFECT SCHEDULE - GENERAL FORM (PANAS-GEN)

Instructions:

"This scale consists of a number of words that describe different feelings and emotions. Read each item and then mark the appropriate answer in the space next to that word. Indicate to what extent you GENERALLY feel this way, that is how you feel ON AVERAGE."

Scales/Items:

PANAS-GEN positive affect

[RA5SPGP]: A continuous variable based on 10 items

Items: 10 items

- _____ interested
- _____ excited
- _____ strong
- _____ enthusiastic
- _____ proud
- _____ alert
- _____ inspired
- _____ determined
- _____ attentive
- _____ active

Coding: 1 (very slightly or not at all) 2 (a little) 3 (moderately) 4 (quite a bit) 5 (extremely)

Scaling: [RA5SPGP] is constructed by taking the **mean** of responses to the items.

Scales/Items:

PANAS-GEN negative affect

[RA5SPGN]: A continuous variable based on 10 items

Items: 10 items

- _____ distressed
- _____ upset
- _____ guilty
- _____ scared
- _____ hostile
- _____ irritable
- _____ ashamed
- _____ nervous
- _____ jittery
- _____ afraid

Coding: 1 (very slightly or not at all) 2 (a little) 3 (moderately) 4 (quite a bit) 5 (extremely)

Scaling: [RA5SPGN] is constructed by taking the **mean** of responses to the items.

POSITIVE AND NEGATIVE AFFECT SCHEDULE – NOW FORM (PANAS-NOW)

Instructions:

“This scale consists of a number of words that describe different feelings and emotions. Read each item and then mark the appropriate answer in the space next to that word. Indicate to what extent you feel this way RIGHT NOW, that is, AT THIS VERY MOMENT. Use the following scale to record your answers.”

PANAS-NOW Time1 (Prior to Psychophysiology Emotional Response Task)

Scales/Items:

PANAS-NOW positive affect Time1 (Prior to Psychophysiology Emotional Response Task)

[RA5SP1P]: A continuous variable based on 10 items

Items: 10 items

- _____ interested
- _____ excited
- _____ strong
- _____ enthusiastic
- _____ proud
- _____ alert
- _____ inspired
- _____ determined
- _____ attentive
- _____ active

Coding: 1 (very slightly or not at all) 2 (a little) 3 (moderately) 4 (quite a bit) 5 (extremely)

Scaling: [RA5SP1P] is constructed by taking the **mean** of responses to the items.

PANAS-NOW negative affect Time1 (Prior to Psychophysiology Emotional Response Task)

[RA5SP1N]: A continuous variable based on 10 items

Items: 10 items

- _____ distressed
- _____ upset
- _____ guilty
- _____ scared
- _____ hostile
- _____ irritable
- _____ ashamed
- _____ nervous
- _____ jittery
- _____ afraid

Coding: 1 (very slightly or not at all) 2 (a little) 3 (moderately) 4 (quite a bit) 5 (extremely)

Scaling: [RA5SP1N] is constructed by taking the **mean** of responses to the items.

PANAS-NOW Time2 (After Psychophysiology Emotional Response Task)

Scales/Items:

PANAS-NOW positive affect Time2 (After Psychophysiology Emotional Response Task)

[RA5SP2P]: A continuous variable based on 10 items

Items: 10 items

- _____ interested
- _____ excited
- _____ strong
- _____ enthusiastic
- _____ proud
- _____ alert
- _____ inspired
- _____ determined
- _____ attentive
- _____ active

Coding: 1 (very slightly or not at all) 2 (a little) 3 (moderately) 4 (quite a bit) 5 (extremely)

Scaling: [RA5SP2P] is constructed by taking the **mean** of responses to the items.

PANAS-NOW negative affect Time2 (After Psychophysiology Emotional Response Task)

[RA5SP2N]: A continuous variable based on 10 items

Items: 10 items

- _____ distressed
- _____ upset
- _____ guilty
- _____ scared
- _____ hostile
- _____ irritable
- _____ ashamed
- _____ nervous
- _____ jittery
- _____ afraid

Coding: 1 (very slightly or not at all) 2 (a little) 3 (moderately) 4 (quite a bit) 5 (extremely)

Scaling: [RA5SP2N] is constructed by taking the **mean** of responses to the items.

PANAS-NOW Time3 (Prior to fMRI Emotional Response Task)

Scales/Items:

PANAS-NOW positive affect Time3 (Prior to fMRI Emotional Response Task)

[RA5SP3P]: A continuous variable based on 10 items

Items: 10 items

- _____ interested
- _____ excited
- _____ strong
- _____ enthusiastic
- _____ proud
- _____ alert
- _____ inspired
- _____ determined
- _____ attentive
- _____ active

Coding: 1 (very slightly or not at all) 2 (a little) 3 (moderately) 4 (quite a bit) 5 (extremely)

Scaling: [RA5SP3P] is constructed by taking the **mean** of responses to the items.

PANAS-NOW negative affect Time3 (Prior to fMRI Emotional Response Task)

[RA5SP3N]: A continuous variable based on 10 items

Items: 10 items

- _____ distressed
- _____ upset
- _____ guilty
- _____ scared
- _____ hostile
- _____ irritable
- _____ ashamed
- _____ nervous
- _____ jittery
- _____ afraid

Coding: 1 (very slightly or not at all) 2 (a little) 3 (moderately) 4 (quite a bit) 5 (extremely)

Scaling: [RA5SP3N] is constructed by taking the **mean** of responses to the items.

PANAS-NOW Time4 (After fMRI Emotional Response Task)

Scales/Items:

PANAS-NOW positive affect Time4 (After fMRI Emotional Response Task)

[RA5SP4P]: A continuous variable based on 10 items

Items: 10 items

- _____ interested
- _____ excited
- _____ strong
- _____ enthusiastic
- _____ proud
- _____ alert
- _____ inspired
- _____ determined
- _____ attentive
- _____ active

Coding: 1 (very slightly or not at all) 2 (a little) 3 (moderately) 4 (quite a bit) 5 (extremely)

Scaling: [RA5SP4P] is constructed by taking the **mean** of responses to the items.

PANAS-NOW negative affect Time4 (After fMRI Emotional Response Task)

[RA5SP4N]: A continuous variable based on 10 items

Items: 10 items

- _____ distressed
- _____ upset
- _____ guilty
- _____ scared
- _____ hostile
- _____ irritable
- _____ ashamed
- _____ nervous
- _____ jittery
- _____ afraid

Coding: 1 (very slightly or not at all) 2 (a little) 3 (moderately) 4 (quite a bit) 5 (extremely)

Scaling: [RA5SP4N] is constructed by taking the **mean** of responses to the items.

Missing Values: A score for each scale/subscale was determined by taking an average of all unambiguously-completed items (i.e., skipped items and questions for which more than one response was indicated were dropped). An average was taken instead of a sum to simplify problems of missing items (a sum would be affected by missing items; an average is not). Scales for which fewer than 50% of items were completed were excluded.

Source:

Watson, D., Clark, L.A., Tellegen, A. (1988). Development and validation of brief measures of positive and negative affect: The PANAS scales. *Journal of Personality and Social Psychology*, 54, 1063-70.

Additional Studies:

Davidson, R.J. (2000). Affective style, psychopathology, and resilience: Brain mechanisms and plasticity. *American Psychologist*, 55, 1196-1214.

Davidson, R.J. (2004). Well-being and affective style: Neural substrates and biobehavioural correlates. *Philosophical Transactions of the Royal Society of London B*, 359, 1395-1411.

Urry, H.L., Nitschke, J.B., Dolski, I., Jackson, D.C., Dalton, K.M., Mueller, C.J., Rosenkranz, M.A., Ryff C.D., Singer, B.H., & Davidson, R.J. (2004). Making a life worth living: neural correlates of well-being. *Psychological Science*, 15, 367-372.

SPIELBERGER STATE-TRAIT ANXIETY INVENTORY - GENERAL FORM (STAI-X2)

Instructions:

"A number of statements which people have used to describe themselves are given below. Read each statement and then circle the appropriate number to the right of the statement to indicate how you generally feel. There are no right or wrong answers. Do not spend too much time on any one statement, but give the answer which seems to describe how you generally feel."

Scales/Items:

STAI Trait

[RA5SST]: A continuous variable based on 20 items

Items: 20 items

1. I feel pleasant.
2. I tire quickly.
3. I feel like crying.
4. I wish I could be as happy as others seem to be.
5. I am losing out on things because I can't make up my mind soon enough.
6. I feel rested.
7. I am "calm, cool, and collected."
8. I feel that difficulties are piling up so that I cannot overcome them.
9. I worry too much over something that really doesn't matter.
10. I am happy.
11. I am inclined to take things hard.
12. I lack self-confidence.
13. I feel secure.
14. I try to avoid facing a crisis or difficulty.
15. I feel blue.
16. I am content.
17. Some unimportant thought runs through my mind and bothers me.
18. I take disappointments so keenly that I can't put them out of my mind.
19. I am a steady person.
20. I become tense and upset when I think about my present concerns.

Coding: 1 (Not at all) 2 (Somewhat) 3 (Moderately So) 4 (Very Much So)

Scaling: [RA5SST] is constructed by taking the **mean** of responses to the items.

The following questions are to be reverse-scored: 1, 6, 7, 10, 13, 16, 19. Reverse-scoring means that instead of giving the participants 2 points for answering "2 – Sometimes," you would give them 3 points. The reverse-scoring scale is as follows: 4 = 1, 3 = 2, 2 = 3, and 1 = 4.

Missing Values: A score for each scale/subscale was determined by taking an average of all unambiguously-completed items (i.e., skipped items and questions for which more than one response was indicated were dropped). An average was taken instead of a sum to simplify problems of missing items (a sum would be affected by missing items; an average is not). Scales for which fewer than 50% of items were completed were excluded.

Source:

Spielberger, C.D., Gorsuch, R.L., Lushene, R., Vagg, P.R., & Jacobs, G.A. (1983). *Manual for the State-Trait Anxiety Inventory*. Palo Alto, CA: Consulting Psychologists Press.

Additional Studies:

Shackman, A.J., Sarinopoulos, I., Maxwell, J.S., Pizzagalli, D.A., Lavric, A., & Davidson, R.J. (2006). Anxiety selectively disrupts visuospatial working memory. *Emotion*, 6, 40-61.

SPIELBERGER STATE-TRAIT ANXIETY INVENTORY – NOW FORM (STAI-X1)

Instructions:

"A Number of statements which people have used to describe themselves are given below. Read each statement and then circle the response option to the right to indicate how you feel right now, that is, at this moment. There are no right or wrong answers. Do not spend too much time on any one statement, but give the answer which seems to describe your present feelings best."

STAI State Time1 (Prior to Psychophysiology Emotional Response Task)

Scales/Items:

[RA5SS1]: A continuous variable based on 20 items

Items: 20 items

1. I feel calm.
2. I feel secure.
3. I am tense.
4. I am regretful.
5. I feel at ease.
6. I feel upset.
7. I am presently worrying about possible misfortunes.
8. I feel rested.
9. I feel anxious.
10. I feel comfortable.
11. I feel self-confident.
12. I feel nervous.
13. I am jittery.
14. I feel "high strung".
15. I am relaxed.
16. I feel content.
17. I am worried.
18. I feel over-excited and rattled.
19. I feel joyful.
20. I feel pleasant.

Coding: 1 (Not at all) 2 (Somewhat) 3 (Moderately So) 4 (Very Much So)

Scaling: [RA5SS1] is constructed by taking the **mean** of responses to the items.

The following questions are to be reverse-scored: 1, 2, 5, 8, 10, 11, 15, 16, 18 and 20. Reverse-scoring means that instead of giving the participants 2 points for answering "2 – Sometimes," you would give them 3 points. The reverse-scoring scale is as follows: 4 = 1, 3 = 2, 2 = 3, and 1 = 4.

STAI State Time2 (After Psychophysiology Emotional Response Task)

Scales/Items:

[RA5SS2]: A continuous variable based on 20 items

Items: 20 items

1. I feel calm.
2. I feel secure.
3. I am tense.
4. I am regretful.
5. I feel at ease.
6. I feel upset.
7. I am presently worrying about possible misfortunes.
8. I feel rested.
9. I feel anxious.
10. I feel comfortable.
11. I feel self-confident.
12. I feel nervous.
13. I am jittery.
14. I feel "high strung".
15. I am relaxed.
16. I feel content.
17. I am worried.
18. I feel over-excited and rattled.
19. I feel joyful.
20. I feel pleasant.

Coding: 1 (Not at all) 2 (Somewhat) 3 (Moderately So) 4 (Very Much So)

Scaling: [RA5SS2] is constructed by taking the **mean** of responses to the items.

The following questions are to be reverse-scored: 1, 2, 5, 8, 10, 11, 15, 16, 18 and 20. Reverse-scoring means that instead of giving the participants 2 points for answering "2 – Sometimes," you would give them 3 points. The reverse-scoring scale is as follows: 4 = 1, 3 = 2, 2 = 3, and 1 = 4.

STAI State Time3 (Prior to fMRI Emotional Response Task)

Scales/Items:

[RA5SS3]: A continuous variable based on 20 items

Items: 20 items

1. I feel calm
2. I feel secure.
3. I am tense.
4. I am regretful.
5. I feel at ease.
6. I feel upset.
7. I am presently worrying about possible misfortunes.
8. I feel rested.
9. I feel anxious.
10. I feel comfortable.
11. I feel self-confident.
12. I feel nervous.
13. I am jittery.
14. I feel "high strung".
15. I am relaxed.
16. I feel content.
17. I am worried.
18. I feel over-excited and rattled.
19. I feel joyful.
20. I feel pleasant.

Coding: 1 (Not at all) 2 (Somewhat) 3 (Moderately So) 4 (Very Much So)

Scaling: [RA5SS3] is constructed by taking the **mean** of responses to the items.

The following questions are to be reverse-scored: 1, 2, 5, 8, 10, 11, 15, 16, 18 and 20. Reverse-scoring means that instead of giving the participants 2 points for answering "2 – Sometimes," you would give them 3 points. The reverse-scoring scale is as follows: 4 = 1, 3 = 2, 2 = 3, and 1 = 4.

STAI State Time4 (After fMRI Emotional Response Task)

Scales/Items:

[RA5SS4]: A continuous variable based on 20 items

Items: 20 items

1. I feel calm
2. I feel secure.
3. I am tense.
4. I am regretful.
5. I feel at ease.
6. I feel upset.
7. I am presently worrying about possible misfortunes.
8. I feel rested.
9. I feel anxious.
10. I feel comfortable.
11. I feel self-confident.
12. I feel nervous.
13. I am jittery.
14. I feel "high strung".
15. I am relaxed.
16. I feel content.
17. I am worried.
18. I feel over-excited and rattled.
19. I feel joyful.
20. I feel pleasant.

Coding: 1 (Not at all) 2 (Somewhat) 3 (Moderately So) 4 (Very Much So)

Scaling: [RA5SS4] is constructed by taking the **mean** of responses to the items.

The following questions are to be reverse-scored: 1, 2, 5, 8, 10, 11, 15, 16, 18 and 20. Reverse-scoring means that instead of giving the participants 2 points for answering "2 – Sometimes," you would give them 3 points. The reverse-scoring scale is as follows: 4 = 1, 3 = 2, 2 = 3, and 1 = 4.

Missing Values: A score for each scale/subscale was determined by taking an average of all unambiguously-completed items (i.e., skipped items and questions for which more than one response was indicated were dropped). An average was taken instead of a sum to simplify problems of missing items (a sum would be affected by missing items; an average is not). Scales for which fewer than 50% of items were completed were excluded.

Source:

Spielberger, C.D., Gorsuch, R.L., Lushene, R., Vagg, P.R., & Jacobs, G.A. (1983). *Manual for the State-Trait Anxiety Inventory*. Palo Alto, CA: Consulting Psychologists Press.

Additional Studies:

Davidson, R.J., Kabat-Zinn, J., Schumacher, J., Rosenkranz, M., Muller, D., Santorelli, S.F., Urbanowski, F., Harrington, A., Bonus, K., & Sheridan, J.F. (2003). Alterations in brain and immune function produced by mindfulness meditation. *Psychosomatic Medicine*, 65, 564-570.