December 7th, 2023

**Measures recommended for inclusion in new and ongoing HRS studies**

**Background**: The Networks and Scientific Advisory Boards of the NIA Stress Network and EWB Network harmonized both [stress measures](https://www.stressmeasurement.org/_files/ugd/890fda_a772dffaf9ee45d28d048d32c0073f3b.pdf) and [EWB measures](https://www.emotionalwellbeing.org/_files/ugd/890fda_024ccd38f8264a44a3eaebad9bf4e154.pdf) across 9 HRS studies, which you can see the measures for in the linked manuals.

We have now reviewed the scope of the existing stress and EWB measures in these studies and created a list of important measures linked to healthy aging that were rarely included if at all. We prioritized (through voting) the rank order of measures we recommend for potential inclusion in population-based studies going forward as well as Core Battery for new studies being launched. Here we provide our suggestions for the top 4 measures (and citations with a validation study and link to health outcomes).

**Stress Measures:**

1. Perceived Stress
2. Early Life Adversity
3. Loneliness (this was included in many)
4. Everyday Discrimination

**Emotional Well-Being Measures**

1. Hope/optimism
2. Flourishing (Evaluative well-being)
3. Social Well-Being
4. Gratitude

**Stress Measures**

**Title: Perceived Stress Scale**

**Citation:** Cohen, S., & Williamson, G. (1988). [Perceived stress in a probability sample of the U.S. In S. Spacapam & S. Oskamp (Eds.)](https://www.cmu.edu/dietrich/psychology/stress-immunity-disease-lab/scales/pdf/cohen%2C-s.--williamson%2C-g.-1988.pdf), The social psychology of health: Claremont Symposium on Applied Social Psychology. Newbury Park, CA: Sage.

**References Linking to Health Outcomes:** <https://www.cmu.edu/dietrich/psychology/stress-immunity-disease-lab/scales/index.html>

**Measure:** The questions in this scale ask you about your feelings and thoughts during THE LAST MONTH. In each case, please indicate your response by placing an “X” over the circle representing HOW OFTEN you felt or thought a certain way.

4 = Very Often

3 = Fairly Often

2= Sometimes

1 = Almost Never

0 = Never

1. In the last month, how often have you felt that you were unable to control the important things in your life?
2. In the last month, how often have you felt confident about your ability to handle your personal problems?
3. In the last month, how often have you felt that things were going your way?
4. In the last month, how often have you felt difficulties were piling up so high that you could not overcome them?

PSS-4 scores are obtained by reverse coding items # 2 and 3.

**Title: Early Life Adversity (Trauma and deprivation)**

The Adverse Childhood Experiences measure has a 10 item and a 2 item screener.
The 10 item has been predictive with a range of mental and physical conditions

**Citation:** Felitti, V. J., Anda, R. F., Nordenberg, D., Williamson, D. F., Spitz, A. M., Edwards, V., ... & Marks, J. S. (1998). Relationship of childhood abuse and household dysfunction to many of the leading causes of death in adults: The Adverse Childhood Experiences (ACE) Study. *American Journal of Preventive Medicine,14*(4), 245-258.

**More details on measurement of ELA:** <https://www.stressmeasurement.org/early-life-stress>
The World Health Organization published an international version of ACES (with a more sensitive response scale, and that includes **war/collective violence**), found [here](https://www.who.int/publications/m/item/adverse-childhood-experiences-international-questionnaire-%28ace-iq%29). More details on a dimensional approach to measuring level of threat vs. deprivation can be found [here](https://www.stressmeasurement.org/early-life-stress-dimensional).

**Measure**: Adverse Childhood Experiences (ACEs) Questionnaire

Yes/No Response

Prior to your 18th birthday:

1. Did a parent or other adult in the household often or very often…
Swear at you, insult you, put you down, or humiliate you? Or
Act in a way that made you afraid that you might be physically hurt?
2. Did a parent or other adult in the household often or very often… Push, grab, slap, or throw something at you? or Ever hit you so hard that you had marks or were injured?
3. Did an adult or person at least 5 years older than you ever…
Touch or fondle you or have you touch their body in a sexual way? Or
Attempt or actually have oral or anal intercourse with you?
4. Did you often or very often feel that …
No one in your family loved you or thought you were important or special? Or
Your family didn’t look out for each other, feel close to each other, or support each other?
5. Did you often or very often feel that …
You didn’t have enough to eat, had to wear dirty clothes, and had no one to protect you?
or Your parents were too drunk or high to take care of you or take you to the doctor if you needed it?
6. Was a biological parent ever lost to you through divorce, abandonment, or other reason?
7. Was your mother or stepmother:
Often or very often pushed, grabbed, slapped, or had something thrown at her? Or
Sometimes, often, or very often kicked, bitten, hit with a fist, or hit with something hard? or Ever repeatedly hit over at least a few minutes or threatened with a gun or knife?
8. Did you live with anyone who was a problem drinker or alcoholic or who used street drugs?
9. Was a household member depressed or mentally ill? Or
Did a household member attempt suicide?
10. Did a household member go to prison?

The ACE score is the total number of “Yes” responses.

**Title: Loneliness**

The UCLA 20 item loneliness scale has been shortened to three items for epidemiological studies (Hughes 2004).

**Citation:** Measure: Hughes ME, Waite LJ, Hawkley LC, Cacioppo JT. A Short Scale for Measuring Loneliness in Large Surveys: Results From Two Population-Based Studies. Res Aging. 2004;26(6):655-672. doi: 10.1177/0164027504268574. PMID: 18504506; PMCID: PMC2394670.

**References Linking to Health Outcomes:** Holt-Lunstad J, Smith TB, Baker M, Harris T, & Stephenson D. (2015). Loneliness and social isolation as risk factors for mortality: a meta-analytic review. Perspectives on Psychological Science, 10(2), 227–237

**Measure:**

3 = Often

2 = Some of the time

1 = Hardly Ever

1. How often do you feel that you lack companionship?
2. How often do you feel left out?
3. How often do you feel isolated from others?

The scores for each individual question can be added together to give you a possible range of scores from 3 to 9. Researchers in the past have groups people who score 3-5 as “not lonely” and people the score 6-9 as “lonely.”

**Title: Everyday Discrimination**

Daily Discrimination Scale (Short Version- Alpha 0.77). Developed for the Study of Adult Health in the Community of Chicago (CCAHS)

**Citation:** Sternthal, M., Slopen, N., Williams, D.R. “Racial Disparities in Health: How Much Does Stress Really Matter?” Du Bois Review, 2011; 8(1): 95-113

**References Linking to Health Outcomes:** Farmer, H. R., Wray, L. A., & Thomas, J. R. (2019). Do race and everyday discrimination predict mortality risk? Evidence from the health and retirement study. *Gerontology and Geriatric Medicine*, *5*, 2333721419855665.

**Measure:**

In your daily life, how often have any of the following things happened?

1. You are treated with less courtesy or respect than other people.
2. You receive worse service than other people in restaurants or stores.
3. People act as though they think you are not intelligent.
4. People act as though they are afraid of you.
5. You are threatened or assaulted.

Recommended answer categories for all items: • Almost every day • At least once a week • A couple of times a month • A couple of times a year • Less than once a year • Never

Follow-up Questions (Ask them only if they responded “A couple of times a year” or higher frequency for at least one question):

What do you think is the main reason for these experiences?

Recommended options:

1. Ancestry or national origin
2. Gender
3. Race
4. Age
5. Religion
6. Height
7. Weight
8. Other aspect of your physical appearance
9. Your sexual orientation
10. Education level or income level

Other possible categories to consider:

1. A physical disability
2. Skin color
3. Your tribe
4. Other (Specify) \_\_\_\_\_\_\_\_\_\_\_

**Emotional Well-Being Measures**

**Title:** **Hope/Optimism**

Life Orientation Test-R: 2 Item measure derived from the CASP-19 quality of life inventory used in English Longitudinal Study of Aging

**Citation:** Hyde M, Wiggins RD, Higgs P, & Blane DB (2003) A measure of quality of life in early old age: the theory, development and properties of a needs satisfaction model (CASP-19). Aging Ment Health 7(3):186-194.

**References Linking to Health Outcomes:**

* Steptoe A, Wardle J. Life skills, wealth, health, and wellbeing in later life. Proc Natl Acad Sci U S A 2017;114(17):4354-4359. DOI: 10.1073/pnas.1616011114.
* Life Orientation Test-R (Scheier MF, Carver CS, Bridges MW. Distinguishing optimism from neuroticism (and trait anxiety, self-mastery, and self-esteem): A reevaluation of the Life Orientation Test. Journal of Personality and Social Psychology 1994;67:1063-1078.)
* Tindle HA, Chang YF, Kuller LH, et al. Optimism, cynical hostility, and incident coronary heart disease and mortality in the Women's Health Initiative. Circulation 2009;120(8):656-62. (http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?cmd=Retrieve&db=PubMed&dopt=Citation&list\_uids=19667234 ).

**Measure:**

Please indicate the extent to which you agree or disagree with the following statements on the scale indicated. (score 1(strongly agree) to 5 (strongly disagree)

1. In uncertain times, I usually expect the best
2. It’s easy for me to relax
3. If something can go wrong for me it will +
4. Overall, I expect more good things to happen to me than bad
5. I’m always optimistic about my future
6. I enjoy my friends alot
7. It’s important for me to keep busy
8. I hardly ever expect things to go my way +
9. I don’t get upset too easily
10. I rarely count on good things happening to me +

Items that should be scored: 1, 4, 5, 3 (r), 8 (r), 10 ®; Non-scored items are filler items; + = reverse score

2-item version derived based on empirical examination of linkages to mortality (scale response: (strongly disagree, disagree, somewhat disagree, neither agree nor disagree, somewhat agree, agree, strongly agree)

1. If something can go wrong for me, it will +
2. Overall, I expect more good things to happen to me than bad

**Title: Flourishing Scale**

The Flourishing Scale consists of eight items describing important aspects of human functioning ranging from positive relationships, to feelings of competence, to having meaning and purpose in life. The scale was called Psychological Well-being in an earlier publication, but the name was changed to more accurately reflect the content because the scale includes content that goes beyond psychological well-being narrowly defined.

**Citation:** Diener, E., Wirtz, D., Tov, W., Kim-Prieto, C., Choi, DW., Oishi, S., & Biswas-Diener, R. (2010). New well-being measures: Short scales to assess flourishing and positive and negative feelings. Social Indicator Research, 97, 143-156.

**References Linking to Health Outcomes:**

Wickham, S. R., Amarasekara, N. A., Bartonicek, A., & Conner, T. S. (2020). The big three health behaviors and mental health and well-being among young adults: a cross-sectional investigation of sleep, exercise, and diet. Frontiers in Psychology, 11, 579205

**Measure:**

Below are 8 statements with which you may agree or disagree. Using the 1–7 scale below, indicate your agreement with each item by indicating that response for each statement.

7 = Strongly agree

6 = Agree

5 = Slightly agree

4 = Neither agree nor disagree

3 = Slightly disagree

2 = Disagree

1 = Strongly disagree

1. I lead a purposeful and meaningful life
2. My social relationships are supportive and rewarding
3. I am engaged and interested in my daily activities
4. I actively contribute to the happiness and well-being of others
5. I am competent and capable in the activities that are important to me
6. I am a good person and live a good life
7. I am optimistic about my future
8. People respect me

Total (Sum) \_\_\_\_\_\_\_

**Title: Social Well-Being**

**Citation:** Keyes, C. L. M. (1998). Social well-being. Social Psychology Quarterly, 61(2), 121–140. https://langleygroupinstitute.com/wp-content/uploads/Lee-Keyes-2013-Social-Well-Being.pdf

**References Linking to Health Outcomes:** Keyes CL, Simoes EJ. To Flourish or Not: Positive Mental Health and All-Cause Mortality. American Journal of Public Health 2012;102(11):2164-2172. DOI: 10.2105/ajph.

**Measure:**Thinking about your experience generally, indicate how strongly you agree or disagree with each of the following statements.

Strongly disagree

Disagree

Slightly disagree

Neither agree nor disagree

Agree

Strongly agree

1. I felt that I didn’t belong to anything I'd call a community.
2. I felt that I had something valuable to give the world.
3. I felt close to other people in my community.
4. I could not make sense of what's going on in the world.
5. My community was a source of comfort.
6. I believed that people are kind.

**Title: Gratitude GQ-6**

**Citation:** McCullough, M. E., Emmons, R. A., & Tsang, J. (2002). The Grateful Disposition: A Conceptual and Empirical Topography. Journal of Personality and Social Psychology, 82, 112-127

**References Linking to Health Outcomes:** Hartanto, A., Majeed, N.M., Lua, V.Y.Q. *et al.* Dispositional gratitude, health-related factors, and lipid profiles in midlife: a biomarker study. *Sci Rep* 12, 6034 (2022). <https://doi.org/10.1038/s41598-022-09960-w>

**Measure:**

Using the scale below as a guide, write a number beside each statement to indicate how much

you agree with it.

1 = strongly disagree

2 = disagree

3 = slightly disagree

4 = neutral

5 = slightly agree

6 = agree

7 = strongly agree

1. I have so much in life to be thankful for.
2. If I had to list everything that I felt grateful for, it would be a very long list.
3. When I look at the world, I don’t see much to be grateful for.\*
4. I am grateful to a wide variety of people.
5. As I get older I find myself more able to appreciate the people, events, and situations

that have been part of my life history.

1. Long amounts of time can go by before I feel grateful to something or someone.

Other large cohort studies have used a 2-item version of this measure:

(1) “I have so much in life to be thankful for”

(2) “I am grateful to a wide variety of people.”

 7-point scale (1 = *Strongly disagree*, 7 = *Strongly agree*)