



Making Lemonade out of Lemons: Finding Resilience Despite Chronic Pain

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**CHRONIC PAIN
AND FATIGUE**
RESEARCH CENTER





Martin E.P. Seligman, PhD
The Father of Positive Psychology



joy



calm



love



glee



interest



content



awe

emotions north of zero



fear



sadness



disgust



shame



guilt



hatred



anger



hostility

Resilience

“Was mich nicht umbringt macht mich stärker.”

“That which does not kill me will make me stronger”

Friedrich Nietzsche's Twilight of the Idols (1888).



Adversity

Low
Resilience

Moderate
Resilience

High
Resilience

Thriving!

CAPACITY TO ADAPT AND RECOVER

THRIVING: Life is even better than before – a life that feels fuller, more meaningful, and rewarding.

Resilience strongly predicts chronic pain outcomes:

- Presence of chronic pain
- Widespread pain
- Analgesic use
- Disability and pain interference
- Quality of life and psychosocial functioning
- Sleep impairment
- Depression, anxiety, PTS symptoms
- Psychological adaptation (e.g., pain acceptance, pain catastrophizing, pain self-efficacy, active coping strategies, fear avoidance)



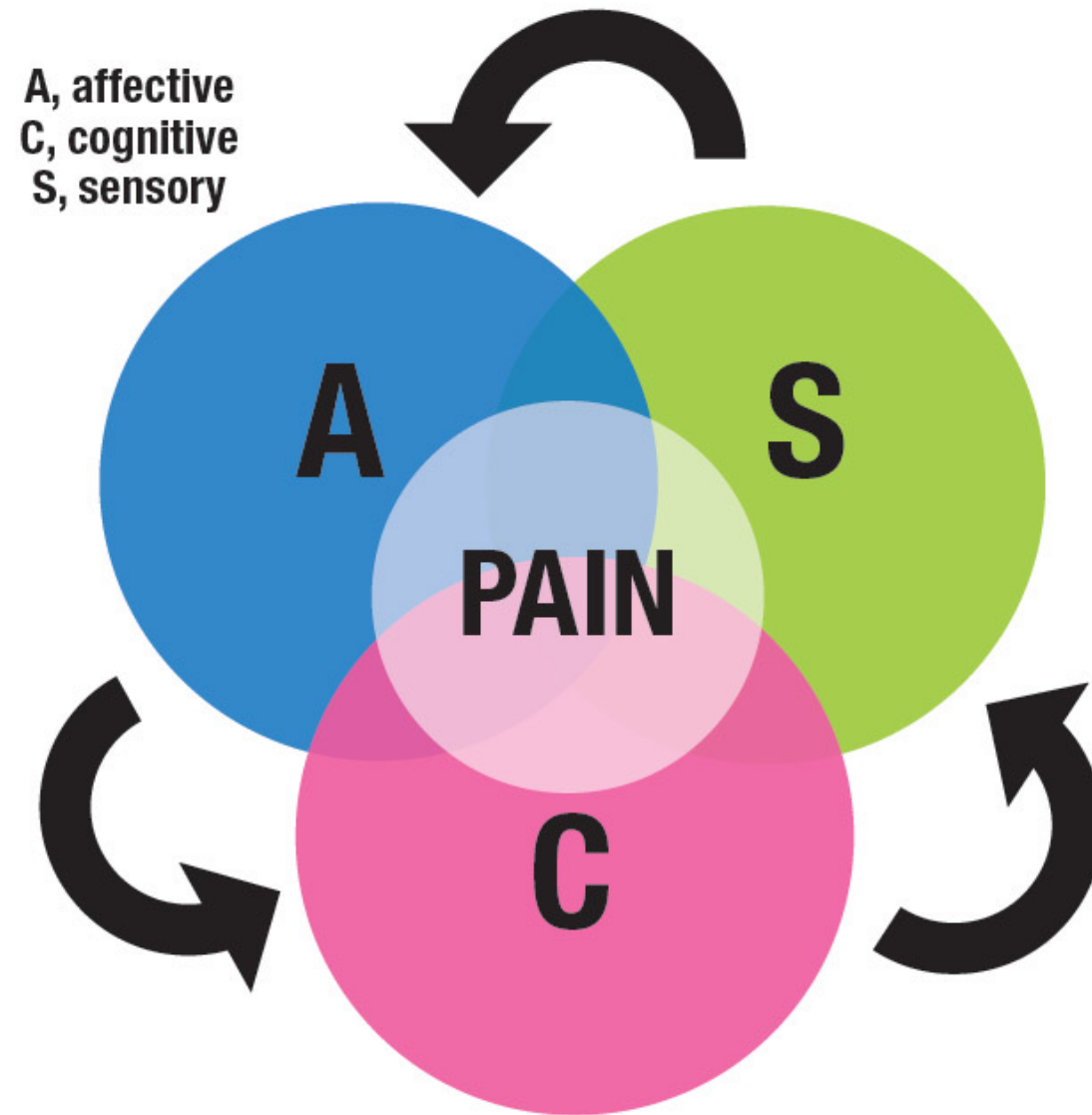
Resilience can be influenced by our:

- Thoughts
- Emotions
- Social Support
- Sense of meaning/purpose





Why do thoughts matter?



A TYPICAL PAIN NEUROTAG

1. PREMOTOR/ MOTOR CORTEX
organize and prepare movements
2. CINGULATE CORTEX
concentration, focusing
3. PREFRONTAL CORTEX
problem solving, memory
4. AMYGDALA
fear, fear conditioning, addiction
5. SENSORY CORTEX
sensory discrimination
6. HYPOTHALAMUS/ THALAMUS
stress responses, autonomic regulation, motivation
7. CEREBELLUM
movement and cognition
8. HIPPOCAMPUS
memory, spacial recognition, fear conditioning
9. SPINAL CORD
gating from the periphery



Association Between Predeployment Optimism and Onset of Postdeployment Pain in US Army Soldiers

Afton L. Hassett, PsyD; Joseph A. Fisher, PhD; Loryana L. Vie, PhD; Whitney L. Kelley, MPH; Daniel J. Clauw, MD; Martin E. P. Seligman, PhD

- 20,734 US Army soldiers assessed (CSF2), then followed over deployment(s).
- Post-deployment pain reported in at least 1 new area of the body by 37.3%.
- Tertile analysis compared to high optimism soldiers, those with low optimism had 35% greater odds of reporting new pain (odds ratio, 1.35; 95% CI, 1.21-1.50) controlling for *demographic, military and combat factors*.




Optimism and Pain Outcomes

Systematic review - optimism and pain:

- 69 studies = 70% of studies showed a beneficial association between optimism and pain outcomes.
- Greater percentage shown in experimental studies (78.6%) and those of higher quality (92.9%).





Why do positive emotions matter?

Positive affect = better outcomes in chronic pain

- Solid prospective and experimental studies found PA related to:
 - Lower overall pain ratings
 - Lower pain intensity scores
 - Decreased same day pain report
 - Decreased subsequent day pain report
 - Decreased subsequent week pain report
 - Increased induced pain tolerance
 - Decreased induced pain sensitivity
 - Longer tolerance to pain
 - Evoked potential moderation
 - Decreased use of pain medication
 - Lower post-op pain ratings
 - Greater walking times post-surgery
 - Length of stay in colorectal cancer surgery

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Positive Affect and Chronic Pain

	Negative affect (high is bad)	Positive affect (high is good)
Healthy individuals ¹	18.1 (5.9)	35.0 (6.4)
Osteoarthritis ²	16.6 (4.7)	31.6 (5.5)
Systemic lupus erythematosus ³	22.6 (7.3)	33.8 (6.4)
Fibromyalgia ⁴	23.2 (8.9)	29.1 (8.9)
Chronic low back pain ⁵	24.4 (9.9)	26.0 (8.9)
Chronic pelvic pain*	24.0 (8.0)	24.4 (8.5)

Watson et al. J Pers Soc Psych 1988;6:1063-1070. 2. Finan et al. J Consult Clin Psychol. 2005 Apr; 73(2): 212–220. 3. Hassett et al. Arthritis Care Res 2012;64:1341-8. 4. Hassett et al. Arthritis Care Res 2008;59:833-40. 5. Hassett et al. Clin J Pain 2016;32:907-14. *Unpublished UM APOLO dataset.

Valued life activities



Many people with chronic pain tend to give up the very things they love and value most in order to attend to the things they MUST do.

The joy in life gets lost.

Meaning in life gets lost

Valued relationships get lost.

Some even lose ability to even to seek and process positive events.

Disruption in reward processing in the brain?

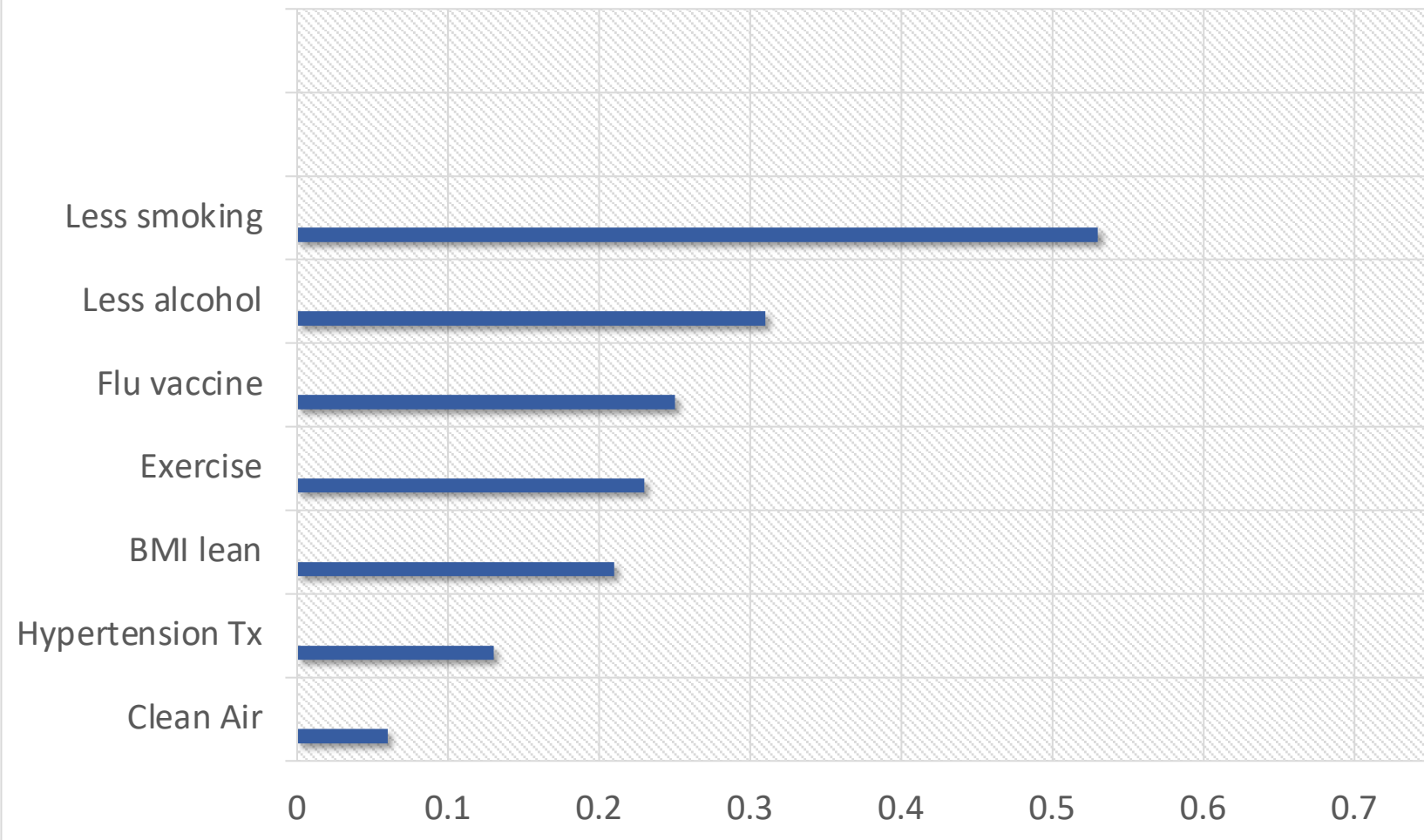


- The experience of pain (in chronic conditions) can be influenced by **changes in the reward processing system** in the brain.
- **Reward deficiency** (less likely to detect and experience positive events).
- Results in anhedonia (feeling **meh**) and **less motivation to seek out positive experiences**.
- **Reversible!**

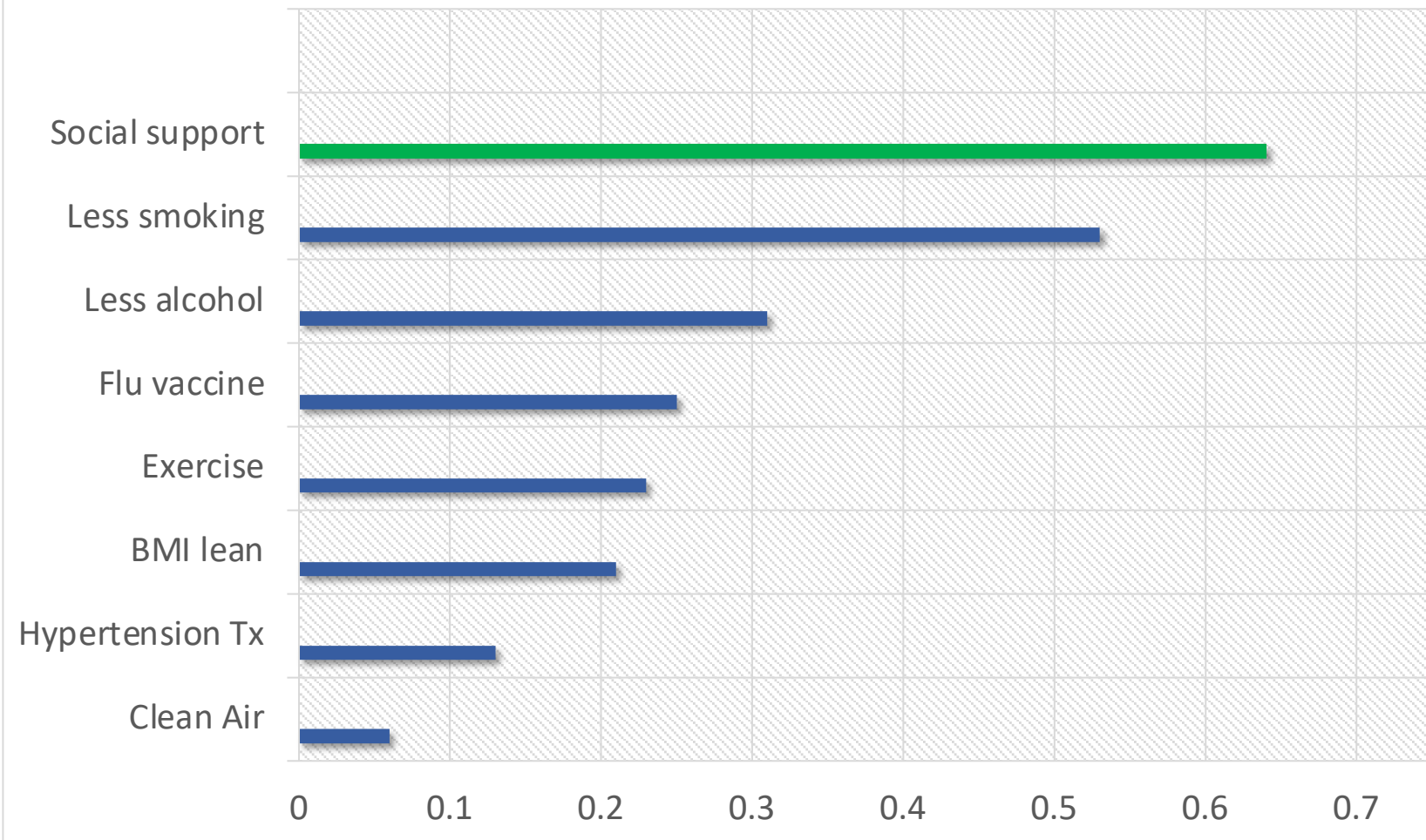


Why does feeling connected matter?

Comparison of Odds Ratios of Decreased Mortality across Conditions Associated with Mortality



Comparison of Odds Ratios of Decreased Mortality across Conditions Associated with Mortality



Social Relationships and Health

- (1) Mental and physical health;
- (2) Behavioral, psychosocial, and physiological pathways;
- (3) Costs (e.g., abusive relationships) + benefits for health (strong integration);
- (4) *Cumulative impact* on health outcomes over time.



A person with long, wavy hair is seen from behind, looking out over a city at sunset. The sun is a bright, glowing orb in the sky, casting a warm, golden light over the scene. The city below is silhouetted against the bright sky, with some lights visible in the distance. The overall mood is contemplative and serene.

What about meaning and
purpose in life?

Purpose in life

Engage in meaningful activities

Your life purpose consists of the central motivating aims of your life:

- guides life decisions,
- influences behavior,
- shapes goals,
- offers a sense of direction,
- creates meaning.

When you have purpose, adversity takes place in a larger context.



Purpose in life and health

The scientific evidence

Purpose in life is associated with:

- Less anxiety and depression
- Healthier aging
- Better sleep
- Better diet and nutrition
- Decreased risk of heart attack
- Decreased risk of Alzheimer's
- Improved immune system functioning
- Increased pain tolerance
- Less pain



Purpose in life

Citations

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A silhouette of a person standing on a hill with their arms raised in a 'V' shape, set against a dramatic sunset sky with orange and blue hues and scattered clouds. The person is positioned on the left side of the frame.

Building resilience

Resilience can be influenced by our:

- Thoughts
- Emotions
- Social Support
- Sense of meaning/purpose



Resilience treatment targets

- Thoughts
- Emotions
- Social Support
- Sense of meaning/purpose



Positive Psychology

Resilience Building Interventions



Amplify positive emotions
Get people moving
Connect with others

- Pleasant activities
- Gratitude
- Savoring and mindfulness
- Acts of kindness
- Positive daily reflection

RBIs are effective for people with chronic pain

Meta-Analysis in people with **chronic pain**:

- RBIs compared to controls decreased:
 - pain intensity
 - depressive symptoms
 - pain catastrophizing
 - negative emotions
 - *increased* positive emotions.

At 3-month follow-up, benefit persisted for depression and positive and negative emotions.



Resilience Building Interventions

Increase positive emotions, connections, and physical activity

Pleasant Activity Scheduling

- On 3 to 5 days this week, set aside time to do something you enjoy. Put it on your calendar and treat it with the same respect as you would a doctor's appointment.

- Have coffee with a friend
- Spend time on your hobby/sport
- Buy a small gift for yourself/loved one
- Take a cooking or yoga class
- Get a massage
- Curl up with a great book
- Take the dog or a friend on a nature hike



Cuijpers et al. Clin Psychol Rev 2007;27:318-26
LARGE effect size in depression = .87
Behavioral activation!

Resilience Building Interventions

Walk and spend time in nature

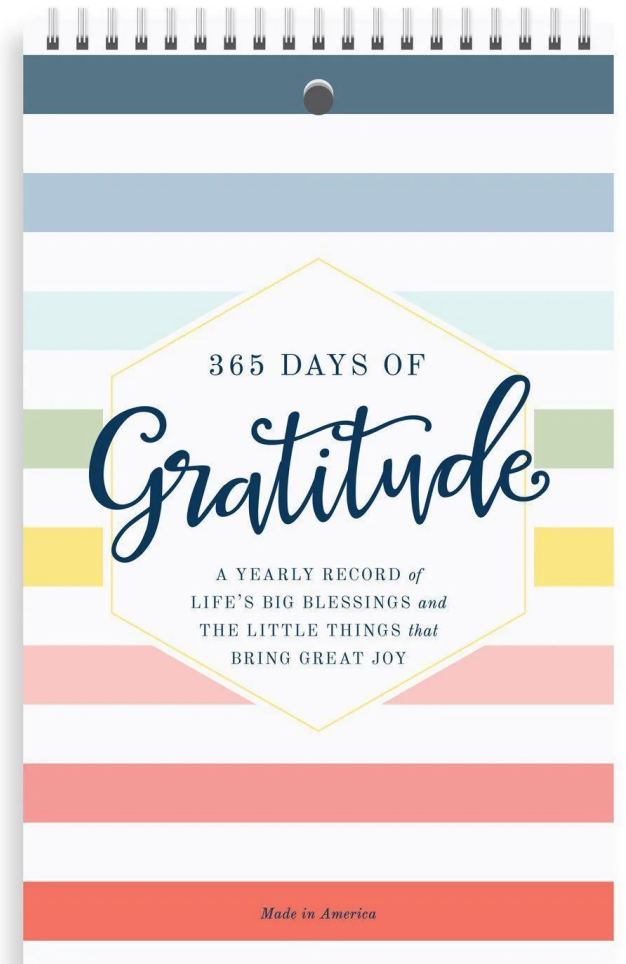


Resilience Building Interventions

Enhance feelings of gratitude & positive thoughts

Keep a Gratitude Diary (next 30 days or longer)

1. Every day, write down 3 things for which you are grateful. It can be anything - feeling the sunshine on your face, happy that a friend phoned, receiving a gift, being able to take a walk, anything. Work out a time to do this. Set an alarm on your iPhone.
2. Make a commitment to yourself that you will write down 3 things every day.
3. The 3 things **MUST be DIFFERENT** each time.
4. Smile as you write them down. This will help you to feel grateful.



Moskowitz et al. Journal of health psychology. 2012;17(5):676-692.

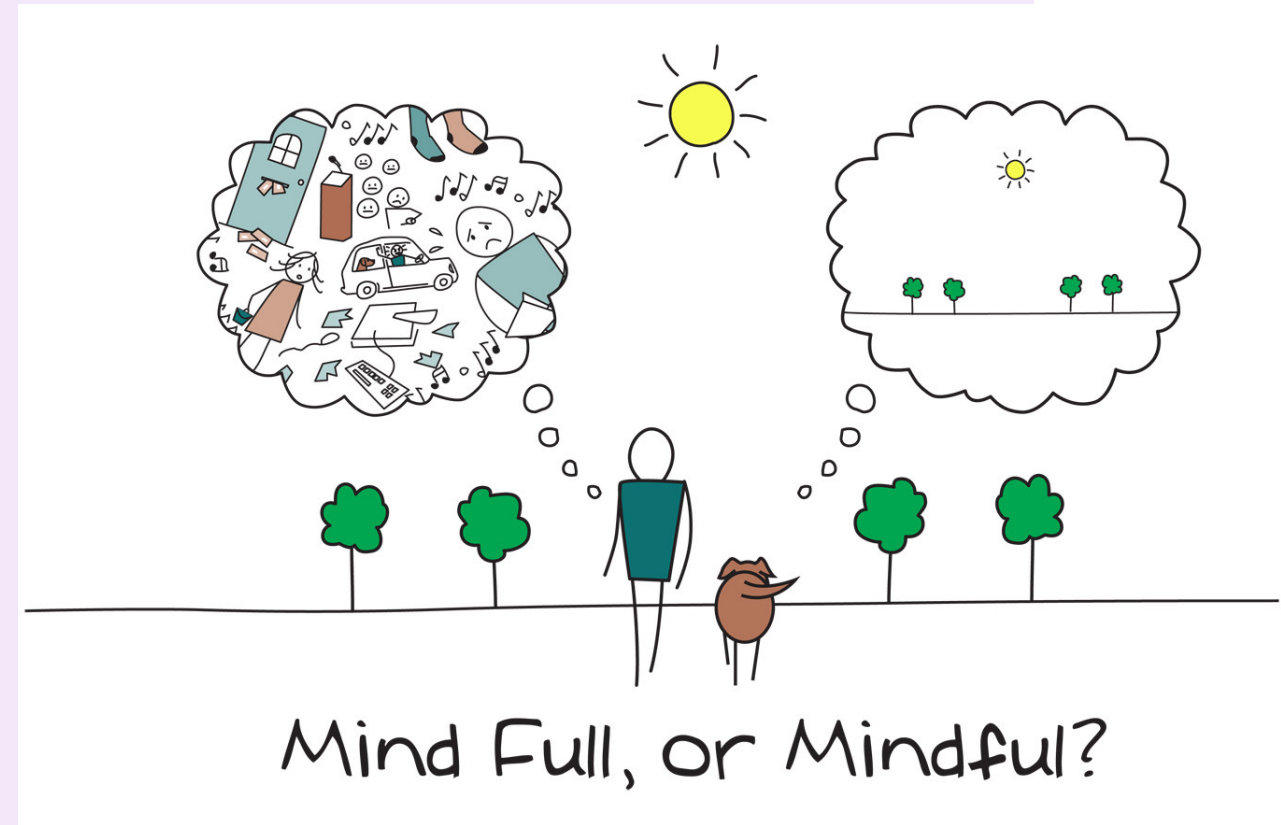
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Mindfulness

- A mental state achieved by focusing one's awareness on the present moment, while calmly acknowledging and accepting one's feelings, thoughts, and bodily sensations.



LEARN ME: Three Mindful Breaths

Breath one: Feel the cool air enter your nose, and flow into your lungs. Pause. Breathe out through your mouth. Feel the breath all the way in and out.

Breath two: Inhale the cool air again and become aware of any tension in your body. Hold a beat, then exhale allowing all tension to melt from your body.

Breath three: Now, mindfully slowly breathe in, pause, and breathe out asking your self, “What *really* matters?”



Resilience Building Interventions

Increase mindfulness and presence

Savoring and Mindfulness:

- Every day for the next week, be sure to savor at least two experiences (for example, your morning coffee, a moment with a friend, or the sun on your face as you walk to your car).
- Be sure to engage all your senses.
- Be present, be mindful.
- Spend at least 2-3 minutes savoring each experience.



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Seligman et al. *American psychol* 2005;60(5):410-42. Sin & Lyubomirsky. *J Clin Psychol* 2009;65:467-87

Acts of Kindness

- Acts of kindness have been associated with:
 - lower levels of pain,
 - decreased levels of health-related stress,
 - less depression in patients living with diabetes,
 - lower levels of cortisol,
 - lower blood pressure,
 - less anxiety and depression
 - and much more if you include *positive service/volunteering* an “act of kindness”!
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Resilience Building Interventions

Connect with others – improve social support

Acts of Kindness

- One day this week, do five kind things for other people and one kind thing for yourself.
- The people can be complete strangers or friends and family members. You can do very small acts of kindness such as holding a door open, sharing a genuine compliment or giving somebody a hug. For yourself, perhaps take a long bath, call a close friend or enjoy a book or movie.



Resilience Building Interventions

Positive Daily Reflection

Positive Piggy Bank:

- Piggy Bank
- Slips of paper and a pen
- Positive reflection instruction card



Positive Daily Reflection

Notice, savor, recall

*“Every evening think about the people, things or events that made you **happy (or grateful)** that day. You may make a list if you like. Pick one of these and spend a moment savoring it. What made it so special to you? Now, write down this moment on a “currency” slip. Use enough detail that you can immediately recall what happened later. Next, add the date, fold up your happy memory “currency,” and drop it in the piggy bank. You will make these happy memory “deposits” in the same way every evening for the next 30 days.”*



Positive Daily Reflection

Notice, savor, recall

“At the end of 30 days, you will “close your account.” This means that you will withdraw all the “currency” from your piggy bank and read each one of the deposited happy memories.”

“As you read them, try to recall details of the happy event and what made it so special to you at the time. Enjoy!”



Strengthen Social Ties

Connect with others – improve social support

Text to Connect

- Every day for the next week, text someone you care about, but with whom you have not spoken to for a while. Let them know you care and are thinking about them.
- Bonus: Send them a photo of the two of you.



Resilience Building Interventions

Unlock your strengths!



We all have Character Strengths and these are our secret superpowers.



Character strengths



Creativity



Curiosity



Judgment



Perspective



Bravery



Perseverance



Zest



Honesty



Social Intelligence



Kindness



Love



Leadership



Fairness



Teamwork



Forgiveness



Love of Learning



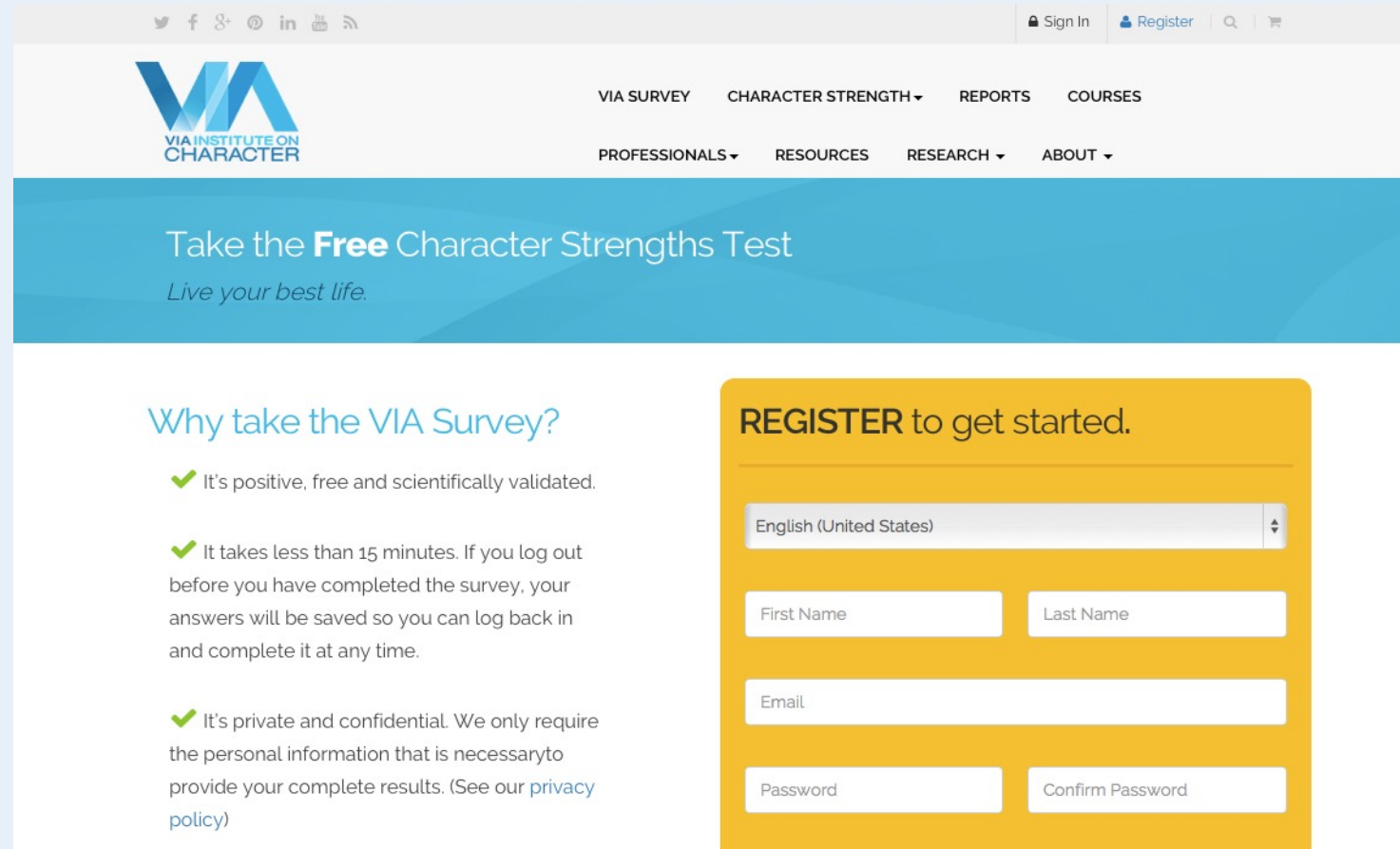
Gratitude



Spirituality

Identify your character strengths

Capitalize, grow, thrive



The screenshot shows the VIA Institute on Character website. At the top, there is a navigation bar with social media icons (Twitter, Facebook, Google+, Pinterest, LinkedIn, YouTube, RSS) on the left, and 'Sign In' and 'Register' links on the right. Below this is a header with the VIA logo and a menu: VIA SURVEY, CHARACTER STRENGTHS (with a dropdown arrow), REPORTS, COURSES, PROFESSIONALS (with a dropdown arrow), RESOURCES, RESEARCH (with a dropdown arrow), and ABOUT (with a dropdown arrow). The main banner features the text 'Take the **Free** Character Strengths Test' and the tagline 'Live your best life.' Below the banner, on the left, is a section titled 'Why take the VIA Survey?' with three bullet points, each preceded by a green checkmark. On the right is a yellow registration box titled 'REGISTER to get started.' containing a language dropdown menu (set to 'English (United States)'), and input fields for 'First Name', 'Last Name', 'Email', 'Password', and 'Confirm Password'.

Why take the VIA Survey?

- ✓ It's positive, free and scientifically validated.
- ✓ It takes less than 15 minutes. If you log out before you have completed the survey, your answers will be saved so you can log back in and complete it at any time.
- ✓ It's private and confidential. We only require the personal information that is necessary to provide your complete results. (See our [privacy policy](#))

REGISTER to get started.

English (United States)

First Name Last Name

Email

Password Confirm Password

<http://www.viacharacter.org/www/Character-Strengths-Survey>

Use your character strengths

Capitalize, grow, thrive

Signature Strengths:

- Every day for the next week, use one of your character strengths in a way that you have not before.
- Each night, write down how you used one of your strengths that day, including what strength you used, how you felt before, during, and after the activity, and whether you plan to repeat it in the future.



Creativity



Curiosity



Judgment



Perspective



Bravery



Perseverance



Zest



Honesty



Social Intelligence



Kindness



Love



Leadership



Fairness



Teamwork



Forgiveness



Love of Learning



Gratitude



Spirituality

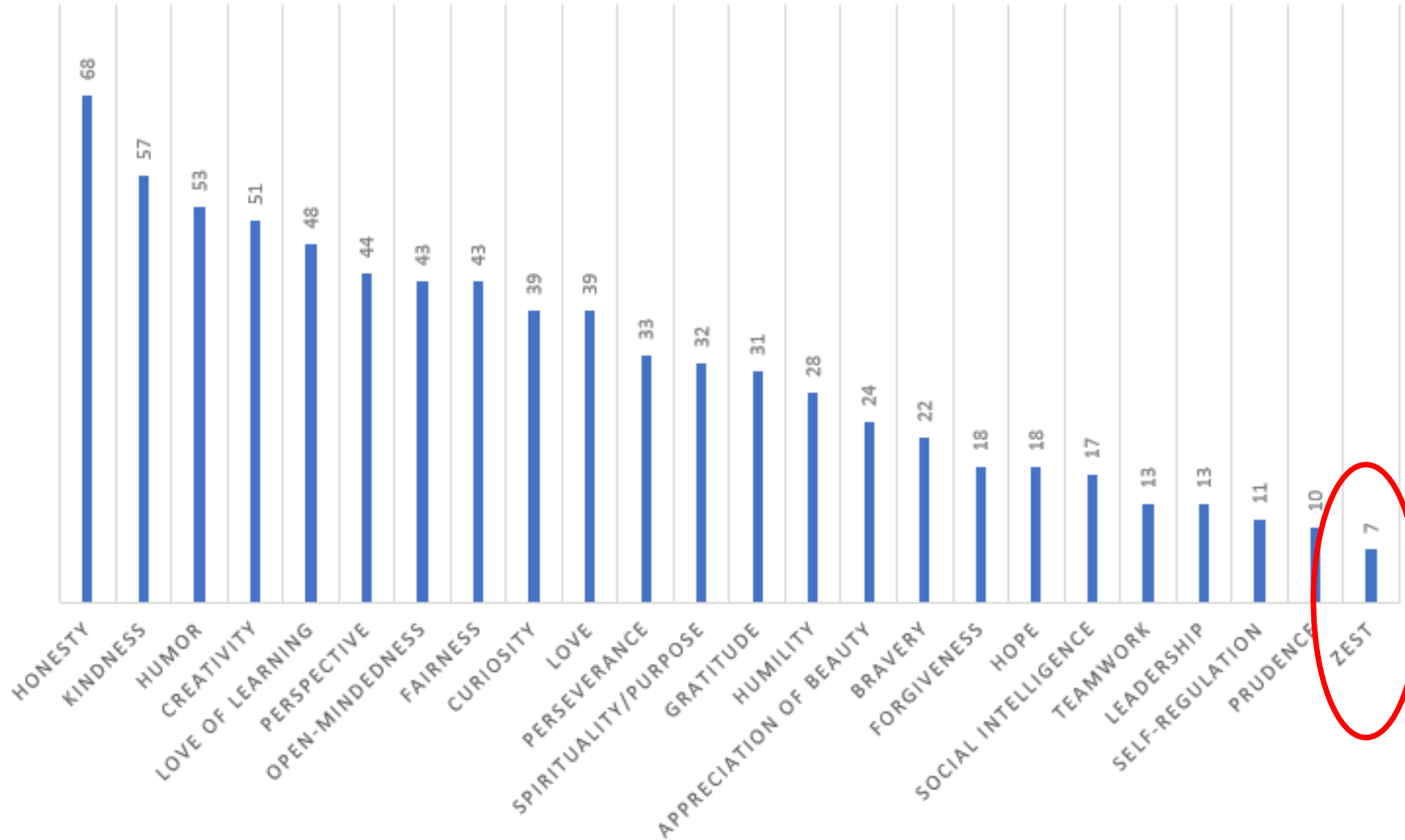
Use your character strengths
Capitalize, grow, thrive

Meta-analysis of character strengths-based interventions for chronic illnesses demonstrated:

- Improved self-esteem,
- Enhanced general self-efficacy,
- Reduced depression.



SIGNATURE STRENGTHS ENDORSED



Purpose in Life Questions to Ask Yourself

- 1) What am I passionate about?
- 2) What are my strengths?
- 3) What am I good at already?
- 4) What would feel meaningful?
- 5) Create a statement of purpose.



Purpose in Life Examples

- To nurture my mind, body and soul.
- To never stop being curious and search for answers.
- To be a spiritual and enlightened person.
- To give my family love and support no matter what.
- To love my partner and build a meaningful life together.
- To give back and help my community thrive.
- To feel accomplished in my career.
- To make a unique contribution to the common good.
- To educate and enrich the lives of students/trainees.
- To make a difference in as many lives as I can.
- To inspire and help others find their own purpose in life.
- To serve and provide for those who are less fortunate.



Resilience Building Interventions

Visioning

Best Possible Self

Select a time in the future (e.g., 5 or 10 years from now) and imagine that at that time you are expressing your best possible self *even in the context of having chronic pain!*

Imagine it in detail where you have worked hard and succeeded at accomplishing your life goals. You might think of this as hitting an important milestone or living a life filled with meaning and purpose.

The point is not to think of unrealistic fantasies, rather think about things that are positive and attainable within reason.

After you have a fairly clear image, write about the details.



Peters et al. JPP 2010;5(3):204-11.
Sheldon & Lyubomirsky. JPP 2006;1:73-82

We are all different.

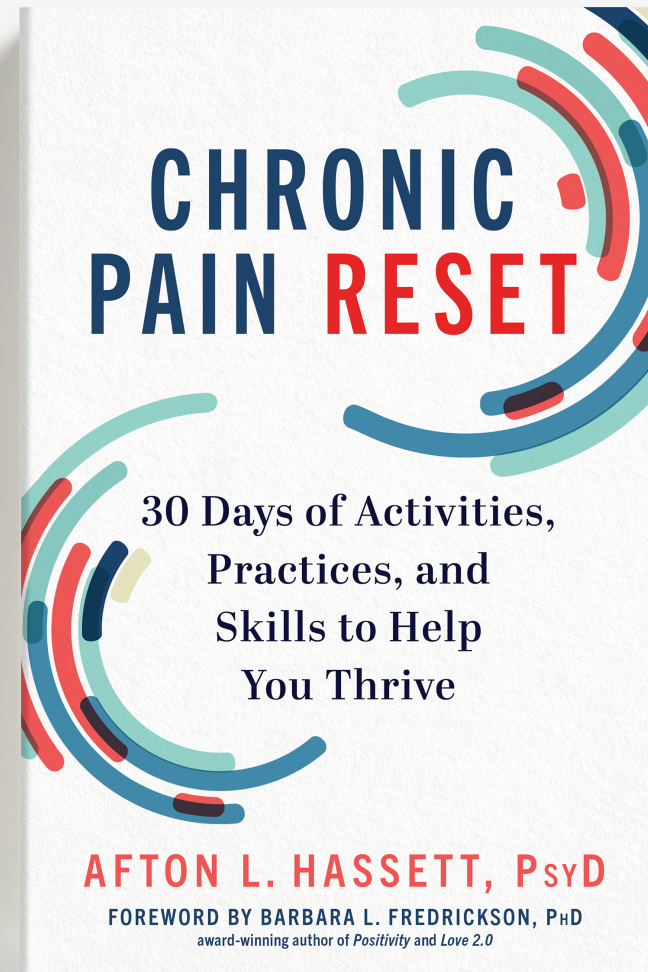
Choose the activities that make sense to you and that you are willing to do!



*Evidence –based
Pain Self-Management
with a focus on developing
resilience for less pain and
greater joy.*

***Amazon**, Barnes & Noble, Target*

*AftonHassett.com
Join “Stay in the Loop” invitation to join a
Special Live Event*





Funding Sources and Salary Support:

NIH-National Institute of Arthritis and Musculoskeletal and Skin Diseases (NIAMS)

NIH-National Heart Lung and Blood Institute (NHLBI)

NIH-National Center for Complementary and Integrative Health (NCCIH)

NIH-National Institute of Nursing Research (NINR)

University of Michigan, Department of Anesthesiology



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