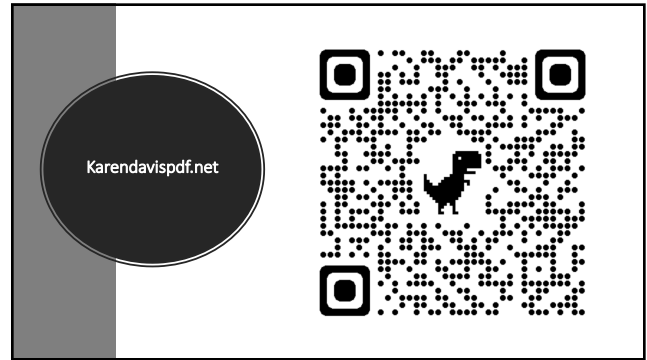




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4



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6



7

Holmes and Rahe Stress Scale

do stressful events carry causality in illness?

150 – 300 points ~50% chance of major health breakdown next 2 years
 >300 points raises the odds to 80%

Death of spouse	100	Major personal illness	53
Divorce	73	Marriage	50
Marital separation	65	Being fired from work	47
Detention in jail	65	Marital reconciliation	45
Death of close family	63	Retirement from work	45

<https://www.thecalculator.co/health/Holmes-And-Rahe-Stress-Scale-Calculator-983.html>

8



9

American Academy of Facial Esthetics DE April 2021

Percent increase of clenching-related patient symptoms

HPI: Compared to before COVID-19, how has the prevalence of the following conditions changed among patients in your dental practice? (Percentages represent an increase.)

Bruxism	71%
Chipped teeth	62.6%
Cracked teeth	63.7%
Temporomandibular disorders (TMD)	62.3%

Source URL: <https://www.dentaleconomics.com/practice/article/14200843/the-economic-impact-of-covid19-on-solo-dental-practices-vs-dso-practices>

10

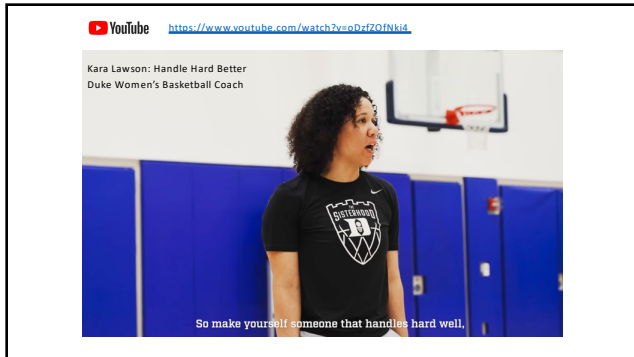
2020 Systematic Review

"A positive qualitative correlation was observed in the literature among stress-related biomarkers and severity of periodontal disease."

Decker A, Askar H, Tattam M, Tichman R, Wang HL. The assessment of stress, depression, and inflammation as a collective risk factor for periodontal diseases: a systematic review. Clin Oral Investig. 2020 Jan;24(1):1-12. doi: 10.1007/s00784-019-03089-3. Epub 2019 Nov 1. PMID: 31677052; PMCID: PMC6980775.

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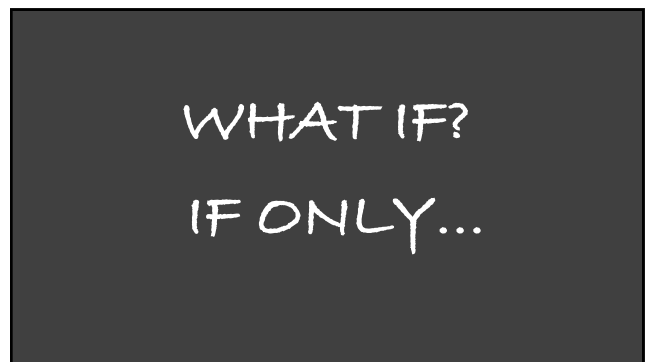
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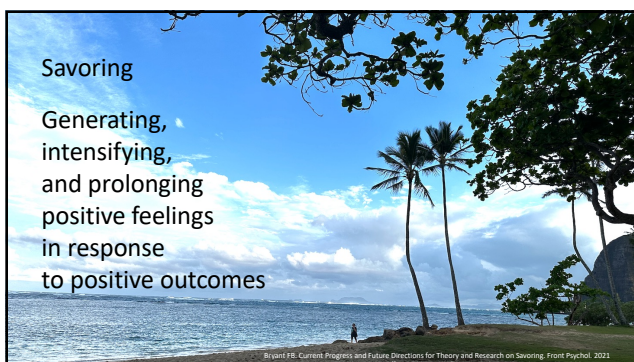
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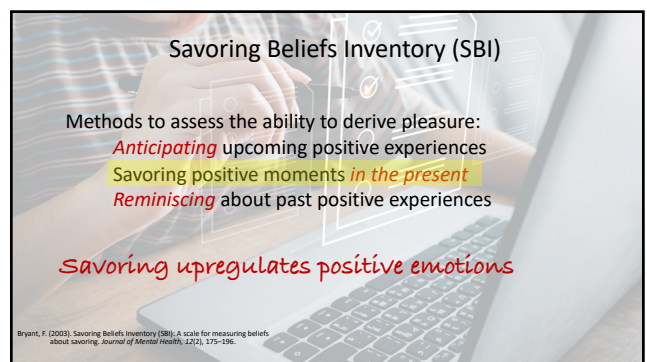
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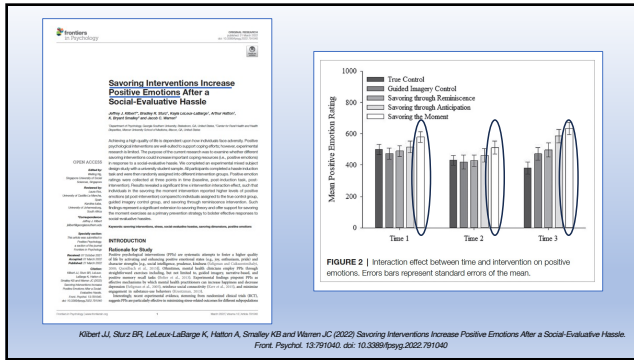
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19



20

Treating autism (Cai et al., 2018 and anxiety disorders (Eisner et al., 2009); preventing depression (Ford et al., 2016); reducing pain (D'Arven et al., 2015); helping people cope with stress (Samios et al., 2020), cancer (Hou et al., 2017), and acquired physical disability (Dunn and Brody, 2008); repairing the negative effects of state dysphoric rumination (Stone et al., 2020); reducing the link between marijuana use and marijuana problems (Luba et al., 2020) and reducing pain and opioid misuse risk (Garland, 2021). Research with older adults has also investigated the role of savoring in promoting resilience (Smith and Hollinger-Smith, 2015) and positive attitudes toward aging (Bryant et al., 2021), improving physical health (Geiger et al., 2017), buffering the deleterious effects of illness on subjective well-being (Smith and Bryant, 2016). Savoring has also been identified as a resource in bereavement (Permanadeli and Sundararajan, 2021), in lowering suicide risk (Kilbert et al., 2019), and in protecting soldiers from the psychological effects of combat exposure (Sytine et al., 2018). In addition, researchers have used savoring to increase people's consumption of healthy foods (Coary and Poor, 2016), decrease overeating (Black and Areni, 2016), and promote healthy relationships with food (Batat et al., 2019).

Bryant FB. Current Progress and Future Directions for Theory and Research on Savoring. Front Psychol. 2021 Dec 14;12:771698. doi: 10.3389/fpsyg.2021.771698. PMID: 34970196; PMCID: PMC8712667.

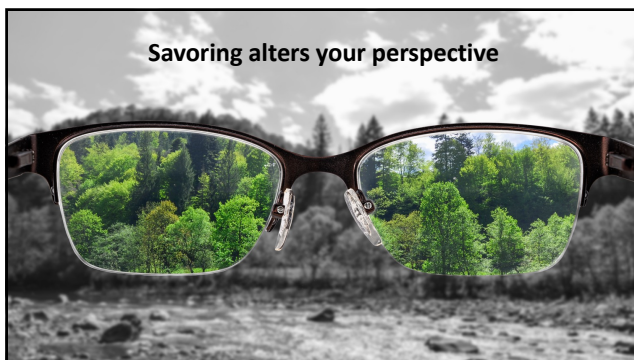
21

Savoring moderates the association between cancer-specific physical symptoms and depressive symptoms

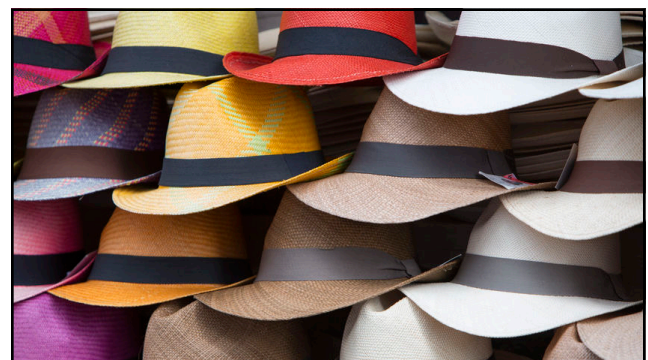
Savoring was associated with **lower levels of:**
cancer-specific physical symptoms,
anxiety, and depressive symptoms,
and **higher levels of:**
positive affect, and life satisfaction

Hou WK, Lau KM, Ng SM, Cheng AC, Shum TC, Cheng ST, Cheung HY. Savoring moderates the association between cancer-specific physical symptoms and depressive symptoms. Psychosom. 2021 Feb;20(2):231-238. doi: 10.1002/pon.4114. Epub 2016 Mar 16. PMID: 26990110.

22



23



24

True compassion
is to look beyond your own pain
to see the pain of others



25



26

How Do You Demonstrate Compassion
for Hurting Patients?



27

Fear of Pain / Hypersensitivity: Premium on Comfort



28

NEW
BufferPro™
8.4% Sodium Bicarbonate
Buffer Solution



Reduced pain
Faster onset
More profound anesthesia



29

Reducing the Burn of Injections

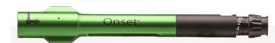


Adding 8.4% sodium bicarbonate
raises all anesthetic solutions to a
pH of 6.8 – 7.0

Vasoconstrictors with epinephrine are acidic

Lidocaine ~3.5 pH
Bupivacaine – 3.0 to 4.5 pH
Citanest – 3.5 to 5.2pH
Articaine 4.0 to 5.5 pH
Mepivacaine Plain - 5.5 to 6.0 pH

Lower pH = Longer onset/greater burn



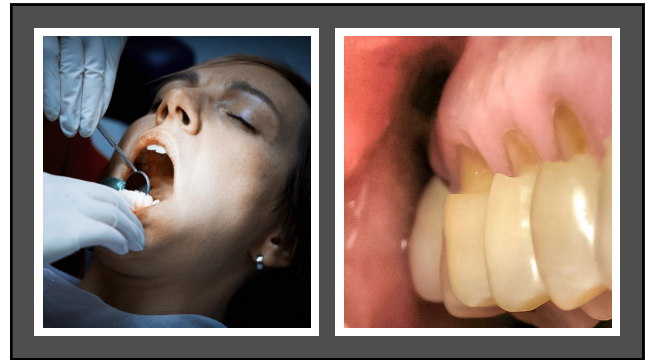
30

DycloPro Dyclonine Hydrochloride Topical Solution 0.5%

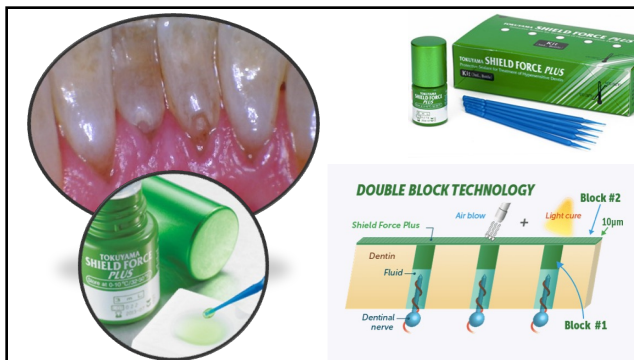
- ✓ Was marketed by Astra Zenca as Dyclone until 2001
- ✓ Ketone based, not amide or ester-based
- ✓ Applied: Mouth rinse or syringe
- ✓ Onset ~2 to 5 min.
- ✓ Duration 30 min.



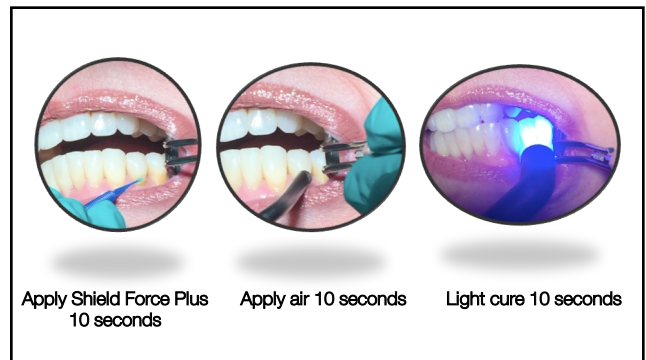
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35

Soothing/ Promotes Healing/ Natural / Safe				
Ingredient	Gel	Rinse	Action	
Aloe Vera	✓	✓	Antimicrobial, Anti-inflammatory, Antioxidant, Pain relief	
Xylitol	✓	✓	Antimicrobial, Caries preventive, Natural sweetener	
Cinnamon	✓	✓	Antibacterial, Anti-inflammatory	
Thyme	✓	✓	Antibacterial, Inhibits growth of oral pathogens	
Clove	✓	✓	Antimicrobial, Analgesic, Used in homeopathic medicine/dental	
Wintergreen		✓	Antibacterial, Analgesic	

36

Soothing/ Promotes Healing/ Natural / Safe

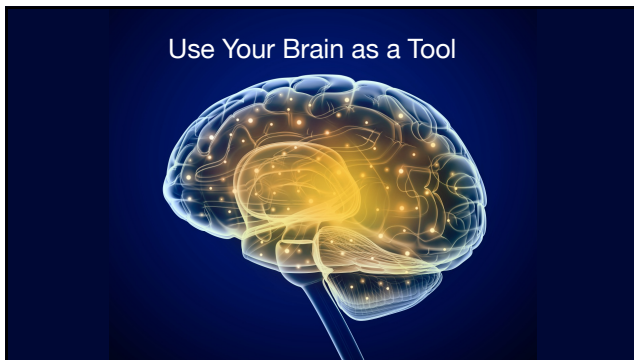
Ingredient	Gel	Rinse	Action
Aloe Vera	✓	✓	Antibacterial, Anti-inflammatory, Antioxidant,
Xylitol	✓	✓	Antibacterial, Analgesic
Cinnamon	✓	✓	Antibacterial, Analgesic
Thyme	✓	✓	Antibacterial, Analgesic
Clove	✓	✓	Antibacterial, Analgesic
Wintergreen		✓	Antibacterial, Analgesic



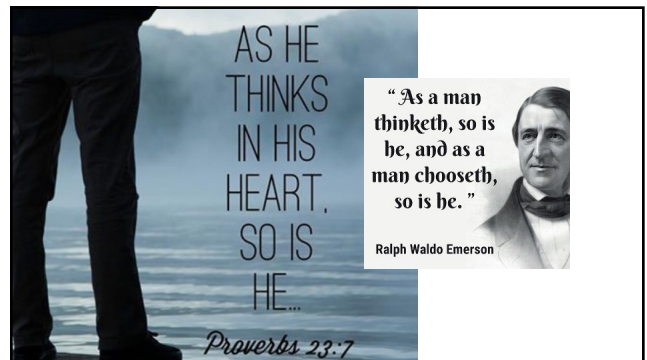
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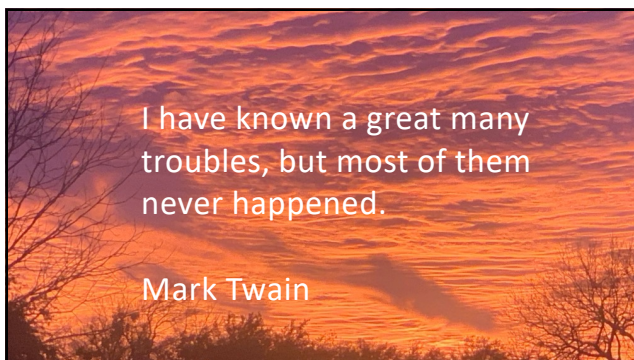
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41

Analysis 186 RCT (16,655 patients)

At least **half of the overall treatment effect observed in RCT across conditions is attributable to placebo effects** rather than to the specific experimental intervention on trial.

REVIEW

Placebo response and effect in randomized clinical trials: meta-research with focus on contextual effects

Abstract

Background: Contextual effects (i.e., placebo response) refer to all health changes resulting from administering an intervention, rather than the specific intervention itself. The placebo response is a well-documented phenomenon in clinical trials. The placebo response can be attributed to a variety of factors, including the power of suggestion, the desire to please, and the desire to believe in the treatment. The placebo response can be a significant source of bias in clinical trials, and it is important to understand its nature and extent in order to interpret the results of clinical trials correctly.

Methods: We conducted a meta-analysis of 186 randomized controlled trials (RCTs) that reported the placebo response. We included RCTs that reported the placebo response in the context of a specific intervention. We extracted the placebo response rate for each RCT and calculated the overall placebo response rate. We also examined the factors that were associated with the placebo response rate.

Results: The overall placebo response rate was 50.0% (95% CI 47.5% to 52.5%). The placebo response rate was significantly higher in RCTs that reported the placebo response rate than in RCTs that did not report the placebo response rate. The placebo response rate was also significantly higher in RCTs that reported the placebo response rate than in RCTs that reported the placebo response rate.

Conclusion: The placebo response is a well-documented phenomenon in clinical trials. The placebo response can be a significant source of bias in clinical trials, and it is important to understand its nature and extent in order to interpret the results of clinical trials correctly.

Keywords: Placebo response, Placebo effect, Contextual effects, Placebo response rate

BMC

42

PLACEBO EFFECT

231 physicians

45% used placebos in clinical practice

96% believed placebos can have **therapeutic** effects

Sherman R, Hickner J. Academic physicians use placebos in clinical practice and believe in the mind-body connection. J Gen Intern Med. 2008; Jan;23(1):7-10. doi: 10.1007/s11606-007-0332-z. Epub 2007 Nov 10. PMID: 17994270; PMCID: PMC2173915.

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Harvard Health Publishing
HARVARD MEDICAL SCHOOL

Neurotransmitters at work

The power of the placebo effect

December 15, 2008

Treating yourself with your mind is possible, but there is more to the placebo effect than positive thinking.

Your mind can be a powerful healing tool when given the chance. The idea that your brain can continue your body's healing process is the real thing – the so-called placebo effect – and this remarkable healing has been around for millennia. How science has found that under the right circumstances, a placebo can be just as effective as traditional treatments.

"The placebo effect is more than positive thinking – believing a treatment or procedure will work. It's about creating a stronger connection between the brain and body and how they work together," says Professor Ted Kaptchuk of Harvard-affiliated Beth Israel Deaconess Medical Center, whose research focuses on the placebo effect.

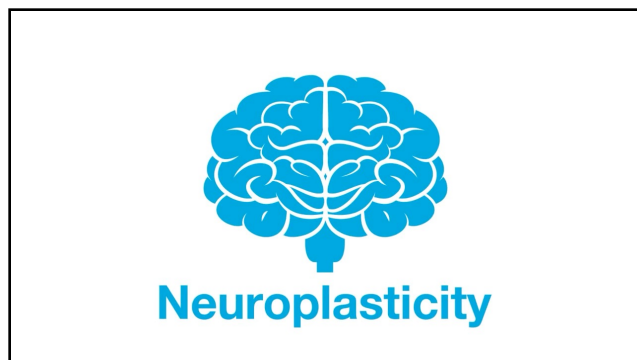
Placebos won't lower your cholesterol or shrink a tumor. Instead, placebos work on symptoms mediated by the brain, like the perception of pain. "Placebos may make you feel better, but they will not cure you," says Kaptchuk. "They have been shown to be most effective for conditions like pain management, stress-related insomnia, and cancer treatment side effects like fatigue and nausea."

<https://www.health.harvard.edu/mental-health/the-power-of-the-placebo-effect>

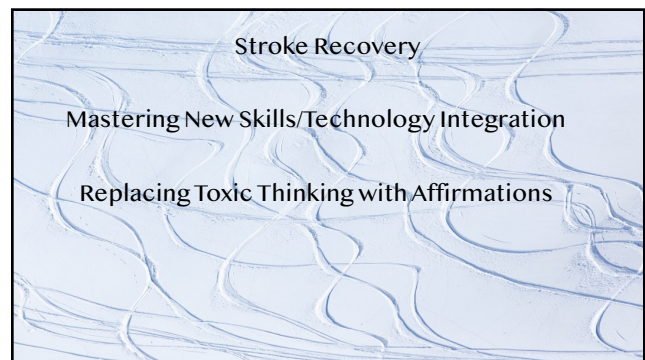
Osteoarthritis Knee Pain Relief With Placebo

Activated middle frontal gyrus brain region (makes up about one-third of the frontal lobe)

44



45



46

Strategies to Help Promote Neuroplastic Changes in Your Brain
Megan Call, Director Resiliency Center, University of Utah Health

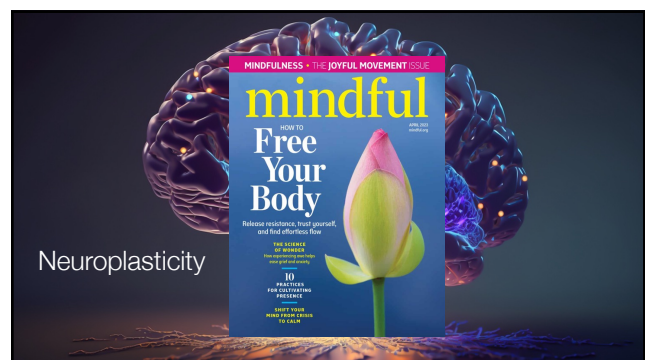
Decide a new skill you are interested in and challenged by - new language, musical instrument, learn to paint

Take time for/repetition to build new neurons

Be committed. It's a process.

<https://accelerate.uofh.edu/health-and-wellness/neuroplasticity-how-to-use-your-brains-malleability-to-improve-your-well-being>
Accessed January 17, 2023

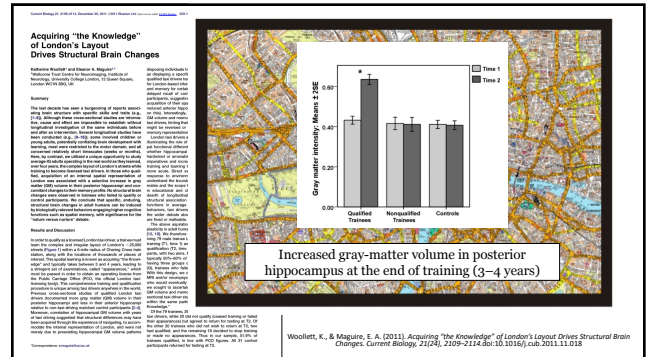
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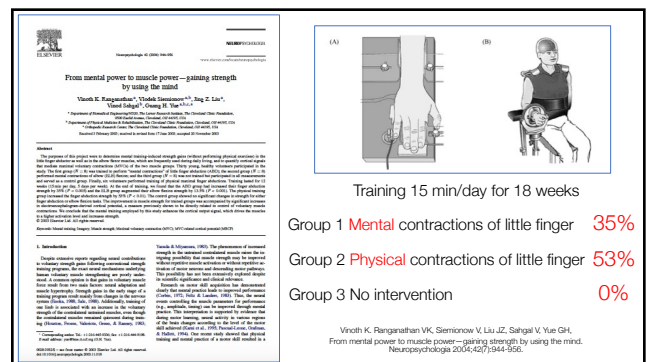
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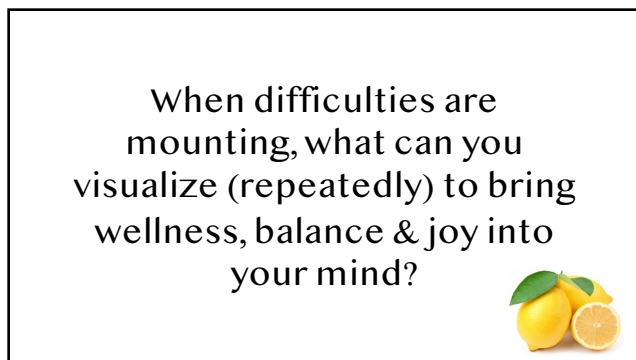
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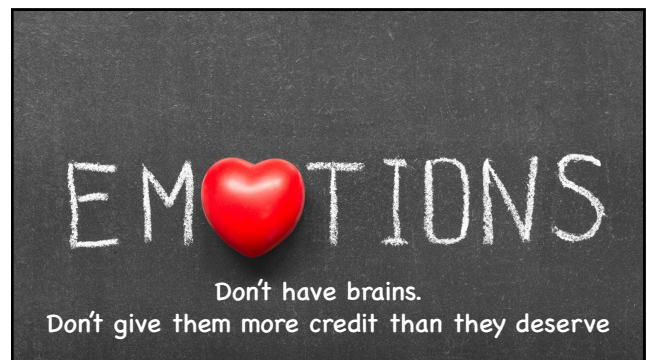
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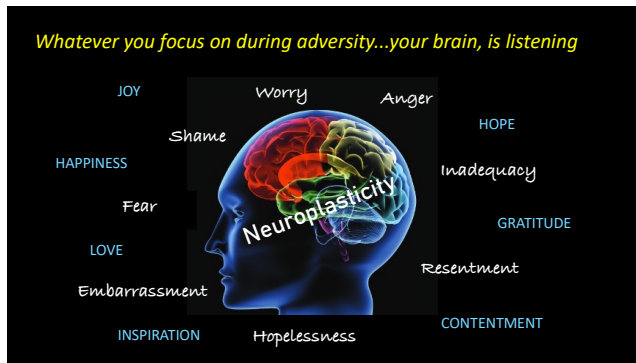
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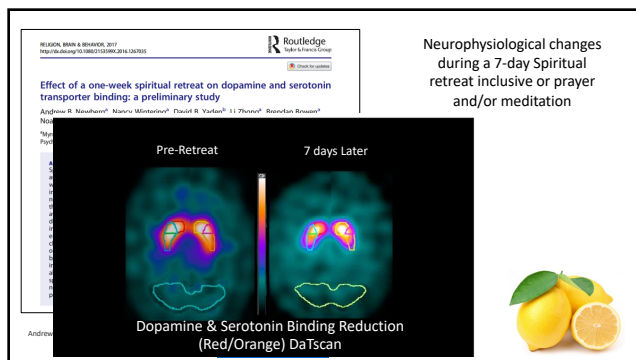
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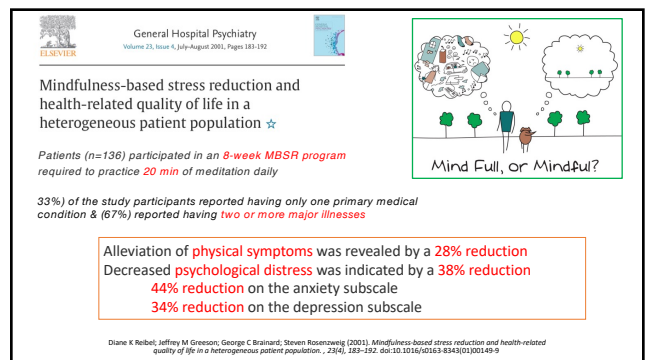
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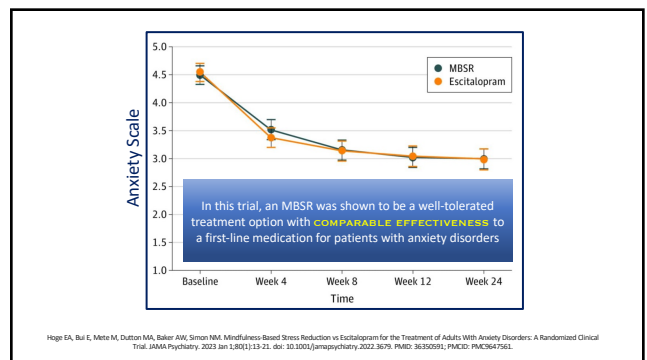
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Mindfulness Outcomes in Different Patient Populations

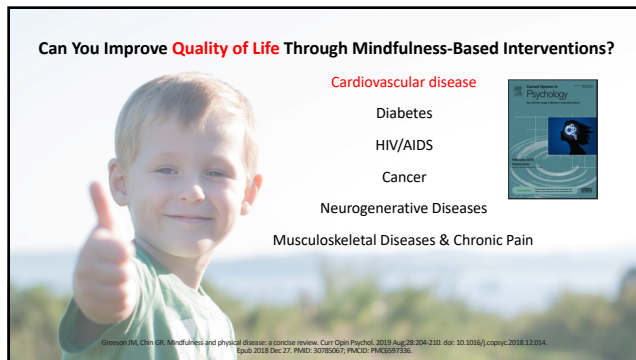
Study (Ref)	Population	Clinical Outcomes
Grossman et al ¹⁰	Healthy population	Reduction of stress, cortisol levels and depression. Improvement of QoL
Ledesma and Kumano ¹¹ ; Yuan et al ¹²	Patients with and without cancer	Reduction of cortisol levels, Improvement of immune functions
Suh et al ¹³ ; Sayadi et al ¹⁴	Type 2 diabetes and SARS-CoV-2 infection	Reduction of anxiety, depression, stress, and reduction of systemic cortisol levels
Diez et al ¹⁵	Healthy adult subjects	Reduction of systemic cortisol and Interleukin 1β (IL-1β) levels
Saban et al ¹⁶	Woman veterans at high risk of cardiovascular diseases	Reduction of diurnal salivary cortisol and interleukin-6
Garland et al ¹⁷	Cancer survivors	Reduction of systemic cortisol levels
Lipschitz et al ¹⁸	Cancer survivors with sleep disturbance	Reduction in cortisol levels and sleep quality improvement
Matousek et al ¹⁹	Breast cancer patients	Reduction of stress levels, depression, anxiety and pain
Duncan et al ¹⁰	Breast cancer patients	Improvement of QoL and reduction of cortisol levels

Fonte: P. Altabe V, Bologna L, Mazzoni D, Quagliarillo V, Mauras N, Di Berto G, Quarata E, Migliaccio G, Pettilo M, Barberio D. Mindfulness-based stress reduction in cancer patients: impact on overall survival, quality of life and risk factor. Eur Rev Med Pharmacol Sci. 2023 Sep;73(7):1320-1337. doi: 10.33358/eurres_202309_13279. PMID: 37755447.

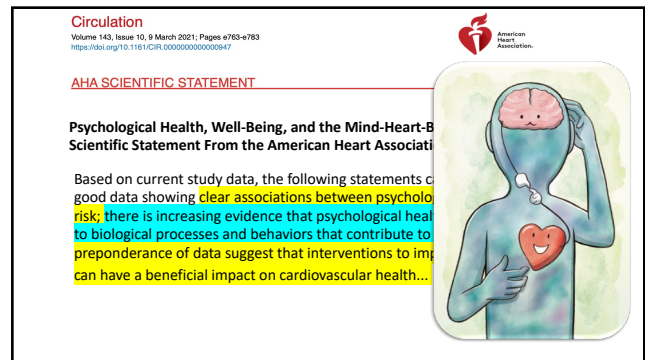
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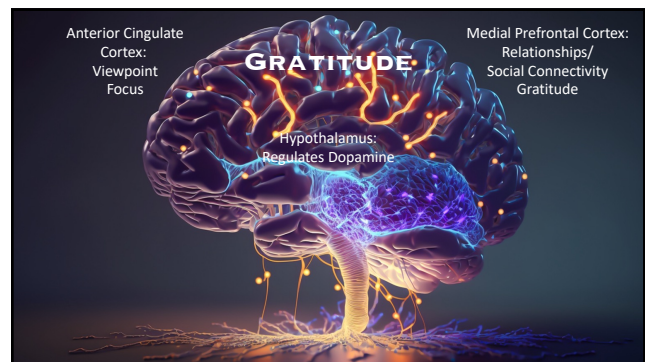
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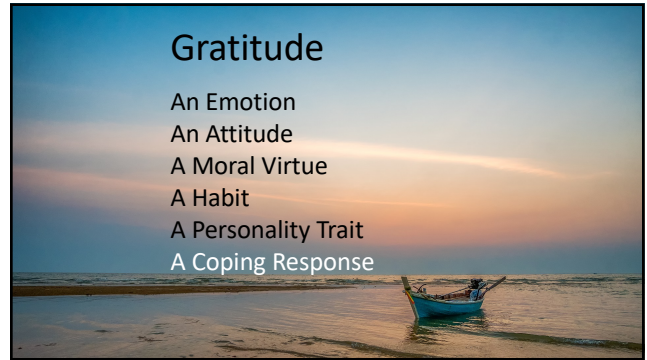
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Gratitude and Well-Being

Religious thankfulness & gratefulness assessments to *predict lifetime history of 9 psychiatric disorders (2621 participants):*

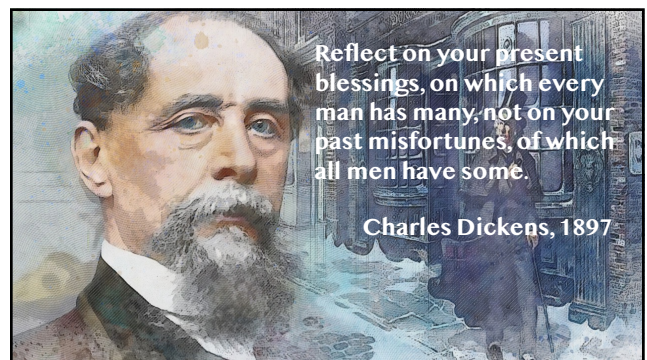
- Major Depression
- General Anxiety Disorder
- Phobia
- Nicotine Dependence
- Alcohol Dependence
- Drug Abuse/Dependence
- Bulimia Nervosa

Thankfulness significantly predicted LOWER RISK & improved outcomes



Wood AM, Froh JJ, Geraghty AM. Gratitude and well-being: a review and theoretical integration. Clin Psychol Rev. 2010 Nov;24(7):859-965. doi: 10.1016/j.cpr.2010.03.005. Epub 2010 Mar 20. PMID: 20461333.

69



70

Gratitude Questionnaire Six-Item Form (GQ-6)

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

Scoring: Compute a mean across the item ratings; items 3 and 6 are reverse-scored.

71

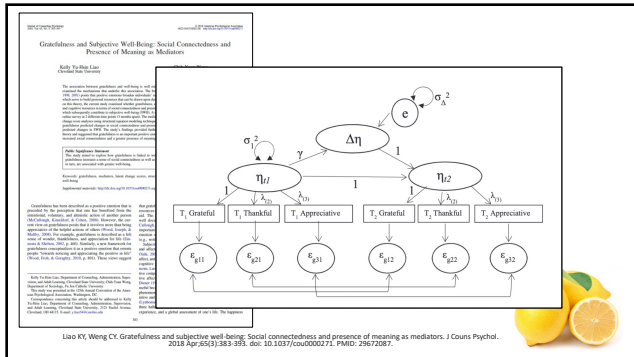
Gratitude Resentment and Appreciation Scale (GRAT)

1 I strongly disagree	2 I disagree somewhat	3 I feel neutral about the statement	4 I mostly agree with the statement	5 I strongly agree with the statement
--------------------------	--------------------------	---	--	--

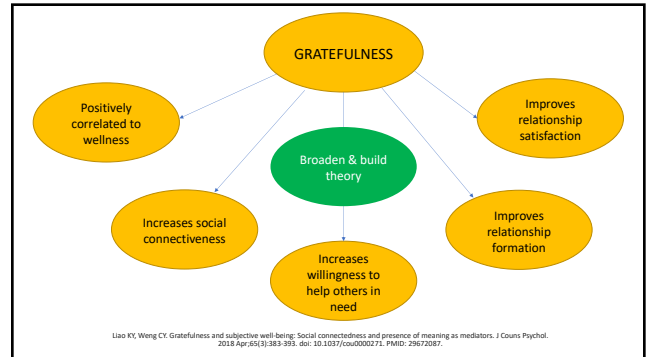
1. I couldn't have gotten where I am today without the help of many people.
2. Life has been good to me.
3. There never seems to be enough to go around and I never seem to get my share.
4. Oftentimes I have been overwhelmed at the beauty of nature.
5. Although I think it's important to feel good about your accomplishments, I think that it's also important to remember how others have contributed to my accomplishments.
6. I really don't think that I've gotten all the good things that I deserve in life.
7. Every fall I really enjoy watching the leaves change colors.
8. Although I'm basically in control of my life, I can't help but think about all those who have supported me and helped me along the way.
9. I think that it's important to "stop and smell the roses."
10. More bad things have happened to me in my life than I deserve.
11. Because of what I've gone through in my life, I really feel like the world owes me something.
12. I think that it's important to pause often to "count my blessings."
13. I think it's important to enjoy the simple things in life.
14. I feel deeply appreciative for the things others have done for me in my life.
15. For some reason I don't seem to get the advantages that others get.
16. I think it's important to appreciate each day that you are alive.

Scoring:
The following items should be reverse scored: 3, 6, 10, 11, 15.

72



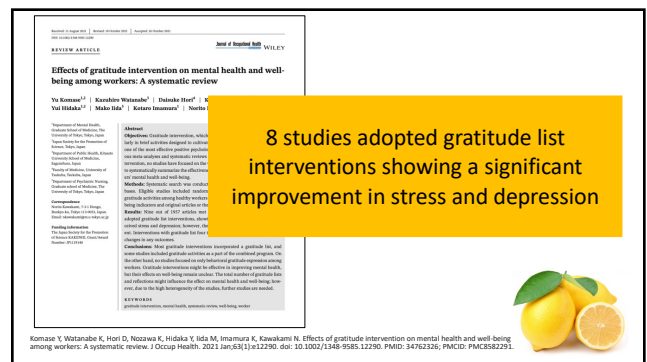
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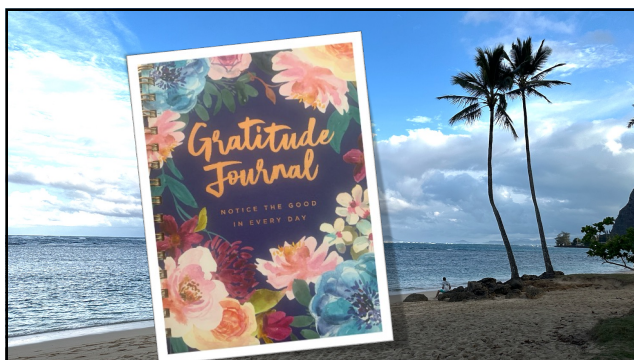
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77



78


Positive Psychology and Gratitude Interventions: A Randomized Clinical Trial

3 Groups surveyed daily for 2 weeks

For the Gratitude group, the instructions were:
Think back over the past day and write down five things in your life that you are grateful for. (153)

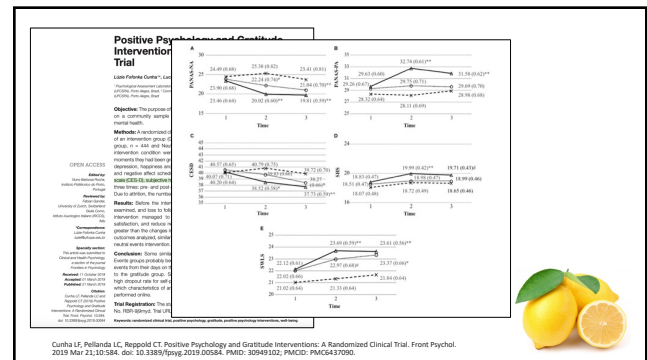
For the Neutral Events group, the instructions were:
Think back over the past day and write down five events that somehow affected you. (134)

For the Hassles group, the instructions were:
In life, we sometimes encounter hassles and annoying situations that may bother and irritate us. Think back over the past day and write down five hassles or annoying situations that you had to face. (123)



Cunha LF, Pellanda LC, Reggold CT. Positive Psychology and Gratitude Interventions: A Randomized Clinical Trial. Front Psychol. 2019 Mar 21;10:584. doi: 10.3389/fpsyg.2019.00584. PMID: 30949102; PMCID: PMC6437090.

79



80


Positive Psychology and Gratitude Interventions: A Randomized Clinical Trial

Line graphs showing the effect of the intervention on various outcomes over time (1, 2, 3 weeks).

Outcomes:

- Life Satisfaction:** Increased significantly for the Gratitude group compared to the Neutral Events and Hassles groups.
- Subjective Happiness:** Increased significantly for the Gratitude group compared to the Neutral Events and Hassles groups.
- Resilience:** Increased significantly for the Gratitude group compared to the Neutral Events and Hassles groups.
- Depression:** Decreased significantly for the Gratitude group compared to the Neutral Events and Hassles groups.
- Optimism:** Increased significantly for the Gratitude group compared to the Neutral Events and Hassles groups.

The gratitude intervention group of 446 subjects (daily gratitude lists for 14 days) **increased** positive affect, **reduced** negative affects and depression symptoms compared to group of 446 subject with no intervention



Cunha LF, Pellanda LC, Reggold CT. Positive Psychology and Gratitude Interventions: A Randomized Clinical Trial. Front Psychol. 2019 Mar 21;10:584. doi: 10.3389/fpsyg.2019.00584. PMID: 30949102; PMCID: PMC6437090.

81

124 Older Adults/Spain/Age 60-89

Training in gratitude and savoring **increased** scores in Life Satisfaction, Subjective Happiness, Resilience, and **reduced** Negative Affect

Savoring and Optimism interventions **decreased** scores in depression



Salme-Cubero RM, Ramirez-Bertrando E, Ortega-Martin AE. Strengths in older adults: differential effect of savoring, gratitude and optimism on well-being. Aging Ment Health. 2023 Aug;23(8):1017-1034. doi: 10.1080/13607863.2018.1471145. Epub 2018 May 12. PMID: 29793723

82

"The only mistake we make about expressing gratitude is never expressing it at all."

Walter Green

83

"...but are you grateful?"

84

When life gives you lemons
make #LemonAid

85

Making lemonade isn't easy
but...
It is a choice

86



87



88