



THE SCIENCE

BEHIND HES WELL-BEING CAMPAIGNS



THE SCIENCE

BEHIND HES WELL-BEING CAMPAIGNS

Is it possible to take up a habit of walking... for fun? Could eating more leafy greens and cruciferous veggies be... entertaining?

Yes and yes. At Health Enhancement Systems (HES), we harness the power of science *and* fun... to captivate and motivate. We offer well-being programs that employees don't want to miss — campaigns that get participants smiling, cheering each other on, and exchanging stories of their offline wellness adventures.

For us, *fun doesn't mean fluff*, we take pride in using scientific research to create results-driven, crowd-pleasing, best-in-class, *and* fun well-being campaigns. Drawing on studies from the fields of health, medicine, psychology, adult learning, and more, we design immersive online experiences that delight, engage, and inspire... equipping participants to lead happier, healthier lives.

DRIVING SUSTAINABLE CHANGE

A well-designed workplace well-being campaign helps participants get off to a solid start toward making healthier habits their own. But the main goal with any wellness initiative is to set the stage for change that sticks like glue, for good.

Motivation from within — intrinsic¹ — is vital to lasting change; without it, newly formed habits quickly wither and die once trophies, gift cards, or other prizes are no longer awarded.² Many employers mistakenly believe paying people to “get healthy” works, offering cash or premium discounts for participation or achieving a specific step goal. But like tossing shrimp to a performing seal, once the external reward goes away, interest wanes.

When people decide for themselves that their reasons for changing are more compelling — daily — than their reasons for not changing, the magic happens... and long-term change is within reach.

Self-Determination Theory (SDT) holds that people are more likely to adopt new behaviors in a context where conditions

support autonomy, competence, and relatedness (or connection).³

HES campaigns are strategically designed to foster success with these features:

- Pre/post self-assessments that serve as education tools and markers of progress (autonomy, competence)
- Goal setting at program onset, with an option to share (autonomy, connection)
- Inspiring, actionable content to build self-efficacy in healthy living skills (competence)
- Quizzes for knowledge retrieval and learning enhancement (competence)
- Simple, engaging tracking tools so participants can visually follow their own progress — and that of their Trail Mates, Buds, or Travel Companions (autonomy, competence)
- Social elements like team challenges, buddy features, an interactive, moderated wall, leaderboards, intra-team messaging, and content sharing (in-product tips, articles, recipes) (connection).

“ When we started this program, I had just finished my physical and was diagnosed overweight, pre-diabetic and with high blood pressure and high cholesterol. The tracking of progress through this helped me make sure I was getting in my 60 minutes a day. I am down 27 lbs and have lowered both my blood pressure and cholesterol!

—*Spring Into Motion* Participant



CHALLENGING GOALS

HES campaigns prompt people to strive toward big goals... challenging, yet realistic. Ask anyone who's made the leap from Slurpees® and Big Macs® to a whole food, plant-based diet or who's gone from sloth to fitness enthusiast; they'll tell you it took a major lifestyle overhaul... not little changes here and there. Research supports the value of aiming high:

- Big, challenging goals lead to greater effort, persistence, and performance compared to small or easy goals.^{4,5} When people set challenging goals, a wider chasm exists between current and target behavior; this boosts motivation at the conscious and subconscious level to close the gap.⁶
- Boosts in self-esteem surface only from going after difficult, challenging tasks; lukewarm goals don't do the trick.⁷

- fMRI research found self-determined goal-setting is related to the sense of voluntary behavior and linked with greater intrinsic motivation.⁸

The “baby steps” approach is an outdated and ineffective way for adults to go about changing complex behavior patterns. And while there's value in a step-wise approach and building on previous successes, new habits are less likely to stick in the absence of big, challenging goals.

“

I lost 14 of the 15 lbs I set my goal for; I also reached ALL of my other goals and exceeded them. Those were to exercise at least 30 minutes per day, drink at least 8 glasses of water per day and to also complete my first 5k, running as much of it as I could and walking the rest, but to finish the run.

”

—*HealthTrails* Participant



FUN THEMES

A chance to have fun, especially in a friendly competition with coworkers, is universally appealing. Like free gourmet chocolate left in the break room, fun is naturally enticing; you don't have to pay people to sample the goods. There's enough about life — and work — that isn't fun; why not take a lighthearted approach to enhancing well-being?

With intriguing wraparound themes like world travel, a pirate adventure, a winter holiday scene-building story, a cross-country trip to the most intriguing US attractions, and more, HES campaigns inspire people to recruit coworkers and stay in the game above all *because it's fun...* without being silly.

- According to William Glasser's Choice Theory, fun is a *basic human need* along with survival, love and belonging, power and freedom. We're genetically driven to satisfy these needs.⁹
- Positive emotions such as fun and enjoyment are linked to successful adult learning and perceived boosts in well-being.¹⁰

- Encountering immediate vs. delayed rewards is a big factor in staying on track with long-term goals.¹¹ Turns out we're more motivated to do what it takes to feel better now vs. preventing stroke in 30 years.
- Fun activities are even more happiness-inducing when shared with others... especially friends.¹²
- Enjoying a new behavior (like whipping up a healthy dinner of grilled salmon and veggie shish kabobs) predicts short-term success in giving it another go; repeated experiences of successful practice predict long-term enjoyment for the behavior, even if it wasn't much fun to begin with.¹³

Each HES product offers a rich, surround-sound experience. Participants aren't just tracking activity; they're learning, seeing, and doing within an engaging theme that feels like play.

“ I love this challenge! I have learned so much about Hawaii. The pictures and the descriptions are incredible. I find myself hurrying up to the next stop so I can read about that place. ”

—*Ola Ala* Participant

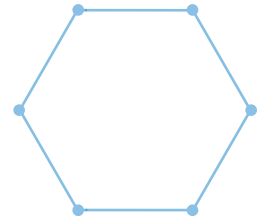




“ I really loved the trails and learning about the interesting places. **I’ve benefited from the support,** encouragement and competitiveness of my teammates. The *HealthTrails* website has been a great resource to me as well, I’ve made several of the healthy recipes and they have all been great! Participating in **this program has prompted me to really ‘get healthy’** again. ”

—*HealthTrails* Participant

SOCIAL SUPPORT



Having the right people cheering you on makes the hard work of behavior change easier. Research underscores the importance of meaningful social connections to physical and emotional health — as well as longevity. HES campaigns feature friendly team competitions, moderated message boards, and built-in buddy elements like Travel Companions and Trail Mates to promote social support for overall well-being and successful behavior change.

- A strong sense of belonging and connection at work is linked to better physical and psychological well-being.¹⁴ Loneliness and social isolation are linked with a 30% increased risk of developing heart disease or stroke.¹⁵
- Feelings of similarity, positive emotional connection, and belonging are important precursors to social connection.¹⁶

- Exercising with a friend increases self-efficacy, self-monitoring, and action planning with regard to physical activity.¹⁷
- Working out with a virtual partner enhances motivation for cardiovascular exercise.¹⁸

Participants tell us the support they receive through HES program tools makes a huge difference in their success; they enjoy getting to know coworkers better around a shared commitment to health and well-being. Team challenges are a hands-down favorite; who can resist the chance to go up against another group for bragging rights? Our data shows that participants in teams of 4 or 5 have *double the chance of achieving their program goals than those who go it alone.*



“ I started this program on my own, and was assigned a Travel Companion from another unit at the hospital. I am so thankful I had the opportunity to connect with my Travel Companion and learn about her life. I think we supported each other very well throughout this program, and I know the connection we made will always be there. ”

—*Passport* Participant





“ We’ve been using our team chat to share encouragement and stories! **I’m so excited to have a group keep me moving in the right direction!** ”

—*Health for the Holidays* Participant

“

At first, being a guy, I was skeptical that this program would help me in any way. I just started doing it because the other members of the team asked me to. I had no intention of participating as much as I did or being so interested in my progress or the progress of my team members. But, almost immediately I was looking forward to coming in each day to mark my progress and find out the new tip of the day and see what landmark was next on my journey. It was actually a fun and informative exercise where I learned about my ‘trail’ and its history and surroundings and about myself too.

”

—*HealthTrails* Participant



INTERACTIVE TRACKING



Seeing proof of your progress toward meaningful goals is a powerful motivator, according to researcher Teresa Amabile;¹⁹ it's also true for health behavior change.

- Self-monitoring activities (regular weighing, keeping a meal diary, and tracking exercise) are consistent predictors of successful weight loss outcomes, especially in earlier phases of behavior change.²⁰
- Visual portrayals of progress strengthen motivation, especially as people get closer to the goal; easy-to-visualize goals enhance perceptions of progress, promote persistence, and spur increased effort to get to the finish line.²¹

HES products make tracking progress fun, easy, and inspiring. From slam-dunking baskets to scoring mileage along breathtaking trails and making delightful story scenes come together, participants are visually rewarded every time they record activity. From seeing a personalized avatar hike along the Pacific Northwest Trail, “blending” produce servings into colorful layers, or watching snowfall accumulate in proportion to progress, participants tell us the easy tracking and entertaining visual effects keep them logging in day after day.

“

The daily reminders to practice self-compassion proved to be the biggest benefit of *HealthTrails*. It became a habit to stop judging myself, and to start embracing my journey and celebrate my little achievements.

”

—*HealthTrails* Participant





“ *Get Fit on Route 66* jump started my regular exercise program and provided an innovative way to encourage consistency. In addition to the invaluable information resources in one location and menu ideas, **I looked forward to logging my success immediately after exercising.** The visual representation of seeing the car progress across Route 66 motivated me each day.

”

— *Get Fit on Route 66* Participant

“

I have a lot of weight loss apps on my phone, but it was nice seeing the leaves drop every time I completed a goal.

”

—*Walktober* Participant



ELEMENTS OF SURPRISE

New, exciting experiences spark curiosity and interest in day-to-day life... as well as in wellness campaigns, driving the brain to explore.²² Unfamiliar experiences improve memory and enhance learning.²³

- Novelty and surprise capture attention and enhance learning²⁴
- Curiosity sparks changes in brain chemistry linked with enhanced learning and memory²⁵
- High levels of curiosity are associated with reduced risk of developing diabetes and high blood pressure, suggesting positive emotions have a protective effect on physical health²⁶
- Being open to discovery, exploring, and learning is a pathway to building life meaning.²⁷

Curiosity propels people forward to close the gap between the known and unknown. HES campaigns foster this innate drive by:

- Sending participants on virtual journeys to fascinating locales and attractions around the world

- Crafting compelling scenes, stories, and competitions that play out visually.

Our appealing themes provide a novel experience and sense of adventure; captivating images and crisp, actionable content pique interest and support ongoing engagement while participants learn and practice healthy behaviors. Our participants love design elements that catch them off guard:

- Mystery destinations
- Earned access to locked attractions
- Daily tournament play against new competitors
- Scenes and stories that unfold with activity tracking
- Bonus challenges undisclosed until opt-in
- Support and high-fives on the message board from moderators and co-participants
- Kudos and animations activated by achievements.

“ I LOVE the picture that populates as I add activities. I want to log just to see what the picture will look like. ”

—*Health for the Holidays* Participant





“ The **competition against the other teams was fun.**
The variety of ways to score points was a plus. ”

—*Slam Dunk Wellness* Participant

“ Onto my 4th trail this morning. I can't believe I hit 1 million steps in 43 days. WOW! Would have never thought I walked so much. ”

—*HealthTrails* Participant



LEARNING AND DOING

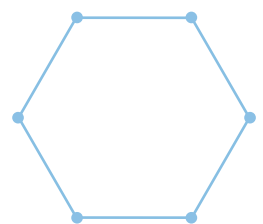
We tend to remember only about 10% of what we read. Our memory increases when we hear and see something together — like watching a movie or going to an exhibit. We remember about 90% of what we say and do, like practicing what we learned.²⁸

Passively absorbing information doesn't foster behavior change. To be effective, wellness program design needs to align with adult learning principles.²⁹ We create interesting, relevant, and action-inspiring content that spurs participants to do something today with what they learn... to relate concepts to their own lives, experiment, and find their own solutions. This approach plays out within HES products in many ways; a few examples:

- **Self-direction.** Participants have the freedom to explore areas of interest and set their own pace and direction. They select their own routes, Trail Mates, and teams, and are given a variety of ways to dive deeper into specific topics according to interest level.

- **Relevance.** Learning opportunities relate to participant interests, needs, and goals — like relaxation tips, healthy recipes, and activity tracking — in meaningful ways to cultivate knowledge and skills they can use right away.
- **Active engagement.** Adults need to make sense of learning in the context of their own life experiences. We help this process along with message board moderator tips and questions, team communication tools, and daily tips that trigger personal reflection, in addition to discussion and sharing ideas with participants.

By pairing online elements with content and features that drive offline activities, HES products promote daily practice of well-being behaviors to cultivate and strengthen new habits.



“

I have been wanting to adopt a healthier lifestyle, and *Right This Weigh* helped me make progress toward my goal weight. The 12-week program gave me many tips that I will use going forward. I have gained confidence in myself and that is a wonderful feeling!

”

—*Right This Weigh* Participant





“ This was a great way to become more aware of the types of fruits and vegetables I eat! Doing it for six weeks has **helped me to think about my eating choices daily...** beyond the program. Also, the program offers great ideas for delicious recipes using healthy food. ”

—*Colorful Choices* Participant

RECOGNITION

Most people enjoy hard-earned high-fives, especially in a social context. Embedding recognition elements in our products capitalizes on neuroscience powering the reward effect. When we do, see, or experience something that triggers pleasure, dopamine is released... and it feels good, which reinforces the preceding behaviors.³⁰ Besides being a fun way to celebrate efforts and offer praise, acknowledging the achievements of others makes us feel good — strengthening a positive link with behavior-change efforts.

HES product features put recognition at participants' fingertips:

- **Individual and team leaderboards.** Norm's coworkers raise some hoopla when they see him advance by 2 places. And *Team HotCocoa* doubles down when they see a chance to edge out *Team Don't Stop Believin'* for first place.
- **Team messaging.** This tool is a streamlined way for any team member to rally the troops, throw down a challenge, or give a shout-out.
- **Interactive wall.** Participants love sharing successes — and obstacles — with the community... always followed by a flurry of applause, supportive messages, and problem-solving tips.
- **Badges.** Walking 10,000 steps in a day, unlocking a new attraction, and reaching other achievements earn badges in most HES products. Participants share their accomplishments on the wall, where others chime in with cheers and compliments.
- **Progress tally.** Most of our campaigns offer a way for others to note individual progress — such as total accumulated steps or program miles listed under participant images appearing with message board posts.

“ It’s amazing being among some of the top-ranking teams (*Fit Kittens!*). ”

—*HealthTrails* Participant





“ This was my first time participating in SIM. I earned a Springer every single day of the challenge and **exceeded 10,000 steps** for all but four days. ”

—*Spring Into Motion* Participant

FOCUSING ON IMMEDIATE REWARDS

Warning people to turn from their couch-potato, soda-swilling ways — lest they develop diabetes years down the road — has proven ineffective. Yet many well-being pros still take this unfortunate gloom-and-doom tactic.

In contrast, HES provides an upbeat tone that undercores the immediate rewards of healthy living... like enjoying the sweet, juicy goodness of a cup of fresh strawberries or feeling your mood lift and energy soar after a brisk morning walk. Research in motivational psychology supports this approach:

- Emotions are powerful drivers of decision making,³¹ logic doesn't always win, and can even undermine motivation.
- Feeling better right now is a more potent motivator for healthy behavior vs. focusing on long-term benefits.³²
- Framing physical activity as a means to greater vitality, enjoyment, and quality of life is more effective than pointing to health benefits. As researcher Michelle Segar explains, "Health is too vague to be compelling."³³

“

Before *Walktober* I was not an avid cooker. After participating in *Walktober*, I have learned how fun, delicious and nutritious cooking at home can be. I have become more hospitable as a result, inviting friends and family over to enjoy homemade meals. Thank you for the variety of healthful recipes. I enjoyed trying them, and will add them to my recipe collections.

”

—*Walktober* Participant





“ I started out so I could complete the challenge and earn a gift card, however, in the process **I began to change my focus** and started doing the exercise and eating healthier... it made me realize that **the health benefits far outweighed any gift card or incentive** that could be offered to me. ”

—*HealthTrails* Participant

“

It really makes you feel good
when you get out and walk.

”

—*10K-A-Day* Participant





“ I started with 15 minutes of walking per day. Now 3 miles about 1.5 hours per day and **my energy level is thru the roof.** My blood pressure is that of a teenager now. **I feel amazing.** ”

—10K-A-Day Participant

POSITIVE PSYCHOLOGY ORIENTATION

Mental and emotional well-being is arguably as important as exercise, nutrition, and other traditional wellness program components... if not more so. Without it, attempts at behavior change are more likely to crash and burn, over and over again.

We use research findings from the growing field of positive psychology (the study of human flourishing) to create content that fosters a mindset of growth, optimism, hope, resilience, gratitude, self-compassion, and more. These feelings and cognitive processes are closely connected to well-being in countless ways:

- Optimism is tied to better resilience, fewer depression symptoms, reduced physical complaints, slower disease progression, and longer lives.³⁴
- Hope reliably predicts positive emotions³⁵ and is linked with a greater sense of meaning.³⁶
- Further, hope is a vital precursor to change.³⁷
- Gratitude strengthens relationships and buffers against stress and adversity, among other benefits. People who keep weekly gratitude journals are more optimistic, get more exercise, are physically healthier, and feel happier vs. those tracking negative or neutral events.³⁸
- Self-compassion is linked with reduced perfectionism and fear of failure; improved stress coping; less body dissatisfaction and body shame; and greater body appreciation.³⁹ Many women — and men, too — suffer from a startling lack of self-compassion. Fostering this mindset is a powerful way to enhance quality of life.

“ I am so grateful for the reminder to practice self-kindness today. It is so easy to go down the road of self-deprecation but self-kindness is so much more productive and healthy. ”

—*Health for the Holidays* Participant





“ A lot of healthy campaigns focus purely on exercise and food. *Feel Like a Million* makes you also **think about your emotional well-being and how important it is**. Writing a journal, something I haven't done for years, made me evaluate things. **It made me realize that it is okay to be imperfect** as long as you are always working to be the best that you can be. ”

—*Feel Like a Million* Participant

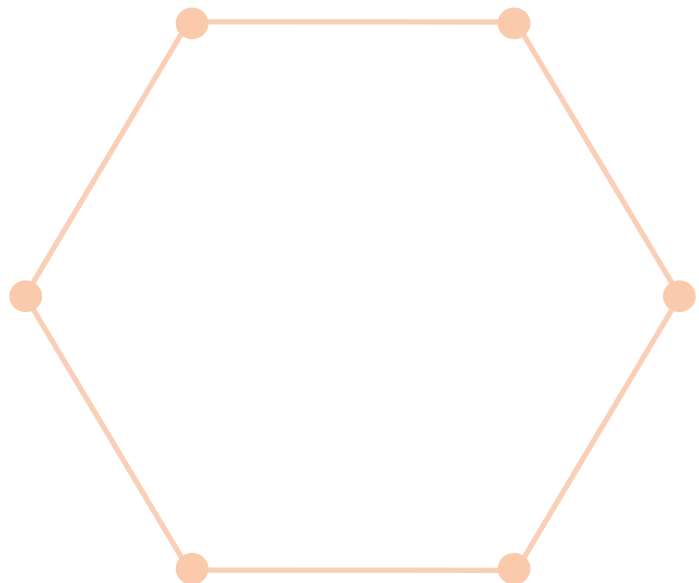
INTERMITTENT INTERVENTIONS

Most of our products are designed to run for 6, 8, or 12 weeks. We've found these timeframes most effective in maintaining participant interest and engagement. Why? Fatigue. Lives don't revolve around the latest wellness campaign; people have other priorities and interests. They get tired of tracking and grow weary of program-related chatter. No matter how much fun wellness campaigns are, taking a break reinforces learning and allows anticipation to build again before the next one launches.

- In behavioral economics, the hedonic adaptation concept asserts that increases in happiness with a new experience are generally temporary. People adapt to their environments; ever-present stimuli tend to blend into the background.⁴⁰
- As in high-intensity interval training and other forms of work-recovery intervals, taking a break after intense physical or cognitive effort enhances focus and performance.⁴¹ Even small breaks enable movement toward goals with a fresh perspective.

- Spacing out learning and practice, with plenty of time in between, strengthens habit formation.⁴²

Some organizations are set on launching year-round campaigns; we can make it happen, but strongly recommend a couple of short-term challenges-within-a-challenge during the year to keep participants on track and fired up (see Elements of Surprise, p. 23). For more insight on campaign frequency, view our SlideShare: [How Many Wellness Challenges in a Year?](#)



SCIENCE + FUN = RESULTS

Wellness pros love the science of well-being and want participants to understand the *why* of getting healthy; many people, however, want to focus on what to do to achieve their goals... and *how to do it*. People sign up for HES campaigns — and get results — because we package the science-backed *what* and *how* for that fun-loving kid inside all of us. For those seeking a deeper dive into the *why* of well-being habits, we offer relevant, snack-size facts and reliable, user-friendly resources.

Why not take our more-fun-than-should-be-allowed-at-work well-being campaigns for a test drive... so you can experience the thrill first-hand? Here's how:

- Watch a 2-minute product video for a quick look at any HES campaign: hesonline.com/products.

- Sign up for an HES group demo (scheduled periodically) or request a custom run-through (any time): hesonline.com/demo-request.
- Register for a 2-week pilot to experience the program and give us feedback about how we can make it even better. We run these several times a year; follow us on Twitter® or sign up on our blog for our twice a month e-newsletter to get pilot invitations.

Thanks for taking time to learn how HES approaches the science of health behavior change. To see how we can help you improve health and well-being in those you serve, contact us at 800.326.2317.

ENDNOTES

- ¹ Teixeira PJ, Carraça EV, Markland D, Silva MN, Ryan RM. Exercise, physical activity, and self-determination theory: A systematic review. *International Journal of Behavioral Nutrition and Physical Activity*, 2012; 9:78. doi:10.1186/1479-5868-9-78
- ² Deci E, Flast R. Why We Do What We Do, Penguin Books, 1995; Ch. 1, 2
- ³ Self-Determination Theory: Overview, selfdeterminationtheory.org/domains/intrinsic-motivation, retrieved August 10, 2017
- ⁴ Locke E, Latham G. New Directions in Goal-Setting Theory, *Association for Psychological Science*, Vol. 15(5): 265-268
- ⁵ Strecher V, Seijts G, Kok G, et al. Goal Setting as a Strategy for Health Behavior Change, *Health Education Quarterly*, May 1995, Vol. 22(2): 190-200
- ⁶ Locke E, Latham G. Building a Practically Useful Theory of Goal Setting and Task Motivation: A 35-Year Odyssey, *American Psychologist*, Vol. 57(9): 705-717
- ⁷ Tracy J, Robins R. Emerging Insights Into the Nature and Function of Pride, *Journal of Personality and Social Psychology*, 2007; cited in Miller C, Frisch M. Creating Your Best Life: The Ultimate Life List Guide, Sterling, 2009
- ⁸ Lee W, Reeve J. Self-determined, but not non-self-determined, motivation predicts activations in the anterior insular cortex: an fMRI study of personal agency. *Social Cognitive and Affective Neuroscience*, 2013; 8(5):538-545. doi:10.1093/scan/nss029
- ⁹ Choice Theory, William Glasser Institute US, wglasser.com/our-approach/choice-theory, retrieved August 10, 2017
- ¹⁰ Lucardie D. The impact of fun and enjoyment on adult's learning, *Procedia - Social and Behavioral Sciences*, 2014, Vol. 142: 439-446, ac.els-cdn.com/S1877042814046242/1-s2.0-S1877042814046242-main.pdf?_tid=4be76baa-4a47-11e7-bf7e-00000aacb362&acdnat=1496705753_e1868473e394f53858fa85ecd144a0b6
- ¹¹ Woolley K, Fishbach, A. For the Fun of It: Harnessing Immediate Rewards to Increase Persistence in Long-Term Goals. *Journal of Consumer Research*, 2016; 42(6), 952-966. doi:10.1093/jcr/ucv098
- ¹² Reis HT, O'Keefe SD, Lane RD. Fun is more fun when others are involved, *Journal of Positive Psychology*, published online: tandfonline.com/doi/full/10.1080/17439760.2016.1221123, August 16, 2016
- ¹³ Phillips LA, Chapman GB. Enjoyment and Success: Reciprocal Factors in Behavior Change, *Journal of Applied Psychology*, 2012; 42: 990-1009. doi:10.1111/j.1559-1816.2011.00849.x
- ¹⁴ Steffens NK, Haslam SA, Schuh SC, Jetten J, van Dick R. A Meta-Analytic Review of Social Identification and Health in Organizational Contexts. *Personality and Social Psychology Review*, 2016. doi: 10.1177/1088868316656701
- ¹⁵ Valtorta NK, Kanaan M, Gilbody S, et al. Loneliness and social isolation as risk factors for coronary heart disease and stroke: systematic review and meta-analysis of longitudinal observational studies, *Heart*, 2016; 102:1009-1016
- ¹⁶ Seppala E, Rossomando T, Doty J. Social connection and compassion: Important predictors of health and well-being. *Social Research*, 2013; 80(2), 411-430. doi:10.1353/sor.2013.0027, ccare.stanford.edu/article/social-connection-and-compassion-important-predictors-of-health-and-well-being/
- ¹⁷ Rackow P, Scholz U, Hornung R. Received social support and exercising: An intervention study to test the enabling hypothesis. *British Journal of Health Psychology*, November 2015; 20(4):763-76. doi: 10.1111/bjhp.12139, EPUB April 9, 2015
- ¹⁸ Irwin BC, Scorniaenchi J, Kerr, NL et al. Aerobic Exercise Is Promoted when Individual Performance Affects the Group: A Test of the Kohler Motivation Gain Effect, *Annals of Behavioral Medicine*, 2012; 44: 151. doi:10.1007/s12160-012-9367-4
- ¹⁹ Amabile TM, Pratt MG. The dynamic componential model of creativity and innovation in organizations: Making progress, making meaning. *Research in Organizational Behavior*, 2016, Vol. 36: 157-183
- ²⁰ Teixeira PJ, Carraça, EV, Marques MM, Rutter H, Oppert JM, De Bourdeaudhuij, I, Brug, J. Successful behavior change in obesity interventions in adults: a systematic review of self-regulation mediators. *BMC Medicine*, 2015; 13, 84. doi.org/10.1186/s12916-015-0323-6; ncbi.nlm.nih.gov/pmc/articles/PMC4408562
- ²¹ Cheema A, Bagchi R. The Effect of Goal Visualization on Goal Pursuit: Implications for Consumers and Managers. *Journal of Marketing*, 2011; 75(2), 109-123. doi: 10.1509/jmkg.74.2.109
- ²² Bunzeck N, Düze E. Absolute Coding of Stimulus Novelty in the Human Substantia Nigra/VTA. *Neuron*, August 3, 2006, Vol. 51, Issue 3: 369-379, sciencedirect.com/science/article/pii/S0896627306004752
- ²³ Fenker DB. Novel Scenes Improve Recollection and Recall of Words, *Journal of Cognitive Neuroscience*, 2008, Vol. 20:7: 1250-1265
- ²⁴ Barto A, Mirolli M, Baldassarre G. Novelty or Surprise? *Frontiers in Psychology*, 2013;4:907. doi:10.3389/fpsyg.2013.00907

- ²⁵ Gruber MJ, et al. States of Curiosity Modulate Hippocampus-Dependent Learning via the Dopaminergic Circuit. *Neuron*, Vol. 84, Issue 2: 486-496
- ²⁶ Richman LS et al. Positive Emotion and Health: Going Beyond the Negative. *Health Psychology*, July 2005, Vol. 24(4): 422-429
- ²⁷ Kashdan T, Steger M. Curiosity and pathways to well-being and meaning in life: Traits, states, and everyday behaviors, *Motivation and Emotion Journal*, 2007; 31:159-173 doi: 10.1007/s11031-007-9068-7. pdfs.semanticscholar.org/7848/e4bd1423f86eedec598defc1023032110323.pdf
- ²⁸ Northwest Center for Public Health Practice, School of Public Health, University of Washington, in partnership with the Network for Public Health Law, Effective Adult Learning: A Toolkit for Teaching Adults, 2012. ag.ndsu.edu/evaluation/documents/effective-adult-learning-a-toolkit-for-teaching-adults
- ²⁹ Palis AG, Quiros PA. Adult Learning Principles and Presentation Pearls. *Middle East African Journal of Ophthalmology*, 2014; 21(2):114-122. doi:10.4103/0974-9233.129748. ncbi.nlm.nih.gov/pmc/articles/PMC4005174
- ³⁰ Arias-Carrión O, Stamelou M, Murillo-Rodríguez E, Menéndez-González M, Pöppel E. Dopaminergic reward system: a short integrative review. *International Archives of Medicine*, 2010; 3:24. doi:10.1186/1755-7682-3-24. ncbi.nlm.nih.gov/pmc/articles/PMC2958859/
- ³¹ Lerner J, Li Y, Valdesolo P, Kassam K. Emotions and Decision Making, *Annual Review of Psychology*, January 2015, Vol. 66:799-823
- ³² Segar M, Guérin E, Phillips E, Fortier M. From a Vital Sign to Vitality: Selling Exercise So Patients Want to Buy It, *Translational Journal of the American College of Sports Medicine*, September 1, 2016, Vol. 1, Issue 11: 97-102. doi: 10.1249/TJX.0000000000000015
- ³³ Segar M, Health Promoters Should Stop Promoting Health, *New Science for Behavioral Sustainability*, 2017. michellesegar.com/wp-content/uploads/2017/06/MS_B2B_2017-4.pdf
- ³⁴ Conversano C, Rotondo A, Lensi E, Della Vista O, Arpone F, Reda MA. Optimism and Its Impact on Mental and Physical Well-Being. *Clinical Practice and Epidemiology in Mental Health*: 2010; 6, 25-29. doi. org/10.2174/1745017901006010025
- ³⁵ Gallagher M, Lopez S. Positive expectancies and mental health: Identifying the unique contributions of hope and optimism, *Journal of Positive Psychology*, 2009; Vol. 4, Issue 6, 548-556
- ³⁶ Varahrami A, et al. The Relationships Between Meaning, Hope, and Psychosocial Development. *International Journal of Existential Psychology and Psychotherapy*, [S.I.], Vol. 3, No. 1, ISSN 1708-1696, July 2010
- ³⁷ Hanna F. Therapy With Difficult Clients: Using the Precursors Model to Awaken Change, Ch. 14, 2002
- ³⁸ Emmons R, McCullough M. Counting Blessings Versus Burdens: An Experimental Investigation of Gratitude and Subjective Well-Being in Daily Life. *Journal of Personality and Social Psychology*, 2003, Vol. 84, No. 2: 377-389. ncbi.nlm.nih.gov/pubmed/12585811
- ³⁹ Albertson ER, Neff, KD, Dill-Shackleford, KE. Self-Compassion and Body Dissatisfaction in Women: A Randomized Controlled Trial of a Brief Meditation Intervention. *Mindfulness*, 2014; 1-11. self-compassion.org/wp-content/uploads/publications/AlbertsonBodyImage.pdf
- ⁴⁰ Fredrick S, Loewenstein G. Hedonic adaptation. Well-being: The foundations of a hedonic psychology, 1999; 302-329. New York: Russell Sage Foundation. Cited in Diener E, Lucas RE, Scollon CN. Beyond the hedonic treadmill: Revising the adaptation theory of well-being. *American Psychologist*, 2006; 61(4), 305-314. ink.library.smu.edu.sg/soss_research/921
- ⁴¹ Jabr, F. Why Your Brain Needs More Downtime, *Scientific American*, October 2013
- ⁴² Brown P, Roediger III H, McDaniel M. Make It Stick: The Science of Successful Learning, The Belknap Press of Harvard University Press, 2014; 63



800 Cambridge Street, Suite 101
Midland MI 48642
800.326.2317

HESonline.com

For more white papers to support wellness at your organization, free from HES, go to:
HESonline.com/white-papers

© 2019 Health Enhancement Systems. No part of this document may be distributed, reproduced, or posted without written permission from HES.