

This is the archive for the *Insights with impact* section (pg. 41) of the 2016 Insights for Impact report.

Insight headline	Practice tests improve learning
Theme	Cognition and Neuroscience
Domain	Education
Proposed by	Silvana Mareva
Primary citations (max 2 – 1 original study; 1 review)	
¹ Roediger, H. L., & Butler, A. C. (2011). The critical role of retrieval practice in long-term retention. <i>Trends in cognitive sciences</i> , 15(1), 20-27.	
² Agarwal, P. K., Bain, P. M., & Chamberlain, R. W. (2012). The value of applied research: Retrieval practice improves classroom learning and recommendations from a teacher, a principal, and a scientist. <i>Educational Psychology Review</i> , 24(3), 437-448.	
Most recent significant citation (2011-2015)	
³ Agarwal, P. K., D’Antonio, L., Roediger, H. L., McDermott, K. B., & McDaniel, M. A. (2014). Classroom-based programs of retrieval practice reduce middle school and high school students’ test anxiety. <i>Journal of Applied Research in Memory and Cognition</i> , 3(3), 131-139.	
Highest dissemination	
⁴ Karpicke, J. D., & Blunt, J. R. (2011). Retrieval practice produces more learning than elaborative studying with concept mapping. <i>Science</i> , 331(6018), 772-775.	
50-word summary of insight (non-technical)	
Practice tests foster better long-term memory compared to other common study techniques such as repeated studying and elaboration ^{1,4} . Incorporating practice tests in authentic classrooms improves learning ³ . The benefits of practice tests further extend to reduced anxiety for the final exams ³ . Students are often unaware of the advantages of this powerful study strategy ⁴ .	
Headline findings & critical numbers (simplify if overly technical)	
84% of students performed better on the final test when they studied science via practice tests, relative to when they studied science via elaboration ⁴ .	
Practice tests improved final test scores by 50% compared to elaboration ⁴ .	
75% of students believed that elaborative studying would be just as effective or even more effective than practice tests ⁴ .	
72% of the students in a large-scale classroom-based program incorporating practice tests reported that practice tests made them less anxious for exams ³ .	
Cautions & limitations	
Practice tests render information more likely to be remembered only when administered in low-stake contexts ⁵ .	

⁵ Hinze, S. R., & Rapp, D. N. (2014). Retrieval (sometimes) enhances learning: performance pressure reduces the benefits of retrieval practice. *Applied Cognitive Psychology*, 28(4), 597-606.

Insight headline	Health-promoting financial incentive interventions
Theme	Illness and disorder
Domain	Clinical psychology
Proposed by	Victor Estal Muñoz
Primary citations (max 2 – 1 original study; 1 review)	
¹ Giles, E. L., Robalino, S., McColl, E., Sniehotta, F. F., & Adams, J. (2014). The effectiveness of financial incentives for health behaviour change: systematic review and meta-analysis. <i>PloS one</i> , 9(3).	
Most recent significant citation (2011-2015)	
² Giles, E. L., Sniehotta, F. F., McColl, E., & Adams, J. (2015). Acceptability of financial incentives and penalties for encouraging uptake of healthy behaviours: focus groups. <i>BMC Public Health</i> , 15(1), 1.	
Highest dissemination	
³ Giles, E. L., Robalino, S., Sniehotta, F. F., Adams, J., & McColl, E. (2015). Acceptability of financial incentives for encouraging uptake of healthy behaviours: a critical review using systematic methods. <i>Preventive medicine</i> , 73, 145-158.	
50-word summary of insight (non-technical)	
Using financial incentives within behavioural interventions have shown to promote a variety of outcomes such as weight loss, smoking cessation and improved physical activity.	
Headline findings & critical numbers (simplify if overly technical)	
Financial incentive interventions are more effective than usual care or no intervention for encouraging health behaviour change.	
For dietary behaviour change, the incentive group lost 3.5 times more weight than the usual care Group. ⁴	
For smoking cessation, rates of sustained abstinence from smoking through 6 months were 10% higher than with usual care. ⁵	
For physical activity, incentive group did 2 times more hours of exercise per week than the control group. ⁶	
Cautions & limitations	
Health-promoting financial incentive interventions take a wide range of formats and it is difficult to draw conclusions on the most effective of these. There is a lack of trials which seek to determine if effects of interventions vary according to socio-demographic characteristics. Furthermore, they have shown to be effective in the short-term, but it is not that clear with regards to the long-term yet.	

Policy Assessment Index

⁴ Purnell, J. Q., Gernes, R., Stein, R., Sherraden, M. S., & Knoblock-Hahn, A. (2014). A systematic review of financial incentives for dietary behavior change. *Journal of the Academy of Nutrition and Dietetics*, 114(7), 1023-1035.

⁵ Halpern, S. D., French, B., Small, D. S., Saulsgiver, K., Harhay, M. O., Audrain-McGovern, J., ... & Volpp, K. G. (2015). Randomized trial of four financial-incentive programs for smoking cessation. *New England Journal of Medicine*, 372(22), 2108-2117.

⁶ Finkelstein, E. A., Brown, D. S., Brown, D. R., & Buchner, D. M. (2008). A randomized study of financial incentives to increase physical activity among sedentary older adults. *Preventive medicine*, 47(2), 182-187.

Insight headline	Impact of obesity on mental illness
Theme	Illness and disorder
Domain	Mental illness
Proposed by	Lea Jakob

Primary citations (max 2 – 1 original study; 1 review)

¹Zschucke, E., Gaudlitz, K., & Ströhle, A. (2013). Exercise and Physical Activity in Mental Disorders: Clinical and Experimental Evidence. *Journal of Preventive Medicine and Public Health*, 46(Suppl 1), 12-21. doi:10.3961/jpmpmh.2013.46.s.s12

²McCrea, R. L., Berger, Y. G., & King, M. B. (2011). Body mass index and common mental disorders: exploring the shape of the association and its moderation by age, gender and education. *International Journal of Obesity*, 36(3), 414-421. doi:10.1038/ijo.2011.65

Most recent significant citation (2011-2015)

³Rebar, A. L., Stanton, R., Geard, D., Short, C., Duncan, M. J., & Vandelanotte, C. (2015). A meta-meta-analysis of the effect of physical activity on depression and anxiety in non-clinical adult populations. *Health Psychology Review*, 9(3), 366-378. doi:10.1080/17437199.2015.1022901

Highest dissemination

⁴Gortmaker, S. L., Swinburn, B. A., Levy, D., Carter, R., Mabry, P. L., Finegood, D. T., ... Moodie, M. L. (2011). Changing the future of obesity: science, policy, and action. *The Lancet*, 378(9793), 838-847. doi:10.1016/s0140-6736(11)60815-5

50-word summary of insight (non-technical)

Recent studies have proven the existence of a link between physical activity and the onset as well as progress of mental illnesses. Simple interventions, such as improving access to healthy food and promoting physical activity, have potential of being an efficient strategy for lasting mental disorder reduction.

Headline findings & critical numbers (simplify if overly technical)

Body mass index (BMI) is significantly related to presence of most common mental disorders in over 26 scientific studies, increasing probability of mood and anxiety disorders by 25%²

BMI above 30 (considered as obese) having 1.18 times higher chances of having depression, 1.5 times for bipolar disorder, and 1.3 times for anxiety disorders.²

Physical activity has a moderate effect on lowering depression symptoms and low (but still significant) effect on reducing anxiety.³

Being physically active and of normal body weight reduces the chances of older populations developing dementia and major depressive episodes.¹

Strategies in preventing and treating obesity have been developed, such as downsizing (reducing portion size), providing nutritional values on packages, promoting physical exercise, etc.⁴

Cautions & limitations

Certain studies have found only small effect of exercise on mental illness onset and progress, but meta-analyses of high-quality research on the topic show that there typically is an effect, thus a focus on developing interventions should be seriously considered. Failing to take into account different effects in various groups can lead to diminishing the impact of interventions and discourage individuals from continuing the programme.

Insight headline	Online cognitive behavioral treatments are effective
Theme	Illness & disorder
Domain	Psychotherapy, Clinical psychology
Proposed by	Jovana Gjorgjiovska
Primary citations (max 2 – 1 original study; 1 review)	
¹ Ruwaard, J., Lange, A., Schrieken, B., Dolan, C. V., & Emmelkamp, P. (2012). The Effectiveness of Online Cognitive Behavioral Treatment in Routine Clinical Practice. <i>PLoS ONE</i> , 7(7), e40089. doi: 10.1371/journal.pone.0040089	
Most recent significant citation (2011-2015)	
² Tulbure, B. T., Szentagotai, A., David, O., Ștefan, S., Månsson, K. N. T., David, D., & Andersson, G. (2015). Internet-Delivered Cognitive-Behavioral Therapy for Social Anxiety Disorder in Romania: A Randomized Controlled Trial. <i>PLoS ONE</i> , 10(5), e0123997. doi:10.1371/journal.pone.0123997	
Highest dissemination	
³ Richards, D., & Richardson, T. (2012). Computer-based psychological treatments for depression: a systematic review and meta-analysis. <i>Clinical psychology review</i> , 32(4), 329-342. doi:10.1016/j.cpr.2012.02.004	
50-word summary of insight (non-technical)	
Online CBT provides an effective and viable alternative to face-to-face treatment for individuals who are unwilling or unable to seek traditional forms of mental healthcare. Most patients adhere to the full online treatment. Short- and long-term improvements in various mental disorders are comparable to those of face-to-face CBT.	
Headline findings & critical numbers (simplify if overly technical)	
7 out of 10 patients complete every step of an online CBT. ²	
7 out of 10 patients report on significant decline of their symptoms, while 5 out of 10 fully recover. ²	
One to three years after the treatment, these improvements are maintained. ⁴	
Cautions & limitations	
When online CBT programs rely on self-diagnosis (instead of prescreening for eligibility), a major challenge is making sure that the people accessing the services are in fact those who could benefit from them. Concerns about how to reach a person in crisis, identity verification, maintaining privacy and confidentiality, and premature termination of the treatment are important to consider, given the minimal or total lack of face-to-face contact between therapist and the client.	
Policy Assessment	
Index	
10	

⁴ Ruwaard, J., Lange, A., Schrieken, B., & Emmelkamp, P. (2011). Efficacy and effectiveness of online CBT: A decade of Interapy research. *Studies in health technology and informatics*, 16, 9-14. doi: 10.3233/978-1-60750-766-6-9

Insight headline	Mindfulness improves psychological health and well-being
Theme	Health and Well-being
Domain	Mindfulness
Proposed by	Oscar Lecuona

Primary citations (max 2 – 1 original study; 1 review)

¹Khoury, B., Lecomte, T., Fortin, G., Masse, M., Therien, P., Bouchard, V., Chapleau, M. A., Paquin, K., & Hofmann, S. G. (2013). Mindfulness-based therapy: A comprehensive meta-analysis. *Clinical Psychology Review*, 33, 763–771. doi:10.1016/j.cpr.2013.05.005

²MAPPG. (2015). Mindful Nation UK. *The Mindfulness All-Party Parliamentary Group*. London, UK. Retrieved from <http://oxfordmindfulness.org/wp-content/uploads/mindful-nation-uk-interim-report-of-the-mindfulness-all-party-parliamentary-group-january-2015.pdf>

Most recent significant citation (2011-2015)

³Gu, J., Strauss, C., Bond, R., & Cavanagh, K. (2015). How do mindfulness-based cognitive therapy and mindfulness-based stress reduction improve mental health and wellbeing? A systematic review and meta-analysis of mediation studies. *Clinical Psychology Review*, 37, 1–12. doi:10.1016/j.cpr.2015.01.006

Highest dissemination

⁴Wilson, T. D., Reinhard, D. A., Westgate, E. C., Gilbert, D. T., Ellerbeck, N., Hahn, C., Brown, C. L., & Shaked, A. (2014). Just think: The challenges of the disengaged mind. *Science*, 345, 75-77. doi:10.1126/science.1250830

50-word summary of insight (non-technical)

Mindfulness-based interventions are an effective treatment for many psychological problems. These may reduce repetitive negative thinking, emotional reactivity and mind-wandering, which are key mechanisms in psychopathology^{3,4}. Results show decreases in anxiety, depression and stress, and also increases in well-being, and thus improve psychological functioning. MBIs are effective also in heterogeneous samples and contexts⁶ (e.g., schools⁷), therefore indicating MBIs potential to be effective to general population.

Headline findings & critical numbers (simplify if overly technical)

From aggregated evidence up to 13,000 participants in a variety of countries, MBIs seem to be moderately effective in reducing stress, anxiety and depression (about 20% of improvement above the highest score in control group)¹. No significant differences to CBT or pharmacological therapies in effectiveness¹. Well-being is also improved (10%) alongside positive emotions (7%), emotion regulation (4.5%) and self-realization (5.7%)⁷. Specific programmes (MBSR and MBCT) are more effective (13%; 15.5%) than regular meditation (1.2%)¹.

Cautions & limitations

Although these interventions are found to be effective, key mechanisms are currently being identified and understood. In addition, they may not be effective or even not indicated for some populations. Practices are being applied worldwide but is necessary to ensure intervention’s quality and standardize programmes. In addition, their effectiveness may be culturally specific.

⁵ Arch, J. J., Ayers, C. R., Baker, A., Almklov, E., Dean, D. J., & Craske, M. G. (2013). Randomized clinical trial of adapted mindfulness-based stress reduction versus group cognitive behavioral therapy for heterogeneous anxiety disorders. *Behaviour research and therapy*, 51, 185 – 196. doi:10.1016/j.brat.2013.01.003

⁶ Kuyken, W., Weare, K., Ukoumunne, O. C., Vicary, R., Motton, N., Burnett, R., Cullen, C., Hennesly, S. & Huppert, F. (2013). Effectiveness of the mindfulness in schools programme: non-randomised controlled feasibility study. *The British Journal of Psychiatry*, 203, 126 –131. doi:10.1192/bjp.bp.113.126649

⁷ Eberth, J., & Sedlmeier, P. (2012). The effects of mindfulness meditation: a meta-analysis. *Mindfulness*, 3, 174 –189. doi:10.1007/s12671-012-0101-x