

Are your **MRI contrast agents** cost-effective?

Learn more about generic **Gadolinium-Based Contrast Agents**.



**FRESENIUS
KABI**

caring for life

AJNR

Level 1 EBM Expedited Review

J.S. Ross

AJNR Am J Neuroradiol 2014, 35 (8) 1448-1449

doi: <https://doi.org/10.3174/ajnr.A4047>

<http://www.ajnr.org/content/35/8/1448>

This information is current as
of April 20, 2024.

well-being increase with salary but just up to US \$75,000 per year.¹¹ Above that amount, there are no more increases in happiness (however people making at least that amount are twice as happy as those making, on average, US \$20,000 per year). He suggests that higher income buys satisfaction but not happiness. Moreover, individuals earning higher incomes tend to be tenser, lose their ability to savor small pleasures, and spend less time doing activities they enjoy. It is also clear that lower income correlates with unhappiness and that increases in salary lead to only transient happiness due to the phenomenon of “adaptation.” Among other factors, even college education has little to do with happiness but clearly correlates with stress. Having children is the biggest contributor to unhappiness; they lead to constant feelings of stress, sadness, and worry.¹²

In one study, actors were asked to express feelings of happiness and sadness while examined with fMRI.¹³ In both states, activation occurred in the frontal lobes, anterior temporal lobes, and the pons. Although the regions were similar for both emotional states, different subregions were activated for each. In a different fMRI study, the mode and tempo of music were manipulated to be perceived as either sad or happy and the former elicited responses in the left orbito- and mid-dorsolateral frontal cortices.¹⁴ Happy voices elicit stronger and different fMRI responses than angry ones.¹⁵ Body postures may also indicate happiness or other emotions. When observing human body postures, our brain always records 2 things: action and emotion. These states activate visual representation/motion processing and emotional interpretation areas. Both areas are activated simultaneously but differently in men than in women.¹⁶ Men seem to show more reliable activation but in lesser amounts than women.

It seems to me that we neuroradiologists have every reason to be happy, and despite that, only a small group of us are generous with our money and time. Generosity is generally encouraged by the so-called “immediacy bias,” better known as a “call to action.” Crises and feelings of uncertainty and worry lead to greater donations. What better call to action than the lack of scientific evidence of what we do and the ever-decreasing government funding of research? If we do not support our Foundation, these issues will never be solved. If we continue to be as happy as we are now and do not increase our generosity by contributing to our Foundation, our jobs and other sources of happiness will soon disappear.

REFERENCES

1. Brooks AC. **A nation of givers.** *The American* 2008 <http://www.american.com/archive/2008/march-april-magazine-contents/a-nation-of-givers>. Accessed September 17, 2013
2. Avinun R, Israel S, Shalev I, et al. **AVPR1A variant associated with preschooler's lower altruistic expression.** *PLoS One* 2011;6:e25274
3. Zak PJ, Stanton AA, Ahmado S. **Oxytocin increases generosity in humans.** *PLoS One* 2007;2:e1128
4. Zak PJ. *The Moral Molecule: The Source of Love and Prosperity.* New York: Dutton Adult; 2012
5. James RN, O'Boyle MW. Charitable estate planning as visualized autobiography: an fMRI Study of its neural correlates. February 6, 2012. Social Science Research Network. http://papers.ssrn.com/sol3/papers.cfm?abstract_id=2000345. Accessed September 17, 2013
6. Powers R. *Generosity: An Enhancement.* New York: Farrar, Straus, and Giroux; 2009
7. Hibbing JR, Alford J, Lohrenz T, et al. **Generosity is its own reward: the neural basis of representation.** In: *Proceedings of the Annual*

Meeting of the American Political Science Association, Toronto, Canada; September 3–6, 2009. <http://ssrn.com/abstract=1451309> Accessed on September 17, 2013

8. Davis MA. **Understanding the relationship between mood and creativity: a meta-analysis.** *Organizational Behavior and Human Decision Processes* 2009;108:25–38
9. Graves JA. **The 25 best jobs of 2013.** *US News & World Report Money Careers.* <http://money.usnews.com/money/careers/slideshows/the-25-best-jobs-of-2013>. Accessed September 17, 2013
10. Physician Compensation Report 2013. Medscape Multispecialty. <http://www.medscape.com/features/slideshow/compensation/2013/public>. Accessed September 17, 2013
11. Kahneman D, Deaton A. **High income improves evaluation of life but not emotional well-being.** *Proc Natl Acad Sci U S A* 2010;107:16489–93. www.pnas.org/cgi/doi/10.1073/pnas.1011492107. Accessed September 17, 2013
12. Kahneman D, Krueger AB, Schkade D, et al. **Would you be happier if you were richer? A focusing illusion.** *Science* 2006;312:1908–10
13. Pelletier M, Bouthillier A, Lévesque J, et al. **Separate neural circuits for primary emotions? Brain activity during self-induced sadness and happiness in professional authors.** *Neuroreport* 2003;14:1111–16
14. Khalfa S, Schon D, Anton JL, et al. **Brain regions involved in the recognition of happiness and sadness in music.** *Neuroreport* 2005;16:1981–84
15. Johnstone T, van Reekum CM, Oakes TR, et al. **The voice of emotion: an fMRI study of neural responses to angry and happy vocal expressions.** *Soc Cogn Affect Neurosci* 2006;1:242–49
16. Kana RK, Travers BG. **Neural substrates of interpreting actions and emotions from body postures.** *Soc Cogn Affect Neurosci* 2012;7:446–56

EDITORIAL

Level 1 EBM Expedited Review

J.S. Ross

A recent poll of Canadian researchers identified the top 3 factors that influence where they send their own manuscripts: 1) ensuring methodologic soundness by peer review, 2) journal reputation, and 3) fast publication.¹ The *AJNR* (independent of this poll) has recognized these important factors, as well as the competitive nature of scientific publishing, by the introduction of a Level 1 Evidence-Based Medicine Expedited Program. The details of this significant program are defined on the *AJNR* Web site (see the “Author Info” section). Briefly, the program entails a very fast peer review time of 5–7 days, followed by an immediate editorial decision. The length of time from acceptance of the final revision to electronic publication would be 4 weeks. Other perks of this program include the waiving of various fees, such as the open access, color, and over-the-limit word count charges.

What is level 1 evidence? That depends. Levels of evidence were initially defined in 1979 by the Canadian Task Force on Periodic Health Examination.² Sackett³ further defined this in 1989 in an article looking at the evidence for antithrombotic agents. This seminal paper was barely 2 pages in length. Since that time, interest in this subject has exploded, and there are now

<http://dx.doi.org/10.3174/ajnr.A4047>

multiple stakeholders eyeing evidence-based medicine ranging from individual patients to the Federal government. Multiple excellent reviews are available for the intrepid reader of this complex and controversial topic.^{4,5}

For the purpose of classification for the *AJNR*, the Oxford Centre for Evidence-Based Medicine Levels of Evidence (2009) is used (also on the *AJNR* Web site).⁶ For neuroradiologists, the questions to be answered primarily involve therapy and diagnosis. Therapy level 1 studies include systematic reviews of randomized controlled trials, and randomized controlled trials with narrow confidence limits. Diagnosis level 1 studies include systematic reviews of level 1 studies, a validating cohort study with good reference standards, or a clinical decision rule tested within 1 clinical center. For reference, a nonconsecutive study is level 3, a case series is level 4, and expert opinion is level 5 (ouch).

Evidence-based medicine defines a hierarchy of clinically relevant information; however, this information is by no means absolute.⁷ Certain therapies and treatments may be so effective or dramatic that they will never experience a randomized controlled trial. The oft-cited tongue-in-cheek manuscript evaluating randomized controlled trials in parachute use is a case in point.⁸ In our specialty, with its emphasis on technologic advancement, there will be seminal articles that advance the field and which provide important contributions to patient care, but do not achieve level 1–2 status (such as the initial diffusion imaging papers).

Despite its flaws and increasing complexity, the sorting and weighting of manuscripts that define high quality and minimal bias is an important foundation upon which evidence-based medicine is built. This journal will do its part to bring such manuscripts to readers.

REFERENCES

1. The Scholarly Kitchen. **What researchers value from publishers, Canadian survey.** <http://scholarlykitchen.sspnet.org/2014/05/15/what-researchers-value-from-publishers-canadian-survey/>. Accessed May 22, 2014
2. Canadian Task Force on the Periodic Health Examination. **The periodic health examination.** *Can Med Assoc J* 1979;121:1193–254
3. Sackett DL. **Rules of evidence and clinical recommendations on the use of antithrombotic agents.** *Chest* 1989;95(2 suppl):2S–4S.
4. Manchikanti L. **Evidence-based medicine, systematic reviews, and guidelines in interventional pain management, part I: introduction and general considerations.** *Pain Physician* 2008;11:161–86
5. Burns PB, Rohrich RJ, Chung KC. **The levels of evidence and their role in evidence-based medicine.** *Plast Reconstr Surg* 2011;128:305–10
6. OCEBM Levels of Evidence Working Group. **The Oxford levels of evidence 2.** Oxford Centre for Evidence-Based Medicine. <http://www.cebm.net/index.aspx?o=5653>. Accessed May 22, 2014
7. Glasziou P, Chalmers I, Rawlins M, et al. **When are randomised trials unnecessary? Picking signal from noise.** *BMJ* 2007;334:349–51
8. Smith GCS, Pell JP. **Parachute use to prevent death and major trauma related to gravitational challenge: systematic review of randomised controlled trials.** *Int J Prosthodont* 2003;19:126–28