

You're wrong more often than you think

On page 781, Klein discusses five examples of cognitive biases that can affect medical decision making and offers suggestions for avoiding them. Psychologists have extensively studied the cognitive processes involved

in decision making, and the biases that lead to making poor decisions are widespread, even among doctors. It is possible to train yourself to watch for these errors. Among the strategies for good decision making are to consider whether data are truly relevant and to ask questions that would disprove, rather than confirm, your current hypothesis.

POEM*

Aerobic exercise is effective for mild to moderate depression

Question Is aerobic exercise effective in treating mild to moderate depression?

Synopsis Exercise may be an effective treatment for adults with major depressive disorder. The investigators randomly assigned (concealed allocation assignment) 80 adults, aged 20 to 45 years, with mild to moderate depression, to one of five exercise treatment groups: 7.0 kcal/kg/week (low dose) performed in either three or five sessions per week; 17.5 kcal/kg/week (high dose) performed in either three or five sessions per week; or a flexibility exercise only (control) three days per week. The high dose is consistent with public health recommendations for physical activity. Outcomes were assessed by individuals blinded to treatment group assignment. Of the 80 randomised participants, 10 (13%) were lost to follow-up at 12 weeks. Using intention to treat analysis, patients assigned to either of the high dose exercise groups were significantly more likely to have a clinically relevant response (defined as a 50% or more reduction in mean scores from baseline on the Hamilton rating scale for depression) than those in the control group (42% v 23%; number needed to treat (NNT)=5). There were no significant differences between the three and five sessions per week high dose exercise groups. Patients in the three sessions per week low dose exercise group were also more likely to have a significant response than the control group (38% v 23%; NNT=7), but there was no significant difference between the five sessions per week low dose group and the control group. The combined high dose exercise group was not significantly more effective than the combined low dose exercise group.

Bottom line Both high dose and low dose aerobic exercise are somewhat effective in treating mild to moderate depression. Exercising three times a week is at least as effective as five times a week. To give a real world example of "high dose" exercise, a 70 kg man exercising to a heart rate of 145 beats per minute for 30 minutes on a treadmill expends about 350 kcal per session, requiring a total of three sessions per week. A previous study of walking or jogging at 70% to 80% of maximal aerobic intensity was also as effective as drug therapy in treating mild depression (Blumental JA et al. *Arch Intern Med* 1999;159:2349-56).

Level of evidence 1b (see www.infoPOEMs.com/levels.html). Individual randomised controlled trials (with narrow confidence interval).

Dunn AL, Trivedi MH, Kampert JB, Clark CG, Chambless HO. Exercise treatment for depression. Efficacy and dose response. *Am J Prev Med* 2005;28:1-8.

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* Patient-Oriented Evidence that Matters. See editorial (*BMJ* 2002;325:983)

Editor's choice

Open access, and proud of it

We've been told we don't make enough noise about the good things the *BMJ* does (some of you will dispute this). So, prompted by two articles in this week's journal, let me shout about the fact that the *BMJ* is open access. In fact, for those of you who didn't know, the *BMJ* is the world's only major general medical journal to provide immediate free access to the full text of all research articles, something it's been doing since 1998. We think this provides an important service to the clinical and research communities, and we hope that it increases our attractiveness to authors wanting rapid dissemination and high visibility for their work. All of which confirms that the *BMJ*'s editors are what Jeff Aronson (p 759) calls "zealots" for open access.

But Aronson is right to say that the world should not adopt this system uncritically, and that we must consider harms as well as benefits. The benefits of open access are uncontroversial, if unmeasured. As listed by Schroter and colleagues in their report of interviews with 28 *BMJ* authors (p 756), these include easier literature searching; cost savings on photocopying, interlibrary loans, and subscriptions; faster dissemination and greater visibility for results; more equitable access to information; and the potential to improve medicine globally. More debatable are the potential harms of open access, or rather of the "author pays" model, which seems the only option for supporting open access for most journals in the long term. (The *BMJ* does not currently ask authors to pay because it has diverse sources of revenue to support open access.) Chief among these potential harms, as listed by Aronson on bmj.com, are threats to the quality of published research and disadvantages to authors in developing countries or those doing unfunded research. Fans of the author pays model of open access would say these problems can be minimised by strong peer review and by subsidising authors who can't pay. But what do you think?

In the end it will be authors and funders who, by their response to author charges, decide the fate of open access, since journals still live and die by the quality of the papers they attract. The authors interviewed by Schroter et al said they would still submit their work to a good journal that introduced author charges, given the right the price and financial support from their institution. This is something the *BMJ* Publishing Group is testing at the *Journal of Medical Genetics*, where authors are now offered the choice of paying to make their articles open access (*JMG* 2005;42:97).

Ironically, readers may play less of a role than authors in the wider adoption (or not) of open access—unless they decided to read and cite only open access material, which would be interesting. For those who are tempted, PubMed provides a filter that selectively pulls up articles for which the full text is freely available.

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