A link on Reddit claimed that exercise could be an effective treatment for depression. I felt it necessary to comment that:

Exercise does not have a causal effect on depression or happiness according to twin-control studies (1, 2).

Another person replied with a meta-analysis which I then took a look at. It showed a large effect, apparently giving inconsistent results with the twin studies.


My reply:

I skimmed the meta-analysis you found. It’s here for readers without academic access.

As you can see, it included all kinds of studies, but they were generally small (Table 2+3). There was no analysis of publication bias. Very strange given the ubiquity of this problem. As I reviewer I would not approve a meta-analysis of this sort without an analysis of publication bias.

Luckily, a simply method (funnel plot) of checking publication bias can be applied to the studies given in Figure 1. Here’s the data and the plot.

As you can see, the smaller studies tended to report larger effect sizes in line with publication bias hypothesis. The effect was very strong as you can see, r=−.758.

Perhaps this inconsistency can be solely explained by publication bias.