

“Significance testing as perverse probabilistic reasoning”

- ☐ **Consider a typical medical research study, for example designed to test the efficacy of a drug, in which a null hypothesis H_0 ('no effect') is tested against an alternative hypothesis H_1 ('some effect'). Suppose that the study results pass a test of statistical significance (that is $P\text{-value} < 0.05$) in favor of H_1 . What has been shown?**
- ☐ **1. H_0 is false.**
- ☐ **2. H_1 is true.**
- ☐ **3. H_0 is probably false.**
- ☐ **4. H_1 is probably true.**
- ☐ **5. Both (1) and (2).**
- ☐ **6. Both (3) and (4).**
- ☐ **7. None of the above.**

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- ☐ Only 12 of 246 physicians surveyed in [1] chose #7.
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- ☐ 2. H_1 is true.
- ☐ 3. H_0 is probably false.
- ☐ 4. H_1 is probably true.
- ☐ 5. Both (1) and (2).
- ☐ 6. Both (3) and (4).
- ☐ 7. None of the above.