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Questionable research practices in introductory physics  $labs^1$ MARTIN M. STEIN, Cornell University, EMILY M. SMITH, Colorado School of Mines, N.G. HOLMES, Cornell University — Some practices in particle physics research are in stark contrast to what students practice in introductory physics labs. One contrast is that students in introductory physics labs are often asked to confirm theories they learn in lectures while researchers strive to find "new physics" in experimental data. To highlight an unintended consequence of this practice, we evaluated students' lab notes from an early activity in an intro lab course. We found that about 30% of student groups (out of 107 groups at three institutions) recorded questionable research practices in their lab notes such as subjective interpretations of results or manipulating equipment and data. The large majority of these practices were used to confirm a known theory that was not applicable in this context. We suspect these behaviors stem from students' prior exposure to labs that specifically ask them to confirm a known theory. We propose ways for physics labs to better engage students in authentic scientific practice and support them in the search of "new physics" in their data.

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