

## Biases Summary

Bias	Notes
Statistical bias	<p>Overmatching : obscures the relationship between an exposure and the disease (case-control study)</p> <p>NOTE: overmatching may limit the <u>external</u> validity of the study</p>
Misclassification bias	<p>Minimized by the adherence to strict definitions of what constitutes a case and what constitutes a control (case-control study)</p>
Recall bias	<p>Occurs when cases and controls systematically have different memories of the past (case-control study)</p> <p>Minimal in nested case control studies</p>
Information bias	<p>Occurs when exposed participants are more thoroughly examined for disease than unexposed participants (cohort)</p> <p>Occurs if participants or assessors are able to evaluate outcomes differently based on the results they expect for an exposure (experimental studies)</p> <p>May occur if participants who do not know the answer to a question systematically default to providing the answer they assume the researcher wants to hear (in questionnaires missing the "idk" option )</p>
Hawthorne effect	<p>Occurs when participants in a study change their behavior for the better because they know they are being observed (experimental studies)</p>
The carryover effect	<p>Occurs when the first treatment biases the apparent results of the second treatment (experimental studies; crossover studies)</p>
Observer bias	<p>Occurs when an observer (a researcher) intentionally or</p>

	unintentionally evaluates participants different based on their group membership (case-control study; experimental studies)
Reporting bias	Occurs when members or one study group systematically underreport or overreport an osure or outcome (experimental studies)
Detection bias	Also called surveillance bias, occurs when a population group that is routinely screened for adverse health conditions incorrectly appears to have a higher-than-typical rate of disease because more frequent testing enables a higher case detection rate in that population than in the general population.
Self-selection	Occurs if participants were able to choose the intervention or control group they preferred (experimental studies)
Allocation bias	Occurs when people with different backgrounds are not equally distributed across treatment arms (experimental studies)  Minimized by randomization
Selection bias	Occurs when the people who volunteer to participate in a study are not representative of the source population as a whole ( unaffected by randomization)
Ecological fallacy	The incorrect attribution of population-level associations to individuals (correlational studies)
Non-random sampling bias	Occurs if each individual in the source population does not have an equal chance of being selected for the sample population (probability based sampling)
Ascertainment bias	Occurs if the convenience sampling is not representative of the source population as a whole (convenience sampling)

Non-response bias	<p>Occurs if the members of the of the sample population who agree to be in the study are systematically different from non participants</p> <p>May accompany the usage of online questionnaires (discomfort with technology)</p>
Habituation	<p>Occurs when respondents have given the same answer to so many questions in a row that they continue to reply with the same response even one that doesn't reflect their true perspectives because that response has become routine</p>
Inclusion bias	<p>excluding disliked articles using the process explained in page 173 (systematic reviews)</p>
Publication bias	<p>Occurs when articles with statistically significant results are more likely to be published than those with null results (systematic reviews and meta analysis)</p>
PP : bias sampling	<p>systematic over or under representation of an attribute concerning the population</p>