Causal Language

Causal language refers to wording that suggests a cause-and-effect relationship between two variables.

Definition

Causal language is used when an author implies that one factor **directly causes** another — rather than merely being associated or correlated — even if the study design **does not support** such inference.

Examples:

- “Treatment **leads to** improved survival”
- “Dose escalation **prevents** local failure”

Correct alternatives:

- “Treatment **was associated with** improved survival”
- “Higher dose **correlated with** lower failure rates”

⚠ Why It’s Problematic

Using causal language in:

- **Retrospective** studies
- **Observational** studies without causal inference methods

… can:

- Overstate conclusions
- Mislead clinicians or policymakers
- Hide potential confounding factors or biases

Only Appropriate In:

- Randomized Controlled Trials (RCTs)
- Studies using robust **causal inference tools**:
  - Propensity score matching
  - Instrumental variable analysis
  - Directed acyclic graphs (DAGs)

If a study does not randomize exposure and lacks causal modeling, causal language should be avoided.