# Overestimation

**Overestimation** refers to the act of assigning **greater value, effect, importance, or certainty** to a finding or intervention than is justified by the available evidence.

## Characteristics

- Reporting results with **exaggerated effect sizes**
- Presenting **statistically significant** but **clinically trivial** findings as meaningful
- Ignoring **confidence intervals**, **sample limitations**, or **study design flaws**
- Assuming an intervention is more effective than it truly is due to bias or methodological error

## Common Causes

- **Small sample sizes** (→ inflated effect estimates)
- **Selective reporting** or **publication bias**
- **Lack of blinding** or **randomization**
- **Inappropriate statistical methods** (e.g., p-hacking)

## Examples in Medical Research

- A pilot study claims “dramatic symptom reduction” based on a 10-patient sample
- Overinterpreting early subgroup analyses or interim data
- Drawing strong conclusions from observational associations without controlling for confounders

## Why It Matters

- Leads to **misinformed clinical decisions**
- May result in **harmful overuse** of unproven treatments
- Fuels **false expectations** among clinicians, patients, and policymakers

## Related Terms

- Effect Size
- Sample Size Fallacy
- Rhetorical Inflation
- Scientific Spin
- Overgeneralization

## See Also

- Critical Reading in Medical Literature
- Statistical vs. Clinical Significance