

Glossary: Causal inference and effect estimation using observational data

Supplemental material

Supplemental Table 1: Examples of common types of potential outcome notation.

Description	Superscript notation ¹	Subscript notation ²	Functional notation ³
Potential outcome if exposed (i.e. with exposure A set to 1) ⁴	$Y^{a=1}$	Y_1	$Y(1)$
Potential outcome if exposed for an individual i	$Y_i^{a=1}$	Y_{1i} or $Y_1(i)$	$Y_i(1)$
Potential outcome if exposed, with mediator M set to 0	$Y^{a=1,m=0}$	Y_{10}	$Y(1,0)$
Potential outcome if exposed, with mediator M set to the value it would have taken if unexposed	$Y^{a=1,M^a=0}$	Y_{1M_0}	$Y(1, M(0))$

¹ Hernán MA, Robins JM. Causal inference: what if [Internet]. Boca Raton: Chapman & Hall/CRC; 2020. Available from: <https://www.hsph.harvard.edu/miguel-hernan/causal-inference-book/>

² VanderWeele TJ. A three-way decomposition of a total effect into direct, indirect, and interactive effects. *Epidemiology*. 2013 Mar;24(2):224–32.

³ Rubin DB. Causal inference using potential outcomes. *Journal of the American Statistical Association*. 2005 Mar;100(469):322–31.

⁴ Some authors use other symbols than 1 and 0 to denote the possible values of the exposure (e.g. a and a^*).