

ABLE 13-1 Comparisons of Cohort and Case-Control Studies

	Cohort Studies		Case-Control Studies
	Prospective	Retrospective	
A. Study group	Exposed persons: $(a + b)$	Exposed persons: $(a + b)$	Persons with diseases (cases); $(a + c)$
B. Comparison group	Nonexposed persons: $(c + d)$	Nonexposed persons: $(c + d)$	Persons without disease (controls); $(b + d)$
C. Outcome measurements	Incidence in the exposed $\left(\frac{a}{a + b}\right)$ and Incidence in the nonexposed $\left(\frac{c}{c + d}\right)$	Incidence in the exposed $\left(\frac{a}{a + b}\right)$ and Incidence in the nonexposed $\left(\frac{c}{c + d}\right)$	Proportion of cases exposed $\left(\frac{a}{a + c}\right)$ and Proportion of controls exposed $\left(\frac{b}{b + d}\right)$
D. Measures of risk	Absolute risk Relative risk Odds ratio Attributable risk	Absolute risk Relative risk Odds ratio Attributable risk	— — Odds ratio Attributable risk ¹
E. Temporal relationship between exposure and disease	Easy to establish	Sometimes hard to establish	Sometimes hard to establish
F. Multiple associations	Possible to study associations of an exposure with several diseases*	Possible to study associations of an exposure with several diseases*	Possible to study associations of a disease with several exposures
G. Time required for the study	Generally long because of need to follow-up the subjects	May be short	Relatively short
H. Cost of study	Expensive	Generally less expensive than a prospective study	Relatively inexpensive
I. Population size needed	Relatively large	Relatively large	Relatively small
J. Potential bias	Assessment of outcome	Susceptible to bias both in assessment of exposure and assessment of outcome	Assessment of exposure
K. Best when	Exposure is rare Disease is frequent among exposed	Exposure is rare Disease is frequent among exposed	Disease is rare Exposure is frequent among the exposed
L. Problems	Selection of nonexposed comparison group often difficult Changes over time in criteria and methods	Selection of nonexposed comparison group often difficult Changes over time in criteria and methods	Selection of appropriate controls often difficult Incomplete information on exposures

*so possible to study multiple exposures when the study population is selected on the basis of a factor unrelated to the exposure.
¹provided additional information is available.

Reference: Gordis L. 2004. Epidemiology. Third ed. Philadelphia: Elsevier Saunders; p.200.