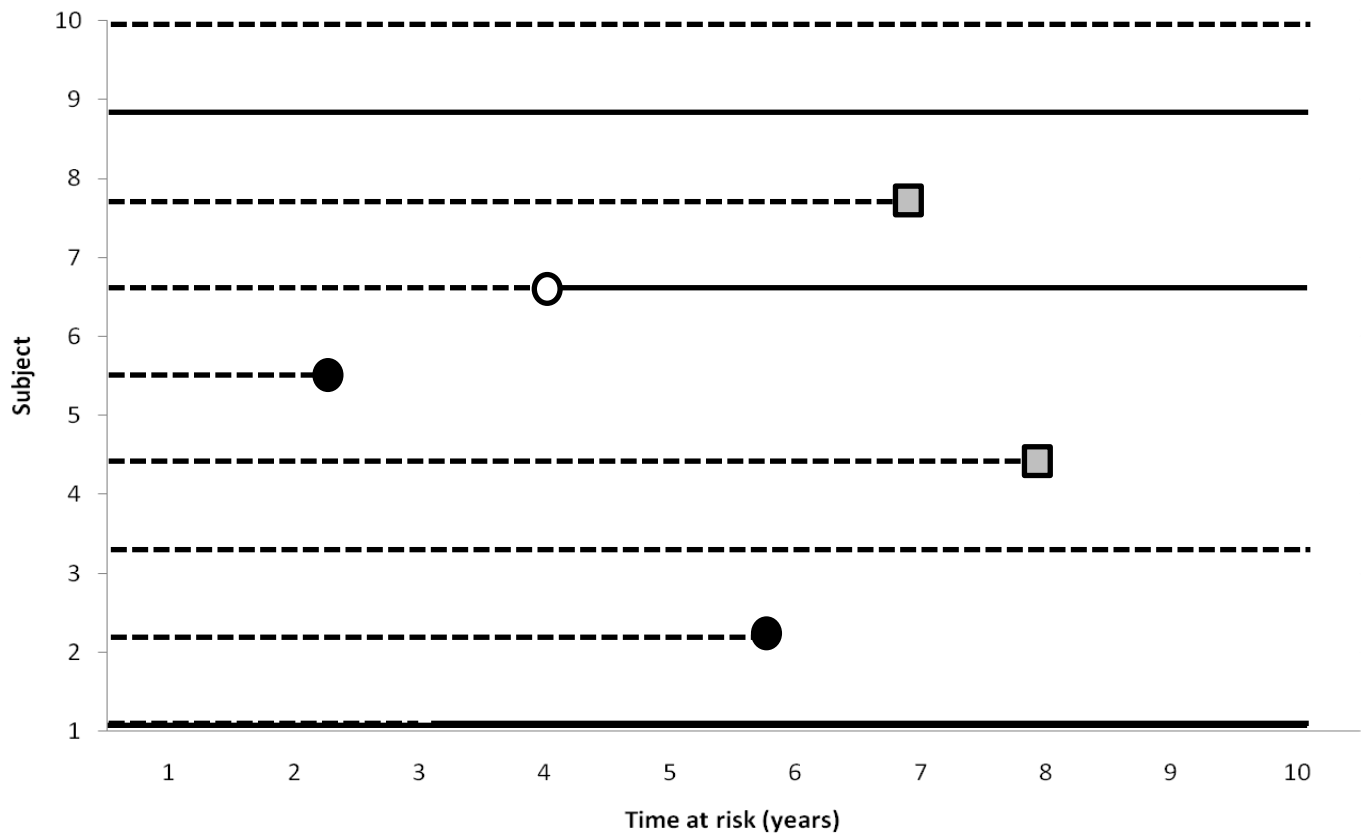


## Chapter 5 Exercises

1. Researchers at Farrlandia U are interested in measuring the occurrence of insomnia among newly enrolled students at the Farrlandia School of Public Health during the first two weeks of courses. Each student is sent a survey with a few questions related to insomnia after the first two weeks of courses has been completed. After compiling the answers into a database, researchers note that 103 students out of 560 have probable insomnia.
  - a. What is the prevalence of insomnia among newly enrolled students? What time period does this prevalence refer to?
  - b. One of the researchers is not familiar with epidemiology and interprets this data to mean that 103 new cases of insomnia occurred during the first two weeks of classes. Is this a correct assumption? Why or why not?
2. The figure below shows a study of disease A in 10 individuals. Please refer to the figure to answer questions a-d.



Legend:

- At risk for A      \_\_\_\_\_ Have A
- Got and died from A
- Living with A
- Never got A and died from some other cause

- a. What is the incidence proportion of disease A?
  - b. What was the prevalence of disease at the end of the first year? At the end of the tenth year?
  - c. Calculate the person time at risk for the entire study period
  - d. What is the incidence rate of A over the study period?
3. Incidence or prevalence?
- a. Proportion of campers who developed food-borne disease within a few days of eating chicken salad at the dining hall.
  - b. Proportion of persons who reported having arthritis as part of the 2013 National Health Interview Survey.
  - c. Proportion of children who have immunity to mumps, either because they had the disease or because they received the vaccine.
  - d. Proportion of premature babies who contract infections this year in the Farrlandia General Hospital NICU.
  - e. Proportion of US 12- to 16-year-olds who have tried marijuana.
  - f. Proportion of the US population that contracted influenza during the 2010-2011 flu season.
  - g. Proportion of breast cancer patients who have BRCA mutations.
  - h. Proportion of 3-6 year-olds currently diagnosed with autism spectrum disorder in the US.
  - i. Proportion of 3-6 year-olds who received a new diagnosis of autism spectrum disorder in the US in 2012.
  - j. Proportion of women age 15 to 25 who tested positive for HIV for the first time in South Africa in 2010.

4. Calculate the mean, median, and mode from the following data:

Number of lifetime sexual partners reported by 20 randomly selected adults age 20-59

Subject	Number of sexual partners
1	6
2	19
3	4
4	1
5	2
6	8
7	0
8	3
9	26
10	5
11	10
12	6
13	16
14	7
15	1
16	9
17	1
18	15
19	5
20	22

- a. Mean
- b. Median
- c. Mode
- d. If you were to report on these data, which measure would you choose and why?

5. A group of 156 heart attack patients who were regular smokers up to the time of their heart attacks were followed for ten years. 75 patients continued to smoke after their heart attacks and 81 quit after their heart attacks. Of the 75 patients who continued smoking, 27 died during the ten years of follow-up, and of the patients who quit, 14 died during the 10 years of follow-up.

- a. Fill in the following 2x2 table:

	Death	Survival	Total
Smoked			
Quit			
Total			

- b. What is the marginal risk of death in this study sample?
- c. What is the conditional risk of death among the quitters?
- d. What is the conditional risk of death among those who continued smoking?