1. The following contingency table summarizes the relationship between exposure to a risk factor and development of a disease.

	Develop Disease	Do Not Develop Disease	*Total*
Exposed	200	9800	10,000
Unexposed	100	9900	10,000
Total	300	19,700	20,000

   a. Find the relative risk ratio to compare the risk of disease among exposed subjects to that of unexposed subjects.

   b. Find the odds ratio to compare the odds of disease among exposed subjects to that of unexposed subjects.

   c. What are the consequences of misinterpreting the odds ratio as a ratio of probabilities?

2. In a randomized experiment involving 500 female athletes, 250 received preventative treatment and 250 did not; 100 of the untreated athletes were injured over the next year, whereas only 25 of the treated athletes were injured.

	Injured	Uninjured	*Total*
Untreated	100	150	250
Treated	25	225	250
Total	125	375	500

   a. Find the relative risk ratio to compare the risk of injury among untreated athletes to that of treated athletes.

   b. Find the odds ratio to compare the odds of injury among untreated athletes to that of treated athletes.

   c. What are the consequences of misinterpreting the odds ratio as a ratio of probabilities?

3. Consider the data from Question 2 once again.

   a. Obtain a point estimate for the probability of remaining *uninjured* in the Treated group.

b. Obtain a point estimate for the probability of remaining *uninjured* in the Untreated group.

c. Find the ratio of these two probability estimates.

d. Is it fair to conclude that the risk (i.e., chance) of injury is 4 times higher in the Untreated group? Is it fair to conclude that the chance of remaining uninjured is 1.5 times higher in the Treated group? Can both of these statements be correct?

e. Compute the odds of remaining uninjured for both groups, and then find the odds ratio. How does this compare to the odds ratio comparing the odds of *injury* across groups?