

**Teacher Guide**  
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**Gastrointestinal Illness Strikes**  
**Yourtown Nebraska**  
**Worksheet 4**

**10. Construct a 2 x 2 table to examine the association between illness and the consumption of hamburger.**

The 2 x 2 table allows the epidemiologist to focus in on a single item. It is basically the same procedure as calculating the attack rate, and the final numbers here correspond to the attack rate numbers in the table above.

**Answer:**

**Attack rate for consumption of hamburger**

	<u>Disease Status</u>			
	Ill	Not Ill	Totals	Attack Rate (%)
<b>Exposure to risk factor</b> Ate hamburger	A (43)	B (11)	A + B (54)	$A / (A + B) = 79.6$
<b>Did not eat hamburger</b>	C (3)	D (18)	B + D(21)	$C / (C + D) = 14.3$

**11. Calculate the relative risk for becoming ill from eating the hamburger.**

**Answer:**  $\frac{79.6}{14.3} = 5.6$

**12. What does this value of the relative risk tell you about the association between illness and eating hamburger?**

**Answer:**

People who ate a hamburger were 5.6 times more likely to become ill than were people who didn't eat a hamburger.

**13. Three of the people who became ill said they had not eaten a hamburger. How might you explain this?**

**Answer:**

Possible explanations:

Perhaps other foods became cross contaminated from the hamburger via dishes, knives, or serving utensils

Perhaps these three all ate very well done hamburgers

The infectious agent might not have been evenly distributed in the burgers.

These three people may have remembered inaccurately.

These cases could be completely unrelated to the outbreak.