

Simpson's Paradox

QAP

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Two researchers, Smith and Jones, conduct research on the presence of a certain antibody in the population.

	Test Positive?	
	Yes	No
Female	3	97
Male	1	49

Smith's study

	Test Positive?	
	Yes	No
Female	5	45
Male	9	91

Jones' study

1. Which gender has the higher percentage of positive tests in the Smith study?
2. Which gender has the higher percentage of positive tests in the Jones study?
3. Which gender has the higher percentage of positive tests in the both studies combined?

Answer: The rates are as follows:

	Yes	No	Rate
	Smith		
Female	3	97	3/100
Male	1	49	1/50
Jones			
Female	5	45	5/50
Male	9	91	9/100
Smith+Jones			
Female	8	142	8/150
Male	10	140	10/150

So the answer is that the females have a higher percentage of positive tests in the Smith study and in the Jones study but not in both studies combined. The reversal of a relationship after collapsing is called Simpson's Paradox.