

Risk Perception

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Optimistic Bias

- See less risk for ourselves
 - Adults
 - Adolescents
- Know risk of smoking, but...
 - Less at risk than the “typical smoker”
(McCoy et al., 1992)
 - Think they can avoid risk
(Arnett, 2000; Segerstrom et al., 1993)

Unrealistic Optimism

- Some who seem optimistic are realistic
 - Their health may actually be very good
 - Some are aware of their high risk
- Tie estimates to actual health
 - Mismatch is often optimistic
 - These people are particularly resistant to efforts to change behavior

(Klein, 1996)

Measuring Risk

- Quantitative estimates of risk
 - Explaining risk to people
 - Eliciting people's beliefs of their own risk
- Numeracy
 - Some people are less comfortable with numbers
 - Possible barrier to understanding risk

Assessing Numeracy

- Toss a fair coin 1,000 times
 - How many times will it come up heads?
- Chance of winning a prize is 1%
 - If 1,000 play, how many will win?
- Chance of winning a prize is 1 in 1,000
 - What percent of players win the prize?

Risk Perception & Numeracy

- Poor numeracy impedes understanding
 - Appreciation of risk reduction
- Avoiding quantitative measures reduces effect of numeracy
 - Qualitative assessments
 - Relative to other people or other conditions
- Improve quantitative measures of risk

Why Do We Take Risks

- Trade off costs (or risks) and benefits
 - Time horizon
 - Probabilistic
- Conventional wisdom about teenagers
 - Failure to appreciate risks
 - Perceptions of invulnerability

(Fischhoff, Parker, Bruine de Bruin, Downs, Palmgren, Dawes, & Manski 2000)

Goals: School and Work

	estimate	actual
• Have a high school diploma by age 20?	93.4%	84%
• Have a 4-year college degree by age 30?	72.8%	30%
• Working for pay more than 20 hours/week by age 30?	92.3%	91%

Risks: Crime

	estimate	actual
• Be the victim of a violent crime in the next year?	14.7%	10%
• Be arrested, whether rightly or wrongly, in the next year?	10.2%	<10%
• Serve time in jail by age 20?	5.3%	0.6%

Risks: Mortality

	estimate	actual
• Die from any cause (crime, illness, accident, and so on) in the next year?	18.6%	0.08%
• Die from any cause (crime, illness, accident, and so on) by age 20?	20.3%	0.4%

Teens' Risk Perceptions

- Mildly optimistic about achievements
- Greatly overestimate risk of dying in the near future
- Implications for risk communications capitalizing on perceived invulnerability
- Perceptions follow from communications in non-obvious ways

Behavior and Risk Perception

- Risky behavior precedes lowered perception of risk
 - Experience may correct misperceptions
 - Or may give false confidence
- Perceived risks go down
- Perceived benefits go up

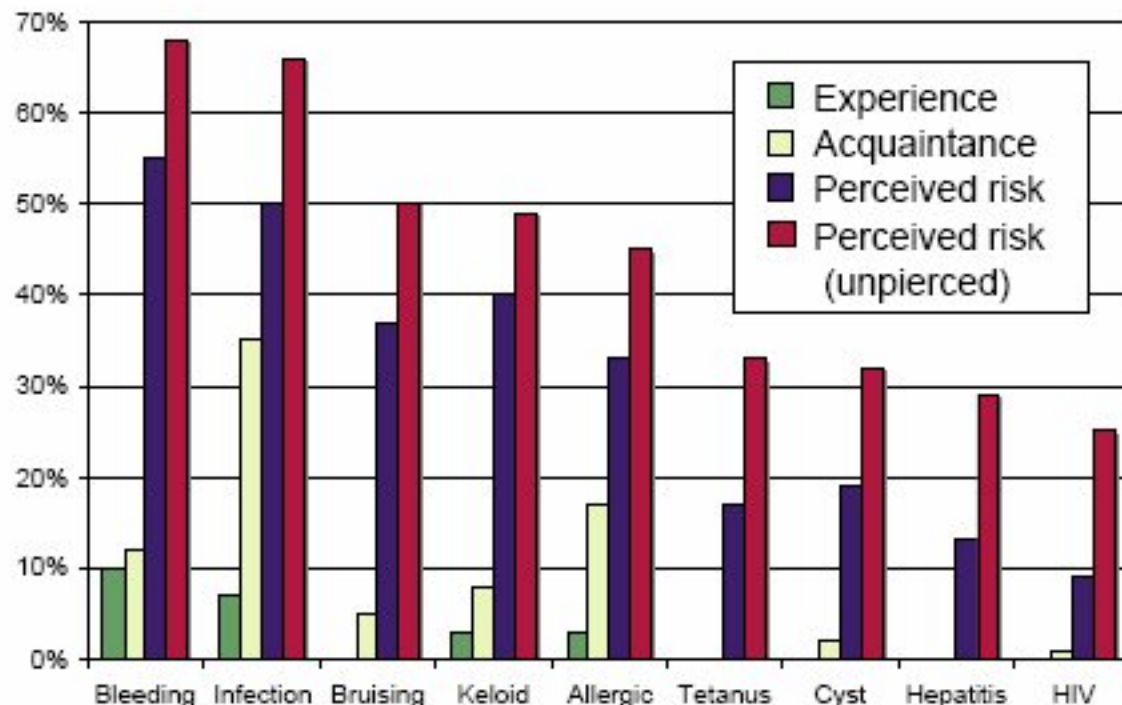
Risk Communications

- Often ignore common gaps in knowledge and misconceptions
Halperin, 1999
- Information chosen for reasons other than needs of target audience
Bok & Morales, 1998
- Often repeat well-worn messages that don't change behavior
Crosby & Yarber, 2001

Misinformation About Risk

- Attention to very low risks
- Exaggeration of risk
- Various motivations
 - Assumption that teens don't appreciate risk
 - Desire to control behavior
 - Liability concerns for products or messages
- Little concern about spill-over effects

Risks of Body Piercing



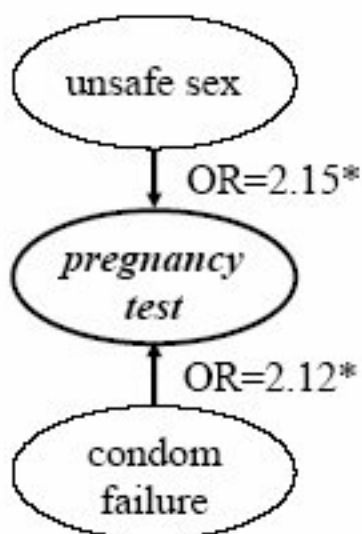
(Schorzman, Gold, Murray & Downs, 2005)

Problems with Exaggeration

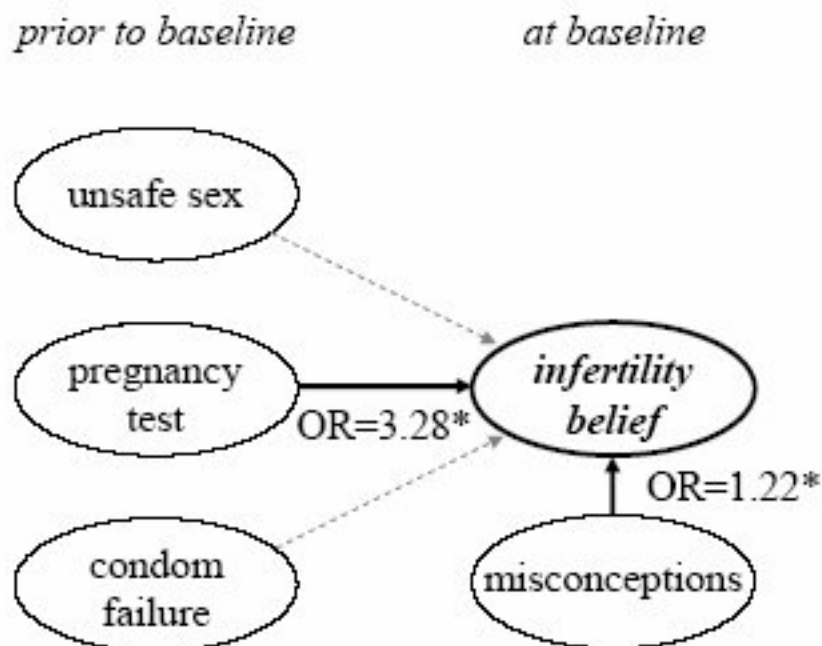
- Inconsistency of information
- Source may become discredited
 - Discount all information from source
 - Ignore all risk messages
- Experience may interact with beliefs
 - Undermine all knowledge of domain
 - Draw inappropriate conclusions

Seek Information After Risk

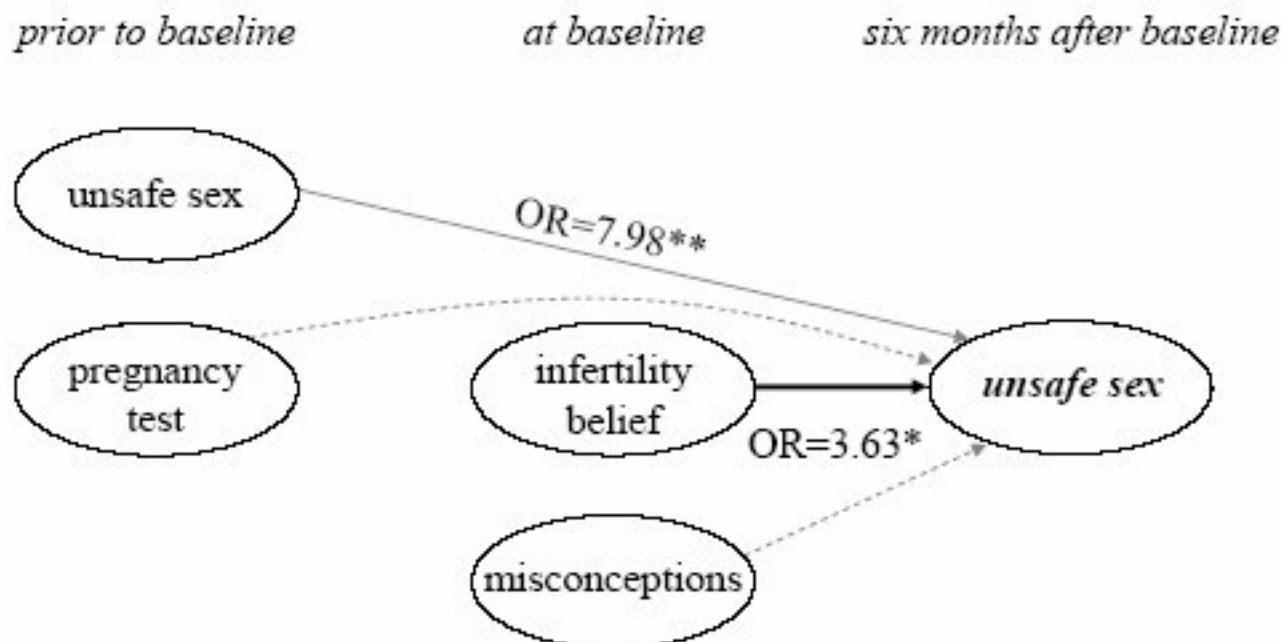
prior to baseline



Draw Reasoned Conclusion



Act on Inferences



(Downs, Bruine de Bruin, Murray & Fischhoff, 2004)

Communication of Values

- Focus on right vs wrong rather than risk
- Avoid problem of wrong information by not providing any
- But messages interact with context
 - Underlying knowledge
 - Inferences about risk
 - Inferences about message

Disingenuous Communication

- Messages violating known facts
 - Exaggerated messages did not violate logical relationships
 - Values-oriented messages did not present logical arguments
- May require a network of insincere arguments to sustain

Reducing High-Risk Behavior

- Context affects message impact
 - Past and future communications
 - Past and future experiences
- Intuitive understanding of domain
 - As basis for new information
 - As challenge for changing understanding

Implications for Reduced-Risk Tobacco-Based Products

- No success yet in decreasing disease
- Implicit comparison to “typical” smoker
 - How bad must this smoker be?
- Perceived risk reduction affects behavior
 - Reduces quitting intentions
- Must avoid convenient comparisons

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