



Making Sense of the Statistics

Eggs and *Salmonella* Enteritidis

1. It is estimated that one in 20,000 eggs may contain *Salmonella* Enteritidis (SE).
2. A person who eats a raw egg every day would encounter a contaminated egg once in 55 years.
3. Based on per capita egg consumption of 253, the average consumer would encounter a SE contaminated egg once every 79 years.
4. Since 30% of all eggs consumed are pasteurized egg products, the average consumer would encounter a SE contaminated shell egg every 113 years.
5. The USDA estimates that the average consumer eats an undercooked egg 20 times a year. If so, consumers would be exposed to a SE contaminated undercooked shell egg once in 1000 years.
6. It is estimated that there are 76 million cases of foodborne illness each year in the US. The CDC estimates that there are 125,000 illnesses due to egg related SE each year (approximately 0.16%).
7. The actual number of SE cases reported through the CDC's FoodNet system in 2001 was 2 cases in 100,000 persons. Adjusted for a population of 280 million people, this is a total of 5,600 cases. The CDC estimates that for every reported case of Salmonella, there are 38 unreported cases, so the actual number is multiplied by 38 for the total estimated cases.
8. The odds of any one person in the US getting sick from SE in eggs is 1 in 2,240 or 0.045% each year.

References

1. United States Department of Agriculture. Salmonella Enteritidis Risk Assessment. June 1998, page 1
2. Mathematical conclusion: A person eating 365 raw eggs per year, and one in 20,000 eggs contains SE. $20,000 \div 365$
3. Mathematical conclusion: $20,000 \div 253$ eggs per year
4. Mathematical conclusion: Multiply 253 by 0.70 (70%) equals 177 shell eggs per year. Divide 20,000 by 177.
5. United States Department of Agriculture. Salmonella Enteritidis Risk Assessment. June 1998, page 161
Divide 20,000 by 20 (one in 20,000 eggs may contain SE, and 20 undercooked eggs consumed each year). This gives us the chance that one of the 20 undercooked eggs is one of the one in 20,000 that are contaminated.
6. Mead et al. Food-Related Illness and Death in the United States. *Emerging Infectious Diseases*. 1999, Vol. 5, No. 5, 607-625.
CDC estimate for egg related SE cases in 1998 provided to FDA and USDA for Egg Safety Action Plan.
7. Preliminary FoodNet data on the incidence of foodborne illnesses – Selected Sites, United States, 2001. *MMWR* 2002; 52(15); 325-329.
Mead et al. Food-Related Illness and Death in the United States. *Emerging Infectious Diseases*. 1999, Vol. 5, No. 5, 607-625.
8. Mathematical estimate: 280,000,000 people (US population) divided by estimated number of people getting sick from SE in eggs (125,000).