

Herd Immunity: Measles Simulator

1. Navigate to the following website: <https://fred.publichealth.pitt.edu/measles>
2. In this simulation, what are the blue dots representing? What are the red dots representing?
3. Under “Measles in Selected Counties” select “TEXAS” as the state and “Austin, TX” as the city. Write down 2 observations of the simulation.
4. What is the vaccination rate in the scenario on the left? On the right?
5. Why do you think there is such a dramatic difference in the number of measles cases in the scenario on the left compared to the scenario on the right? Relate your answer to the concept of **herd immunity**.

Vaccination Hesitancy Case Studies

Case 2: Madison: Autism, Aluminum, Natural Immunity

1. Navigate to the following website: <https://downloads.aap.org/CaseStudies/case-2/>
2. If you are using an iPhone or iPad, pair up with someone else since the videos will not work on your device. Additionally, only **Firefox**, **Google chrome**, or **Safari** web browsers will work.
3. You will navigate through the case study by clicking “Next”.
4. Does Madison have any history of immunizations?
5. Read the “Family History” and “Social History” paragraphs under the “Well Child Visit” section.
6. Based on Madison’s medical history, what do you expect are some of the vaccine beliefs of Madison’s parents? Highlight your answer.
 - a. Vaccines cause autism
 - b. Vaccines have dangerous levels of mercury and aluminum.
 - c. Natural immunity is better.
 - d. Vaccine preventable diseases aren’t around anymore.
 - e. All of the above.
7. Watch video clip 1 showing the interaction between Madison’s mother and her doctor. What strategies does the doctor use to convince the mother of the importance of vaccination?
8. Madison’s mom would like to know more about the potential side effects from vaccines. What can you tell her about mild and potentially serious side effects associated with vaccines? Choose the best response to her concern:
 - a. Chronic behavioral disorders and Sudden Infant Death Syndrome (SIDS) have been associated with vaccination in children Madison’s age
 - b. VAERS surveillance has not shown any side effects associated with vaccination.
 - c. Pain and swelling at the injection site, fever >102 F, and rash are among the most common reactions associated with vaccination.
 - d. Severe, inconsolable crying, febrile seizures, and syncope can occur after vaccination in some children. Though worrisome for parents, these are not considered serious adverse reactions.
 - e. Options C and D are correct.
9. Watch video clip 2: Conveying facts about vaccines.

10. Which of the following are good approaches when dealing with parents such as Madison's who are making vaccine decisions based on fear and an emotional response? Choose the best response to their concerns.
- Give them a fact sheet about the benefits of vaccination and tell them to refer to the website.
 - Refer them to a naturopath or chiropractor who agrees with their approach to healthcare.
 - Use the "heart and head" approach. Share some anecdotes of patients who have had vaccine preventable diseases, show them pictures of the various diseases, and give them opportunities to ask questions and address concerns.
 - Lecture them on the dangers of risking their baby's health based on bogus research and propaganda.
 - All of the above.
11. Watch video clip 3, effective communication. What compound found in vaccines are Madison's parents concerned about?
12. TRUE or FALSE: Aluminum is the component of Thimerosal that some parents are concerned is toxic.
13. TRUE or FALSE: Many childhood vaccines have never contained Thimerosal.
14. TRUE or FALSE: Ethylmercury (found in vaccines as Thimerosal) is much less likely than methylmercury (found in the environment) to be toxic at high levels in the body causing heavy metal poisoning.
15. TRUE or FALSE: The United States is the only country that still claims no link between Thimerosal and Autism.

Case 10: Sara

- Navigate to the website: <https://downloads.aap.org/CaseStudies/case-10/>
- What is Sara's past medical history?
- Watch the video clip - Vaccine Safety Concerns.
- Why is Sara concerned about her son getting the chicken pox and measles vaccines?
- TRUE or FALSE: Influenza is not serious when you've had cancer and are in recovery; it's only a major concern for people with respiratory illnesses and/or the elderly.
- TRUE or FALSE: Live vaccines should only be given to healthy individuals with a healthy immune system.
- TRUE or FALSE: Since MMR is a live-virus vaccine, a recipient could shed virus and infect another person. This is a concern for a household with an immunosuppressed individual.

8. TRUE or FALSE: Immunosuppressed individuals can be safely immunized with inactivated vaccines.

SUMMARY

1. Based on the case studies that you examined, would you recommend that all people get vaccinated regardless of their medical history? Why or why not?