



## INFECTED!

### Learning objectives

- understand that there are different methods of disease transmission
- understand what is involved in each of these methods

### Glossary

**direct contact transmission** requires physical contact between an infected animal and a susceptible animal

**indirect contact transmission** results from a susceptible animal coming into contact with a contaminated surface rather than through direct contact with an infected animal

**airborne transmission** involves the spread of disease through the air, rather than through any direct or indirect contact between animals: some micro-organisms are able to stay suspended in the air (as droplets or on dust particles), allowing them to enter a body through the respiratory tract; fortunately, few micro-organisms can survive for long outside the body, which limits airborne transmission



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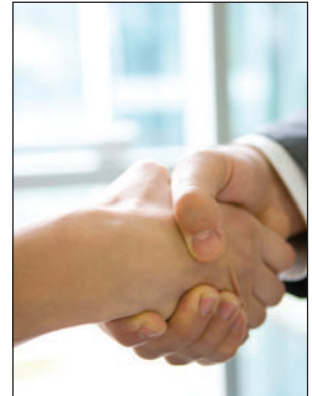
## DIRECT CONTACT

### Materials

- none

### Directions

- 1 Secretly designate one participant as *infected*.
- 2 Direct all participants (including the one who is infected) to walk around and shake each other's hands.
- 3 The person who is infected must *squeeze* the hand of any participant with whom they shake hands.
- 4 Anyone whose hand is squeezed becomes *infected* — and must now squeeze hands when they shake hands.



### ! Did you notice that...

- often you cannot tell by looking at an animal if it is infected, especially if it has not yet begun to show symptoms
- one way for disease to spread among these animals is through direct transmission — this means that an animal becomes infected through physical contact with an infected animal



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## INDIRECT CONTACT

### Materials

- 2 large, wet sponges, or
- 2 hardboiled eggs or ping pong balls
- enough spoons for each participant
- large, open space

### Directions

#### Sponge Relay Race

This variation is a relay race using wet sponges.

- 1 Divide the group into two teams.
- 2 Point out the start and finish lines of the race. Depending on the length of the race course, assign each team member a portion or a full lap of the course.
- 3 Line up the two teams behind the start line. Give the first runner on each team one of the sponges.
- 4 Start the race. When the first runners finish their portion, they must pass the wet sponge to the next runner on their team, without touching their teammate as they pass the sponge.
- 5 After the race is finished, explain that the water in the sponge represents disease-causing germs. Ask the participants if their hands got wet at any point during the race. Everyone who touched the sponge should have gotten wet hands. Therefore, everyone who touched it could have also become infected — without ever having touched one another.



#### ! Did you notice that...

- disease can be transmitted, even if animals never touch one another; if one animal comes into contact with a contaminated surface, this animal can become infected
- pathogens can be carried on clothing, boots, or equipment and be transferred from one place to another

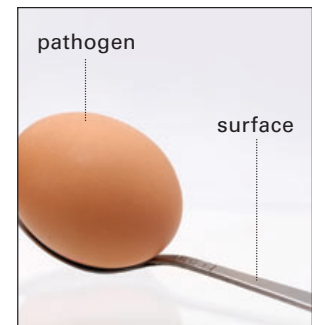
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## Egg Relay Race

This is a relay race using hardboiled eggs or ping pong balls, and spoons.

- 1 Divide participants into two teams.
- 2 Give each participant a spoon.
- 3 Point out the start and finish lines of the race. Depending on the length of the race course, assign each team member a portion or a full lap of the course.
- 4 Give the starting runners from each team one of the hardboiled eggs or ping pong balls. Have them balance the egg or ball on their spoon.
- 5 Explain that the egg or ball represents a pathogen, while the spoon represents a surface. Each participant runs until they pass the egg or ball to the next runner on their team. They must transfer the egg or ball to the next runner's spoon without directly touching the egg or ball. This represents pathogens being carried on surfaces such as boots or equipment.
- 6 If the egg or ball falls off their spoon as they run, participants may pick it up to put it back on but this means that they are now infected — through indirect contact transmission — and because they are now “sick,” they must walk instead of run.
- 7 The race continues until the last person has completed their leg of the race.



### ! Did you notice that...

- disease transmission can occur when animals seem healthy (represented by the participants who never dropped the egg or ball and ran the entire way) as well as when they show symptoms (represented by the participants who dropped the egg or ball and had to walk)
- participants never had to touch one another for the pathogen to be able to travel from the first participant to the last; they all came into contact with it indirectly

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## AIRBORNE CONTACT

### Materials

- soapy water
- bubble wands

### Directions

- 1 Have the participants blow bubbles to observe how they are carried through the air.
- 2 Relate this to airborne pathogens, explaining that some diseases travel by air.
- 3 Ask the participants to imagine that each time a bubble *lands* on them they become infected!

### ! Did you notice that...

- disease can be transmitted by air