

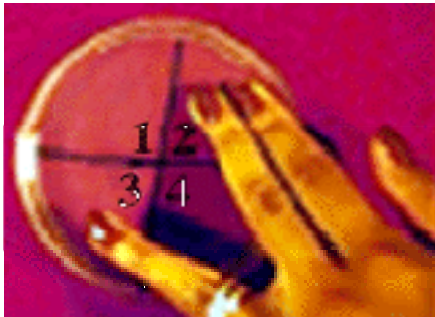
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Handwashing Laboratory Activities

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Activity #1: Fingerprint Technique



photographs by C.L Case Ed.D

Materials

These materials are for each pair of students.

- Two petri plates containing nutrient agar
- Soap

Procedure

1. Divide two nutrient agar plates into four quadrants.
 - a. Label the quadrants of each plate 1 through 4.

- b. Label one plate "Water," the other "Soap."
 2. One student use the "Water" plate.
 - a. Touch section 1 with your fingers.
 - b. Wash well without soap.
 - c. Shake off excess water and while still wet touch section 2.
 3. Do not dry your fingers with a towel.
 - a. Wash again and while wet touch section 3.
 4. Wash a final time and touch section 4.
 5. Another student should use the plate labeled "Soap." Repeat the procedure step 2 (Except 2b. Wash with soap) through 4.
 6. Incubate the plates inverted at 35C or room temperature until the next period. (Usually 24 hours at 35C or 48 hours at room temperature.)
 7. Record your results:
 - a. 4+ = maximum growth
 - b. 3+ = moderate growth
 - c. 2+ = some growth
 - d. 1+ = a little growth
 - e. neg = no growth
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Activity #2: Bowl Technique

Materials

These materials are for the whole class.

- Two sterilized bowls (wash then rinse out with alcohol and sterile water)
- 100 ml sterile water per bowl
- Two petri plates containing nutrient agar

Procedure

1. Label one nutrient agar plate "Not washed," the other "Washed."
2. Go to the restroom and touch all the things you would normally touch, such as doors and faucets, but do not wash your hands.
3. Immerse your hands up to mid-palm in 100 ml sterile water. Rub your fingers against each other.
4. After everyone has rinsed their hands in the same container of sterile water, transfer 0.5 ml of the wash water from step 2 to the surface of the "Not washed" plate. Spread the inoculum over the plate with an L-shaped glass rod. (The rod can be sterilized by dipping in alcohol and washing off the alcohol with sterile water.)
5. Go to the restroom and touch all the things you would normally touch then wash your hands.
6. Immerse your hands up to mid-palm in 100 ml sterile water. Rub your fingers against each other.
7. After everyone has rinsed their hands in the water, transfer 0.5 ml of the wash water from

step 5 to the surface of the "Washed" plate. Spread the inoculum over the plate with a sterilized glass rod.

8. Incubate the plates inverted at 35C or room temperature until the next period. (Usually 24 hours at 35C or 48 hours at room temperature.)

9. Record your results:

- a. 4+ = maximum growth
- b. 3+ = moderate growth
- c. 2+ = some growth
- d. 1+ = a little growth
- e. neg = no growth

Options

Compare hot/cold water; bar/liquid soap; dispenser types, e.g., bar soap, pump bottle, slit top, powdered soap; soap ingredients, e.g., alcohol, soap, detergent, hexachlorophene, medicated soaps.

Questions

1. Why is it not necessary and, in fact, undesirable to remove all bacteria from the skin?
2. The microorganisms that are normally present on the human skin are not pathogens. Why does a surgeon scrub for 2 to 5 minutes with an antiseptic soap before operating?
3. List some diseases that can be transmitted on hands.
4. Make a sign for your school restroom that will get students to wash their hands. Make a sign for your school that will encourage students who own lizards to wash their hands after handling the lizard.