

Resource 18 – Toilet paper and microbes¹

The aim of this activity is to investigate contamination of the hands when using toilet paper.

You will need:

- a sterile nutrient agar plate
- toilet paper
- a sample of fresh soil
- a clean, dry towel.

Basic procedure

- 1 With a marker, divide the agar plate into three areas – ‘Before’, ‘Pre-wash’ and ‘Post-wash’.
- 2 Push your fingers gently onto the surface of the agar in the area labelled ‘Before’. Cover the plate.
- 3 Wrap those fingers in one or more layers of toilet paper to simulate normal use and then rub them over the surface of the soil to simulate normal ‘cleaning’ using toilet paper.
- 4 Discard the toilet paper in the bin.
- 5 Uncover the agar plate and push the fingers that were wrapped in the toilet paper gently onto the surface of the agar in the area labelled ‘Pre-wash’. Cover the plate.
- 6 Wash your hands as you normally would after using toilet paper and dry them on a clean, dry towel.
- 7 Uncover the agar plate and, again, push the fingers that were wrapped in the toilet paper gently onto the surface of the agar in the area labelled ‘Post-wash’. Cover the plate.
- 8 Incubate the plate at room temperature for several days, checking it regularly for the growth of microbes.
- 9 Use the growth patterns on your plate to discuss the effectiveness of toilet paper in protecting fingers from faecal contamination. Discuss also the effectiveness of washing the fingers.

Extensions

Investigate different brands or styles of toilet paper. Which are the most effective at protecting the fingers?

To what extent does the thickness of the toilet paper, or the number of sheets, reduce the amount of contamination.

How important is it to wash your hands after going to the toilet and using toilet paper?

¹ Based on an activity from: Stephen Blackwell 1993, *A Drink to Your Health*, Melbourne Water and Science Teachers Association of Victoria.