



# Potential for Streptococcus Bacteria Reinfection Due to Toothbrush Contamination in Patient's Testing Positive for Streptococcal Pharyngitis

SCHOOL OF PHARMACY

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## Background

- Streptococcal pharyngitis is a bacterial infection characterized by symptoms such as sore throat, redness of throat/tonsils, swelling of tonsils/lymph nodes, and appearance of white patches on tonsils.
- Limited data is available on the subject on whether a toothbrush needs replaced after infection of streptococcal pharyngitis

## Methods

- Observational study; sample goal of 100
- Students called Health Service to schedule appointment
- Triage staff asked students to bring in toothbrush if having any upper respiratory symptoms
- Per provider discretion, a strep test was performed
- If positive, providers asked for consent to use toothbrush for the study along with the time teeth were last brushed
- Toothbrush was tested using POC strep tests and microbiology lab media
- Positive results were recorded as a 1, negative as a 0; interpreted as percentages and averages

## Results

- Total of 12 toothbrushes collected
- 5 positive POC tests
- 12 rich media growth
- 7 selective media growth
- Cultured an average of 2.7 days after collection

Toothbrush No.	Date Collected	POC Results	Rich Media Result	Selective Media Result	Hours Since Last Brush at Time of POC Test
1	9/5/24	0	1	1	2 hrs. 55 min
2	9/6/24	0	1	0	7 hrs. 0 min
3	9/12/24	1	1	0	3 hrs. 50 min
4	9/17/24	0	1	0	6 hrs. 20 min
5	10/10/24	1	1	1	27 hrs. 11 min
6	10/10/24	0	1	1	3hrs. 19 min.
7	10/15/24	0	1	0	22 hrs. 20 min
8	10/16/24	0	1	1	7 hrs. 45 min
9	10/17/24	1	1	1	1 hr. 0 min
10	10/22/24	1	1	1	3 hrs. 15 min
11	11/7/24	1	1	0	3 hrs. 15 min
12	12/3/24	0	1	1	1 hr. 0 min

## Limitations

- Sample goal not met
- Frequent walk-in visits
- Understaffing
- Appointments between class periods
- Long periods between time of culture

## Conclusion

- Over half of the toothbrushes collected showed evidence of growth on selective media
- Supports claim that it could be possible for reinfection via a toothbrush
- Larger studies need to be performed
- Patients should be recommended to dispose of their toothbrush and replace it with a new one after being diagnosed with streptococcal pharyngitis

