

## Popular summary

Drinking water is a daily necessity. Could you taste differences when you are drinking tap water from different places? Do you have any idea why the water taste varies a lot? Microbes might be part of the answer! In this study, we focused on the impact of the distribution system on microbial communities. Two public buildings were chosen to be studied, one of them is closer to the drinking water distribution system and the other is further away. During March and April in 2021, we went to the buildings to take water samples from different taps and took the water back to Lund University for analysis. One week of stagnation was introduced in the study due to the Easter holiday. Flow cytometry was the key technique in this project. It's like counting sheep, but instead of you it's the machine and instead of sheep they are cells, also it's faster. Microbiology, chemical and metal analysis were applied as well. It was found that the distribution system has an influence on the microbial communities in the water in the building. The intact cells were present more in the building further down in the distribution system, which was a result of water age differences and pipes. The stagnation effect was investigated based on the cell count increase after the holiday. Moreover, since the weather was getting warmer, the water temperature was climbing during the two months; thus, more cells were detected in the water. This project could be a useful reference for the government when it's needed to establish important public buildings like hospitals and schools where clean and safe drinking water is fundamental.