

Passive measurement of cigarette smoking - debrief

Thank you for taking part in this study, which is being run within the School of Psychological Science at the University of Bristol. The School has a number of projects exploring novel approaches to capturing data about the way people lead their lives. Lifestyle health behaviours, such as smoking, drinking and eating, are of particular interest, as they have been associated with increased risks of many diseases, including cancers and heart disease. The diaries and questionnaires traditionally used to record these behaviours are known to be subject to a number of biases and errors, so new ways to record these behaviours with less bias and more accuracy are of considerable interest.

In this project, we are testing a prototype of a system that will passively measure when people are smoking cigarettes. By 'passively', we mean the system will detect the act of smoking a cigarette without the person having to take any actions to record it themselves. The system is limited to smoking cigarettes at the moment, but may be extended to e-cigarettes in the future. The system is based on a single, commercially available smartwatch. It uses the motion sensors in the smartwatch, and looks for the particular patterns of hand movement that are the motion signature of smoking a cigarette.

We completed some initial testing of the system some time ago, but now need to test it on the latest generation of smartwatches. For this, we are asking participants to wear the smartwatch for one day as they go about their normal daily activities. The version of the smartwatch system you wore was modified slightly so that it can capture 'ground truth' data. We will compare this data about your actual smoking behaviour to the data from the smartwatch system to derive accuracy and precision measures that tell us how well the system worked in free living conditions.

Thank you again for taking part.

If you would like any further information about this study, please contact Dr Andy Skinner by email at andy.skinner@bristol.ac.uk.