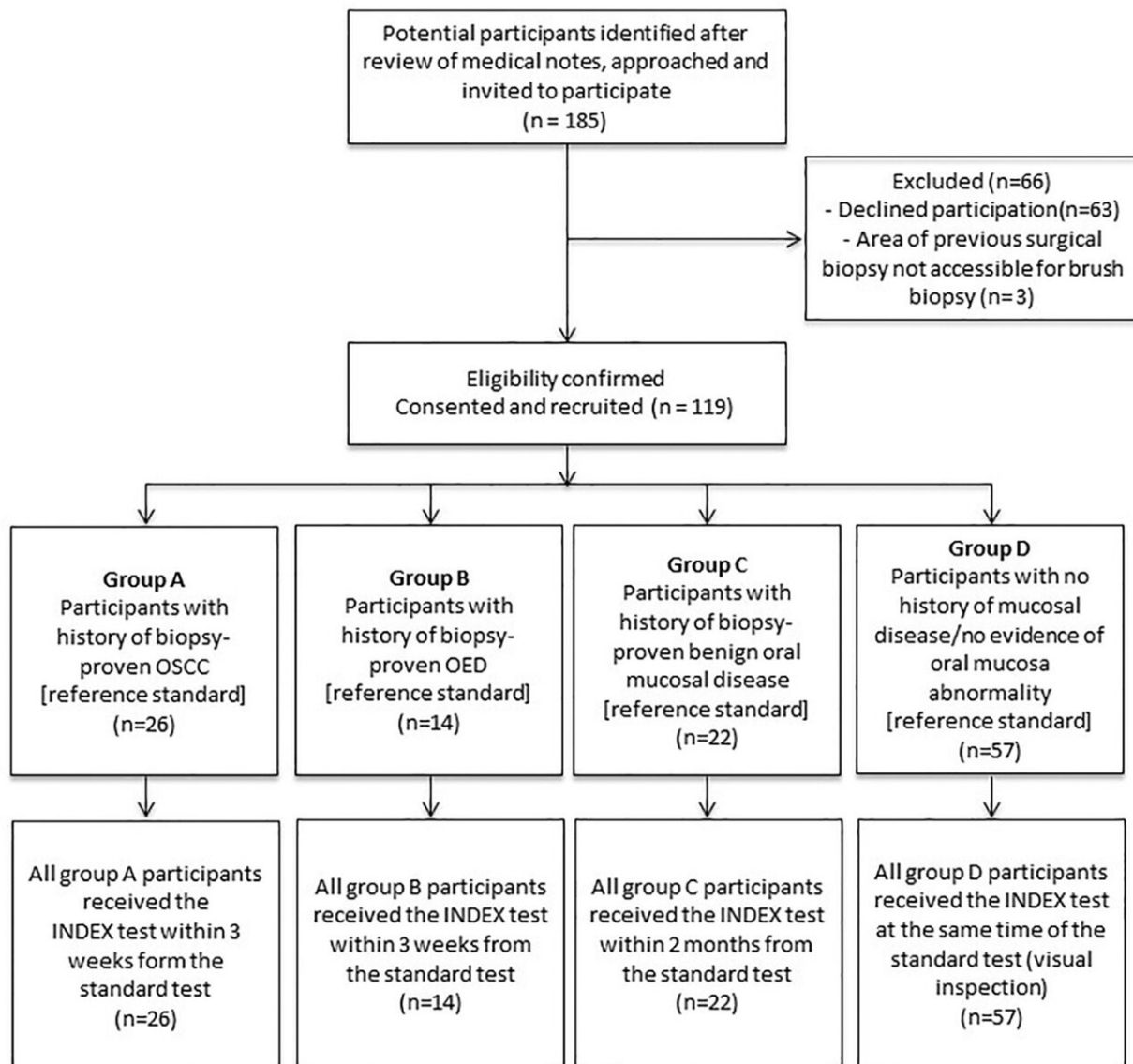# PANDORA test could pave the way for better oral cancer detection

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Flow chart of study participants. Credit: *Journal of Oral Pathology & Medicine*

Surrey scientists have developed a proof-of-concept test called PANDORA that was shown to be over 92% accurate at identifying patients with oral squamous cell carcinoma (OSCC). The test was also shown to be more than 80% accurate at identifying patients with pre-cancer or oral epithelial dysplasia (OED).

Dr. Fatima Labeed, co-author of the study and Senior Lecturer in Human Biology from the University of Surrey, said, "Over 300,000 people are diagnosed with oral cancer worldwide—a disease with an alarming mortality rate of around 50%. This suggests that the scientific community doesn't have the tools available to identify oral cancer early enough, and we hope that PANDORA paves the way for more effective clinical diagnostic tools for this terrible disease."

The research team took cell samples from 40 people with OSCC and OED, along with 79 people without cancer (including those with other benign lesions), for use as a test group. They used a machine called a DEPtech 3DEP analyser, with a unique set-up protocol, to measure and analyze the cells of the patients. Samples could be collected at a dentist's surgery and posted for analysis, allowing it to be used in primary care to identify patients in need of specialist care.

Oral squamous cell carcinoma is a common type of cancer that impacts the cells lining the mouth and throat and is linked to lifestyle factors such as smoking or poor oral hygiene, or alcohol use. Symptoms can include persistent mouth sores, difficulty swallowing, and changes in speech. OSCC is treatable if identified early, but has a poor survival rate if identified at a late stage.

Similar to oral squamous cell carcinoma, oral epithelial dysplasia is a precancerous condition where the cells lining the mouth show abnormal changes in shape, size, and arrangement because of smoking, alcohol use, or poor oral hygiene. The condition is precancerous because it can develop into oral cancer over time.

The study has been published in the *Journal of Oral Pathology and Medicine*.

Provided by University of Surrey