



A force-controlled stimulus application method for testing lip tactile spatial acuity.

Left: Square-wave gratings (JVP Domes, Stoelting) are inserted into a plastic tube (dotted rectangle). Two silicone rubber o-rings (thick black lines) surround the dome shaft and contact the inner wall of the tube to provide stability with minimal friction, allowing the dome shaft to press backwards upon contact with the participant's lip (right). A sensor at the rear of the tube (shaded rectangle; micro switch FS; Honeywell) outputs voltages proportional to the applied force. A computer program written in LabVIEW (National Instruments) monitors the sensor output (via a National Instruments PCI-MIO-16E-1 board) and provides auditory feedback to the investigator via headphones to signal the force with which the investigator is pressing the dome against the lip.