

Studying COVID-19 transmission in Chinese schools

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Wearable device for close contact behavior detection. Credit: Xiyue Liu

Schoolchildren in China, tracked with wearable devices, provide data about close contact behavior that may influence viral transmission, according to a study. Nan Zhang and colleagues fitted wearable trackers on 24 children at a school comprising primary, middle, and high school students in Jiangsu Province, China. Their findings are published in the journal *PNAS Nexus*.

Two volunteers were selected from each grade, 1–12, and asked to sit near the middle of the classroom. For 45 minutes during class and 10 minutes during breaks between two classes, the devices recorded the children's interpersonal distance, face orientation, relative position (horizontal and vertical), close contact rate, and number of people per close contact.

Close contact was defined as any face-to-face or face-to-side/back interaction between individuals within 1.5 meters. The authors harvested 251,558 data points of close contact events and found that [younger children](#) had higher close contact rates than older children.

Most of the face-to-face contact occurred during breaks. On average, children were in close contact with other children 37% of the time during class and 48% of the time during breaks. The authors estimate that most COVID-19 viral transmission in the school would be via [long-distance](#) airborne transmission, although short-range airborne transmission was more likely during breaks—but only when no masks were worn.

The [viral transmission](#) rate was higher during breaks than during classes, although there is typically more concern about transmission during class.

The authors recommend a classroom ventilation rate of 30 cubic meters per hour per person, generally achievable by opening the windows in fair weather and with fresh air systems at other times.

More information: Yong Guo et al, Student close contact behavior and COVID-19 transmission in China's classrooms, *PNAS Nexus* (2023). DOI: [10.1093/pnasnexus/pgad142](https://doi.org/10.1093/pnasnexus/pgad142)

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