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Title: Indoor air quality: Presence of students in a classroom changes levels of air-borne particulate matter

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Body: Background: The Respira Project is an EU funded Italia-Malta project, whose main aim is to monitor air quality and respiratory Health in schools amongst children aged 11-14. Aim: In this preliminary analysis, airborne or gaseous pollutants in 2 classrooms in two different schools were monitored for 48 hours during the scholastic year. Method: An aeroqual IQM60 was used to measure PM 1, PM2.5, PM 10 particulate levels, Ozone, Carbon Dioxide, Carbon monoxide, Nitrogen Dioxide, and Volatile organic compound levels. Levels were monitored every 2 minutes for 48 hours Results: Levels for Ozone, Carbon Monoxide, Volatile organic carbons and nitrogen dioxide, were all well below the maximum recommended levels of indoor air quality in both classes. In school 1, class 1, Carbon dioxide levels rose from baseline 356pp/million, rose to mean of 875pp/million with a peak of 1397 pp/million with students present from 08:00 to 10:00 AM. Similarly PM2.5 and PM10 levels rose from a baseline of 25.1 µg/m3 and 25.5 µg/m3 to a mean of 43.4 and 54.0 µg/m3 with peaks of 58.5 and 76.9 µg/m3 respectively. However mean PM1 dropped from mean 25.3 µg/m3 to mean 12.9 with a nadir of 11.37 µg/m3. School 2, Classroom 2 baselines were CO2 356ppm, PM1 30.5, PM2.5 30.7, PM10 30.0 µg/m3 Classroom values from 9.00 to 11.00 AM with students present were CO2 mean 587, peak 981 ppm, Mean PM 2.5 and PM 10 rose to 43.8 and 55.9, with peaks of 96.8 and 134.7 µg/m3 respectively. PM1dropped from mean of 30.5 µg/m3 dropped to mean 19.75 with a nadir of 11.37 µg/m3. Conclusion: Rreliminary results indicated that the presence of students in the classroom significantly alters airborne particulate matter concentrations.