Objective
To provide reference values for pulse oximeter saturation (SpO2) in primary school children, measured at home during sleep.

Methods
Recordings of SpO2 and signal quality from 100 children were randomly selected from a larger population-based sample intended to study the prevalence of sleep-disordered breathing. Recordings were analyzed for the duration of artifact-free recording time (AFRT), minimum SpO2 (SATmin) and median SpO2 (SAT50), the SpO2 below which the child spent 5% of AFRT (SAT5), and the SpO2 below which the child spent 10% of AFRT (SAT10). In addition, the time in seconds with SpO2 $\leq 90\%$ per hour of AFRT (TI90) was calculated, as were the number of falls in SpO2 by $\geq 4\%$ per hour of AFRT (DI4), the number of falls in SpO2 to $\leq 90\%$ per hour of AFRT (DI90), and the number of falls in SpO2 to $\leq 92\%$ per hour of AFRT (DI92).

Results
Ten recordings had to be excluded because of insufficient AFRT ($< 5\, h$). Mean age of the remaining 90 children (54 girls) was 9.3 years (SD, 0.6). Median (range; fifth centile) values for SATmin, SAT5, SAT10, and SAT50 were 93% (76 to 97; 87.5), 97% (88 to 99; 95), 97% (89 to 99; 96), and 98% (94 to 100; 97). Median values (range; 95th centile) for TI90, DI4, DI90, and DI92 were 0.0 s (0.0 to 5.8; 1.6), 0.8 (0.0 to 6.1; 3.9), 0.0 (0.0 to 1.2; 0.2), and 0.0 (0.0 to 2.0; 0.6).

Conclusion
Baseline SpO2 values $< 97\%$ were uncommon in these children, as were intermittent desaturations to $\leq 90\%$. These data may serve as a basis for the interpretation of clinical recordings of SpO2 in children referred for sleep-related breathing disorders.