Supplemental Digital Content 2: Description of the method of calculation of dose of desaturation

The total dose of desaturation experienced by each child was computed as follows:

$$total\ dose\ of\ SctO_2\ desaturation = \int_0^{tmax} f(s(t))$$

$$f(x) = \begin{cases} threshold - s(t) & s(t) < threshold \\ 0 & s(t) \geq threshold \end{cases}$$

Where:

- **threshold:** 65% (desaturation threshold)
- **s:** $SctO_2$ signal, $s(t)$ refers to the value of the signal at time t
- **tmax:** 720 minutes (12 hours) or 1440 minutes (24 hours) , it refers to the maximum duration of the window from which the total dose of $SctO_2$ desaturation is extracted