Supplementary material for Harteela M, et al. Comparison of end-expiratory respiratory gating methods for PET/CT. Acta Oncol 2014;53:1079–85.

Supplementary Figure 1. Working principle of the minimum-constant method, where (A) is the median of minima, (B) is the median absolute deviation of the minima and (C) is the constant value defining where the end-expiratory period is extracted. If a respiratory cycle's minimum deviates more than the median absolute deviation from the median of the minima A, the respiratory cycle is discarded. Based on the selected respiratory cycles, a constant value C for the amplitude threshold is generated by defining the median amplitude of the selected respiratory cycles.

Supplementary Figure 2. Working principle of the slope-based method, where (A) and (B) define the left (beginning) and right (end) slope thresholds multiplied by arbitrary coefficients, defining where the end-expiratory period is extracted. The beginning point of the selected end-expiratory period, A, will be found by moving from the minimum of the cycle to the left until the slope of the curve reaches the left slope threshold. The end point of the selected end-expiratory period, B, will be found in proportion by moving to the right from the minimum of the cycle.

Supplementary Figure 3. Working principle of the amplitude-median method, where (A) is the median of the selected points and (B) defines the amplitude threshold defining where the end-expiratory period is extracted. The method finds the median of the selected data points A and discards the points which are too far from the median based on a threshold value B.

Supplementary Figure 4. Supplementary Random variability introduced in simulated respiratory signals on cycle duration, amplitude and baseline variability..

Supplementary Figure 5. Example of RPM signals (left) and simulated respiratory signals (right).

Supplementary Figure 6. Box-plot of the measured SUVmax values in the PET/CT patient study, when end-expiratory gating is applied both to PET and CT. Whiskers define the maximum and minimum value of SUVmax, while the horizontal line defines the median of the SUVmax.

Supplementary Figure 7. Box-plot of the measured SUVmean values in the PET/CT patient study, when end-expiratory gating is applied both to PET and CT. Whiskers define the maximum and minimum value of SUVmean, while the horizontal line defines the median of the SUVmean.

Supplementary Table I. Properties of the developed gating methods.

Method	Minimum-constant	Slope-based	Amplitude-median
+	Resistant to baseline changes	Resistant to cycle inconsistencies	Largest fraction of counts preserved
–	Smallest fraction of counts preserved	Sensitive to baseline changes	Sensitive to cycle inconsistencies