Supplementary Results *for Van Dijk et al. Interfractional renal and diaphragmatic position variation in children and adults: is there a difference?*

Cone beam (CB)CT to CT organ registration

In some patients one or both kidneys or the diaphragm could not be registered. Reasons for non-registration were for example nephrectomy in Wilms' tumor patients, a small field of view (FOV) so that the concerning organ was not included in the cone beam CT scans (CBCTs), or insufficient visibility due to (breathing) artefacts. In a number of children treated with craniospinal irradiation, diaphragm and kidneys were registered in separate thoracic and abdominal images, respectively. This resulted in analyses of 24 right and 29 left kidneys (in 344 CBCTs), and 30 diaphragms (in 357 CBCTs) in the children. For the adults we analyzed 32 right and 35 left kidneys, and 27 diaphragms in 476 CBCTs with a FOV large enough to include both the diaphragm and kidneys.

Supplementary Table *for Van Dijk et al. Interfractional renal and diaphragmatic position variation in children and adults: is there a difference?*

Supplementary Table. Median, IQR and range (mm) of organ position variation in children and adults						
	Children			Adults		
	Median	(IQR)	(range)	Median	(IQR)	(range)
Right kidney						
CC	-0.4	(-0.7 – 2.8)	(-10.2 – 9.1)	1.7	(-2.1 – 6.6)	(-13.3 – 14.5)
LR	-0.1	(-5.4 – 5.5)	(-4.2 – 2.3)	0.9	(-0.7 – 2.3)	(-3.3 – 3.5)
AP	-2.6	(-1.5 – 0.4)	(-4.1 – 4.3)	-0.4	(-2.0 – 0.9)	(-8.1 – 10.4)
Left kidney						
CC	1.3	(-1.7 – 3.4)	(-4.8 – 7.3)	0.3	(-4.3 – 3.9)	(-19.5 – 14.7)
LR	-0.2	(-1.4 – 0.6)	(-3.5 – 1.9)	0.0	(-1.4 – 1.3)	(-4.3 – 4.2)
AP	-0.2	(-1.0 - 0.4)	(-21.1 – 1.6)	-0.2	(-1.9 – 1.0)	(-4.9 – 6.5)
Diaphragm						
CC	0.2	(-4.0 – 1.7)	(–9.2 – 5.6)	2.3	(-4.0 – 8.6)	(-18.3 – 26.9)
Abbreviations: IQR = interquartile range, min = minimum, max = maximum, CC = cranio-caudal, LR = left-right, AP = anterior-posterior						

Supplementary Figure 1A *for* Van Dijk et al. Interfractional renal and diaphragmatic position variation in children and adults: is there a difference?

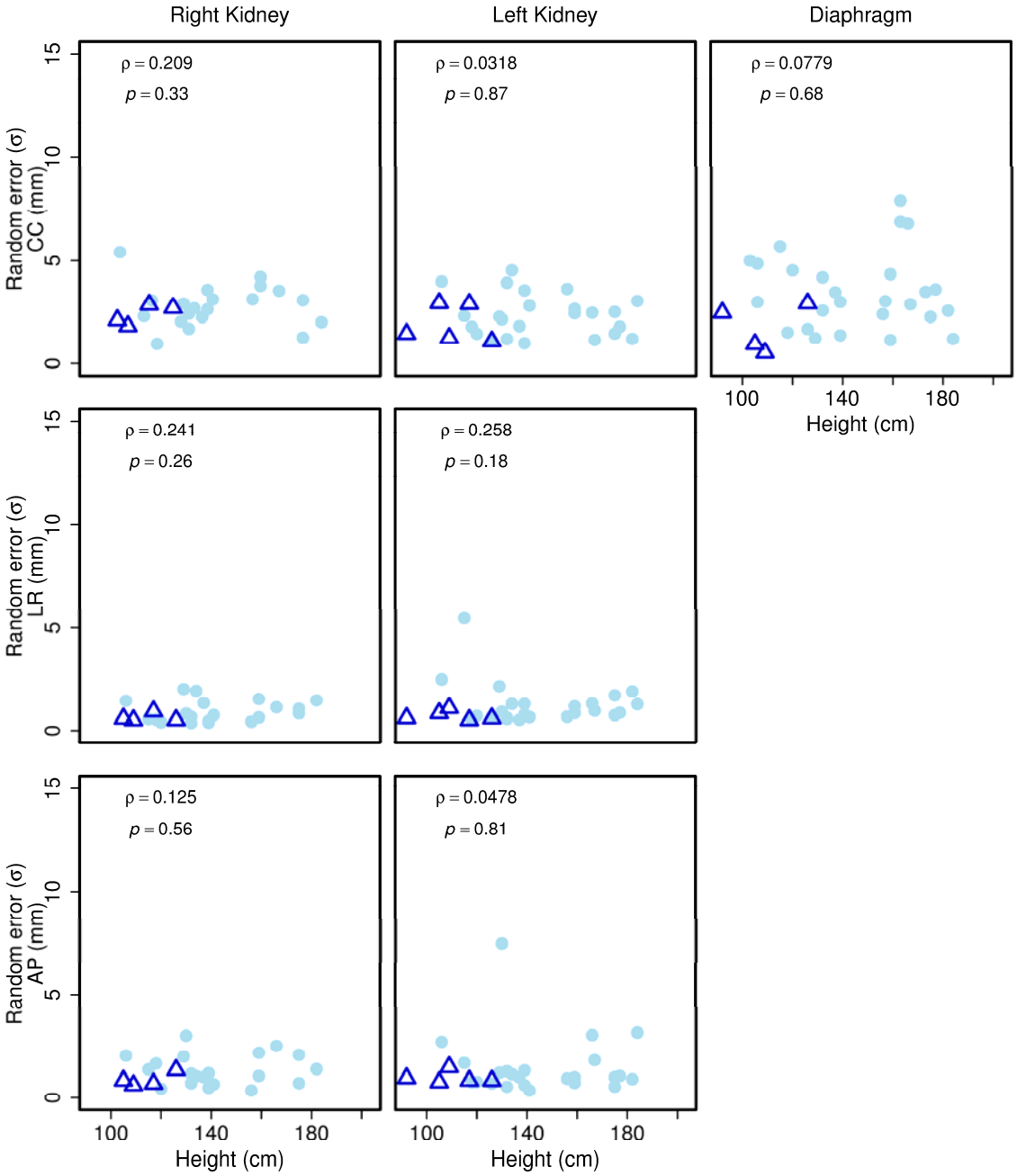

Figure 1A. Pediatric patients: Distributions of the individual random errors (σ) of interfractional renal and diaphragmatic position variation in the CC, LR, and AP directions. Spearman's ρ indicate correlations between organ position variation and patients' height. Dots (blue) and triangles (dark blue) represent pediatric patients treated without and with anesthesia, respectively.

Abbreviations: CC = cranio-caudal, LR = left-right, AP = anterior-posterior

Supplementary Figure 1B *for* Van Dijk et al. Interfractional renal and diaphragmatic position variation in children and adults: is there a difference?

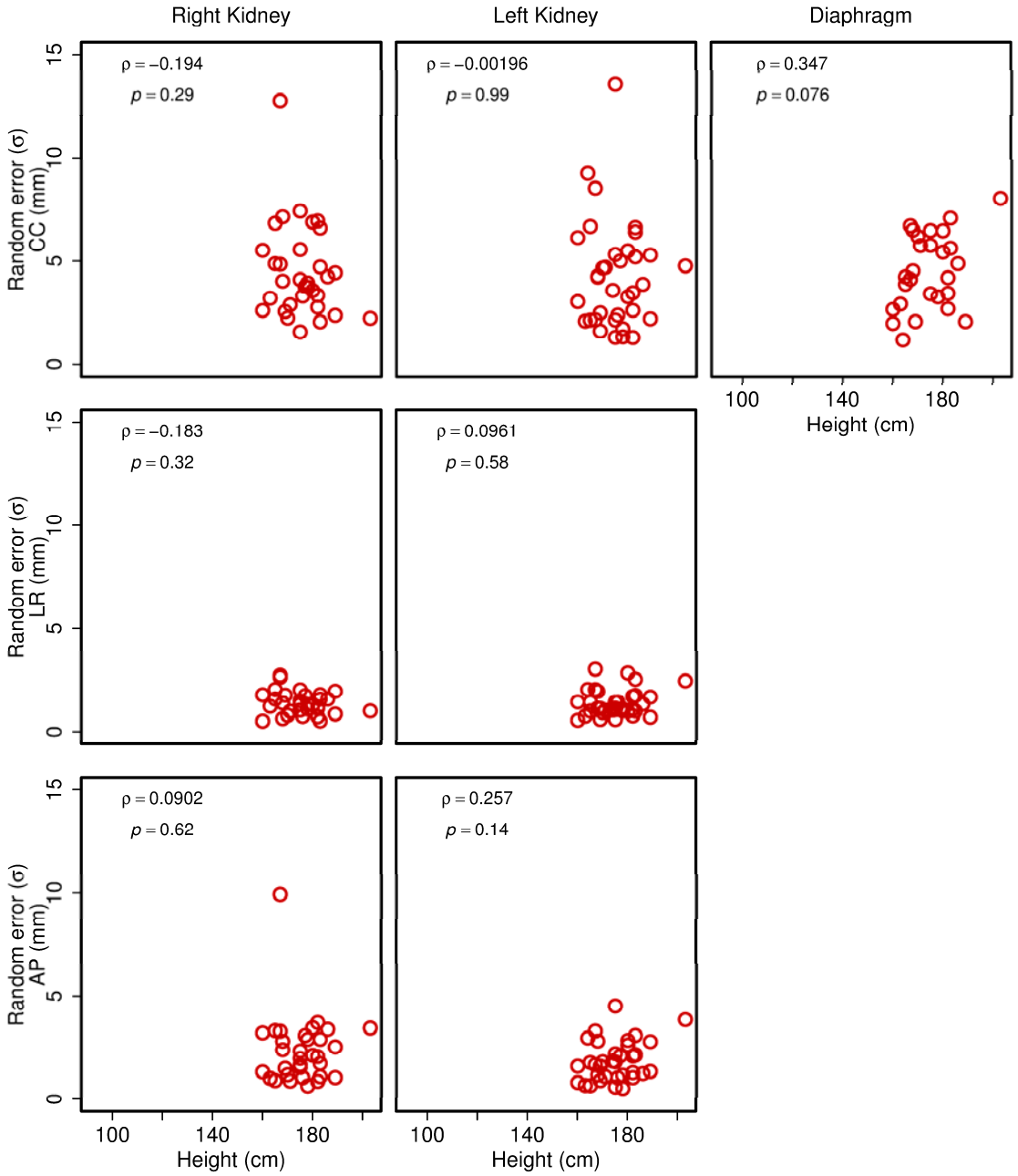

Figure 1B. Adult patients: Distributions of the individual random errors (σ) of interfractional renal and diaphragmatic position variation in the CC, LR, and AP directions. Spearman's ρ indicate correlations between organ position variation and patients' height.

Abbreviations: CC = cranio-caudal, LR = left-right, AP = anterior-posterior

Supplementary Figure 2 *for* Van Dijk et al. Interfractional renal and diaphragmatic position variation in children and adults: is there a difference?

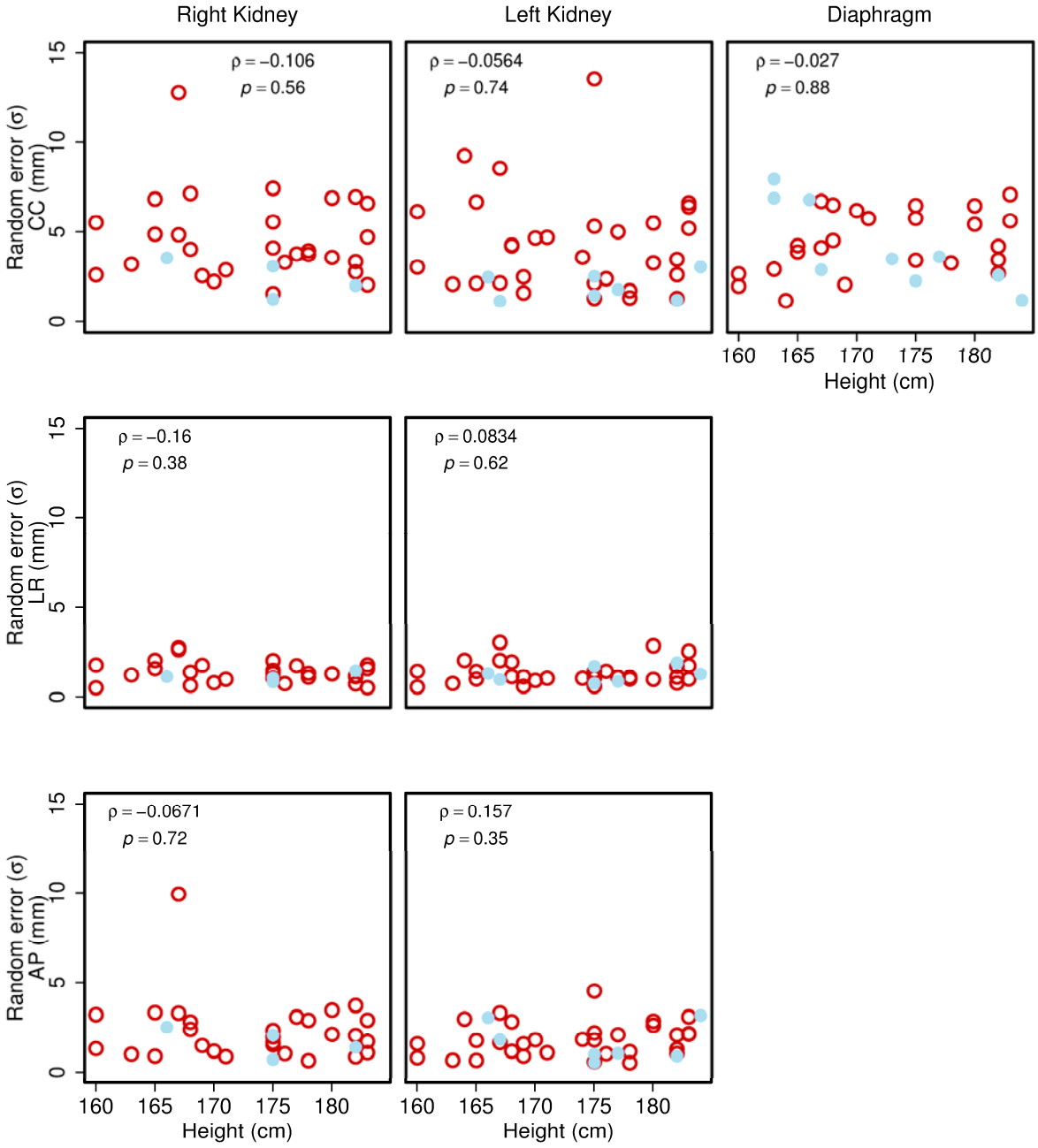

Figure 2. Subgroup of children and adults with overlapping heights: Distributions of the individual random errors (σ) of interfractional renal and diaphragmatic position variation in the CC, LR, and AP directions. Spearman's ρ indicate correlations between organ position variation and patients' height. Dots (blue) and circles (red) represent pediatric and adult patients, respectively.

Abbreviations: CC = cranio-caudal, LR = left-right, AP = anterior-posterior

Supplementary Figure 3 *for* Van Dijk et al. Interfractional renal and diaphragmatic position variation in children and adults: is there a difference?

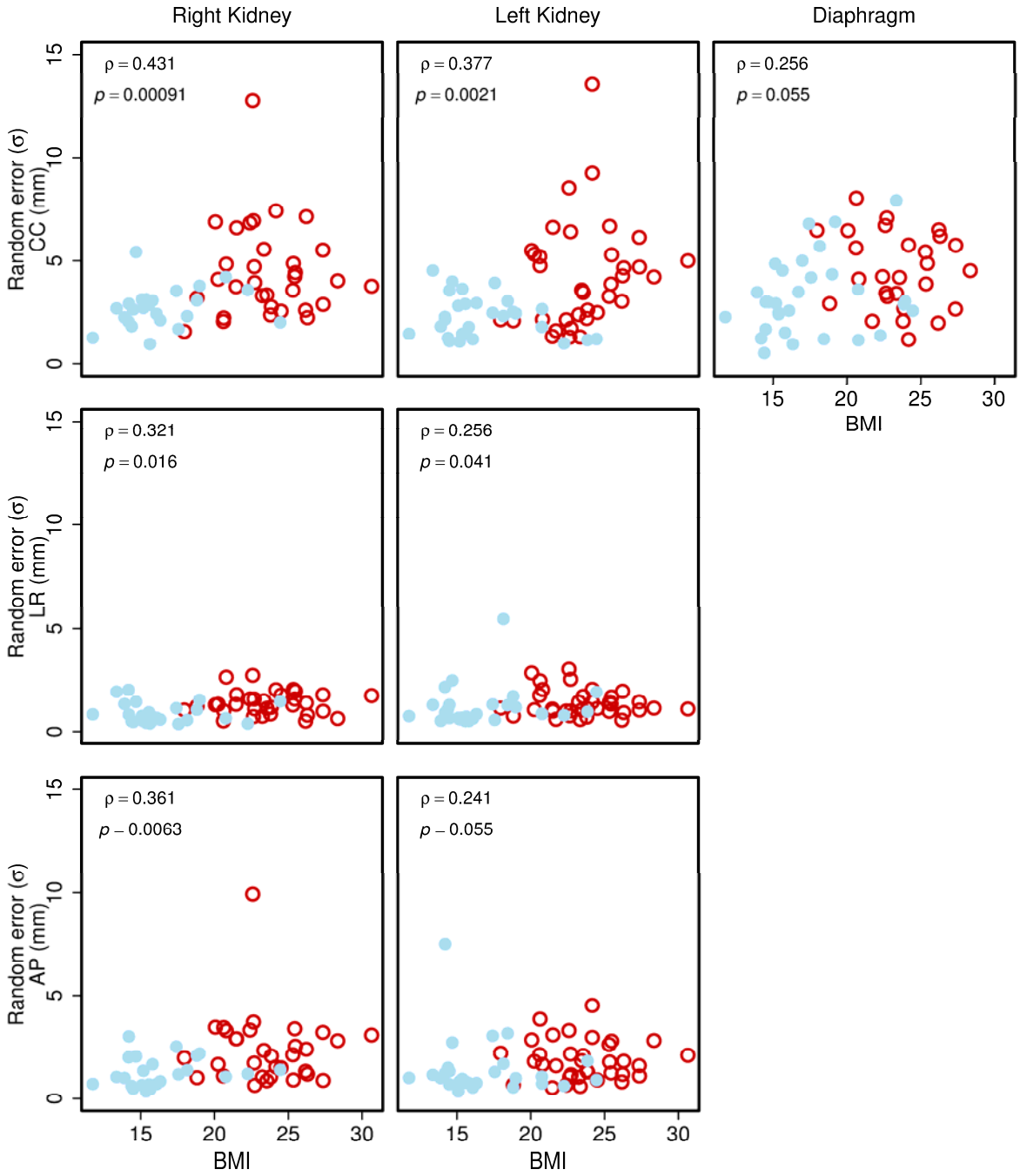

Figure 3. Correlations with BMI: Distributions of the individual random errors (σ) of interfractional renal and diaphragmatic position variation in the CC, LR, and AP directions. Spearman's ρ indicate correlations between organ position variation and patients' BMI. Dots (blue) and circles (red) represent pediatric and adult patients, respectively.

Abbreviations: CC = cranio-caudal, LR = left-right, AP = anterior-posterior, BMI = Body Mass Index (calculated as weight (kg) / height^2 (meter))