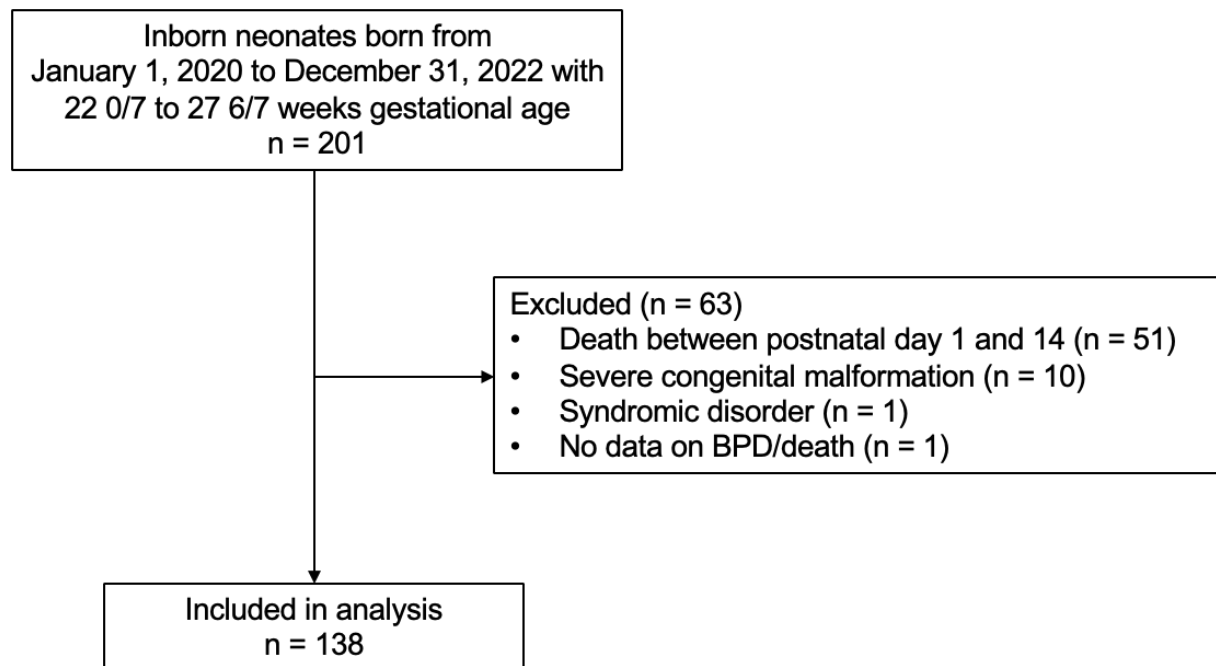
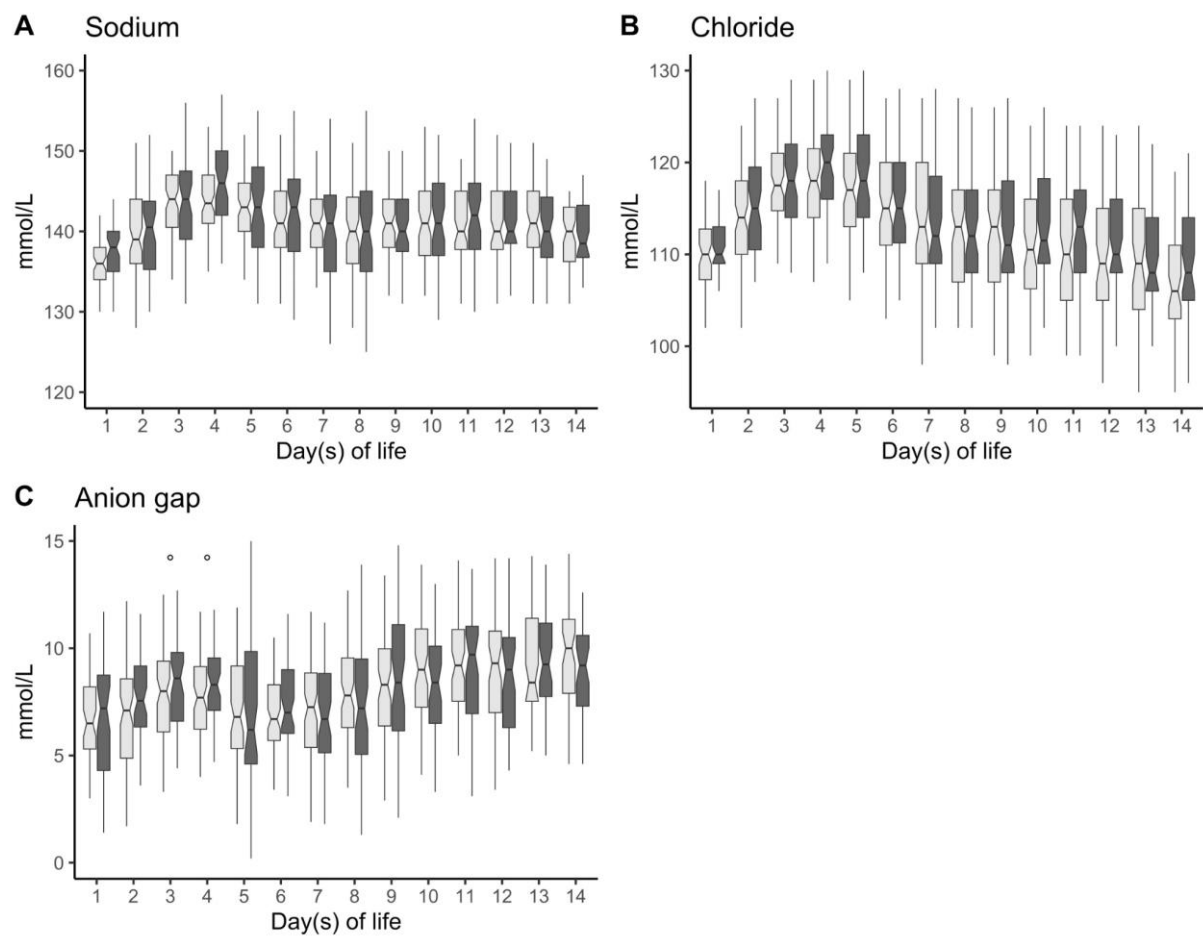


Additional Figure 1. Study cohort. CONSORT diagram.



BPD, bronchopulmonary dysplasia.

Additional Figure 2. Daily sodium, chloride and anion gap values in extremely preterm neonates during the first 14 days of life.



A Sodium. **B** Chloride. **C** Anion gap.

Notched boxplots represent median, 25% quantile and 75% quantile of BPD-free survivors (light grey) and infants with BPD/death (dark grey), respectively.

° unadjusted $p < 0.05$.

Additional Table 1. Number of data points included in the analysis

Postnatal day	Number of patients	Number of patients with data on						
		pH	BE	SBC	Lactate	Sodium	Chloride	Anion gap
1	138	113	113	110	108	110	113	110
2	138	138	138	134	127	134	137	133
3	138	138	138	134	131	135	138	134
4	138	138	138	134	129	135	137	133
5	138	137	137	135	130	134	136	133
6	138	137	137	136	133	135	137	135
7	138	135	135	134	128	131	133	130
8	138	133	133	129	122	130	132	128
9	138	123	123	121	115	119	123	119
10	138	115	115	113	108	112	114	112
11	138	119	119	117	115	118	119	117
12	138	109	109	107	104	108	109	107
13	138	107	107	106	104	107	107	106
14	138	106	106	104	103	103	106	102
Total data points, n (%)	1 932	1 748 (90.5%)	1 748 (90.5%)	1 714 (88.7%)	1 657 (85.8%)	1 711 (88.6%)	1 741 (90.1%)	1 699 (87.9%)

SBC, standard bicarbonate.

Additional Table 2. Logistic regression analyses examining the association of metabolic acidosis during the second week of life with outcomes BPD/death, BPD, and mortality.

Exposure variable and outcomes	aOR (95% CI)	Hosmer-Lemeshow <i>p</i>
<i>Metabolic acidosis, DOL 8-14</i>		
BPD/death	0.451 (0.084-2.429)	0.539
BPD	0.187 (0.025-1.419)	0.304
Mortality	1.212 (0.064-22.980)	0.987

aOR, adjusted Odds Ratio; BPD, bronchopulmonary dysplasia; DOL, day of life.

Adjusted for sex, gestational age, small for gestational age, prenatal steroids, mode of delivery, 5-min Apgar < 7, surfactant application.

Note: Analyses for BPD/death and mortality included all infants (n=138) and analyses for BPD alone included infants surviving to 36 weeks postmenstrual age (n=133).

Additional Table 3. Optimal cut-off values of each daily blood gas parameter during the first week of life that was independently associated with BPD/death, determined by Youden index, with corresponding AUC, sensitivity and specificity.

Exposure variable	AUC (95% CI)	Threshold	Direction	Sensitivity (%)	Specificity (%)
pH, DOL 2	0.672 (0.580-0.764)	7.28	>	75	54
pH, DOL 3	0.699 (0.609-0.768)	7.26	>	77	59
pH, DOL 4	0.725 (0.639-0.810)	7.26	>	86	52
pH, DOL 5	0.662 (0.568-0.757)	7.22	>	43	84
pH, DOL 6	0.685 (0.593-0.777)	7.24	>	59	75
pH, DOL 13	0.764 (0.672-0.856)	7.26	>	78	68
Base excess, DOL 3 (mmol/L)	0.615 (0.519-0.710)	-7.1	>	73	45
SBC, DOL 2 (mmol/L)	0.616 (0.513-0.708)	16.9	>	36	82
SBC, DOL 3 (mmol/L)	0.655 (0.559-0.751)	17.6	>	70	58
SBC, DOL 4 (mmol/L)	0.625 (0.529-0.721)	17.9	>	69	56
Lactate, DOL 3 (mmol/L)	0.615 (0.517-0.714)	2.9	<	31	88

AUC, area under the receiver operating characteristic curve; DOL, day of life; SBC, standard bicarbonate.

Exposure variables: All daily pH, base excess, standard bicarbonate, lactate, sodium and chloride measures values which were independently associated with BPD/death in multivariable logistic regression analysis.

Direction: ">": if the predictor values for BPD-free survivors are higher than for infants with BPD/death; "<": if the predictor values for BPD-free survivors are lower than for infants with BPD/death.