

Supplementary Table 1, Type of variables, model used to predict missing data, and percentages of values missing for each variable included in the imputation model.

Variables	Type of variable	Model used to predict missing data	Percentages of missing values among survivors at 5
inborn	Binary	No missing data	0%
Gestational age	Categorical	No missing data	0%
Maternal characteristics at birth			
Maternal age at birth	Categorical (3 categories)	Multinomial regression	0%
Primiparity	Binary	Logistic regression	1%
Maternal born in France	Binary	Logistic regression	1%
Living in a couple relationship	Binary	Logistic regression	5%
Parents' socio-economic status*	Categorical (5 categories)	Multinomial regression	5%
Maternal level of education	Categorical (5 categories)	Multinomial regression	6%
Obstetric factors			
Multiple pregnancy	Binary	No missing data	0%
Infertility treatment	Binary	Logistic regression	1%
Antenatal steroids	Binary	No missing data	0%
Tocolysis	Binary	Logistic regression	<1%
Antenatal administration of magnesium sulphate	Binary	Logistic regression	1%
Premature rupture of membranes	Binary	Logistic regression	<1%
Spontaneous labour	Binary	Logistic regression	3%
Chorioamnionitis	Binary	Logistic regression	2%
Antepartum haemorrhage	Binary	Logistic regression	1%
Pre-eclampsia	Binary	Logistic regression	2%
Caesarean	Binary	Logistic regression	1%
Neonatal factors			
Cephalic presentation	Binary	Logistic regression	1%
Male sex	Binary	Logistic regression	0%
Small-for-gestational age [†]	Binary	Logistic regression	0%
Major congenital malformation	Binary	No missing data	0%
Surfactant	Binary	Logistic regression	1%
Severe cerebral lesions	Binary	Logistic regression	1%
Severe bronchopulmonary dysplasia	Binary	Logistic regression	3%
Attempted CPAP in the first 24 hours of life	Binary	Logistic regression	1%
Respiratory distress syndrome	Binary	Logistic regression	2%
Cumulative duration of mechanical ventilation	Continuous	Predictive mean matching	1%
Severe necrotising enterocolitis	Binary	Logistic regression	1%
Severe retinopathy of prematurity	Binary	Logistic regression	1%
Late onset sepsis	Binary	Logistic regression	1%
Treatment of patent ductus arteriosus with NSAIDs	Binary	Logistic regression	2%
Surgical treatment of patent ductus arteriosus	Binary	Logistic regression	4%
Breast milk at discharge	Categorical (3 categories)	Multinomial regression	7%
At 2 years corrected age			
Cerebral palsy	Categorical	Multinomial regression	16%

	(5 categories)		
Other abnormal neuro motor signs	Binary	Logistic regression	16%
Hearing disabilities	Categorical (3 categories)	Logistic regression	18%

Supplementary Table 1 (Continued)

Variables	Type of variable	Model used to predict missing data	Percentages of missing values among survivors at 5
Visual disabilities	Categorical (5 categories)	Logistic regression	22%
ASQ Communication score	Continuous	Predictive mean matching	17%
ASQ Gross motor score	Continuous	Predictive mean matching	19%
ASQ Fine motor score	Continuous	Predictive mean matching	20%
ASQ Problem solving score	Continuous	Predictive mean matching	21%
ASQ Personal-social score	Continuous	Predictive mean matching	20%
Small vocabulary stock	Binary	Logistic regression	22%
At 5½ years			
Cerebral Palsy	Categorical (5 categories)	Multinomial regression	29%
Hearing disabilities	Categorical (4 categories)	Multinomial regression	31%
Visual disabilities	Categorical (4 categories)	Multinomial regression	38%
WPPSI-IV FSIQ score	Continuous	Predictive mean matching	40%
MABC-2 Total score	Continuous	Predictive mean matching	40%
SDQ total score	Continuous	Predictive mean matching	39%

ASQ=Ages and Stages questionnaire (Squire, 2009); WPPSI-IV=Wechsler Preschool and Primary Scale of Intelligence-Fourth edition (Wechsler, 2014); FSIQ= Full-Scale Intelligence quotient; MABC-2=Movement Assessment Battery for Children- Second Edition (Henderson, 2007); SDQ= Strengths and difficulties questionnaire (Goodman, 1997).

All variables were included as a predictor of all imputation models.

* Defined as the highest occupational status between occupations of the mother and the father, or mother only if living alone.

† Small-for- gestational age was defined as birth weight less than the 10th percentile for gestational age and sex based on French intrauterine growth curves (Ego, 2016).

Supplementary Table 2, Comparison of eligible infants and those missing information about antenatal corticosteroid administration.

	Eligible infants		Antenatal steroids not available or incomplete data		Chi2
	n=3355		n=102		p-value
Gestational age, week					
24	161/3355	4.8	6/102	5.9	0.36
25	273/3355	8.1	9/102	8.8	
26	357/3355	10.6	13/102	12.7	
27	338/3355	10.1	16/102	15.7	
28	408/3355	12.2	8/102	7.8	
29	452/3355	13.5	8/102	7.8	
30	609/3355	18.2	19/102	18.6	
31	757/3355	22.6	23/102	22.5	
Maternal characteristics at birth					
Maternal age					
<25 years	627/3353	18.7	17/102	16.7	0.87
25-34 years	1992/3353	59.4	62/102	60.8	
≥35 years	734/3353	21.9	23/102	22.5	
Mother born in France	2485/3271	76.0	76/95	80.0	0.87
Parents' socio-economic status*					
Professional	688/3126	22.0	16/83	19.3	0.86
Intermediate	639/3126	20.4	19/83	22.9	
Administrative, public service, self-employed, students	844/3126	27.0	22/83	26.5	
Shop assistants, service workers	462/3126	14.8	10/83	12.0	
Manual workers	397/3126	12.7	12/83	14.5	
Unemployed	96/3126	3.1	4/83	4.8	
Obstetric factors					
Primiparous	1810/3324	54.5	47/97	48.5	0.50
Infertility treatment	563/3312	17.0	17/93	18.3	0.75
Antenatal steroids					
No	581/3355	17.3	-	-	0.026
Incomplete course	584/3355	17.4	-	-	
Complete course	2190/3355	65.3	-	-	
Tocolysis	1881/3342	56.3	41/92	44.6	0.32
Antenatal administration of magnesium sulphate	272/3314	8.2	5/93	5.4	0.37
Premature rupture of membranes	1040/3317	31.4	26/96	27.1	0.69
Spontaneous labour	1683/3261	51.6	44/89	49.4	0.10
Chorioamnionitis	112/3289	3.4	6/90	6.7	0.85
Antepartum haemorrhage	203/3319	6.1	5/89	5.6	0.75
Pre-eclampsia	564/3275	17.2	17/92	18.5	0.65
Caesarean section	2151/3332	64.6	63/101	62.4	0.76
Multiple pregnancy	1102/3355	32.8	35/102	34.3	
Neonatal factors					
Cephalic presentation	2063/3243	63.6	65/94	69.1	0.27
Male sex	1768/3355	52.7	62/102	60.8	0.11
Small-for-gestational age†	1156/3352	34.5	34/102	33.3	0.81

* Defined as the highest occupational status of the mother and father, or mother only if living alone.

† Small-for-gestational age was defined as birth weight less than the 10th percentile for gestational age and sex based on French intrauterine "EPOPé" growth curves (Ego 2016).

Supplementary Table 3, Comparison between matched and unmatched inborn infants.

	Matched Inborn n=1235		Unmatched Inborn n=1622		p-value	
Gestational age, week						
24	66/1235	5.3	64/1622	3.9	<.0001	
25	91/1235	7.4	142/1622	8.8		
26	105/1235	8.5	203/1622	12.5		
27	99/1235	8.0	198/1622	12.2		
28	121/1235	9.8	240/1622	14.8		
29	108/1235	8.7	293/1622	18.1		
30	235/1235	19.0	293/1622	18.1		
31	410/1235	33.2	189/1622	11.7		
Maternal characteristics at birth						
Maternal age						
<25 years	224/1234	18.2	283/1621	17.5	0.35	
25-34 years	743/1234	60.2	950/1621	58.6		
≥35 years	267/1234	21.6	388/1621	23.9		
Mother born in France	888/1205	73.7	1204/1589	75.8	0.30	
Parents' socio-economic status*						
Professional	241/1148	21.0	370/1533	24.1	0.075	
Intermediate	243/1148	21.2	305/1533	19.9		
Administrative, public service, self-employed, students	315/1148	27.4	418/1533	27.3		
Shop assistants, service workers	163/1148	14.2	211/1533	13.8		
Manual workers	142/1148	12.4	196/1533	12.8		
Unemployed	44/1148	3.8	33/1533	2.2		
Obstetric factors						
Primiparous	658/1223	53.8	897/1612	55.6	0.32	
Multiple pregnancy	399/1235	32.3	574/1622	35.4	0.085	
Infertility treatment	198/1221	16.2	326/1605	20.3	0.006	
Antenatal steroids						
No	337/1235	27.3	0/1622	0.0	0.006	
Incomplete course	406/1235	32.9	47/1622	2.9		
Complete course	492/1235	39.8	1575/1622	97.1		
Tocolysis	651/1231	52.9	1006/1616	62.3	<0.001	
Antenatal administration of magnesium sulphate	104/1216	8.6	162/1609	10.1	0.17	
Premature rupture of membranes	359/1222	29.4	593/1615	36.7	<0.001	
Spontaneous labour	614/1195	51.4	755/1587	47.6	0.047	
Chorioamnionitis	44/1207	3.6	59/1599	3.7	0.95	
Antepartum haemorrhage	80/1223	6.5	70/1606	4.4	0.01	
Pre-eclampsia	229/1207	19.0	284/1585	17.9	0.48	
Caesarean	781/1229	63.5	1110/1619	68.6	0.005	
Neonatal factors						
Cephalic presentation	779/1202	64.8	971/1579	61.5	0.073	
Male sex	651/1235	52.7	852/1622	52.5	0.92	
Small-for-gestational age‡	418/1235	33.8	614/1621	37.9	0.026	

* Defined as the highest occupational status of the mother and father, or mother only if living alone.

‡ Small-for-gestational age was defined as birth weight less than the 10th percentile for gestational age and sex based on French intrauterine “EPOPE” growth curves (Ego 2016).

Supplementary Table 4: Survival without moderate-severe impairment at age 5½ years in a matched cohort of children from EPIPAGE-2 according to gestational age at birth.

	Matched cohort 1:n (up to 4) ^a				Inborn vs outborn			
	Inborn		Outborn		Unadjusted OR (95% CI) ^b	p-value	Adjusted OR (95% CI) ^{b,c}	p-value
	n/N	%	n/N	%				
Survival without severe or moderate disabilities at 5.5 years^c								
24 weeks	9/66	14.0	3/31	11.5	1.27 (0.29-5.46)	0.75	<i>Did not converge</i>	
25 weeks	36/91	38.3	13/40	34.0	1.21 (0.49-2.95)	0.68	0.91 (0.27-3.08)	0.89
26 weeks	58/105	59.0	19/49	39.0	2.25 (1.01-5.06)	0.05	2.88 (1.01-8.24)	0.048
27 weeks	61/99	65.1	20/41	48.8	1.96 (0.87-4.44)	0.11	2.50 (0.77-8.12)	0.13
28 weeks	90/121	72.9	32/47	68.9	1.22 (0.53-2.80)	0.65	1.42 (0.45-4.52)	0.55
29 weeks	86/108	77.0	37/51	73.0	1.23 (0.48-3.18)	0.67	1.29 (0.34-4.92)	0.71
30 weeks	185/235	77.5	66/81	81.7	0.77 (0.37-1.61)	0.49	0.78 (0.34-1.80)	0.55
31 weeks	348/410	83.8	130/158	82.8	1.07 (0.57-2.03)	0.82	1.03 (0.51-2.12)	0.93

^a Result after multiple imputation for missing data and weighted for the variable matching ratio. Matching were performed in each subgroup.

^b OR were calculated using conditional logistic regression.

^c OR adjusted for maternal age, mother born in France, parents' socio-economic status, primiparous, infertility treatment, multiple pregnancy, tocolysis, antenatal administration of magnesium sulphate, context of preterm birth, caesarean section, cephalic presentation, small-for-gestational age and sex.

^d Severe or moderate cerebral palsy (Gross Motor Function Classification System level-2/5), visions (bilateral binocular visual acuity < 3.2/10), hearing (uni-bilateral hearing loss > 40dB not corrected or partially corrected with hearing aid), and full-scale intelligence quotient < 2 standard deviations below the mean of the reference sample born at term (See Pierrat 5 ans).