

Table S1 Notations of Gestational Age and Ultrasound Measures

	<i>Week 11-13</i>	<i>Week 14-19</i>	<i>Week 20</i>	<i>Week 21-35</i>			<i>Week 36-</i>
Gestational Age (Weeks)	GA11W1	GA14W1	GA20W1	GA21W1	GA21W2	GA21W3	GA36W1
Gestational Age (Days)	GA11D1	GA14D1	GA20D1	GA21D1	GA21D2	GA21D3	GA36D1
Crown-Rump Length	GA11CRL1						
Nuchal Translucency	GA11NT1						
Biparietal Diameter		GA14BPD1	GA20BPD1	GA21BPD1	GA21BPD2	GA21BPD3	GA36BPD1
Head Circumference		GA14HC1	GA20HC1	GA21HC1	GA21HC2	GA21HC3	GA36HC1
Abdominal Circumference		GA14AC1	GA20AC1	GA21AC1	GA21AC2	GA21AC3	GA36AC1
Femur Length		GA14FL1	GA20FL1	GA21FL1	GA21FL2	GA21FL3	GA36FL1
Estimated Fetal Weight		GA14EFW1	GA20EFW1	GA21EFW1	GA21EFW2	GA21EFW3	GA36EFW1

Note:

Gestational age (W/D: weeks/days), crown-rump length (CRL) (mm) and nuchal translucency (NT) (mm) taken once during the week 11 - week 13 (GA11) are denoted by GA11W1, GA11D1, GA11CRL1 and GA11NT1. Gestational age (W/D: weeks/days), biparietal diameter (BPD) (mm), head circumference (HC) (mm), abdominal circumference (AC) (mm), femur length (FL) (mm) and estimated fetal weight (EFW) (g) taken once during the week 14 - week 19 (GA14), once in the week 20 (GA20), three times during the week 21 - week 35 (GA21) and once in the week 36 or later (GA36) are denoted by: GA14W1, GA14D1, GA20W1, GA20D1, GA21W1, GA21D1, GA21W2, GA21D2, GA21W3, GA21D3, GA36W1 and GA36D1 (gestational age); GA14BPD1, GA20BPD1, GA21BPD1, GA21BPD2, GA21BPD3 and GA36BPD1 (biparietal diameter); GA14HC1, GA20HC1, GA21HC1, GA21HC2, GA21HC3 and GA36HC1 (head circumference); GA14AC1, GA20AC1, GA21AC1, GA21AC2, GA21AC3 and GA36AC1 (abdominal circumference); GA14FL1, GA20FL1, GA21FL1, GA21FL2, GA21FL3 and GA36FL1 (femur length); GA14EFW1, GA20EFW1, GA21EFW1, GA21EFW2, GA21EFW3 and GA36EFW1 (estimated fetal weight).

Table S2-1 Random Forest Variable Importance (VI) and Regression Coefficient from Run 1:
All Variables (Dependent Variable: Newborn's Weight [g])

Variable	Random Forest		Linear Regression	
	VI Value	VI Rank	Coefficient	P-Value
Gestational Age - Delivery (Weeks)	81437955	1	*170.2000	0.0000
GA36EFW1 (g)	59566065	2	*0.3300	0.0000
GA36AC1 (mm)	40359557	3	*3.3950	0.0055
Maternal Weight at Delivery Time (kg)	12600886	4	-2.9740	0.8606
GA36BPD1 (mm)	11536549	5	3.5670	0.2456
Maternal BMI at Delivery Time	9183122	6	25.9200	0.5537
Neonatal Intensive Care Unit Hospitalization	8666421	7	*-45.8000	0.0265
GA36FL1 (mm)	8167498	8	0.8415	0.8153
GA11CRL1 (mm)	7670171	9	-0.1804	0.8833
GA21AC1 (mm)	7394983	10	1.7720	0.0624
GA21BPD2 (mm)	7337688	11	3.0080	0.3310
Maternal Pregestational BMI	6918490	12	-12.7300	0.7878
GA21AC2 (mm)	6435064	13	1.2240	0.1581
GA21AC3 (mm)	6019105	14	*3.7860	0.0039
GA36HC1 (mm)	5840288	15	-0.1518	0.8389
GA21BPD1 (mm)	5804584	16	3.5090	0.2108
GA20AC1 (mm)	5174051	17	0.2379	0.3931
GA20EFW1 (g)	5113174	18	-0.2566	0.1524
Maternal Pregestational Weight (kg)	5066332	19	1.8500	0.9193
GA21EFW1 (g)	4834716	20	*0.2289	0.0472
GA21FL2 (mm)	4749409	21	-3.1040	0.4481
GA20HC1 (mm)	4713837	22	-0.0199	0.9811
GA21HC2 (mm)	4646094	23	-0.6821	0.3531
Apgar Score in 1 Minute After Delivery	4645375	24	0.4369	0.9574
Apgar Score in 5 Minutes After Delivery	4632233	25	2.7750	0.8193
GA21EFW3 (g)	4602151	26	0.0566	0.5850
Maternal Height (cm)	4570952	27	8.3310	0.3864
GA14BPD1 (mm)	4472051	28	*6.8380	0.0270
Maternal Age	4345422	29	-2.3960	0.1433
GA20BPD1 (mm)	4297216	30	-6.3500	0.0544
GA21EFW2 (g)	4291562	31	*0.2961	0.0005
GA21FL1 (mm)	4270426	32	-4.0100	0.2977
GA21HC1 (mm)	4261178	33	-0.3190	0.3783
GA20FL1 (mm)	4222331	34	*9.9590	0.0214
GA14FL1 (mm)	4186594	35	*-9.4160	0.0486
GA11NT1 (mm)	4115745	36	-2.3880	0.6990
GA14AC1 (mm)	3751675	37	-0.6944	0.5587
GA14HC1 (mm)	3564844	38	0.9472	0.3295
GA21D2	3276785	39	*-15.1600	0.0002
GA36W1	3209062	40	*-90.3100	0.0000
GA14EFW1 (g)	3195941	41	0.2681	0.6498
GA21FL3 (mm)	3148541	42	3.1280	0.5050
GA21BPD3 (mm)	3037689	43	-4.2120	0.2591
Gestational Age - Delivery (Days)	2509973	44	*26.3600	0.0000
GA20D1	2486914	45	-0.7006	0.8328
GA21W2	2448127	46	*-68.6300	0.0000
GA21D1	2403058	47	-4.9800	0.2280
GA14D1	2332492	48	1.0580	0.8048

GA21W3	2210537	49	*-48.2000	0.0000
GA11W1	2101369	50	8.0970	0.6390
GA36D1	2070967	51	*-10.4800	0.0046
GA11D1	1873568	52	2.4760	0.5382
GA21HC3 (mm)	1870408	53	-0.3961	0.6457
GA21D3	1695039	54	-5.1410	0.2215
Newborn's Sex - Female	1690467	55	*-72.8900	0.0000
GA21W1	1672527	56	*-42.2900	0.0002
Number of Ultrasound Equipment Types	1266183	57	-1.0670	0.6962
Caesarean Delivery	1154290	58	*83.4100	0.0000
Maternal Abortions	1112585	59	-5.1360	0.5099
Children Alive	1096311	60	*56.7900	0.0027
Maternal Preterm Births	1093502	61	-36.4600	0.0895
GA14W1	966830	62	-2.5850	0.8723
Maternal Term Births	792117	63	-13.2700	0.4956
GA20W1	0	64		

Notes

*:	P-Value < 0.05
AC:	Abdominal Circumference (mm)
BPD:	Biparietal Diameter (mm)
CRL:	Crown-Rump Length (mm)
EFW:	Estimated Fetal Weight (g)
FL:	Femur Length (mm)
HC:	Head Circumference (mm)
NT:	Nuchal Translucency (mm)
GA11:	Gestational Age, Week 11 - Week 13
GA14:	Gestational Age, Week 14 - Week 19
GA20:	Gestational Age, Week 20
GA21:	Gestational Age, Week 21 - Week 35
GA36:	Gestational Age, Week 36 or Later
W/D:	Gestational Age - Weeks/Days

Table S2-2 Random Forest Variable Importance (VI) and Regression Coefficient from Run 1:
All Variables (Dependent Variable: Benn Index: Newborn's Weight/Height)

Variable	Random Forest		Linear Regression	
	VI Value	VI Rank	Coefficient	P-Value
Gestational Age - Delivery (Weeks)	213	1	*0.2775	0.0000
GA36EFW1 (g)	162	2	*0.0005	0.0026
GA36AC1 (mm)	138	3	*0.0070	0.0050
Maternal Weight at Delivery Time (kg)	38	4	0.0093	0.7880
Maternal BMI at Delivery Time	37	5	0.0004	0.9967
GA36BPD1 (mm)	36	6	0.0072	0.2503
GA21AC1 (mm)	32	7	0.0033	0.0855
GA11CRL1 (mm)	32	8	-0.0002	0.9216
GA21BPD2 (mm)	31	9	0.0041	0.5133
GA21AC2 (mm)	27	10	0.0014	0.4243
GA36FL1 (mm)	23	11	0.0039	0.5915
Maternal Pregestational BMI	22	12	-0.0324	0.7362
GA21EFW2 (g)	22	13	*0.0007	0.0001
Maternal Age	22	14	-0.0049	0.1416
GA21AC3 (mm)	21	15	*0.0061	0.0218
GA21EFW1 (g)	20	16	*0.0006	0.0166
GA21HC2 (mm)	20	17	-0.0010	0.5015
Neonatal Intensive Care Unit Hospitalization	20	18	-0.0460	0.2719
GA21BPD1 (mm)	19	19	0.0014	0.8032
GA36HC1 (mm)	18	20	-0.0016	0.2824
GA20AC1 (mm)	18	21	0.0007	0.2050
Maternal Pregestational Weight (kg)	18	22	0.0095	0.7981
GA14FL1 (mm)	18	23	-0.0176	0.0694
Apgar Score in 1 Minute After Delivery	17	24	0.0016	0.9248
GA21FL1 (mm)	17	25	*-0.0188	0.0166
GA21EFW3 (g)	17	26	0.0001	0.5429
GA21HC1 (mm)	17	27	-0.0008	0.2818
GA20EFW1 (g)	17	28	-0.0006	0.0912
Maternal Height (cm)	17	29	-0.0026	0.8923
GA21FL2 (mm)	16	30	-0.0125	0.1315
GA20BPD1 (mm)	16	31	-0.0076	0.2596
GA14BPD1 (mm)	16	32	*0.0145	0.0214
GA20HC1 (mm)	15	33	-0.0004	0.8220
GA11W1	14	34	0.0061	0.8621
GA20FL1 (mm)	14	35	0.0134	0.1265
GA11NT1 (mm)	13	36	-0.0048	0.7014
Apgar Score in 5 Minutes After Delivery	13	37	0.0130	0.5985
GA14AC1 (mm)	13	38	-0.0015	0.5294
GA14HC1 (mm)	12	39	0.0002	0.9016
GA14EFW1 (g)	12	40	0.0004	0.7231
GA21BPD3 (mm)	12	41	-0.0060	0.4312
GA21D2	11	42	*-0.0258	0.0017
GA21FL3 (mm)	11	43	0.0033	0.7297
GA21W2	9	44	*-0.1161	0.0000
GA36W1	9	45	*-0.1473	0.0000
GA20D1	8	46	-0.0016	0.8136
GA14D1	8	47	0.0077	0.3783
Gestational Age - Delivery (Days)	8	48	*0.0433	0.0000

GA21W3	8	49	*-0.0936	0.0000
GA21D1	8	50	-0.0053	0.5268
GA11D1	7	51	0.0013	0.8756
GA21HC3 (mm)	7	52	0.0009	0.6186
GA36D1	6	53	*-0.0201	0.0074
GA21D3	6	54	-0.0058	0.4996
GA21W1	5	55	*-0.0508	0.0249
Newborn's Sex - Female	5	56	*-0.1179	0.0000
Maternal Abortions	4	57	0.0024	0.8772
Caesarean Delivery	4	58	*0.1594	0.0000
Children Alive	4	59	*0.0883	0.0216
Number of Ultrasound Equipment Types	4	60	0.0026	0.6399
GA14W1	4	61	0.0127	0.6964
Maternal Term Births	4	62	-0.0294	0.4582
Maternal Preterm Births	4	63	-0.0448	0.3044
GA20W1	0	64		

Notes

<i>*</i> :	P-Value < 0.05
<i>AC</i> :	Abdominal Circumference (mm)
<i>BPD</i> :	Biparietal Diameter (mm)
<i>CRL</i> :	Crown-Rump Length (mm)
<i>EFW</i> :	Estimated Fetal Weight (g)
<i>FL</i> :	Femur Length (mm)
<i>HC</i> :	Head Circumference (mm)
<i>NT</i> :	Nuchal Translucency (mm)
<i>GA11</i> :	Gestational Age, Week 11 - Week 13
<i>GA14</i> :	Gestational Age, Week 14 - Week 19
<i>GA20</i> :	Gestational Age, Week 20
<i>GA21</i> :	Gestational Age, Week 21 - Week 35
<i>GA36</i> :	Gestational Age, Week 36 or Later
<i>W/D</i> :	Gestational Age - Weeks/Days

Table S2-3 Random Forest Variable Importance (VI) and Regression Coefficient from Run 1: All Variables (Dependent Variable: Ponderal Index: Newborn's Weight/Height³)

Variable	Random Forest		Linear Regression	
	VI Value	VI Rank	Coefficient	P-Value
GA21AC1 (mm)	1804	1	0.0061	0.6314
GA36AC1 (mm)	1598	2	0.0296	0.0697
Gestational Age - Delivery (Weeks)	1417	3	*0.3250	0.0000
GA21BPD2 (mm)	1230	4	0.0145	0.7260
Maternal BMI at Delivery Time	1205	5	-0.1966	0.7364
GA36EFW1 (g)	1196	6	0.0006	0.5464
GA21AC2 (mm)	1068	7	-0.0012	0.9168
Maternal Age	1054	8	-0.0311	0.1542
GA11CRL1 (mm)	868	9	0.0031	0.8499
GA21EFW2 (g)	808	10	*0.0031	0.0064
Maternal Pregestational BMI	728	11	-0.2214	0.7256
Apgar Score in 5 Minutes After Delivery	727	12	-0.1616	0.3187
GA21EFW1 (g)	719	13	*0.0032	0.0373
GA36BPD1 (mm)	672	14	0.0163	0.6903
GA21HC2 (mm)	671	15	-0.0012	0.9037
Maternal Weight at Delivery Time (kg)	662	16	0.0748	0.7408
GA21FL2 (mm)	657	17	*-0.1148	0.0356
GA20FL1 (mm)	572	18	-0.0284	0.6232
GA20BPD1 (mm)	559	19	0.0174	0.6932
GA20EFW1 (g)	558	20	-0.0032	0.1774
Maternal Height (cm)	545	21	-0.1067	0.4059
GA36FL1 (mm)	541	22	0.0587	0.2220
GA11NT1 (mm)	530	23	-0.0205	0.8034
GA21BPD1 (mm)	527	24	-0.0365	0.3298
GA14BPD1 (mm)	520	25	0.0536	0.1934
GA21FL1 (mm)	512	26	*-0.1944	0.0002
GA20AC1 (mm)	489	27	0.0057	0.1269
GA20HC1 (mm)	472	28	-0.0023	0.8358
Maternal Pregestational Weight (kg)	462	29	0.0990	0.6846
GA21AC3 (mm)	462	30	0.0126	0.4697
GA14HC1 (mm)	444	31	-0.0049	0.7033
GA14FL1 (mm)	437	32	-0.0740	0.2455
Apgar Score in 1 Minute After Delivery	431	33	0.0915	0.4015
GA11W1	426	34	-0.0138	0.9522
GA21FL3 (mm)	407	35	0.0151	0.8092
GA21HC1 (mm)	398	36	-0.0063	0.1907
GA21BPD3 (mm)	375	37	-0.0044	0.9290
GA21EFW3 (g)	374	38	0.0005	0.7374
GA14AC1 (mm)	370	39	-0.0016	0.9180
GA36HC1 (mm)	355	40	-0.0150	0.1332
GA14EFW1 (g)	317	41	0.0003	0.9701
GA21D2	316	42	-0.0900	0.0951
GA21HC3 (mm)	308	43	0.0209	0.0686
GA21W1	240	44	0.1859	0.2112
GA21W2	233	45	-0.2402	0.0631
GA11D1	232	46	-0.0273	0.6116
GA14D1	219	47	0.0539	0.3455
GA20D1	218	48	-0.0015	0.9730

Gestational Age - Delivery (Days)	217	49	0.0555	0.1816
GA21D1	209	50	0.0506	0.3582
GA21D3	186	51	0.0240	0.6686
GA36D1	171	52	-0.0703	0.1538
Number of Ultrasound Equipment Types	150	53	0.0532	0.1448
GA21W3	149	*54	-0.3869	0.0012
Maternal Term Births	144	55	-0.1025	0.6934
Neonatal Intensive Care Unit Hospitalization	143	56	0.0954	0.7289
Children Alive	137	57	0.0747	0.7672
Maternal Abortions	137	58	0.0837	0.4208
GA36W1	106	*59	-0.3329	0.0153
Caesarean Delivery	99	*60	0.4253	0.0158
Maternal Preterm Births	99	61	-0.1428	0.6180
GA14W1	87	62	0.0974	0.6498
Newborn's Sex - Female	62	63	-0.2758	0.1077
GA20W1	0	64		

Notes

*:	P-Value < 0.05
AC:	Abdominal Circumference (mm)
BPD:	Biparietal Diameter (mm)
CRL:	Crown-Rump Length (mm)
EFW:	Estimated Fetal Weight (g)
FL:	Femur Length (mm)
HC:	Head Circumference (mm)
NT:	Nuchal Translucency (mm)
GA11:	Gestational Age, Week 11 - Week 13
GA14:	Gestational Age, Week 14 - Week 19
GA20:	Gestational Age, Week 20
GA21:	Gestational Age, Week 21 - Week 35
GA36:	Gestational Age, Week 36 or Later
W/D:	Gestational Age - Weeks/Days

Figure S1-1 Random Forest Variable Importance Values of Top 20 Predictors for Newborn’s Weight

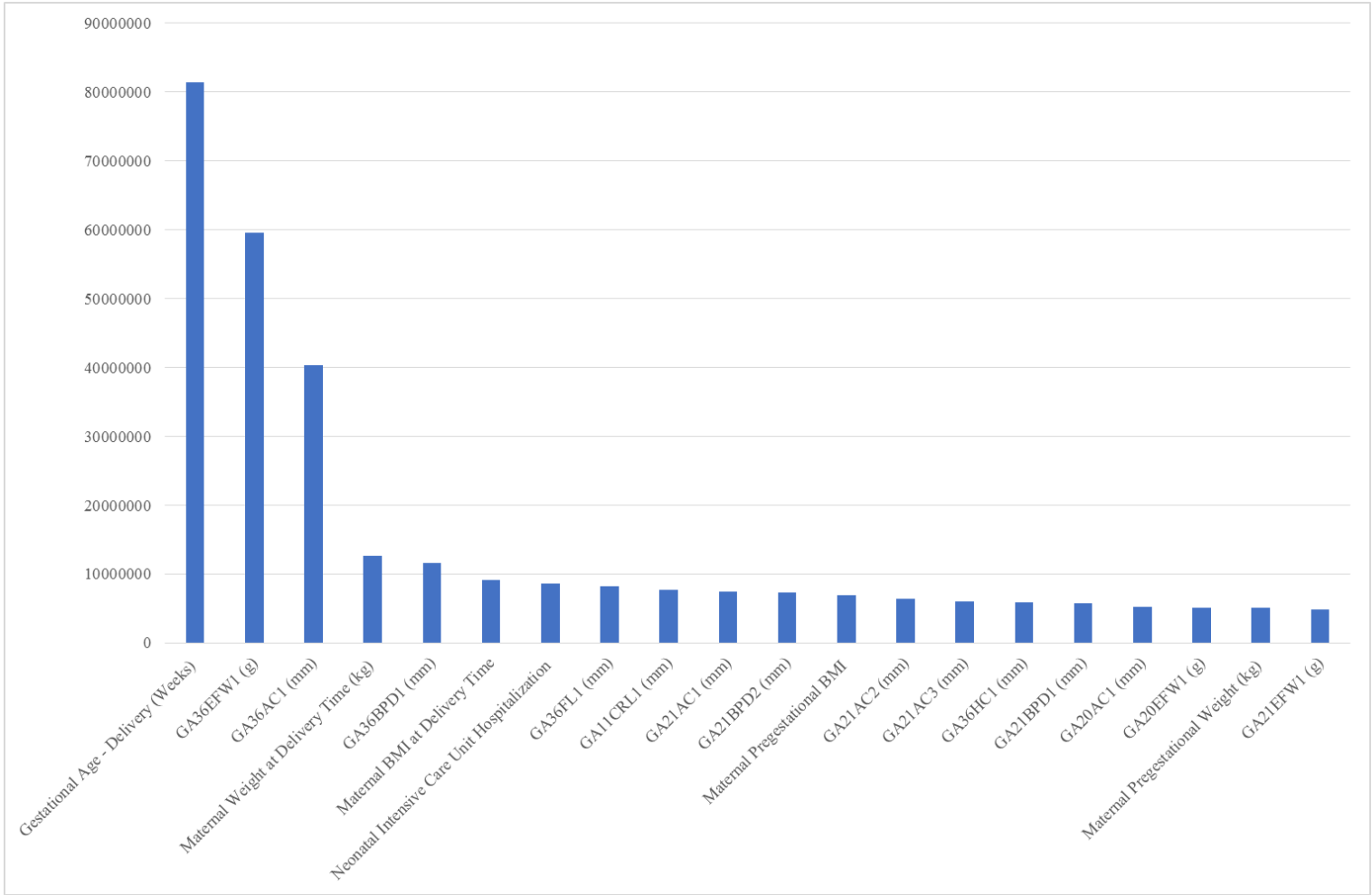


Figure S1-2 Random Forest Variable Importance Values of Top 20 Predictors for Newborn’s Weight/Height

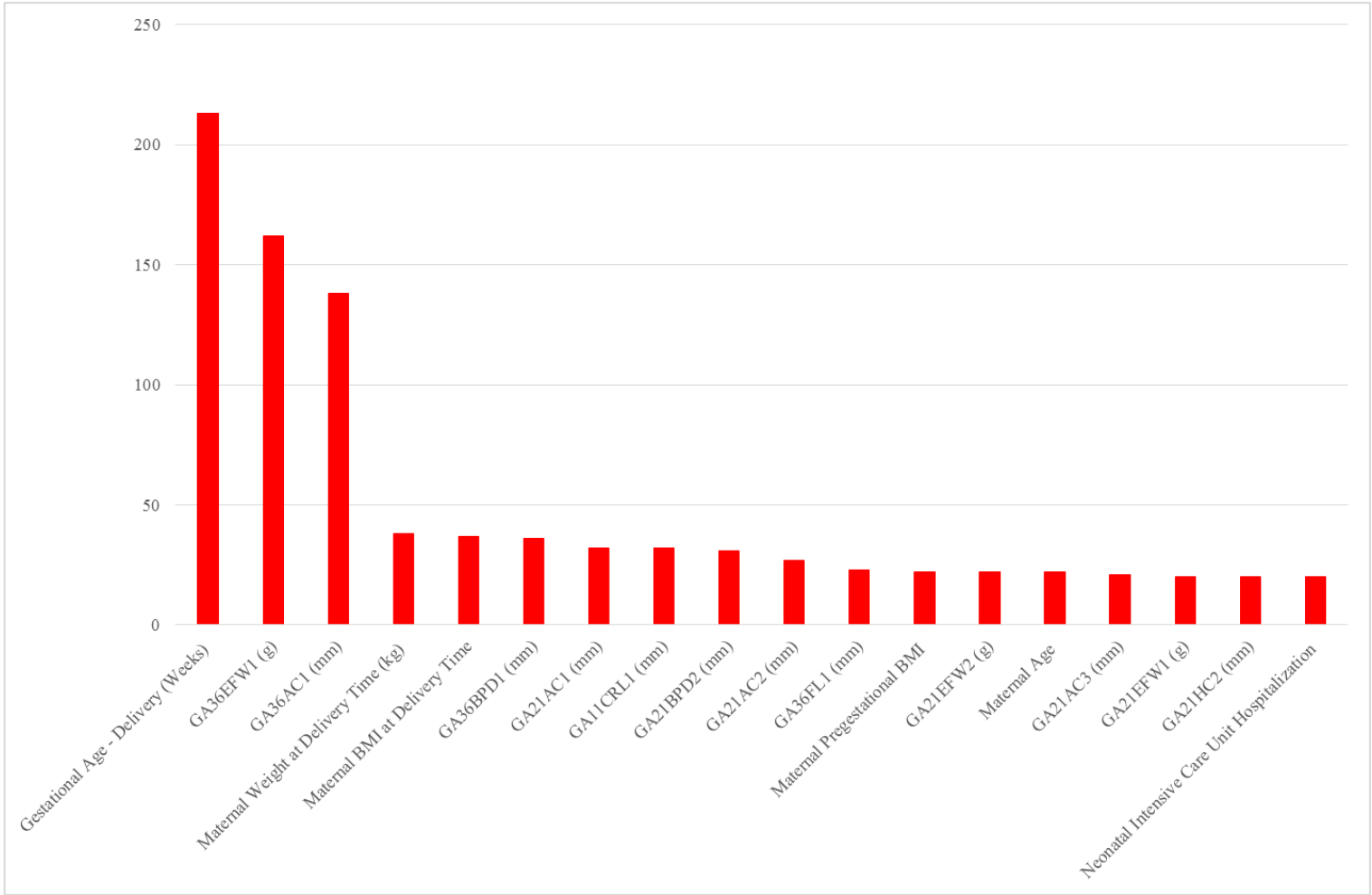


Figure S1-3 Random Forest Variable Importance Values of Top 20 Predictors for Newborn’s Weight/Height³

