

Down syndrome 'triple' and 'quadruple' risks using the SURUSS 2013 parameters

Mat. age	Multiples of the Median (MoM)				<i>apriori</i> risks		Down syndrome risk (1:N)							
							AEh (US)		AEhD (US)		AEh (LMP)		AEhD (LMP)	
	AFP	uE3	hCG	DIA	2 nd	term	2nd	term	2nd	term	2nd	term	2nd	term
25.5	0.5	0.6	0.7	0.6	1030.9	1338.8	783	1017	6058	7868	1092	1418	8082	10496
25.5	0.5	0.6	0.7	3.4	1030.9	1338.8	783	1017	3	3	1092	1418	4	5
25.5	0.5	1.9	0.7	0.6	1030.9	1338.8	1134	1473	2808	3647	774	1005	2133	2771
25.5	0.5	1.9	0.7	3.4	1030.9	1338.8	1134	1473	3	4	774	1005	2	3
25.5	0.5	1.9	3.8	0.6	1030.9	1338.8	393	511	1448	1881	179	232	801	1040
25.5	0.5	1.9	3.8	3.4	1030.9	1338.8	393	511	21	28	179	232	9	11
25.5	0.6	1.3	0.6	0.4	1030.9	1338.8	3524	4576	18784	24395	2815	3655	16928	21984
25.5	0.6	1.3	0.6	4.4	1030.9	1338.8	3524	4576	2	2	2815	3655	1	2
25.5	0.6	1.3	3.3	0.4	1030.9	1338.8	273	355	1277	1658	178	232	1032	1340
25.5	0.6	1.3	3.3	4.4	1030.9	1338.8	273	355	4	5	178	232	2	3
25.5	1.8	0.6	3.8	0.6	1030.9	1338.8	75	97	642	834	115	149	1147	1490
25.5	1.8	0.6	3.8	3.4	1030.9	1338.8	75	97	24	31	115	149	34	44
25.5	3.8	0.5	3.3	0.4	1030.9	1338.8	44	57	276	359	87	113	675	877
35.5	0.5	0.6	0.7	0.6	271.3	352.3	206	268	1594	2070	287	373	2127	2762
35.5	0.5	1.9	0.7	0.6	271.3	352.3	298	388	739	960	204	265	561	729
35.5	0.5	1.9	3.8	0.6	271.3	352.3	104	134	381	495	47	61	211	274
35.5	0.6	0.5	0.6	0.4	271.3	352.3	457	594	8192	10638	744	966	12197	15840
35.5	0.6	1.3	0.6	0.4	271.3	352.3	927	1204	4943	6419	741	962	4454	5785
35.5	0.8	0.3	0.7	0.4	271.3	352.3	259	337	6333	8224	582	756	12592	16353
35.5	0.8	1.2	5.1	0.4	271.3	352.3	104	136	373	484	65	84	305	396
35.5	0.8	1.2	5.1	3.7	271.3	352.3	104	136	11	14	65	84	6	8
35.5	1.8	0.6	0.7	3.4	271.3	352.3	4359	5662	98	128	5612	7288	124	161
35.5	1.8	0.6	3.8	0.6	271.3	352.3	20	26	169	219	30	39	302	392
35.5	1.8	0.6	3.8	3.4	271.3	352.3	20	26	6	8	30	39	9	12
35.5	3.8	0.5	0.6	4.4	271.3	352.3	5582	7249	34	44	8780	11402	52	68
35.5	4.1	0.3	0.7	3.7	271.3	352.3	838	1088	22	28	1985	2578	50	66

RED indicates differences from original SURUSS parameters

variable lower truncation limit for NT

10 wk (0.50), 11 wk (0.70), 12 wk (0.80), 13 wk (0.85)

First Trimester (weeks 10 through 13)

Marker	Unaffected		Down Syndrome		truncation limit
	log x	log sd	log x	log sd	
NT (N)	0.0000	A	n(x)	0.2313	x to 2.5
PAPP-A (P)	0.0000	0.2495	p(x)	0.2802	0.2-3.0

A: 10 wk (0.1550), 11 wk (0.1275), 12 wk (0.1105), 13 wk (0.1105)

$n(x) = 0.8554679 - 0.0064686*(ga \text{ in days})$

$p(x) = -1.1444 + 0.00965*(ga \text{ in days})$

Second Trimester (weeks 15 through 20)

Marker	Unaffected		Down Syndrome		truncation limit
	log x	log sd	log x	log sd	
AFP (A)	0.0000	0.1399	-0.1308	0.1398	0.5-2.5
uE3 (E)	0.0000	0.1142	-0.1549	0.1238	0.4-2.0
hCG (H)	0.0000	0.2276	0.3118	0.2395	0.4-5.0
DIA (D)	0.0000	0.1779	0.3384	0.2213	0.3-5.0

Correlations

	UA	T21		UA	T21
N_P-10	-0.0429	-0.1506	P_H1	0.2198	0.1284
N_P-11	-0.0516		P_F1	0.1395	-0.0692
N_P-12	-0.0559		P_A	0.1160	0.0660
N_P-13	-0.0559		P_E	0.1213	0.3712
N_H1-10	-0.063	-0.0819	P_H	0.0624	-0.2295
N_H1-11	-0.0758		P_D	0.0237	-0.1842
N_H1-12	-0.0821				
N_H1-13	-0.0821		A_E	0.1981	-0.1093
N_F1-10	-0.0325	0.1080	A_H	0.1535	0.1920
N_F1-11	-0.0391		A_D	0.2033	0.1770
N_F1-12	-0.0423		E_H	-0.0416	-0.3808
N_F1-13	-0.0423		E_D	-0.0875	-0.3276
N_A-10	-0.0079	0.0809	H_D	0.4293	0.4197
N_A-11	-0.0095				
N_A-12	-0.0103				
N_A-13	-0.0103				
N_E-10	0.0495	0.0695			
N_E-11	0.0596				
N_E-12	0.0645				
N_E-13	0.0645				
N_H-10	-0.0549	0.0466			
N_H-11	-0.0661				
N_H-12	-0.0716				
N_H-13	-0.0716				
N_D-10	-0.0415	0.1854			
N_D-11	-0.0499				
N_D-12	-0.0540				
N_D-13	-0.0540				

SURUSS13 Parameters

LMP Dated

First Trimester (weeks 10 through 13)

Marker	Unaffected		Down Syndrome		truncation limit
	log x	log sd	log x	log sd	
PAPP-A (P)	0.0000	0.2670	p(x)	0.2959	0.2-3.0

$$p(x) = -1.1444 + 0.00965 * (\text{ga in days})$$

Second Trimester (weeks 15 through 20)

Marker	Unaffected		Down Syndrome		truncation limit
	log x	log sd	log x	log sd	
AFP (A)	0.0000	0.1417	-0.1308	0.1416	0.5-2.5
uE3 (E)	0.0000	0.1284	-0.1549	0.1370	0.4-2.0
hCG (H)	0.0000	0.2279	0.3118	0.2397	0.4-5.0
DIA (D)	0.0000	0.1779	0.3384	0.2213	0.3-5.0

Correlations

	UA		T21			UA		T21	
P_A	0.1728	0.1211	A_E	0.2473	-0.0288				
P_E	0.2776	0.4671	A_H	0.1336	0.1725				
P_H	0.0214	-0.2487	A_D	0.1896	0.1661				
P_D	0.0030	-0.1879	E_H	-0.1008	-0.4008				
			E_D	-0.1083	-0.3182				
			H_D	0.4225	0.4148				