

Supplementary material

Comparison of four methods to measure haemoglobin concentrations in whole blood donors (COMPARE): a diagnostic accuracy study

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Supplementary Table 1. Participants characteristics by study stage and sex

	Stage 1		Stage 2	
	Men	Women	Men	Women
Number of participants^a	6081	6677	4408	4674
Testing strategy				
NHSBT method	6081	6677	4408	4674
Post donation strategy	5920	6394	0	0
Capillary HemoCue	5279	5724	0	0
OrSense	2646	3058	2215	2522
Haemospect	2159	2018	2193	2152
Age, years	50.6 (13.0)	47.2 (13.4)	49.6 (13.4)	45.9 (13.7)
Ethnicity^c				
White	5821 (95.9%)	6433 (96.6%)	4228 (96.2%)	4558 (97.6%)
Mixed	32 (0.5%)	42 (0.6%)	20 (0.5%)	24 (0.5%)
Asian	44 (0.7%)	18 (0.3%)	26 (0.6%)	16 (0.3%)
Black	13 (0.2%)	11 (0.2%)	15 (0.3%)	3 (0.1%)
Chinese/Other	5 (0.1%)	6 (0.1%)	12 (0.3%)	9 (0.2%)
Prefer Not to Answer	157 (2.6%)	152 (2.3%)	93 (2.1%)	58 (1.2%)
Fitzpatrick Skin Score^d				
Type I (most sensitive)	88 (2.4%)	184 (3.9%)	59 (2.8%)	116 (4.7%)
Type II	1300 (35.7%)	2083 (44.5%)	821 (39.3%)	1154 (47.0%)
Type III	2005 (55.0%)	2206 (47.1%)	1127 (53.9%)	1106 (45.1%)
Type IV	239 (6.6%)	200 (4.3%)	82 (3.9%)	77 (3.1%)
Type V-VI (least sensitive)	14 (0.4%)	12 (0.3%)	1 (0.1%)	2 (0.1%)
Weight, kg^b	86.7 (14.1)	73.3 (15.2)	86.1 (14.4)	73.6 (15.4)
Blood group^e				
A+	1873 (30.9%)	1962 (29.5%)	1272 (29.0%)	1374 (29.5%)
A-	492 (8.1%)	689 (10.3%)	370 (8.4%)	488 (10.5%)
AB+	174 (2.9%)	79 (1.2%)	137 (3.1%)	36 (0.8%)
AB-	46 (0.8%)	54 (0.8%)	35 (0.8%)	42 (0.9%)
B+	420 (6.9%)	467 (7.0%)	301 (6.9%)	299 (6.4%)
B-	129 (2.1%)	191 (2.9%)	110 (2.5%)	112 (2.4%)
O+	2138 (35.2%)	2234 (33.5%)	1601 (36.4%)	1621 (34.8%)
O-	800 (13.2%)	986 (14.8%)	567 (12.9%)	689 (14.8%)
Haemoglobin concentration, g/L				
Baseline ^f	150.8 (10.0)	135.3 (9.5)	150.7 (10.2)	134.8 (9.5)
Return visit	147.4 (10.4)	131.4 (10.4)	-	-
Haemoglobin concentration: <135g/L (M) or <125g/L (W)				
Baseline ^f	286 (4.8%)	830 (12.6%)	237 (5.4%)	584 (12.5%)
Return visit	645 (10.6%)	1563 (23.4%)	-	-
New donor^g	65 (1.1%)	116 (1.7%)	72 (1.6%)	83 (1.8%)
Number of blood donations in previous 2 years	4.1 (1.7)	3.4 (1.6)	3.6 (1.7)	3.1 (1.6)

Data presented are mean (standard deviation) or number of donors (%)

^a Excluding 7189 donors who did not attend visit 2 (for Stage 1 donors), did not have Hb measured on the Sysmex haematology analyser (at visit 2 for Stage 1 donors, or Stage 2), or missing testing device measurement.

^b Weight: Missing 8087 (37%)

^c Ethnicity: Missing 44 (0.2%)

^d The Fitzpatrick scale is a numerical classification schema for human skin colour (Fitzpatrick TB. The validity and practicality of sun-reactive skin types i through vi. Arch Dermatol 1988; 124: 869–71.) Fitzpatrick skin score (type I=Pale white skin, blue/green eyes, blond/red hair (Always burns, does not tan); type II=Fair skin, blue eyes (Burns easily, tans poorly); type III=Darker white skin (Tans after initial burn); type IV=Light brown skin (Burns minimally, tans easily); type V=Brown skin (Rarely burns, tans darkly easily); type VI=Dark brown or black skin (Never burns, always tans darkly): Missing 8964 (41%).

^e Blood group: Missing 52 (0.2%)

^f Baseline haemoglobin: Missing 186 (1.5%) in Stage 1 donors only

^g A participant who has not provided a full blood donation in the five years preceding the study

Supplementary Table 2. Characteristics of NHSBT general donor population and of the COMPARE study†

Demographics n (%) or mean (SD)	NHSBT general donor population	COMPARE study
All donors	949,077 (100.0)	29,085 (100.0)*
Sex		
Male	409,577 (43.2)	13,675 (47.0)
Female	539,500 (56.8)	15,410 (53.0)
Age at baseline, years	44.0 (15.4)	48.4 (13.7)
Ethnicity		
White	875,733 (92.3)	28,127 (96.7)
Asian	25,565 (2.7)	163 (0.6)
Black African	3,261 (0.3)	17 (0.1)
Black Caribbean	3,761 (0.4)	40 (0.1)
Black other	714 (0.1)	7 (≈0.0)
Chinese	3,015 (0.3)	21 (0.1)
Mixed	12,652 (1.3)	175 (0.6)
Other	4,166 (0.4)	28 (0.1)
Unknown	20,210 (2.1)	507 (1.7)
Blood group		
A RhD positive (A+)	273,522 (28.8)	8,612 (29.6)
A RhD negative (A-)	78,821 (8.3)	2,698 (9.3)
AB RhD positive (AB+)	21,876 (2.3)	579 (2.0)
AB RhD negative (AB-)	7,537 (0.8)	253 (0.9)
B RhD positive (B+)	73,588 (7.8)	2,003 (6.9)
B RhD negative (B-)	21,447 (2.3)	723 (2.5)
O RhD positive (O+)	324,570 (34.2)	10,166 (35.0)
O RhD negative (O-)	110,675 (11.7)	4,033 (13.9)
Unknown	37,041 (3.9)	18 (0.1)
Donor status at baseline ^a		
New	169,428 (17.9)	425 (1.5)
Occasional	167,652 (17.7)	3,705 (12.7)
More frequent	611,997 (64.5)	24,955 (85.8)
Donations (over last 2 years prior to baseline) ^b		
All donations	2.5 (2.5)	3.5 (1.7)
Whole blood donations	2.4 (2.0)	3.5 (1.7)
Other donations	0.2 (1.7)	0.02 (0.4)
Deferrals (during the 2 years prior to baseline) ^c		
Deferral for low haemoglobin	56,918 (6.0)	2,105 (7.2)
Any other deferral	229,576 (24.2)	7,016 (24.1)
Length of NHSBT donation history at baseline, years ^d	10.0 (9.5)	12.8 (9.4)
Venue type attended at baseline		
Static centre	173,330 (18.3)	0 (0.0)
Mobile	775,747 (81.7)	29,085 (100.0)

* the characteristics of ~200 donors in the COMPARE study could not be identified in the PULSE database due to merged donor records.

†NHSBT general donor 15th February 2016 to 17th March 2017

^a“New” has been defined according to the classification used by NHSBT i.e. an individual who has not previously provided a full donation is considered to be a new donor. “Occasional” and “More frequent” have been defined as less than or equal to 2 full donations in the last 5 years and more than 2 full donations in the last 5 years, respectively.

^b Including donations where volume equals “Normal”, “Overweight” or “Missing” (not including donations where volume equals “Empty” or “Underweight”).

^c Deferrals during the 2 years prior to baseline were summarised as counts of people with a deferral for low haemoglobin levels, and more generally deferral for reasons other than low haemoglobin.

^d Length of donation history with NHSBT at baseline was defined as the period of time between baseline and the minimum of date of registration, date of first attendance (whether successful or not) and date of first successful donation.

Supplementary Table 3. Differences in demographic factors of members of the COMPARE study versus the NHSBT general donor population

Demographics	COMPARE study	NHSBT general donor population	Difference (95% CI)
Mean or proportion (%) ^a			
Sex: Male (%)	47.0	43.2	3.9% (3.3%, 4.4%)
Age at baseline, years	48.4	44.0	4.38 (4.20, 4.56)
Ethnicity: White (%)	98.4	94.3	4.1% (4.0%, 4.3%)
Blood group: O (%) ^b	48.8	47.7	1.1% (0.5%, 1.7%)
Number of all donations ^c	3.47	2.52	0.96 (0.93, 0.98)
Deferral for low haemoglobin (%) ^c	7.2	6.0	1.2% (0.9%, 1.5%)
Any other deferral (%) ^c	24.1	24.2	-0.1% (-0.6%, 0.4%)
Length of NHSBT donation history at baseline, years	12.8	9.95	2.81 (2.70, 2.92)

^a Those with missing values excluded

^b Blood group O includes both RhD groups

^c During the 2 years prior to baseline

Supplementary Table 4. Standardised proportion of donors that would have been inappropriately bled or deferred using each of the testing strategies, by sex and recruitment stage

Testing device / strategy	Inappropriately bled	Correctly bled	Correctly deferred	Incorrectly deferred
Men: Standardised				
NHSBT method	7.8%	89.3%	2.9%	0.1%
Post-donation strategy	7.6%	88.3%	3.0%	1.1%
Capillary HemoCue	2.2%	78.2%	8.4%	11.2%
OrSense	5.8%	77.8%	4.8%	11.7%
Haemospect	8.7%	77.9%	1.9%	11.6%
Women: Standardised				
NHSBT method	14.9%	76.4%	8.5%	0.2%
Post-donation strategy	15.0%	73.9%	8.4%	2.7%
Capillary HemoCue	4.1%	62.8%	19.3%	13.8%
OrSense	11.4%	56.3%	12.0%	20.3%
Haemospect	18.9%	66.6%	4.4%	10.1%

Standardised (by sex and haemoglobin level) to returning (Stage 1) donor population (N=12,758)

For direct comparisons between strategies, donation outcomes were standardised by sex and haemoglobin level to a reference population – the returning Stage 1 donor population. Each observation was assigned a weight based on the relative frequency of the sex-specific haemoglobin level appearing in the reference population relative to the estimation sample. The proportions for each of the four donation outcomes (bled below haemoglobin threshold, bled above haemoglobin threshold, deferred below haemoglobin threshold, deferred above haemoglobin threshold) were then weighted accordingly. As an example, if 200 male donors tested with Orsense had an Hb level of 120 g/l whilst only 100 male donors had this level in the reference population, each of the 200 observations would carry a weight of $\frac{1}{2}$.

Supplementary Table 5. Number of donors that would have been inappropriately bled or deferred using each of the testing strategies, by sex and recruitment stage

Testing device / strategy	N	Inappropriately bled	Correctly bled	Correctly deferred	Incorrectly deferred
Men: Combined					
NHSBT method	10,489	653 (6.2%)	9599 (91.5%)	229 (2.2%)	8 (0.1%)
Post-donation strategy	5920	443 (7.5%)	5243 (88.6%)	171 (2.9%)	63 (1.1%)
Capillary HemoCue	5279	121 (2.3%)	4121 (78.1%)	455 (8.6%)	582 (11.0%)
OrSense	4861	224 (4.6%)	3917 (80.6%)	179 (3.7%)	541 (11.1%)
Haemospect	4352	297 (6.8%)	3481 (80.0%)	61 (1.4%)	513 (11.8%)
Women: Combined					
NHSBT method	11,351	1403 (12.4%)	9185 (80.9%)	744 (6.6%)	19 (0.2%)
Post-donation strategy	6394	926 (14.5%)	4788 (74.9%)	510 (8.0%)	170 (2.7%)
Capillary HemoCue	5724	236 (4.1%)	3570 (62.4%)	1137 (19.9%)	781 (13.6%)
OrSense	5580	535 (9.6%)	3319 (59.5%)	565 (10.1%)	1161 (20.8%)
Haemospect	4170	554 (13.3%)	3039 (72.9%)	130 (3.12%)	447 (10.7%)
Men: Stage 1					
NHSBT method	6081	467 (7.7%)	5432 (89.3%)	178 (2.9%)	4 (0.1%)
Post-donation strategy	5920	443 (7.5%)	5243 (88.6%)	171 (2.9%)	63 (1.1%)
Capillary HemoCue	5279	121 (2.3%)	4121 (78.1%)	455 (8.6%)	582 (11.0%)
OrSense	2646	170 (6.4%)	2104 (79.5%)	123 (4.7%)	249 (9.4%)
Haemospect	2159	199 (9.2%)	1732 (80.2%)	32 (1.5%)	196 (9.1%)
Women: Stage 1					
NHSBT method	6677	994 (14.9%)	5102 (76.4%)	569 (8.5%)	12 (0.2%)
Post-donation strategy	6394	926 (14.5%)	4788 (74.9%)	510 (8.0%)	170 (2.7%)
Capillary HemoCue	5724	236 (4.1%)	3570 (62.4%)	1137 (19.9%)	781 (13.6%)
OrSense	3058	394 (12.9%)	1817 (59.4%)	373 (12.2%)	474 (15.5%)
Haemospect	2018	323 (16.0%)	1271 (63.0%)	110 (5.5%)	314 (15.6%)
Men: Stage 2					
NHSBT method	4408	186 (4.2%)	4167 (94.5%)	51 (1.2%)	4 (0.1%)
OrSense	2215	54 (2.4%)	1813 (81.9%)	56 (2.5%)	292 (13.2%)
Haemospect	2193	98 (4.5%)	1749 (79.8%)	29 (1.3%)	317 (14.5%)
Women: Stage 2					
NHSBT method	4674	409 (8.8%)	4083 (87.4%)	175 (3.7%)	7 (0.2%)
OrSense	2522	141 (5.6%)	1502 (59.6%)	192 (7.6%)	687 (27.2%)
Haemospect	2152	231 (10.7%)	1768 (82.2%)	20 (0.9%)	133 (6.2%)

Supplementary Table 6. Subgroup proportions of donors bled below the threshold for each testing strategy

	Men			Women		
	Number of donors	Proportion of donors bled below threshold	Trend p-value	Number of donors	Proportion of donors bled below threshold	Trend p-value
NHSBT method						
Age group						
18-24	419 (4.0%)	4.3 (2.6, 6.7)	< 0.001	785 (6.9%)	15.5 (13.1, 18.3)	< 0.001
25-29	548 (5.2%)	3.8 (2.4, 5.8)		820 (7.2%)	15.2 (12.9, 17.9)	
30-34	642 (6.1%)	3.1 (1.9, 4.8)		830 (7.3%)	13.3 (11.0, 15.8)	
35-39	634 (6.0%)	4.4 (3.0, 6.3)		937 (8.3%)	14.5 (12.3, 16.9)	
40-44	900 (8.6%)	5.4 (4.1, 7.1)		1319 (11.6%)	13.0 (11.2, 14.9)	
45-49	1364 (13.0%)	4.6 (3.6, 5.9)		1590 (14.0%)	13.3 (11.6, 15.0)	
50-54	1611 (15.4%)	6.0 (4.9, 7.3)		1517 (13.4%)	11.3 (9.8, 13.0)	
55-59	1577 (15.0%)	6.8 (5.7, 8.2)		1364 (12.0%)	9.7 (8.2, 11.4)	
60-64	1309 (12.5%)	7.6 (6.3, 9.2)		1090 (9.6%)	11.6 (9.7, 13.6)	
65-69	1064 (10.1%)	10.3 (8.6, 12.3)		806 (7.1%)	8.3 (6.5, 10.4)	
70+	421 (4.0%)	9.3 (6.7, 12.4)	293 (2.6%)	10.6 (7.3, 14.7)		
Ethnicity ¹						
White	10049 (98.4%)	6.1 (5.7, 6.6)	< 0.001	10991 (98.8%)	12.3 (11.7, 12.9)	0.007
Other	167 (1.6%)	15.6 (10.4, 22.0)		129 (1.2%)	20.2 (13.6, 28.1)	
Donor status						
Returning donor	10352 (98.7%)	6.3 (5.8, 6.8)	0.020	11152 (98.2%)	12.4 (11.8, 13.1)	0.099
First time donor	137 (1.3%)	1.5 (0.2, 5.2)		199 (1.8%)	8.5 (5.1, 13.3)	
Number of donations in previous 2 years						
0	244 (2.3%)	2.9 (1.2, 5.8)	< 0.001	365 (3.2%)	7.9 (5.4, 11.2)	0.138
1	943 (9.0%)	5 (3.7, 6.6)		1524 (13.4%)	10.7 (9.2, 12.4)	
2	1205 (11.5%)	4.6 (3.5, 5.9)		1831 (16.1%)	12.5 (11.0, 14.1)	
3	1628 (15.5%)	5.5 (4.5, 6.8)		2162 (19.0%)	14.5 (13.1, 16.1)	
4	2074 (19.8%)	6.7 (5.7, 7.9)		2413 (21.3%)	12.6 (11.3, 14.0)	
5+	4395 (41.9%)	7.2 (6.4, 8.0)		3056 (26.9%)	11.9 (10.8, 13.1)	
Post donation						
Age group						
18-24	233 (3.9%)	5.6 (3.0, 9.4)	< 0.001	412 (6.4%)	16.5 (13.1, 20.4)	< 0.001
25-29	263 (4.4%)	5.7 (3.2, 9.2)		425 (6.6%)	18.1 (14.6, 22.1)	
30-34	340 (5.7%)	3.2 (1.6, 5.7)		446 (7.0%)	14.3 (11.2, 18.0)	
35-39	339 (5.7%)	5.3 (3.2, 8.3)		492 (7.7%)	19.5 (16.1, 23.3)	
40-44	505 (8.5%)	6.9 (4.9, 9.5)		755 (11.8%)	17.0 (14.3, 19.8)	
45-49	785 (13.3%)	5.9 (4.3, 7.7)		888 (13.9%)	16.8 (14.4, 19.4)	
50-54	942 (15.9%)	6.9 (5.4, 8.7)		863 (13.5%)	11.1 (9.1, 13.4)	
55-59	915 (15.5%)	7.8 (6.1, 9.7)		800 (12.5%)	10.8 (8.7, 13.1)	
60-64	736 (12.4%)	9.8 (7.7, 12.2)		661 (10.3%)	14.1 (11.5, 17.0)	
65-69	634 (10.7%)	11.5 (9.1, 14.3)		488 (7.6%)	9.4 (7, 12.4)	
70+	228 (3.9%)	10.5 (6.9, 15.3)	164 (2.6%)	14 (9.1, 20.3)		
Ethnicity ²						
White	5665 (98.4%)	7.4 (6.8, 8.1)	< 0.001	6160 (98.8%)	14.5 (13.6, 15.4)	0.751
Other	93 (1.6%)	17.2 (10.2, 26.4)		76 (1.2%)	15.8 (8.4, 26.0)	
Donor status						

Returning donor	5855 (98.9%)	7.5 (6.9, 8.2)	0.175	6281 (98.2%)	14.5 (13.7, 15.4)	0.524
First time donor	65 (1.1%)	3.1 (0.4, 10.7)		113 (1.8%)	12.4 (6.9, 19.9)	
Number of donations In previous 2 years						
0	118 (2.0%)	6.8 (3.0, 12.9)	0.722	196 (3.1%)	13.3 (8.9, 18.8)	< 0.001
1	428 (7.2%)	5.8 (3.8, 8.5)		723 (11.3%)	17.7 (15.0, 20.7)	
2	586 (9.9%)	7.7 (5.7, 10.1)		940 (14.7%)	16.8 (14.5, 19.4)	
3	812 (13.7%)	8.5 (6.7, 10.6)		1160 (18.1%)	16.4 (14.3, 18.6)	
4	1199 (20.3%)	7.7 (6.2, 9.3)		1413 (22.1%)	14.2 (12.4, 16.1)	
5+	2777 (46.9%)	7.3 (6.4, 8.4)		1962 (30.7%)	11.4 (10.0, 12.9)	
Capillary HemoCue Age group						
18-24	203 (3.8%)	2.5 (0.8, 5.7)	0.039	365 (6.4%)	4.7 (2.7, 7.4)	0.165
25-29	243 (4.6%)	3.3 (1.4, 6.4)		386 (6.7%)	4.7 (2.8, 7.3)	
30-34	298 (5.6%)	0.7 (0.1, 2.4)		393 (6.9%)	4.1 (2.3, 6.5)	
35-39	310 (5.9%)	1.6 (0.5, 3.7)		432 (7.5%)	5.6 (3.6, 8.2)	
40-44	467 (8.8%)	1.9 (0.9, 3.6)		684 (11.9%)	4.5 (3.1, 6.4)	
45-49	679 (12.9%)	1.9 (1.0, 3.3)		805 (14.1%)	4.0 (2.7, 5.6)	
50-54	829 (15.7%)	2.2 (1.3, 3.4)		776 (13.6%)	3.1 (2.0, 4.6)	
55-59	831 (15.7%)	1.6 (0.8, 2.7)		709 (12.4%)	4.2 (2.9, 6.0)	
60-64	644 (12.2%)	2.6 (1.5, 4.2)		585 (10.2%)	4.1 (2.6, 6.0)	
65-69	564 (10.7%)	4.3 (2.7, 6.3)		439 (7.7%)	3.0 (1.6, 5.0)	
70+	211 (4.0%)	3.3 (1.3, 6.7)		150 (2.6%)	4.7 (1.9, 9.4)	
Ethnicity³						
White	5049 (98.3%)	2.3 (1.9, 2.7)	0.147	5518 (98.8%)	4.1 (3.6, 4.7)	0.443
Other	86 (1.7%)	4.7 (1.3, 11.5)		67 (1.2%)	6.0 (1.7, 14.6)	
Donor status						
Returning donor	5219 (98.9%)	2.3 (1.9, 2.8)	0.233	5625 (98.3%)	4.1 (3.6, 4.6)	0.328
First time donor	60 (1.1%)	0.0 (0.0, 6.0)		99 (1.7%)	6.1 (2.3, 12.7)	
Number of donations in previous 2 years						
0	108 (2.0%)	0.9 (0.0, 5.1)	0.056	169 (3.0%)	4.1 (1.7, 8.3)	0.762
1	367 (7.0%)	1.6 (0.6, 3.5)		624 (10.9%)	3.5 (2.2, 5.3)	
2	517 (9.8%)	1.5 (0.7, 3.0)		830 (14.5%)	3.7 (2.6, 5.3)	
3	715 (13.5%)	2.4 (1.4, 3.8)		1039 (18.2%)	5.4 (4.1, 6.9)	
4	1072 (20.3%)	2.1 (1.4, 3.2)		1276 (22.3%)	3.4 (2.5, 4.6)	
5+	2500 (47.4%)	2.6 (2.0, 3.3)		1786 (31.2%)	4.3 (3.4, 5.3)	
OrSense Age group						
18-24	195 (4.0%)	4.6 (2.1, 8.6)	0.278	395 (7.1%)	14.9 (11.6, 18.8)	< 0.001
25-29	261 (5.4%)	5.0 (2.7, 8.4)		419 (7.5%)	15.8 (12.4, 19.6)	
30-34	293 (6.0%)	2.4 (1.0, 4.9)		406 (7.3%)	12.3 (9.3, 15.9)	
35-39	299 (6.2%)	5.0 (2.8, 8.1)		465 (8.3%)	11.4 (8.7, 14.6)	
40-44	421 (8.7%)	5.5 (3.5, 8.1)		634 (11.4%)	10.7 (8.4, 13.4)	
45-49	639 (13.1%)	3.1 (1.9, 4.8)		759 (13.6%)	11.1 (8.9, 13.5)	
50-54	746 (15.3%)	5.1 (3.6, 6.9)		783 (14.0%)	6.6 (5.0, 8.6)	
55-59	707 (14.5%)	4.4 (3.0, 6.2)		656 (11.8%)	6.6 (4.8, 8.7)	
60-64	616 (12.7%)	5.5 (3.9, 7.6)		518 (9.3%)	6.6 (4.6, 9.1)	
65-69	503 (10.3%)	4.2 (2.6, 6.3)		403 (7.2%)	5.2 (3.3, 7.9)	

70+	181 (3.7%)	7.2 (3.9, 12.0)		142 (2.5%)	3.5 (1.2, 8.0)	
Ethnicity⁴						
White	4662 (98.4%)	4.5 (3.9, 5.1)	0.001	5414 (98.9%)	9.4 (8.6, 10.2)	0.002
Other	78 (1.6%)	12.8 (6.3, 22.3)		61 (1.1%)	21.3 (11.9, 33.7)	
Donor status						
Returning donor	4795 (98.6%)	4.7 (4.1, 5.3)	0.228	5475 (98.1%)	9.6 (8.9, 10.4)	0.489
First time donor	66 (1.4%)	1.5 (0.0, 8.2)		105 (1.9%)	7.6 (3.3, 14.5)	
Number of donations in previous 2 years						
0	118 (2.4%)	1.7 (0.2, 6.0)	0.032	197 (3.5%)	6.6 (3.6, 11.0)	0.448
1	444 (9.1%)	3.4 (1.9, 5.5)		788 (14.1%)	8.4 (6.5, 10.5)	
2	572 (11.8%)	3.5 (2.1, 5.3)		898 (16.1%)	10.7 (8.7, 12.9)	
3	739 (15.2%)	4.9 (3.4, 6.7)		1076 (19.3%)	10.1 (8.4, 12.1)	
4	986 (20.3%)	5.5 (4.1, 7.1)		1126 (20.2%)	9.7 (8.0, 11.6)	
5+	2002 (41.2%)	4.8 (3.9, 5.9)		1495 (26.8%)	9.5 (8.1, 11.1)	
Haemospect						
Age group						
18-24	177 (4.1%)	4 (1.6, 8.0)	< 0.001	293 (7.0%)	11.6 (8.2, 15.8)	0.298
25-29	237 (5.4%)	3.8 (1.8, 7.1)		305 (7.3%)	15.1 (11.3, 19.6)	
30-34	280 (6.4%)	2.5 (1.0, 5.1)		311 (7.5%)	10.6 (7.4, 14.6)	
35-39	265 (6.1%)	3.4 (1.6, 6.3)		358 (8.6%)	14.8 (11.3, 18.9)	
40-44	375 (8.6%)	5.1 (3.1, 7.8)		490 (11.8%)	16.3 (13.2, 19.9)	
45-49	563 (12.9%)	5.7 (3.9, 7.9)		603 (14.5%)	16.7 (13.9, 20.0)	
50-54	662 (15.2%)	6.2 (4.5, 8.3)		547 (13.1%)	11.5 (9.0, 14.5)	
55-59	667 (15.3%)	7.6 (5.7, 9.9)		480 (11.5%)	10.0 (7.5, 13.0)	
60-64	521 (12.0%)	9.0 (6.7, 11.8)		406 (9.7%)	11.3 (8.4, 14.8)	
65-69	416 (9.6%)	12.7 (9.7, 16.3)		274 (6.6%)	12.4 (8.7, 16.9)	
70+	189 (4.3%)	11.6 (7.4, 17.1)		103 (2.5%)	15.5 (9.1, 24.0)	
Ethnicity⁵						
White	4164 (98.2%)	6.8 (6.0, 7.6)	0.026	4040 (98.7%)	13.1 (12.1, 14.2)	0.001
Other	75 (1.8%)	13.3 (6.6, 23.2)		52 (1.3%)	28.8 (17.1, 43.1)	
Donor status						
Returning donor	4293 (98.6%)	6.9 (6.2, 7.7)	0.116	4096 (98.2%)	13.4 (12.4, 14.5)	0.186
First time donor	59 (1.4%)	1.7 (0.0, 9.1)		74 (1.8%)	8.1 (3.0, 16.8)	
Number of donations in previous 2 years						
0	104 (2.4%)	2.9 (0.6, 8.2)	0.002	136 (3.3%)	11.8 (6.9, 18.4)	0.501
1	404 (9.3%)	4.7 (2.9, 7.2)		555 (13.3%)	12.1 (9.5, 15.1)	
2	503 (11.6%)	6.0 (4.1, 8.4)		697 (16.7%)	14.1 (11.6, 16.9)	
3	716 (16.5%)	6.1 (4.5, 8.2)		786 (18.8%)	16.0 (13.5, 18.8)	
4	854 (19.6%)	7.1 (5.5, 9.1)		912 (21.9%)	13.3 (11.1, 15.6)	
5+	1771 (40.7%)	7.9 (6.7, 9.3)		1084 (26.0%)	11.6 (9.8, 13.7)	

Data presented are proportion (95% CI) or number of donors (%). Ethnicity (NA): ¹ 2.11%, ² 2.42%, ³ 2.39%, ⁴ 1.95%, ⁵ 2.07%

Supplementary Table 7. Subgroup proportions of donors deferred above the threshold for each testing strategy

	Men			Women		
	Number of donors	Proportion of donors deferred above threshold	Trend p-value	Number of donors	Proportion of donors deferred above threshold	Trend p-value
NHSBT method						
Age group						
18-24	419 (4.0%)	0.0 (0.0, 0.9)	0.059	785 (6.9%)	0.0 (0.0, 0.5)	0.874
25-29	548 (5.2%)	0.0 (0.0, 0.7)		820 (7.2%)	0.1 (0.0, 0.7)	
30-34	642 (6.1%)	0.0 (0.0, 0.6)		830 (7.3%)	0.2 (0.0, 0.9)	
35-39	634 (6.0%)	0.0 (0.0, 0.6)		937 (8.3%)	0.5 (0.2, 1.2)	
40-44	900 (8.6%)	0.0 (0.0, 0.4)		1319 (11.6%)	0.1 (0.0, 0.4)	
45-49	1364 (13.0%)	0.1 (0.0, 0.4)		1590 (14.0%)	0.1 (0.0, 0.3)	
50-54	1611 (15.4%)	0.1 (0.0, 0.3)		1517 (13.4%)	0.2 (0.0, 0.6)	
55-59	1577 (15.0%)	0.1 (0.0, 0.4)		1364 (12.0%)	0.2 (0.0, 0.6)	
60-64	1309 (12.5%)	0.3 (0.1, 0.8)		1090 (9.6%)	0.3 (0.1, 0.8)	
65-69	1064 (10.1%)	0.1 (0.0, 0.5)		806 (7.1%)	0.0 (0.0, 0.5)	
70+	421 (4.0%)	0.0 (0.0, 0.9)	293 (2.6%)	0.0 (0.0, 1.3)		
Ethnicity ¹						
White	10049 (98.4%)	0.1 (0.0, 0.2)	0.716	10991 (98.8%)	0.2 (0.1, 0.3)	0.646
Other	167 (1.6%)	0.0 (0.0, 2.2)		129 (1.2%)	0.0 (0.0, 2.8)	
Donor status						
Returning donor	10352 (98.7%)	0.1 (0.0, 0.2)	0.745	11152 (98.2%)	0.2 (0.1, 0.3)	0.560
First time donor	137 (1.3%)	0.0 (0.0, 2.7)		199 (1.8%)	0.0 (0.0, 1.8)	
Number of donations in previous 2 years						
0	244 (2.3%)	0.0 (0.0, 1.5)	0.063	365 (3.2%)	0.0 (0.0, 1.0)	0.911
1	943 (9.0%)	0.0 (0.0, 0.4)		1524 (13.4%)	0.1 (0.0, 0.4)	
2	1205 (11.5%)	0.0 (0.0, 0.3)		1831 (16.1%)	0.3 (0.1, 0.7)	
3	1628 (15.5%)	0.0 (0.0, 0.2)		2162 (19.0%)	0.1 (0.0, 0.4)	
4	2074 (19.8%)	0.1 (0.0, 0.4)		2413 (21.3%)	0.2 (0.1, 0.5)	
5+	4395 (41.9%)	0.1 (0.0, 0.3)		3056 (26.9%)	0.1 (0.0, 0.3)	
Post donation						
Age group						
18-24	233 (3.9%)	1.3 (0.3, 3.7)	0.127	412 (6.4%)	1.7 (0.7, 3.5)	0.501
25-29	263 (4.4%)	0.8 (0.1, 2.7)		425 (6.6%)	2.6 (1.3, 4.6)	
30-34	340 (5.7%)	0.3 (0.0, 1.6)		446 (7.0%)	1.3 (0.5, 2.9)	
35-39	339 (5.7%)	0.6 (0.1, 2.1)		492 (7.7%)	4.5 (2.8, 6.7)	
40-44	505 (8.5%)	0.4 (0.0, 1.4)		755 (11.8%)	4.0 (2.7, 5.6)	
45-49	785 (13.3%)	0.9 (0.4, 1.8)		888 (13.9%)	2.9 (1.9, 4.3)	
50-54	942 (15.9%)	1.6 (0.9, 2.6)		863 (13.5%)	2.7 (1.7, 4.0)	
55-59	915 (15.5%)	1.2 (0.6, 2.1)		800 (12.5%)	1.9 (1.1, 3.1)	
60-64	736 (12.4%)	1.6 (0.8, 2.8)		661 (10.3%)	2.6 (1.5, 4.1)	
65-69	634 (10.7%)	0.8 (0.3, 1.8)		488 (7.6%)	2.3 (1.1, 4.0)	
70+	228 (3.9%)	1.3 (0.3, 3.8)	164 (2.6%)	1.2 (0.1, 4.3)		
Ethnicity ²						
White	5665 (98.4%)	1 (.7, 1.3)	0.002	6160 (98.8%)	2.7 (2.3, 3.1)	0.497
Other	93 (1.6%)	4.3 (1.2, 10.6)		76 (1.2%)	3.9 (.8, 11.1)	

Donor status						
Returning donor	5855 (98.9%)	1.0 (0.8, 1.3)	0.112	6281 (98.2%)	2.7 (2.3, 3.1)	0.237
First time donor	65 (1.1%)	3.1 (0.4, 10.7)		113 (1.8%)	0.9 (0.0, 4.8)	
Number of donations in previous 2 years						
0	118 (2.0%)	3.4 (0.9, 8.5)	0.482	196 (3.1%)	1.5 (0.3, 4.4)	0.001
1	428 (7.2%)	0.7 (0.1, 2.0)		723 (11.3%)	1.2 (0.6, 2.3)	
2	586 (9.9%)	1.5 (0.7, 2.9)		940 (14.7%)	2.8 (1.8, 4.0)	
3	812 (13.7%)	0.9 (0.3, 1.8)		1160 (18.1%)	1.8 (1.1, 2.8)	
4	1199 (20.3%)	0.7 (0.3, 1.3)		1413 (22.1%)	2.9 (2.1, 3.9)	
5+	2777 (46.9%)	1.2 (0.8, 1.6)		1962 (30.7%)	3.6 (2.8, 4.5)	
Capillary HemoCue						
Age group						
18-24	203 (3.8%)	7.4 (4.2, 11.9)	0.025	365 (6.4%)	13.4 (10.1, 17.4)	0.604
25-29	243 (4.6%)	7.8 (4.8, 11.9)		386 (6.7%)	14.0 (10.7, 17.9)	
30-34	298 (5.6%)	10.4 (7.2, 14.4)		393 (6.9%)	11.2 (8.3, 14.7)	
35-39	310 (5.9%)	10.6 (7.4, 14.6)		432 (7.5%)	18.3 (14.8, 22.3)	
40-44	467 (8.8%)	12.6 (9.8, 16.0)		684 (11.9%)	14.5 (11.9, 17.3)	
45-49	679 (12.9%)	10.0 (7.9, 12.5)		805 (14.1%)	12.0 (9.9, 14.5)	
50-54	829 (15.7%)	11.2 (9.2, 13.6)		776 (13.6%)	14.0 (11.7, 16.7)	
55-59	831 (15.7%)	11.4 (9.3, 13.8)		709 (12.4%)	13.5 (11.1, 16.3)	
60-64	644 (12.2%)	10.1 (7.9, 12.7)		585 (10.2%)	12.5 (9.9, 15.4)	
65-69	564 (10.7%)	14.7 (11.9, 17.9)		439 (7.7%)	14.1 (11, 17.7)	
70+	211 (4.0%)	10.0 (6.3, 14.8)		150 (2.6%)	12.7 (7.8, 19.1)	
Ethnicity³						
White	5049 (98.3%)	11.0 (10.1, 11.8)	0.842	5518 (98.8%)	13.7 (12.8, 14.6)	0.956
Other	86 (1.7%)	11.6 (5.7, 20.3)		67 (1.2%)	13.4 (6.3, 24.0)	
Donor status						
Returning donor	5219 (98.9%)	11.1 (10.2, 11.9)	0.503	5625 (98.3%)	13.6 (12.7, 14.6)	0.884
First time donor	60 (1.1%)	8.3 (2.8, 18.4)		99 (1.7%)	14.1 (8.0, 22.6)	
Number of donations in previous 2 years						
0	108 (2.0%)	8.3 (3.9, 15.2)	0.372	169 (3.0%)	14.8 (9.8, 21.1)	0.778
1	367 (7.0%)	10.6 (7.7, 14.2)		624 (10.9%)	13.9 (11.3, 16.9)	
2	517 (9.8%)	10.3 (7.8, 13.2)		830 (14.5%)	14.1 (11.8, 16.7)	
3	715 (13.5%)	11.7 (9.5, 14.3)		1039 (18.2%)	12.8 (10.8, 15.0)	
4	1072 (20.3%)	10.4 (8.7, 12.4)		1276 (22.3%)	13.6 (11.8, 15.6)	
5+	2500 (47.4%)	11.4 (10.2, 12.7)		1786 (31.2%)	13.7 (12.2, 15.4)	
OrSense						
Age group						
18-24	195 (4.0%)	4.1 (1.8, 7.9)	< 0.001	395 (7.1%)	10.9 (8.0, 14.4)	< 0.001
25-29	261 (5.4%)	1.9 (0.6, 4.4)		419 (7.5%)	12.4 (9.4, 16.0)	
30-34	293 (6.0%)	5.1 (2.9, 8.3)		406 (7.3%)	16.7 (13.2, 20.7)	
35-39	299 (6.2%)	5.4 (3.1, 8.5)		465 (8.3%)	18.5 (15.1, 22.3)	
40-44	421 (8.7%)	10.0 (7.3, 13.2)		634 (11.4%)	17.8 (14.9, 21.0)	
45-49	639 (13.1%)	9.5 (7.4, 12.1)		759 (13.6%)	20.9 (18.1, 24.0)	
50-54	746 (15.3%)	10.1 (8.0, 12.4)		783 (14.0%)	25.0 (22.0, 28.2)	
55-59	707 (14.5%)	14 (11.5, 16.8)		656 (11.8%)	25.5 (22.2, 29.0)	
60-64	616 (12.7%)	15.4 (12.7, 18.5)		518 (9.3%)	24.9 (21.2, 28.9)	

65-69	503 (10.3%)	18.1 (14.8, 21.7)		403 (7.2%)	25.6 (21.4, 30.1)	
70+	181 (3.7%)	18.8 (13.4, 25.2)		142 (2.5%)	31.7 (24.1, 40.0)	
Ethnicity⁴						
White	4662 (98.4%)	11.2 (10.3, 12.2)	0.327	5414 (98.9%)	20.9 (19.8, 22.0)	0.034
Other	78 (1.6%)	7.7 (2.9, 16.0)		61 (1.1%)	9.8 (3.7, 20.2)	
Donor status						
Returning donor	4795 (98.6%)	11.2 (10.3, 12.1)	0.187	5475 (98.1%)	20.9 (19.9, 22.1)	0.057
First time donor	66 (1.4%)	6.1 (1.7, 14.8)		105 (1.9%)	13.3 (7.5, 21.4)	
Number of donations in previous 2 years						
0	118 (2.4%)	7.6 (3.5, 14.0)	0.001	197 (3.5%)	19.8 (14.5, 26.1)	0.611
1	444 (9.1%)	8.3 (5.9, 11.3)		788 (14.1%)	20.4 (17.7, 23.4)	
2	572 (11.8%)	9.3 (7.0, 11.9)		898 (16.1%)	18.5 (16.0, 21.2)	
3	739 (15.2%)	10.4 (8.3, 12.9)		1076 (19.3%)	22.9 (20.4, 25.5)	
4	986 (20.3%)	11.5 (9.5, 13.6)		1126 (20.2%)	22.3 (19.9, 24.8)	
5+	2002 (41.2%)	12.6 (11.2, 14.1)		1495 (26.8%)	19.9 (17.9, 22.0)	
Haemospect						
Age group						
18-24	177 (4.1%)	14.1 (9.4, 20.1)	0.208	293 (7.0%)	11.6 (8.2, 15.8)	0.022
25-29	237 (5.4%)	13.1 (9.1, 18.0)		305 (7.3%)	12.8 (9.3, 17.1)	
30-34	280 (6.4%)	12.9 (9.2, 17.4)		311 (7.5%)	13.8 (10.2, 18.2)	
35-39	265 (6.1%)	9.1 (5.9, 13.2)		358 (8.6%)	12.0 (8.8, 15.8)	
40-44	375 (8.6%)	13.1 (9.8, 16.9)		490 (11.8%)	10.0 (7.5, 13.0)	
45-49	563 (12.9%)	11.5 (9.0, 14.5)		603 (14.5%)	11.3 (8.9, 14.1)	
50-54	662 (15.2%)	13.0 (10.5, 15.8)		547 (13.1%)	9.0 (6.7, 11.7)	
55-59	667 (15.3%)	10.5 (8.3, 13.1)		480 (11.5%)	9.6 (7.1, 12.6)	
60-64	521 (12.0%)	12.3 (9.6, 15.4)		406 (9.7%)	9.9 (7.1, 13.2)	
65-69	416 (9.6%)	10.6 (7.8, 13.9)		274 (6.6%)	9.5 (6.3, 13.6)	
70+	189 (4.3%)	10.1 (6.2, 15.3)		103 (2.5%)	9.7 (4.8, 17.1)	
Ethnicity⁵						
White	4164 (98.2%)	11.7 (10.7, 12.7)	0.657	4040 (98.7%)	10.7 (9.7, 11.7)	0.807
Other	75 (1.8%)	13.3 (6.6, 23.2)		52 (1.3%)	9.6 (3.2, 21.0)	
Donor status						
Returning donor	4293 (98.6%)	11.8 (10.8, 12.8)	0.671	4293 (98.6%)	11.8 (10.8, 12.8)	0.433
First time donor	105 (1.9%)	13.3 (7.5, 21.4)		59 (1.4%)	13.6 (6.0, 25)	
Number of donations in previous 2 years						
0	104 (2.4%)	14.4 (8.3, 22.7)	0.901	136 (3.3%)	12.5 (7.5, 19.3)	0.308
1	404 (9.3%)	13.1 (10, 16.8)		555 (13.3%)	9.4 (7.1, 12.1)	
2	503 (11.6%)	10.3 (7.8, 13.3)		697 (16.7%)	10.6 (8.4, 13.1)	
3	716 (16.5%)	11.5 (9.2, 14.0)		786 (18.8%)	9.3 (7.4, 11.5)	
4	854 (19.6%)	11.2 (9.2, 13.6)		912 (21.9%)	12.1 (10, 14.4)	
5+	1771 (40.7%)	12.1 (10.7, 13.8)		1084 (26.0%)	11.2 (9.3, 13.2)	

Data presented are proportion (95% CI) or number of donors (%)

Ethnicity (NA): ¹ 2.11%, ² 2.42%, ³ 2.39%, ⁴ 1.95%, ⁵ 2.07%

Supplementary Table 8. Baseline characteristics of analysis population in stage 1 vs those lost to follow-up

	Analysis	Men Lost to follow-up	P- value	Analysis	Women Lost to follow-up	P-value
Number of participants	6081	2120		6677	2983	
Age, years	50.6 (13.0)	48.0 (14.3)	0.00	47.2 (13.4)	44.4 (14.2)	0.00
Weight, kg¹	86.7 (14.1)	86.0 (14.3)	0.14	73.3 (15.2)	72.9 (15.3)	0.30
Ethnicity²						
White	5821 (95.9%)	2015 (95.9%)		6433 (96.6%)	2855 (96.6%)	
Mixed	32 (0.5%)	13 (0.6%)		42 (0.6%)	24 (0.8%)	
Asian	44 (0.7%)	18 (0.9%)	0.256	18 (0.3%)	20 (0.7%)	0.002
Black	13 (0.2%)	3 (0.1%)		11 (0.2%)	9 (0.3%)	
Chinese/Other	5 (0.1%)	6 (0.3%)		6 (0.1%)	5 (0.2%)	
Prefer Not to Answer	147 (2.6%)	47 (2.2%)		152 (2.3%)	43 (1.5%)	
Fitzpatrick Skin Score³						
Type I (Most sensitive)	88 (2.4%)	24 (2.5%)		59 (3.9%)	184 (3.9%)	
Type II	1300 (35.7%)	363 (37.7%)		645 (42.2%)	2083 (44.5%)	
Type III	2005 (55.0%)	515 (53.5%)	0.798	753 (49.3%)	2206 (47.1%)	0.494
Type IV	239 (6.6%)	58 (6.0%)		68 (4.5%)	200 (4.3%)	
Type V-VI (Least sensitive)	14 (0.4%)	3 (0.3%)		2 (0.1%)	12 (0.3%)	
Blood group⁴						
A+	1873 (30.9%)	640 (30.5%)		1962 (29.5%)	872 (29.6%)	
A-	492 (8.1%)	178 (8.5%)		689 (10.3%)	273 (9.3%)	
AB+	174 (2.9%)	64 (3.1%)		79 (1.2%)	48 (1.6%)	
AB-	46 (0.8%)	20 (1.0%)	0.895	54 (0.8%)	32 (1.1%)	0.368
B+	420 (6.9%)	133 (6.3%)		467 (7.0%)	215 (7.3%)	
B-	129 (2.1%)	43 (2.1%)		191 (2.9%)	89 (3.0%)	
O+	2138 (35.2%)	759 (36.1%)		2234 (33.5%)	990 (33.6%)	
O-	800 (13.2%)	264 (12.6%)		986 (14.8%)	430 (14.6%)	
Haemoglobin concentration, g/L						
Baseline ⁵	150.8 (10.0)	150.5 (10.4)	0.236	135.3 (9.5)	134.2 (10.6)	0.000
Haemoglobin concentration: <135g/L (men) or <125g/L (women)						
Baseline ⁵	286 (4.8%)	122 (5.9%)	0.047	830 (12.6%)	461 (15.9%)	0.000
New donor⁶	65 (1.1%)	83 (3.9%)	0.000	116 (1.7%)	125 (4.2%)	0.000
Number of blood donations in previous 2 years	4.1 (1.7)	3.5 (1.8)	0.000	3.4 (1.6)	2.9 (1.7)	0.000

Data presented are mean (standard deviation) or number of donors (%)

P-value calculated using a t-test for continuous variables and a chi-squared test for categorical variables.

¹Weight: Missing 6226 (35%)

²Ethnicity: Missing 69 (0.4%)

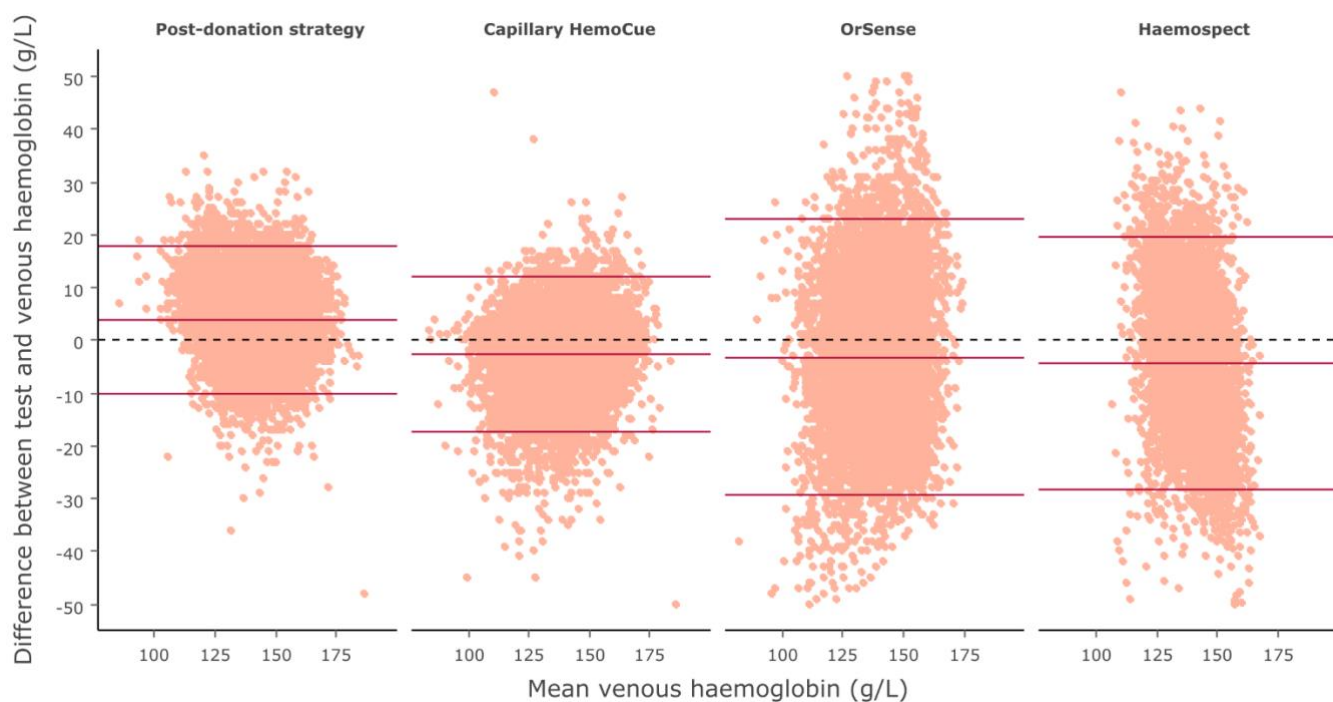
³Fitzpatrick score: Missing 7040 (39%)

⁴Blood group: Missing 77 (0.4%)

⁵ Baseline haemoglobin: Missing 308 (1.7%) in Stage 1 donors only

⁶A participant who has not provided a full blood donation in the five years preceding the study.

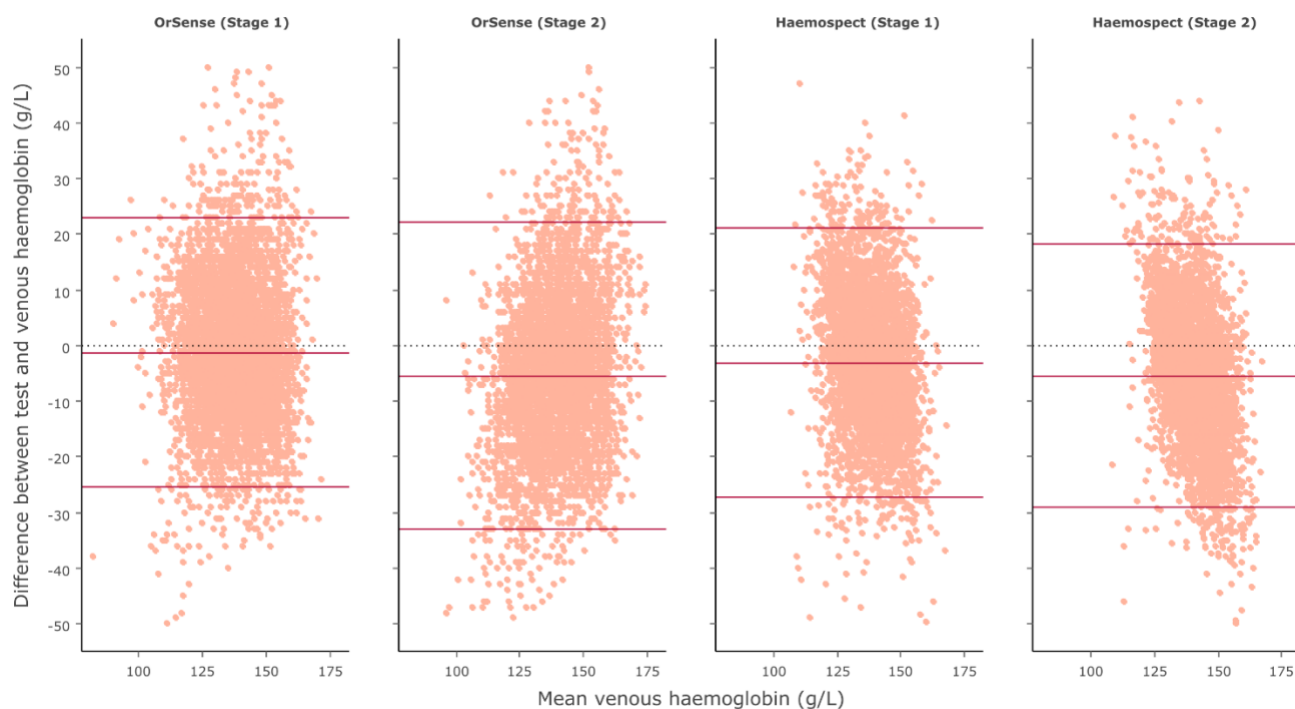
Supplementary Figure 1. Bland-Altman plot of each haemoglobin testing strategy using venous haemoglobin values as the reference



Dotted black reference line represents zero bias. Solid red lines represent the mean bias of the testing strategy (middle) and accompanying 95% limit of agreement (LOA) of the mean bias (upper and lower).

Post-donation strategy: N = 12314, mean bias = 3.8g/L (3.7, 4.0), 95% LOA = (-10.1, 17.8), 4.4% outside the LOA.
 Capillary HemoCue: N = 11033, mean bias = -2.7g/L (-2.9, -2.6), 95% LOA = (-17.4, 12.0), 4.9% outside the LOA.
 OrSense: N = 10441, mean bias = -3.1g/L (-3.4, -2.9), 95% LOA = (-29.2, 22.9), 5.3% outside the LOA.
 Haemospect: N = 8522, mean bias = -4.3g/L (-4.6, -4.0), 95% LOA = (-28.3, 19.7), 5.4% outside the LOA.

Supplementary Figure 2. Bland-Altman plot of each non-invasive haemoglobin testing strategy at stage 1 and stage 2 of the study



Dotted black reference line represents zero bias. Solid red lines represent the mean bias of the testing strategy (middle) and accompanying 95% limit of agreement (LOA) of the mean bias (upper and lower).

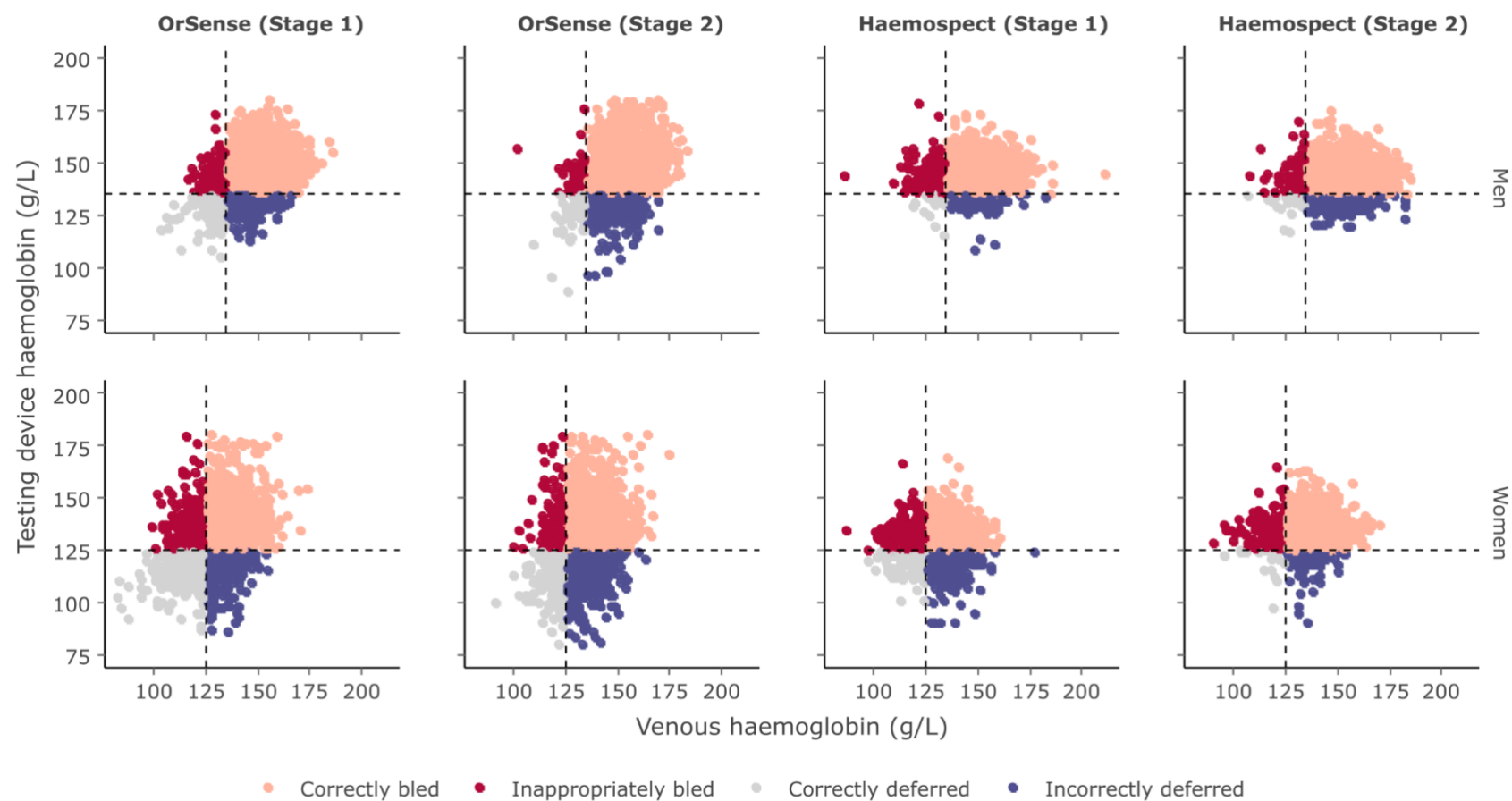
OrSense stage 1: N = 5704, mean bias = -1.2g/L (-1.6, -0.9), 95% LOA = (-25.4, 22.9), 5.3% outside the LOA.

OrSense stage 2: N = 4737, mean bias = -5.4g/L (-5.8, -5.0), 95% LOA = (-33.0, 22.1), 5.4% outside the LOA.

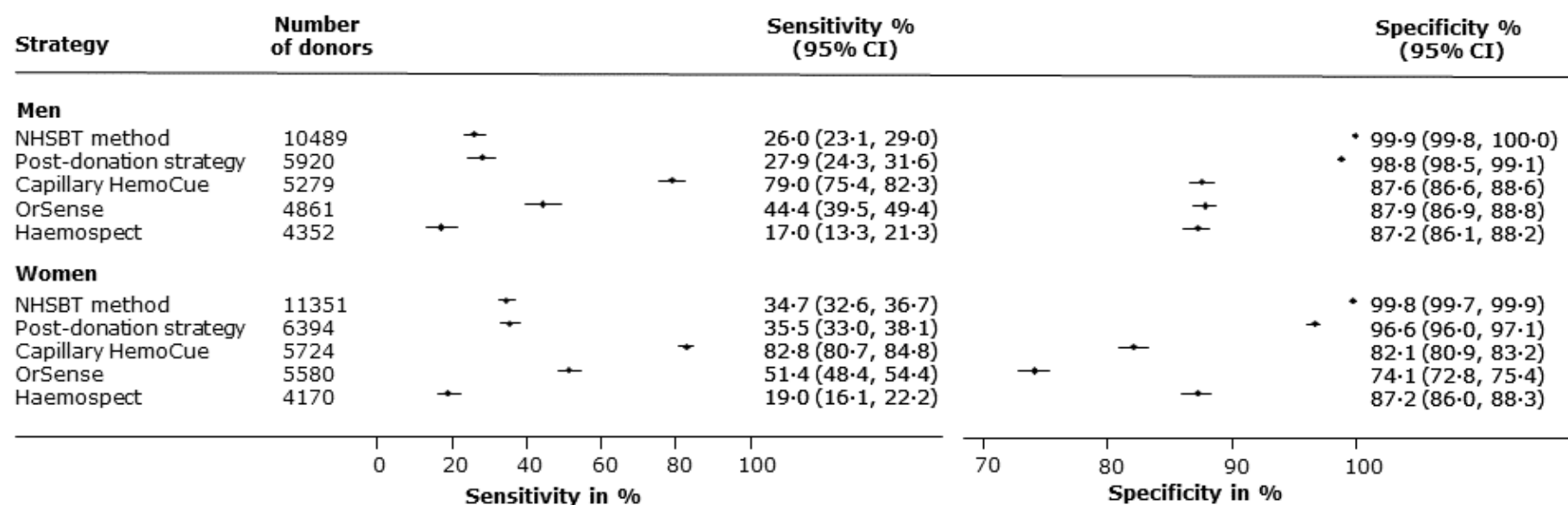
Haemospect stage 1: N = 4177, mean bias = -3.1g/L (-3.5, -2.7), 95% LOA = (-27.2, 21.1), 5.0% outside the LOA.

Haemospect stage 2: N = 4345, mean bias = -5.5g/L (-5.8, -5.1), 95% LOA = (-29.1, 18.2), 5.7% outside the LOA.

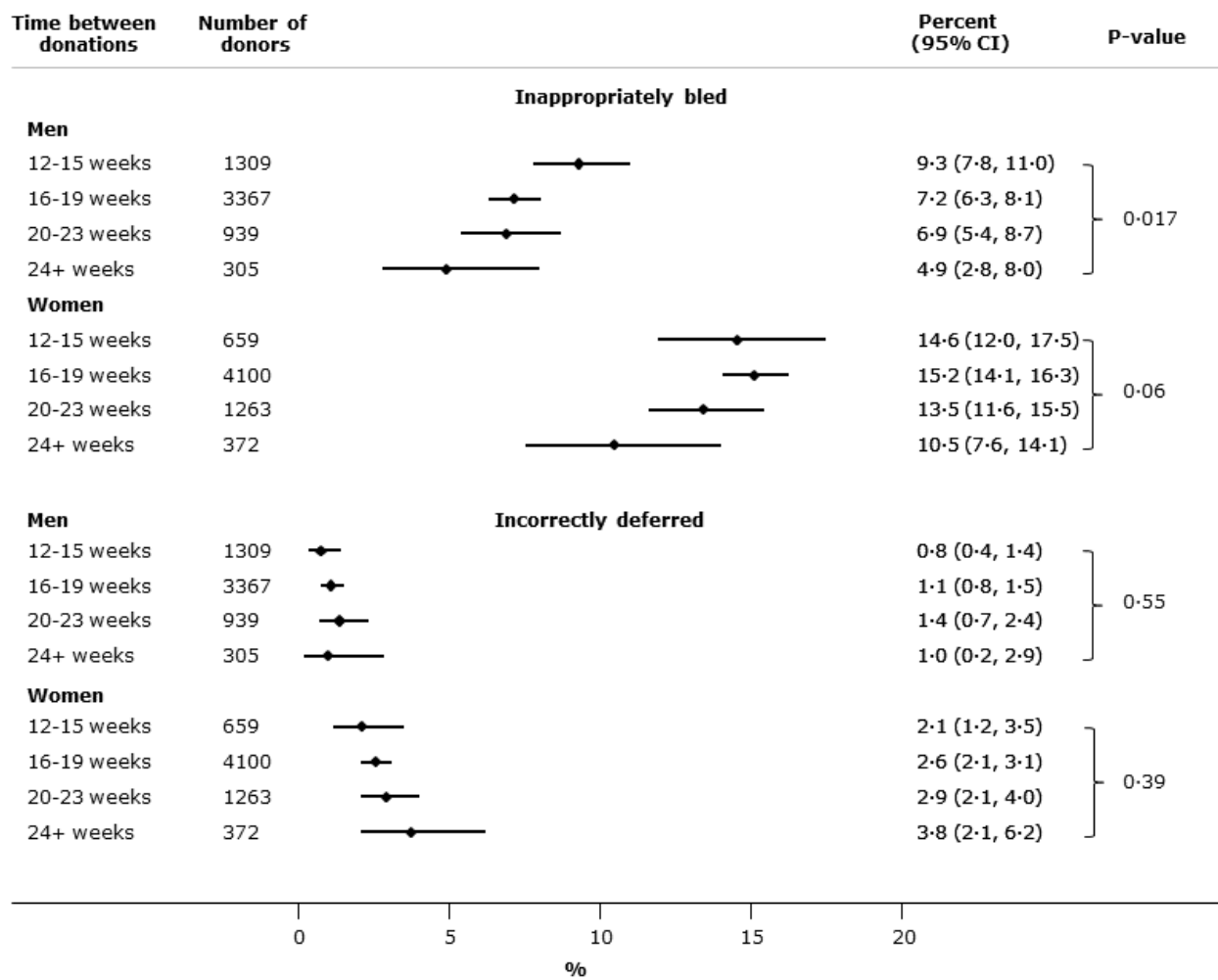
Supplementary Figure 3. Scatterplot of venous versus testing device haemoglobin values by sex



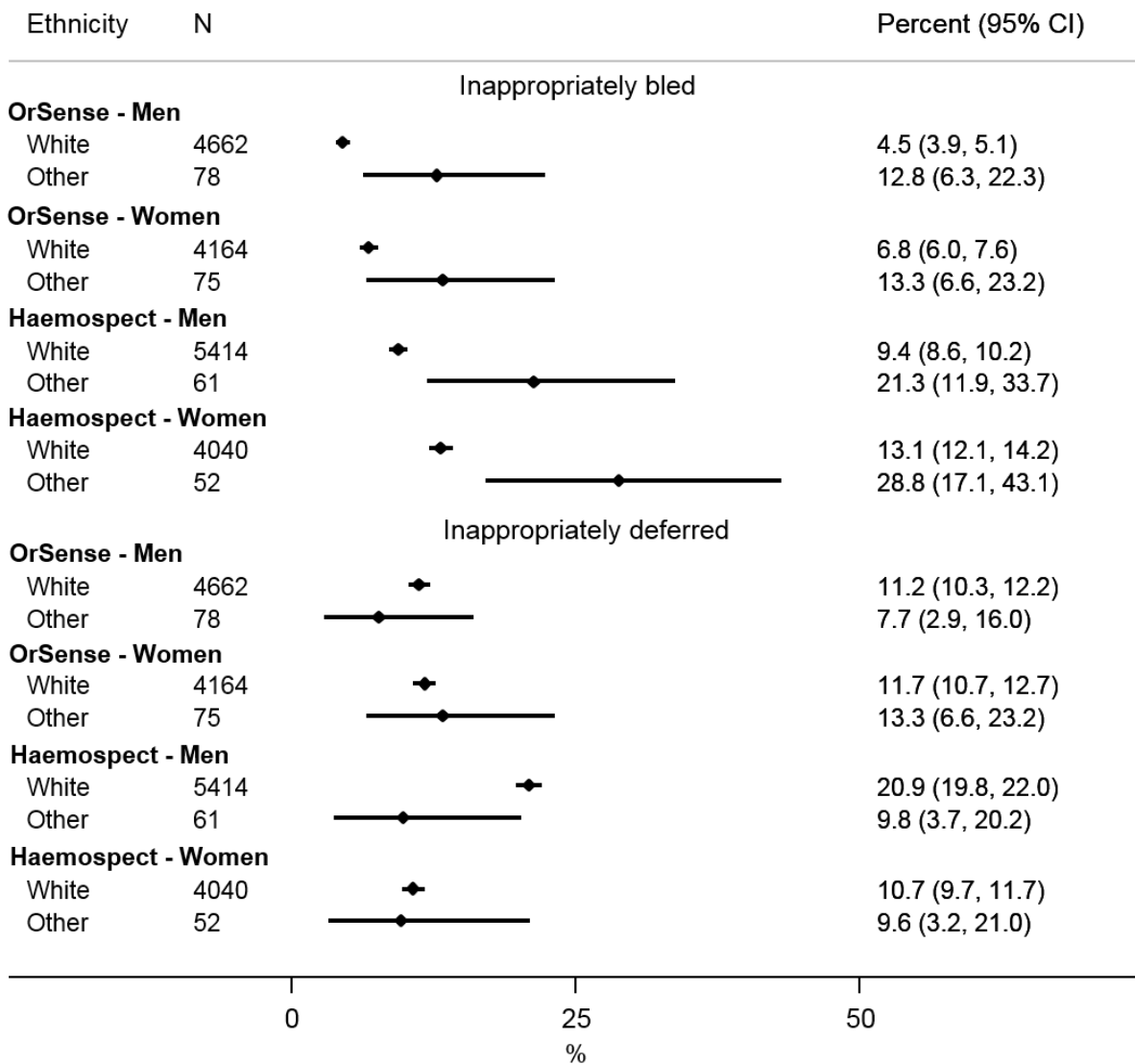
Supplementary Figure 4. Sensitivity and specificity of each haemoglobin testing device at haemoglobin donation threshold of 135 g/L in men and 125 g/L in women



Supplementary Figure 5. Forest plot of post-donation strategy performance by time taken to return for taken to return for second visit



Supplementary Figure 6. Non-invasive device performance in white versus non-white donors



Supplementary Figure 7. Donor reported preferences for each of the haemoglobin testing strategies

