Our data suggest that the ethnic origin of populations should be considered when median data are constructed for analysis of the risk of Down's syndrome.

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1 Gilbert L, Nicholl J, Alex S, Smethurst I, Mander A, Andrews A, et al. Ethnic differences in the outcome of serum screening for Down's syndrome. *BMJ* 1996;312:94-5. (13 January.)

For appreciable ethnic differences in false positive rates, use different cut off points

EDITOR,—Lucy Gilbert and colleagues report ethnic differences in biochemical screening for Down's syndrome and the relative ineffectiveness of the programme in Indian Asians.¹ At national meetings of the Association of Clinical Biochemists we presented our findings on the ethnic differences in maternal serum α fetoprotein and free β human chorionic gonadotrophin concentrations² and the differences in false positive rates in the various groups, which remain unchanged even after the use of "ethnospecific" medians.³

The false positive rate was highest in Afro-Caribbean women (9.2%; n=185) and lowest in white women (4.6%; n=328), with that in South Asian women being between the two (6.3%; n=315). Since then we have re-examined our database as we have acquired considerably more data. Contrary to our previous findings, while the false positive rate remains highest in Afro-Caribbean women, it is slightly lower in South Asian women than in white women. The false positive rates remain essentially unchanged, as before, after use of ethnospecific medians (table 1). The reason for this difference in the false positive rate in the South Asian women is not clear and could be the considerably smaller numbers we had at the time.

Reports suggesting that the incidence of Down's syndrome is low in South Asians, even after migration,⁴ seem consistent with our findings. We remain unconvinced that the detection rate (0/2) found in "Indian Asians" by Gilbert and colleagues is sufficient for it to be concluded that screening is ineffective in these women. Our data do not support this view. The low incidence of trisomy in South Asian women, if confirmed, might be a more convincing argument for abandoning biochemical screening in these women. More information about the true incidence of trisomy in South Asians in Britain is necessary before any major changes in screening strategies are undertaken.

The differences in false positive rates are probably due to different curve parameters for α fetoprotein and human chorionic gonadotrophin in normal and Down's syndrome pregnancies in different ethnic groups. We recommend that laboratories serving multiracial populations should examine the false positive rates separately in the different ethnic groups as the average rate might be misleadingly low; when there are appreciable ethnic differences in the false positive rates they should consider using different cut off points, particularly in Afro-Caribbean women, to avoid subjecting these women to unnecessary anxiety and invasive investigations.

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Table 1—Ethnic differences in biochemical screening for Down's syndrome*

	White women (n=1485)		South Asian women (n=1511)		Afro-Caribbean women (n=887)	
	AFP (U/ml)	HCG (ng/ml)	AFP (U/ml)	HCG (mg/ml)	AFP (U/ml)	HCG (ng/ml)
Weeks' gestation:						
15	22.9	18.1	20.8	16.7	26.7	18.0
16	26.4	14.3	24.3	13.6	30.7	15.1
17	30.5	11.4	28.4	11.0	35.4	12.7
18	35.3	9.0	33.1	9.0	40.8	10.7
19	40.9	7.2	38.7	7.3	47.0	9.0
20	47.3	5.7	45.2	5.9	54.1	7.6
False positive rate (%):						
Overall median	5.7		5.2		6.8	
Ethnospecific median	5.7		5.0		7.2	
No of Down's syndrome pregnancies†	2 (1.3/1000)		1 (0.7/1000)		2 (2.3/1000)	
No of cases of Down's syndrome diagnosed before birth	0		1		1	
No of unscreened Down's syndrome pregnancies	1		0		1	
Detection rate (% (No)) of Down's syndrome‡	0 (0/1)		100 (1/1)		100 (1/1)	

AFP= α Fetoprotein. HCG=Human chorionic gonadotrophin.

*Biochemical variables (assayed by Delfia α fetoprotein/free β HCG Dual, Wallac Oy, Turku, Finland) were corrected for maternal weight.

†Cases diagnosed before and after birth, including unscreened pregnancies.

‡Percentage of screened Down's syndrome pregnancies detected before birth.

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Median values and maternal weight specific to the ethnic group should be used

EDITOR,—Lucy Gilbert and colleagues report a 3.5-fold increase in the proportion of women found to be positive on screening for Down's syndrome when rates among Indian Asian women were compared with those among white women.¹ This prompted me to examine the data from Oldchurch Hospital's screening programme. Unlike Gilbert and colleagues' study, this screening programme uses α fetoprotein and free β human chorionic gonadotrophin as biochemical markers, a combination shown to give a detection rate of 75% at a false positive rate of 5%.² Screening with this test combination has been carried out in my department since 1991, and over the past four years about 50 000 women have been screened. Women are assigned to one of four ethnic groups: white, Afro-Caribbean, Asian, and oriental/others/unknown. Table 1 shows the breakdown of the screened population by ethnic group and the proportion found to be positive.

The findings in our much larger study population do not confirm Gilbert and colleagues' finding of an increased probability of a positive result of screening in Asian women. I agree that there is considerable evidence for ethnic differences in the median concentrations of the various analytes used, particularly α fetoprotein and intact human chorionic gonadotrophin in Afro-Caribbeans³ and free β human chorionic gonadotrophin in oriental women.⁴ Provided due consideration is given to using medians specific to the ethnic group that have been derived from the test population and provided due regard is taken of the maternal weight in these groups (which may vary appreciably from that in a white population), then general screening principles can be applied. As has been

shown in a large study of oriental women, provided these factors are taken into account detection rates of 84% at an amniocentesis rate of 50% are readily achievable—certainly when measurement of α fetoprotein and free β human chorionic gonadotrophin is used.

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When marginal costs and benefits should be used in screening

EDITOR,—Contrary to the statement by David J Torgerson and Anne Spencer in their article on marginal costs and benefits,¹ we did not evaluate the economic consequences of changing screening for Down's syndrome from the method based on maternal age to that based on biochemical screening. We directly estimated the cost of detecting a pregnancy in which the fetus had Down's syndrome by using biochemical screening (the triple test).²

The example that the authors give of how to use marginal costs and benefits to guide a decision on changing from one form of screening to another does not compare the cost of the two methods at the same level of detection and is therefore not an

Table 1—Analysis of screened population by ethnic group and screened positive rate

	Afro-Caribbean	White	Asian	Oriental/other/unknown	Total
Total	3054	36 720	5490	4592	49 856
No (%) positive on screening	186 (6.1)	1 899 (5.2)	302 (5.5)	266 (5.8)	2 653 (5.3)