whole screened population the number of babies with Down's syndrome was 25. With Wald and colleagues' screening test, the number of Down's syndrome babies detected was 12. With screening by maternal age ≥ 37 years alone, the number detected could have been 7 out of 25. These proportions are not significantly different (Fisher's exact test $p=0.24$; odds ratio 2.37; 95% confidence interval 0.73 to 7.68). Even with the different uptake of amniocentesis in the two groups—that is, 75% for all ages and 63% for those ≥ 37 years—there was still no significant difference in the result ($p=0.2$; odds ratio 2.95 (0.77 to 11.3)).

Only 4.9% of women were aged ≥ 37 years; the confidential enquiries into maternal deaths in the United Kingdom 1985-7 reported that 8% of pregnant women were over 35 and in our hospital in 1991 the proportion ≥ 37 years was 9.2%. This proportion is likely to rise as women delay their families for personal and financial reasons, and as this proportion rises the detection rates from the triple test and from maternal age alone will become even more similar.

In any particular district the cost of introducing this programme will depend on the proportion of women ≥ 37 years; in addition, many authorities (including our own) have now abandoned α fetoprotein testing, relying for neural tube defect screening on ultrasonography alone, and the cost of reintroducing this test would need to be accounted for in the calculations.

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- 1 Wald NJ, Kennard A, Densen JW, Cuckle HS, Chard T, Butler L. Antenatal maternal serum screening for Down's syndrome: results of a demonstration project. *BMJ* 1992;305:391-4. (15 August.)
- 2 Department of Health, Welsh Office, Scottish Home and Health Department. *Report on the Confidential Enquiries into Maternal deaths in the United Kingdom 1985-1987*. London: HMSO, 1991:18.

EDITOR,—Nicholas J Wald and colleagues describe a demonstration project for Down's syndrome screening in which the detection rate achieved was 48% (12/25 cases) at a 4.1% false positive rate.¹ They used three biochemical tests (α fetoprotein, total human chorionic gonadotrophin, and unconjugated oestriol) along with maternal age in the so called triple test.

Our screening programme has used only α fetoprotein (and maternal age) in combination with the marker free β human chorionic gonadotrophin. In our large retrospective study free β human chorionic gonadotrophin was shown to be the biochemical marker with the greatest predictive value for Down's syndrome.² Studies with 90 cases of Down's syndrome and 2862 unaffected controls showed that the combination of α fetoprotein and free β human chorionic gonadotrophin detected more cases of Down's syndrome than did the triple test approach. This study confirmed previous findings in which detection rates of 75-80% were achieved in the early gestational period (14-16 weeks).^{3,5}

In prospective studies using the free β protocol we have achieved detection rates for Down's syndrome of 73% (11/15) with a 5.5% false positive rate. Unlike Wald *et al*'s study, which detected only 20% more cases than would have been detected by a policy of screening according to advanced maternal age, our programme detected an additional 53% of cases. These results, in which α fetoprotein and free β human chorionic gonadotrophin detect more cases of Down's syndrome in younger women, confirmed observations in our retrospective study, in which this combination detected 100% more cases in women under 30 than did the triple test.

Observations that concentrations of free β human chorionic gonadotrophin are raised in the first trimester in Down's syndrome pregnancies⁶ add further weight to our argument that free β human chorionic gonadotrophin is the marker of choice for Down's syndrome screening. The benefit of additional tests such as unconjugated oestriol is at best unproved and at worst widens the error in the risk estimate,^{7,8} may add to the false positive rate,^{9,10} and adds to the laboratory screening costs.

The scientific and medical community is best served by a balanced argument of the facts, rather than the exaggerated media reports of recent publications. Health authorities should be aware of the cost implications of making decisions in which suboptimal screening programmes are suggested. The general public and patients are not best served by an oversimplification of the facts that in turn grab headlines. Fortunately the scientific and medical community is capable of seeing through the "hype" and is able to make its own balanced judgments. At least as many laboratories in the United Kingdom are now using the free β human chorionic gonadotrophin protocol as are offering the triple test. The benefit of an increased detection rate and improved screening efficiency with the use of technologically advanced analytical procedures¹¹ will ensure that those benefits become available to all health authorities.

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- 1 Wald NJ, Kennard A, Densen JW, Cuckle HS, Chard T, Butler L. Antenatal maternal serum screening for Down's syndrome: results of a demonstration project. *BMJ* 1992; 305:391-4. (15 August.)
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EDITOR,—We have carried out with others a similar study to that by Nicholas J Wald and colleagues,¹ offering screening for Down's syndrome to 10000 pregnant women in south Wales. This was submitted to the Welsh Office in February 1992. We would like to comment on the findings of Wald and colleagues.

In the population studied by Wald and colleagues 5.5% of women were aged over 37 years; in these women the detection rate was 71%. The detection rate in younger women was only 39%. This is important because the overall detection rate in a predominantly younger population would be decreased. Our population has only 2.8% of pregnancies in women aged over 37.

The initial screen positive rate found by Wald and colleagues was 5.7%, whereas our study had an initial screen positive rate of 3.5%. They used the

triple test (α fetoprotein, human chorionic gonadotrophin, and unconjugated oestriol, whereas we used a double test (α fetoprotein and human chorionic gonadotrophin). The detection rates in the two studies were almost identical: Wald and colleagues found 48% and we found 50%.

Our detection rate was effectively identical to that of Wald and colleagues but we had an initial screen positive rate that was 40% lower. We used only two analytes, consistent with reports that using unconjugated oestriol in screening is of minimal benefit,^{2,3} increases the false positive rate,⁴ and greatly increases the imprecision of risk estimates.⁵

Thus, although Wald and colleagues' study shows that Down's syndrome screening is a useful addition to antenatal care, it does not show that the triple test has any advantages over a double test.

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- 1 Wald N, Kennard A, Densen J, Cuckle HS, Chard T, Butler L. Antenatal maternal serum screening for Down's syndrome: results of a demonstration project. *BMJ* 1992;305:391-4. (15 August.)
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EDITOR,—Although we congratulate Nicholas J Wald and colleagues on their demonstration project,¹ three points deserve comment.

Firstly, we are surprised that 25% (129/526) of the women who proved positive on screening subsequently declined the offer of amniocentesis despite access to individual counselling. We speculate that many of these women did not understand the nature of the initial screening test and that the knowledge that they were at increased risk of having a Down's syndrome baby could have been a source of stress for the remainder of their pregnancy.

Secondly, the authors discuss the advantage of performing a dating ultrasound examination on all women at the time of screening to avoid the need to later reassess positive results after a revision of gestational age. Another advantage is in avoiding possible costly litigation by women with false negative results, where it might be argued that dating by clinical methods alone is negligent. Had a scan been performed, the screening test would have been interpreted differently and amniocentesis offered.

Finally, to assess the population impact of the screening programme it is necessary to know how many Down's syndrome babies were born to the 26% of mothers who declined screening.

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- 1 Wald NJ, Kennard A, Densen JW, Cuckle HS, Chard T, Butler L. Antenatal maternal serum screening for Down's syndrome: results of a demonstration project. *BMJ* 1992;305: 391-4. (15 August.)

EDITOR,—Nicholas J Wald and colleagues claim that antenatal serum screening for Down's