Rugby Unions of less value in establishing the outcome of any changes in policy.[1]

I support the need for a register of injuries, but such a study has to be prospective and a standard form has to be produced. Someone in each club, whether it be a doctor, team captain, or physiotherapist, will have to take responsibility for filling up these forms, checking them, noting time off work and how the injuries were sustained, etc, and seeing that they are centrally registered. It is no good leaving it to the players to fill in forms as self notification is notoriously inaccurate, and, particularly with minor injuries, players may well not report to their general practitioners.

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1 Garraway WM, Macleod DAD, Sharp JCM. Rugby injuries: *BMJ* 1991;**303**:1082-3. (2 November.)
2 Silver JR. Injuries of the spine sustained in rugby. *BMJ* 1984;**288**:37-43.
3 Silver JR, Gill S. Injuries of the spine sustained during rugby. *Sports Med* 1988;5:328-34.

SIR,—In their editorial W M Garraway and colleagues highlight the problem of injury in rugby football and suggest the need for formal audit.[1] In fact, a study is currently under way.

Since 1985 the English Rugby Football Union has conducted a survey of injuries, involving all affiliated clubs and schools. At the beginning of each season copies of a detailed form relating to the nature and circumstances of injury are circulated and a request made for an officer from each organisation to be responsible for their completion and return. The data form the basis of an annual report that is available free from the English Rugby Union. This endeavour encompasses the aims outlined in the editorial and is likely to produce useful information.

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SIR,—I endorse the suggestions in W M Garraway *et al*'s editorial on rugby injuries that the rugby football unions establish a case register of injuries[1] but suggest that such a register be extended to cover minirugby. Minirugby (6-13 years) was set up to encourage the game in light of the demise of school rugby. It has been an overwhelming success.

The rules of minirugby are in a constant flux mainly because of the need to mitigate injury in such young players. The register could settle once and for all the most appropriate age to introduce the tackle and the hand off, and whether age or body weight should be the determining criterion when selecting a team. Although age is generally a good marker in younger boys, during the pubescent year quite remarkable weight and height differences can lead to unbalanced teams and consequent injuries. Further, those clubs that practise at the limits of the rules would be identified formally (we all know them). Paradoxically, this might allow some reasonable relaxation of rules designed to curb such clubs but often to the detriment of the natural rhythm of the game.

It is my experience, as an attending medical officer, that the number of injuries increases exponentially during competition matches. Intraclub matches rarely give rise to injury and I cannot recall an injury of note during training sessions. Interclub matches, however, always give rise to some injuries. I feel this is in part due to the often vociferous support from parents on the touchline, driving their boys to take unnecessary risks. The proposal in the editorial is overdue and would lead to a fall in the number of minirugby injuries which, although not great, must always be of concern.

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## Chorionic villus sampling

SIR,—We find it remarkable that, at a time when the initial confusion over the safety and accuracy of chorionic villus sampling is being clarified by centres with large accumulated experience, Richard J Lilford suggests that the procedure should become history.[1] Provided that chorionic villus sampling is performed after 10 weeks in centres with experience, there is no increased risk of disturbance to embryogenesis and the rate of fetal loss is comparable with that associated with amniocentesis in the second trimester.[2-4]

Inaccuracy is almost entirely due to confined placental mosaicism,[5] which occurs in approximately 1% of cases (provided cytogenetic analysis is performed with both the direct preparation and culture).[6] (Mosaicism occurs with amniocentesis and can be of a similar order of magnitude.[7]) In more than four fifths of this 1% of cases[5] the fetus does not seem to be clinically affected as the effect of mosaicism depends on the chromosomes involved and the proportion of cells in the individual tissues.[8] Therefore it is possible for mosaicism to be diagnosed by chorionic villus sampling but not confirmed by amniocentesis or fetal blood sampling,[9] although this is believed to be rare. The implications for management are that termination should never be performed for mosaicism without further investigation and expert interpretation.

In conclusion, we consider that in centres with experience chorionic villus sampling has "risen" and should not be aborted.

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1 Lilford RJ. The rise and fall of chorionic villus sampling. *BMJ* 1991;**303**:936-7. (19 October.)
2 Smidt-Jensen S, Philip J. Comparison of transabdominal and transcervical CVS and amniocentesis: sampling success and risk. *Prenat Diagn* 1991;**11**:530-7.
3 Young SR, Shipley CF, Wade RV, Edwards JG, Waters MB, Cantu ML, *et al*. Single center comparison of results of 1000 prenatal diagnoses with CVS and 1000 diagnoses with amniocentesis. *Am J Obstet Gynecol* 1991;**165**:255-63.
4 Smoleniec JS, James DK. Evaluation of chorionic villus sampling. *Lancet* 1991;**338**:449.
5 Miny P, Hammer P, Gerlach B, Tercanli S, Horst J, Holzgreve W, *et al*. Mosaicism and accuracy of prenatal cytogenetic diagnoses after chorionic villus sampling and placental biopsies. *Prenat Diagn* 1991;**11**:581-9.
6 Ledbetter D. Cytogenetic results of chorionic villus sampling: high success rates and diagnostic accuracy in the USA collaborative study. *Am J Obstet Gynecol* 1990;**162**:495-501.
7 Medical Research Council Working Party on the Evaluation of Chorionic Villus Sampling. Medical Research Council European trial of chorionic villus sampling. *Lancet* 1991;**337**:1491-9.
8 Hoehn H, Rodriquez ML, Norwood TH, Maxwell CI. Mosaicism in amniotic fluid cell cultures: classification and significance. *Am J Med Genet* 1978;2:253-66.
9 Hammer P, Holzgreve W, Karabacak Z, Horst J, Miny P. "False-negative" and "false-positive" prenatal cytogenetic results due to "true" mosaicism. *Prenat Diagn* 1991;**11**:133-6.

SIR,—Richard J Lilford has always advocated decision analysis and frequently expounds on the question of choice. His editorial is subtitled "midtrimester amniocentesis is usually preferable"[1] and the inference from this—that first trimester chorionic villus sampling is passé—contradicts the idea of appropriate risk management, something that most practising clinicians appreciate.

The higher rate of fetal loss with villus sampling before 28 weeks' gestation reported in the European trial[2] was not substantiated by the Canadian study.[3] Lilford conceded that operator experience and expertise counts. The European trial in which 17% of procedures were considered difficult and 31% required more than one attempt to obtain adequate diagnostic material cannot suggest villus sampling is more risky than amniocentesis. Villus sampling, however, should be done by experts.

World cohort and personal experience of over 1000 samplings suggest that the rate of fetal loss with villus sampling is within 1-2% of the rate with amniocentesis (1·6% in the European trial[2]). Who should choose the screening procedure? Many mothers would not consider midtrimester amniocentesis preferable when faced with the emotive and physical cost of a midtrimester abortion.[4,5]

Facial clefting defects are common abnormalities[6] and are often associated with limb defects[7] in many syndromes. These defects are evident by the third or fourth week and established by the sixth week of gestation. The question of risk framing is important as many women seeking prenatal diagnosis may not consider oromandibular or limb hypogenesis a threat when the calculated incidence is 0·3 per 1000.[1]

The ambiguous results for mosaic chromosomal abnormalities reported in the Canadian trial were not a major problem in the European trial or the United States multicentre study of over 6000 women.[1] Clearly there is also a learning curve for cytogenetists and experience counts.[7,8] With regard to amniocentesis before 12 weeks' gestation, apart from the safety question, where are the amniotic fluid cells from?

Chorionic villus sampling was developed to meet women's needs to avoid midtrimester diagnosis and late abortion. As a member of the working party for the European trial I am acutely aware that participants were still on the learning curve and results will differ if the trial is repeated. Lilford must remember trials are conducted to provide answers and figures—the ingredients for risk framing and decision analysis. The choice must remain with the consumer, who may not be impressed by risk below statistical detection.

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1 Lilford RJ. The rise and fall of chorionic villus sampling. *BMJ* 1991;**303**:936-7. (19 October.)
2 MRC Working Party. Evaluation of chorionic villus sampling. *Lancet* 1991;**337**:1491-9.
3 Canadian Collaborative CVS-Amniocentesis Clinical Trial Group. Multicentre randomised clinical trial of chorionic villus sampling and amniocentesis. *Lancet* 1989;i:1-6.
4 McCormack MJ, Rylance ME, MacKenzie WE, Newton J. Patients attitudes following chorion villus sampling. *Prenatal Diagnosis* 1990;**10**:253-5.
5 Abramsky B, Lenore G, Rodeck CH. Women's choice for fetal chromosome analysis. *Prenatal Diagnosis* 1991;**11**:23-8.
6 Romero R, Pilu G, Jeanty P, Ghidini A, Hobbins JC. *Prenatal diagnosis of congenital abnormalities*. California: Appleton and Lange, 1988:101-5.
7 Romero R, Pilu G, Jeanty P, Ghidini A, Hobbins JC. *Prenatal diagnosis of congenital abnormalities*. California: Appleton and Lange, 1988:89-95.
8 Ledbetter DH, Martin AO, Verlinsky Y, Pergament E, Jackson L, Yang-Feng T, *et al*. Cytogenetic results of chorionic villus sampling. High success rate and diagnostic accuracy in the United States collaborative study. *Am J Obstet Gynecol* 1990;**162**:495-501.
9 Rooney DG. The interpretation of cytogenetic results. In: Liu DTY, ed. *A practical guide to chorion villus sampling*. Oxford: Oxford Medical Publications, 1991;62-72.

## Oral and intravenous rehydration therapy

SIR,—Angela Mackenzie and Graeme Barnes compared oral and intravenous rehydration therapy in children and came to the surprising but comforting conclusion that "rehydration by mouth or nasogastric tube is a safe and effective treatment in moderately dehydrated children with gastro-