Age (years)	Men who had farmed for >10 years			Controls		
	No assessed	Cases of hip replacement	Prevalence (%)	No assessed	Cases of hip replacement	Prevalence (%)
50-55	20	2	10	17		
56-60	24	2	8	19		
61-65	23	4	17	15		
66-70	27	4	15	20	1	5
71-76	26	5	19	12		
>60	76	13	17	47	1	2
All	120	17*	14	83	1	1

*Five (29%) farmers required bilateral replacements.

Incidence of hip replacement among men over 60 in practice=8.4% and among women over 60=1.3%.

activities at an early age. Many of my farmworkers began their work at the age of 14, when their hip joints were not fully mature. Interestingly, Murray and Duncan observed: "Those areas of the world in which middle aged men are particularly afflicted by degenerative disease of the hip largely correspond to those in which competitive athletic activities emerged."

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EDITOR,—The Body Fluids Research Group welcomes the finding by Peter Croft and colleagues that farmers are at a greater risk of suffering from osteoarthritis than the normal population.¹ In Northern Ireland farming is a common occupation and, with the benefit of a centralised orthopaedic service, we have observed a definite clustering in farming communities for many years. One region, Rathfriland, where the incidence is unusually high, led our research group to consider mechanical events as an aetiological factor in this disease.²

We have proposed a new mechanism for producing damage to articular surfaces—namely, the phenomenon of cavitation.³ This term describes potentially destructive bubble activity in fluid systems. Our hypothesis is that predictable mechanical events occur in normal joints which if accentuated will initiate the idiopathic development of osteoarthritis of the hip. We investigated the familiar cracking of joints by vibration arthrometry and postulated that these were due to cavitation.⁴ Tension was applied to the synovial joint and was sufficient to break the synovial fluid, manifesting as cavitation. Cavitation seems to disrupt the surface of hyaline cartilage, particularly the collagen surface of chondrocyte lacunae.⁵ We propose that cavitation in vivo can take two forms⁶: that which produces the familiar cracking sound (macro-cavitation), and microbubble activity, which may occur because of the bubbles remaining in the synovial fluid after the crack (microcavitation).⁶

We related the high incidence of osteoarthritis of the hip in our farming communities either to high tension and shear forces produced while working in wet clay soils planting, harvesting, and stacking, particularly the potato crop, or to genetic factors producing a stickier than normal synovial fluid, both mechanisms inducing cavitation at a higher level than normal.

We believe that these factors must continue to be investigated because of the potential to prevent the disease process. We welcome the evidence that mechanical events in synovial joints may

provide new insight into this common and costly disease.

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- 1 Croft P, Coggan D, Cruddas M, Cooper C. Osteoarthritis of the hip: an occupational disease in farmers. *BMJ* 1992;304:1269-72. (16 May.)
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Making air crashes more survivable

EDITOR,—Daphne Gloag and Ian R Hill give misleading views of progress on improving passengers' survival in aeroplane accidents.^{1,2} The quoted survival statistics refer only to accidents in which some fatalities occurred; no account is therefore taken of improvements that may have led to an accident becoming fully survivable rather than partially so.

The overall fatal accident rate for jet aeroplanes in the United Kingdom has fallen from about 1.5 per million flying hours in the early 1960s to about 0.2 per million since the mid-'80s, and worldwide there has been a similar reduction. That improved cabin safety has played its part in this is shown by the fact that the rate of fatal accidents involving fire has halved in this period. The number of deaths in fires has improved even more dramatically from 11 per million hours to less than four per million.

In pursuit of continued improvements in survival in accidents the Civil Aviation Authority in the past seven years has taken 16 major regulatory initiatives. These include improvements to the resistance of cabin materials to fire, equipment to detect and fight fires, access to exits, and emergency procedures and training. Significant further improvements in survival will be hard to achieve and expensive, so Gloag is incorrect in suggesting that "much could be done now at little cost." Aeroplane landing and take off speeds are, after all, about twice those of fast motorway traffic.

In 1988 the Civil Aviation Authority adopted new requirements regarding the strength of seats, which constituted a major advance on the previous standards, but we accept that the accident at Kegworth highlighted the need for still further improvements to seats and their attachments as well as a general need for greater "impact friendliness" in the cabin.

Research is needed to support new international

standards, and computer simulation of the accident at Kegworth has led to recommendations for a new brace position. We have commissioned additional research to confirm that this will not reduce overall safety levels, and that work will be completed in July.

The question of smoke hoods for passengers has tended to dominate discussions about cabin safety in recent years, with the proponents maintaining an effective and high profile lobby. The easiest response to this campaign would have been for the Civil Aviation Authority to make their provision mandatory. We are firmly convinced, however, that smoke hoods would cause more lives to be lost than would be saved. Accordingly, we do not require them and discourage airlines from offering them. Many fire safety specialists in other aviation authorities, fire services, research organisations, the airline industry, and various representative bodies support us in this.

Extensive full scale research in the United States and experience of accidents suggest strongly that there is not more than 30 seconds between when a survivor without a smoke hood would be incapacitated by the toxic gases and when one with a smoke hood would be overcome by the fire itself. However good the design of a smoke hood and the necessary briefing on its use given to passengers, it will still be unfamiliar; we are concerned that in a crash, with passengers experiencing shock and perhaps panicking, there could be delays in putting smoke hoods on. Furthermore, it would require only one or two people to get into difficulty with their smoke hoods to jeopardise the whole evacuation. We believe that evacuation is the first priority and that any risk of delay or hindrance should be minimised.

The Civil Aviation Authority has not, however, given up its search for improved fire protection—far from it. We are, for example, working with the United States Federal Aviation Administration on a cabin water mist system, which looks promising in its ability to delay the spread of fire, reduce temperatures, and wash out some toxic species. There are no easy options. More needs to be, and is being, done, and the survivability of aircraft accidents has already been much improved.

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Life as a junior hospital doctor's spouse

EDITOR,—I sympathise with Janet Cade's view of life as a junior hospital doctor's spouse.¹ My wife and I had been courting since my second year in medical school. We decided to wait until after the preregistration year to get married to make sure that our relationship could stand the strain. In our three and a half years of marriage we moved house six times. The bulk of this work usually fell to my wife despite her demanding nursing career.

For three years I have been continually studying for higher examinations; for 16 months of this I have been on 1 in 2 rotas. I am not in a hard pressed specialty, but the toll on our social life was great. Communication was limited over the evening meal before the night stretched away into revision, but we were happy, planning our futures and planning children. With our last move my wife could not find a suitable job for her experience and skills and so settled into being a housewife with all the stresses that job implies. Studying continued, and with it our communication dwindled. At

Christmas my wife said that she could not take the situation any more and left.

I think that this highlights two points. Firstly, the career structure of medicine, especially the surgical specialties, requires a high degree of mobility to find jobs and a large degree of luck to pass examinations with low pass rates that have become entrance examinations (rather than exit examinations) to higher training. Secondly, and most importantly, my experience has highlighted the need for good and continuing communication in a marriage. I thought that my wife and I had this, but, as events show, I was wrong. From speaking with a counsellor at Relate, I gather that doctors seem to be reluctant to admit to poor communication and usually leave it too late to seek help. I strongly endorse the need for an accessible counselling service for doctors and regular stress review.²

Now I have another stress to cope with: if I have failed at the most important relationship of my life how can I presume to relate to patients?

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1 Cade J. Junior doctor's spouse—a camp follower? *BMJ* 1992; 304:1639. (20 June.)

2 BMA. *Stress and the medical profession*. London: BMA, 1992.

EDITOR.—There is an alternative view of life as a junior hospital doctor's spouse to that recounted by Janet Cade.¹ I have 10 suggestions for getting the best out of such a life.

(1) Get to know your spouse well before you get married. This will help you to know what you are letting yourself in for.

(2) Get married quite late (around 30 is a good time). This gives you both lots of time to get used to having your own lives—and if they're conducted at opposite ends of the country it is a good test of whether the relationship is worth making an effort for. (It also has the advantage of taking you through the most junior jobs, when doctors change hospitals every three to six months.)

(3) Treat time together as precious and to be used in enjoying each other's company, not as an opportunity to moan about the bits you don't like. Catching up on housekeeping activities and passing on neutral information are better done by notes or telephone calls.

(4) Why should you expect always to come first? There is a time and a place for everything. Working hours should be for work. Be thankful that your spouse has a job that he or she enjoys enough to be committed to: try to achieve the same for yourself. A medical career will not prevent your spouse being there when really needed (childbirth, sudden life threatening illness, marriage), only when you think it would be nicer for you if he or she was there.

(5) Don't ever keep meals waiting until your spouse gets home. That way lies madness (or, at the very least, near starvation). Eat when you need to and then get on with your life. Your partner can fend for himself or herself on returning home.

(6) Make up your minds well in advance whose career comes first. If you are the one whose job is deemed more moveable be prepared to move cheerfully when the time comes. It may never arrive.

(7) Don't bother to spend weekends on take in the hospital after you've tried it a few times. The surroundings are awful, the beds uncomfortable, and the nights inevitably broken. Your partner has had more practice at surviving these atrocious conditions than you have.

(8) Remember: life wasn't meant to be easy. Nobody forced you to marry a junior hospital doctor. It was something you chose for yourself, probably because you thought your lives would be immeasurably enriched by spending what little spare time you have together rather than apart. Don't spoil it by concentrating on the bad bits.

(9) If you really don't like it do the other thing. Get a divorce and marry a teacher instead if what you really want is long holidays and undisturbed nights. But remember, plenty of other people work antisocial hours (police officers, fire officers, ambulance drivers, politicians, publicans, actors, restaurateurs, self employed plumbers, etc). Personally, I'd rather see my husband twice a week (the combined result of his on call and on take rotas and my business trips) than spend undisturbed nights from 6 pm to 8 am, every weekend, and 12 weeks' holiday every year with anybody else.

(10) Love, determination, honesty, and hope are all necessary, but you have a lot more fun if you add laughter, optimism, cheerfulness, and a positive approach to life as well.

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1 Cade J. Junior doctor's spouse—a camp follower? *BMJ* 1992;304:1639. (20 June.)

Cite the workers

EDITOR.—The current system of naming authors of papers rewards a limited number of research writers but often fails to reflect the contribution made by other workers. There is increasing pressure on staff in academic departments of general practice and hospital career grades to publish. At the same time the number of patients in hospital, and hence the opportunity to do research, is dwindling, and research in academic departments of family medicine centred on general practices is limited by overfarming of the practice population. Thus researchers rely more and more on "ordinary" general practitioners, who are asked to supply patients, search records, provide family histories, identify morbidity, complete questionnaires, record consultations, assess model cases, undergo psychological testing, and take blood samples for various trials. Though practices may not actually write up the project, they make a considerable contribution to the work yet there is no recorded recognition other than occasional acknowledgments in a postscript.

There has been much discussion in the past about authorship and who deserves to be named. The consensus statement by medical editors gives specific advice on authorship.¹ In 1989 Grant,² responding to Ben-Shlomo and Goodman,³ emphasised the increasing cooperation between departments and disciplines and defended multiple authors. Perhaps with increasing participation of general practitioners it is time for a change.

I propose altering the heading of scientific papers to recognise the work of essential coworkers who, although intimately involved, did not actually write the paper; I suggest an additional citation in alphabetical order below the usual title and authors. This would be before the text and include only those who were integral and essential coworkers. A formal record of participation at the beginning of a published paper may offer benefits to both general practitioners and prospective researchers.

Firstly, my proposal offers general practitioners the opportunity of partial ownership of a paper and allied professional satisfaction. Formal, recorded participation may increase the profile of the practice. It may help in negotiations with the family health services authority for extra staff. It may be used in assessing practice based projects for grant aid. If the concept of research practices becomes reality it offers formal recognition of previous contributions. It may also offer the incentive to increase involvement in academic practice. Secondly, for research workers who complain of poor participation by general practitioners the promise of citation and thus partial ownership of a paper may increase general practitioners' participation and enthusiasm.

The nature of research is changing, and future research will rely increasingly on general practitioners' cooperation. General practitioners' contribution to research projects should be recognised formally. Let us avoid the ultimate scenario, in which someone other than the author of the paper did all the work or the standardised method described in satire by Rafal.⁴

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1 International Committee of Medical Journal Editors. Uniform requirements for manuscripts submitted to biomedical journals. *N Engl J Med* 1991;324:424-8.

2 Grant IWB. Multiple authorship. *BMJ* 1989;298:386-7.

3 Ben-Shlomo I, Goodman G. A place in the sun. *BMJ* 1988;297:1631-2.

4 Rafal RB. A standardised method of determination of who should be listed as authors on scholarly papers. *Chest* 1991;99:786.

Royal Society of Medicine Services Limited

EDITOR.—We are writing to correct both the errors of fact and the false impressions relating to publications of the Royal Society of Medicine given in Victor Bloom's letter.¹ It is not clear what Bloom means by "publications of the permanent staff." If he means published material over which the permanent staff exercise editorial control then no such publications exist.

Royal Society of Medicine Services Limited is responsible for all publications of the society except the society's journal. These include titles in the International Congress and Symposium Series, the society's vehicle for sponsored symposiums, all of which are peer reviewed. The editor of this series (JW) is a former president of the society, and an associate editor of the series (Professor Paul Turner) is a former honorary editor of the society. The honorary editors of the society are fully aware of the careful peer review procedures followed, and both serve on the panel of referees. Each volume published in the series is invariably sent to every member of council, on which all sections are represented. The serving president and the senior honorary editor of the society both attend board meetings of Royal Society of Medicine Services Limited.

The society's name and coat of arms on publications, including the *Journal of the Royal Society of Medicine*, do not imply the society's endorsement of their content but simply give an assurance of quality determined by thorough editorial control and peer review.

Bloom has also misunderstood the role of the permanent staff at council meetings. They attend in an advisory capacity and have no vote. They are servants of the society, and their duties are to implement the society's policy as laid down by its council. Six of them attend council meetings. There are over 60 fellows on the council.

Royal Society of Medicine Services Limited was established in 1979 and is closely governed by its board of directors (all are appointed by the council, and some of them serve on the council). It is a vigorous publishing company which not only enhances the society's academic reputation but makes an important contribution to its finances. Any fellow of the society who may have any anxiety about its work is free to make representations to the council, the honorary editors, or the board of directors.

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1 Bloom V. All's not well at Royal Society of Medicine. *BMJ* 1992;304:1636. (20 June.)