FERTILITY SERVICES

Hannah O'Connor: Elective Report 2012

Email ha06397@qmul.ac.uk

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Elective supervisor: Prof William Ledger, w.ledger@unsw.edu.au

1. Describe the prevalence of fertility problems amongst males and females who exercise to an extreme level in Australia, and consider the impact that this may have on elite athletes worldwide, including in the UK.

After discussion with our supervisor and performing a literature search, it was decided to only concentrate on female infertility in order to adequately perform a literature search and in depth evaluation in such a short period of time.

There is little data regarding the prevalence of exercise in Australia. However, from our observation of the Eastern Suburbs of Sydney during our elective period, one can conclude that exercise (and indeed, over exercise) is a more prominent public health issue compared to the UK. During clinics in which I observed, the prevalence of menstrual disturbances was higher than during my time observing in the UK, and the BMI of patients was lower.

It is not easy to quantify exercise or extreme exercise. With no universal definition, studies adopt different interpretations which range from duration, type, frequency and whether or not the subject sweated or not. This makes comparison near impossible.

Therefore, it is with caution that I conclude that among female elite athletes in general (without assessing the type of exercise or training schedule involved), an associated fall in BMI could be linked to menstrual disturbances of varying degrees, adverse outcomes of assisted reproductive therapy (if exercise undertaken before treatment) and possible difficulties in achieving natural reproduction.

At the London 2012 Olympic Games, women will participate in every sport on the Olympic programme for the first time ever. They are also expected to better the 42% competitor rate from 2008; a significant increase from the last London Olympic Games in 1945 (9.5%). There is an obvious social shift and response to the recommendation by medical bodies for regular physical activity, both in competitive and non-competitive pursuits.

The effect of this on female fertility is essential to comprehend in order for the physician to advise exercising women attempting conception.

2. How are fertility services organised in Australia, and how does this differ from the UK?

During my time in Sydney, I was able to see both state healthcare and private (at IVF Australia). Most women were paying into a scheme called MediCare. Whilst the consultant tried to ensure that most investigations were carried out on MediCare, some did not extend to this and the patient was required to pay s a private patient.

Routine blood tests were able to be carried out on the scheme, as was artificial insemination, but IVF was not covered.

I have little experience of fertility services in the UK, but from my limited experience in 4th year, I know that there are differences in different parts of the country regarding whether one cycle, none, or more is available on the NHS. This contrasts with Australia. Also, at a sub-fertility clinic, I recall the selection criteria for suitable patients being more stringent than in Australia.

3. What is the impact of extreme exercise on male and female fertility, and what is the likelihood of recovery on cessation of over exercising?

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With sufficient caloric intake and BMI maintenance between 20-25 kg/m^2, fertility should be maintained. However, it is the women who exercise with a low BMI (<20 kg/m^2) that are a target group regarding infertility. In consideration to physical activity during assisted reproductive therapy, this is currently unfounded, though there may be adverse outcomes associated with exercise before treatment.

There is clearer evidence regarding varying degrees of menstrual disturbances in exercising women. However, whether these are too subtle to adversely affect fertility is unknown.

The evidence is not fully conclusive regarding the advice that should be offered to exercising women regarding fertility. Equally, current understanding is consistent with a degree of exercise not being detrimental to reproductive capacity as long as BMI is >20kg/m^2 and caloric intake is maintained.

To date, the optimal BMI for positive fertility is above 21 kg/m^2 and it is recognised that a BMI >20 kg/m^2 is detrimental to fertility. However, the literature focusing on this part of the J-shaped curve, comparing BMI and the odds ratio for infertility is scanty. More quality research and RCT's are necessary to allow clinicians to provide accurate advice to women regarding their fertility on this part of the curve.

There is little literature regarding the recovery of fertility following the cessation of exercise. From the results, one can hypothesise that the return of BMI to the normal range may accompany the return of fertility to normal, though there is as yet no evidence to support this claim.

4. Reflect on acquisition of research skills and how the research project itself along with its associated activities will assist my development in the future.

I chose to undertake my elective in Obstetrics and Gynaecology in order to maximise my C.V. in this field. I am keen to pursue a career in this field, and though I have clinical experience, I wanted to develop my research skills.

I quickly realised that 5 weeks was a short period of time to work in, so we set the aim of having a first draft completed at the end of the placement with the view to continue the work on our return to the UK.

I utilised the use of the library available to me, and had an appointment with the librarian where I was taught to perform a literature search using Embase, Cochrane and Medline. Though the software in the UK may differ slightly, this one to one session will be invaluable in the future when performing similar tasks independently.

Some papers were not available directly through the University of New South Wales, so I ordered them through the librarian. Fortunately, they did not take long to arrive so I was able to begin reading them and assessing their suitability for my project. At this point I had an appointment with another consultant, with specialist knowledge of systematic reviews. He provided me with tools and experiences to help me write my review. In the future, this will help me perform similar tasks.

I feel that I have acquired the skills to perform a literature search using a variety of databases, including how to use the abstract as an initial tool to assess the suitability of papers. I also know more about writing systematic reviews, including the need to produce a clear table of featured papers. In the future, I hope that this will lead me to produce high quality research.