Introduction

This article aims to give a brief overview of diet and fertility. The scientific literature on farm animals abounds with articles on nutrition and fertility while that on humans appears somewhat more sparse.

Even at local general farming meetings, “steaming up” is considered. This is the term when ewes are given extra food before being introduced to the ram in order to assist with the conception of lambs. Yet, for humans, there is often relatively little consideration of health and maximising fertility or of preconceptual care when a pregnancy is planned.

There appears to be only one main voluntary organisation which deals with preconceptual care – Foresight; the association for the promotion of preconceptual care helps couples to prepare for pregnancy[1]. The organisation promotes nutritional advice and counselling on lifestyle and environmental factors which could affect pregnancy.

With a decline in human fertility, many couples may be referred to fertility clinics for assistance and advice. However, from discussions with dietetic colleagues, relatively few fertility clinics offer advice on nutrition from dietitians to couples seeking help.

Obese or underweight

The main groups of individuals referred for dietetic advice to assist with improving problems with fertility tend to be those who are grossly obese or those who are severely underweight. In both instances, such problems can markedly affect fertility.

Obesity in women is associated with ovulatory dysfunction (Kirschner et al., 1982) and consequential effects on fertility. In males, an inverse relationship has been shown between testosterone levels and body weight (cited by the British Nutrition Foundation Task Force, 1999).

For these individuals who are obese, and have reproductive disorders, weight loss can remedy the situation by helping to restore sex hormone levels to a more normal level, thus assisting in conception.

It is well documented that women who are underweight also experience an imbalance of sex hormones and hence fertility difficulties.
Such problems have been documented in those suffering from anorexia nervosa and in sportswomen who strive for a low body weight for professional reasons. Other illnesses causing severe weight loss in both men and women have also been recorded to affect fertility.

**Micronutrients**

Nutrients such as zinc have been shown to be vital for human reproduction.

In adult males, zinc is concentrated in the semen and thus men have a higher requirement for zinc than women:
- 9.5mg for males of 19-50 years; and
- 7.0mg for females of 19-50 years

Indeed, some researchers have postulated that a decrease in zinc intake over the years may have contributed to the present decline in human fertility.

Zinc is found in red meat and fish in good amounts. It is found in particularly high levels in shellfish, especially oysters (which have been long associated with having aphrodisiacal properties, possibly because of the high levels of zinc they contain). Other sources of zinc are nuts, seeds and whole-grain cereals. However, the zinc found in foods of animal origin is particularly easily absorbed by the body, while that in cereals is limited by the phytate they contain.

The increased requirement for folic acid during pregnancy to prevent neural tube defects has been recognised over the last decade, and women who are planning a pregnancy are advised to take a supplement (Health Education Authority, 1997).

**Other factors affecting fertility**

Fertility is affected by numerous other factors from environmental ones such as pollutants to illnesses.

Chronic illnesses such as cystic fibrosis can affect fertility as can diabetes mellitus if it is poorly controlled.

Medications and chemotherapy such as used in cancer treatments can also have an effect on fertility.

Alcohol, if taken in excess, can affect fertility as can smoking and so-called recreational drugs such as marijuana (Bussell, 1999).

**Summary**

To promote fertility, it is prudent to take a varied and balanced diet and to avoid excessive alcohol and cigarette smoking. For those who are grossly overweight, professional advice on how to achieve a gradual sustained weight loss could be of benefit. Also, for those who are underweight, dietary assessment and advice from a dietitian could assist the individual in gaining weight gradually.

Those individuals with chronic disorders such as diabetes require advice on maximising their control.

**Note**

1 Foresight: the association for the promotion of preconceptual care, The Old Vicarage, Church Lane, Whitley, Surrey. Tel: 01159 665447. (Please note that, due to time constraints and being asked to write this article over Christmas, this address has not been verified.)

**References**


