REFRESHER COURSE FOR GENERAL PRACTITIONERS**ANTENATAL CARE—II. ADVICE FOR THE EXPECTANT MOTHER**

BY

W. C. W. NIXON, M.D., F.R.C.S., F.R.C.O.G.*Professor of Obstetrics and Gynaecology, University College Obstetric Hospital, London*

The subject of diet in pregnancy is so important that it is considered in a separate section. Alcohol and tobacco need not be vetoed provided moderation is practised.

Exercise.—There is no harm in cycling, gardening, or swimming, provided it is not vigorous. Some miscarriages have been directly attributed to the lifting of heavy weights or to turning of a mattress. Walking, if possible for an hour a day, is the best exercise. Driving a motor-car can be allowed, but long journeys are not desirable. High-heeled shoes should be changed during pregnancy for those with heels not more than $1\frac{1}{2}$ in. (3.8 cm.) high. Employment involving much standing should be given up, at least during the last two months of pregnancy.

Rest.—A mother who is learning how to relax is usually advised to practise this after the midday meal. In any case she should at this time take a rest with her shoes off. When sitting down the feet should be raised whenever possible. Sleep at night can be helped by taking a hot drink.

Clothes should hang loosely, and any constricting bands—garters, rolled stockings, tight belts—should be avoided. A brassière that lifts the breasts up but does not compress them should be worn.

Bathing.—If a daily bath is impossible, then the mother should have a sponge down. Personal hygiene is of particular importance during pregnancy. Douching should never be performed.

Bowels.—A daily bowel action can be maintained by attending to diet. Fresh salads, fruit eaten with its skin (plums, prunes, tomatoes, apples), wholemeal bread, and hot water all help to ensure a regular bowel action. The ritual of purgation and the taking of laxatives should be avoided. It should also be remembered that the bowel is a creature of habit. When there is obstinate constipation then a bran recipe will be helpful.

Diet in Pregnancy

During recent years diet has become a subject of universal interest, and from the spate of scientific and lay publications it might be concluded there is something novel about it. Yet since the dawn of history food has played a dominant part in the survival and evolution of man. Pregnancy is a "diet-efficiency" test, and during this period of physiological strain borderline states of malnutrition may be revealed which otherwise would have remained latent.

In a community in which diet is faulty or restricted the children and mothers, expectant and nursing, suffer first. This does not mean, however, that the baby born of an undernourished woman is necessarily small and feeble, for it is a common experience in obstetrics to see ill-fed and unfit women give birth to babies who are apparently healthy and of average weight. At present we are fortunate in not having in this country the severe degrees of malnutrition seen in Asia and the Middle East. But no one can deny that there are groups in our population who do not enjoy

optimum nutrition—that is, a state of well-being in which improvement cannot be effected by a change in diet.

A doctor is sometimes asked by an expectant mother if she can affect the weight of her baby by dieting. Normally there is no correlation between maternal diet and the birth weight of the baby or between maternal gain in weight and birth weight. It is only under famine conditions, with the maternal diet dangerously restricted for a long time, that the baby's weight will be significantly reduced. This was seen in Holland and in the sieges of Leningrad, Budapest, and Vienna in the last war.

It is well known that during pregnancy—and still more during lactation—a woman needs to pay careful attention to her diet. In 1933 Sir Edward Mellanby chose as his Lloyd Roberts Lecture the subject of "Nutrition and Child-bearing," and it is interesting to compare the advice he gave then with the modern view. There has been little change.

"Proper nutrition is essential to healthy child-bearing, and the diet should include throughout pregnancy and lactation a sufficiency of what are known as protective foodstuffs. When plenty of these are taken there is every reason to believe that the rest of the diet will take care of itself.

"As a general guidance, the diet of pregnancy and lactation ought to include:

- 2 pints (1.1 litres) of milk daily.
- 1 or 2 substantial servings of green vegetables—cabbage, spinach, or lettuce—daily.
- 1 or 2 eggs or egg-yolks daily.
- An apple or orange or some fresh fruit daily.
- Sea fish twice or more a week.
- Calf's liver once a week.
- If cod-liver oil can be taken, 2 teaspoonfuls (7 ml.) daily is advisable.

"The rest of the diet can be made up as the woman wishes."

The extra rations and allowances for expectant mothers (milk, eggs, meat, orange juice, vitamins A and D, ferrous sulphate) go a long way in 1953 to supplementing what might be thought a meagre diet.

Should calcium be prescribed in pregnancy? This element is best obtained from food. Milk and cheese are the best sources of calcium, green vegetables less so. The ideal amount of milk is a quart (1.1 litres a day), since this would meet all requirements for calcium and phosphorus. Some women find difficulty in drinking raw milk. For these there are different ways in which the daily milk ration can be taken—soups, gravies, milk puddings, hot drinks, including coffee, milk shakes, cereal. The administration of iron should be regulated by the haemoglobin level, and the Tallqvist test is a simple and quick way of doing this.

Control of Weight

In the United States much importance is attached to controlling the weight of a woman during pregnancy. At every visit her weight is accurately measured, and if there is an increase of more than 1 lb. (0.45 kg.) a week her diet is then restricted. Some obstetricians in that country view even an increase of more than $\frac{1}{2}$ lb. (0.23 kg.) as abnormal, and try to limit the total gain to 20 lb. (9 kg.). The reason for the attention to this aspect of pregnancy during recent years is the recognition that a sudden and rapid increase of weight may herald toxæmia of pregnancy. On the other hand, there are some women who put on many pounds in weight yet pass through pregnancy and labour normally;

this group usually remains overweight after the pregnancy is over. By regular weighing it is possible to detect the sharp rise of weight which sometimes occurs before the classical signs of toxæmia present themselves.

During the first trimester there is little gain in weight, in fact there may be a loss. It is during the second and third trimesters that the weight increases. In the last trimester about half the total gain takes place, and for the last 24 weeks of pregnancy there is an average gain of about 1 lb. (0.45 kg.) a week. Of this 24 lb. (10.9 kg.) increase, 14 lb. (6.4 kg.) is distributed as follows:

Baby		7 lb. (3.2 kg.)
Placenta		1 lb. (0.45 kg.)
Amniotic fluid		1½ lb. (0.68 kg.)
Increase in weight of uterus		2 lb. (0.9 kg.)
Increase in blood		1 lb. (0.45 kg.)
Increase in weight of breasts		1½ lb. (0.68 kg.)

(Taken from *Expectant Motherhood*, by Professor Nicholson J. Eastman, Johns Hopkins University, Baltimore. 1948.)

The 10 lb. (4.5 kg.) that remain are accounted for by increased deposit of fat and fluid. A very real attempt should be made to keep the total weight gain between 20 and 24 lb. (9 and 10.9 kg.) for two reasons: (1) the risk of toxæmia, particularly of the fulminating type, can be lowered; and (2) most women are sensitive about their body curves not returning to normal after pregnancy.

In many women the abnormal weight gain is due to perversion of appetite and the excessive ingestion of food of high caloric value (carbohydrate and fat). There is, on the other hand, a physiological reason for the increase in weight apart from "the reproductive weight gain" of the products of conception. During pregnancy there is much greater elaboration of those hormones—oestrogen and other steroids—that are responsible for sodium and fluid retention.

Below is a diet which should be taken when there has been a rapid increase in weight. This can be taken as an out-patient for some weeks provided vitamins and minerals are prescribed as extras.

*Low-sodium Reducing Diet for Pregnancy**

1,800 calories. Sodium intake, 0.8 g. daily. Total of 1½ pints of skimmed milk daily.

Breakfast

Tea or coffee, milk, no sugar.
2½ oz. salt-free bread.
½ oz. salt-free margarine.
1 egg.
4 oz. orange or juice.

Mid-morning

Tea or coffee, milk, no sugar.

Dinner

2 oz. lean beef or lean mutton, lean veal, liver, heart, rabbit, chicken, rationed cheese (Cheddar type).
6 oz. green vegetables.
6 oz. potato.
½ oz. rice with milk.
4 oz. fruit.

Tea

Tea, milk, no sugar.
2 oz. salt-free bread.
½ oz. salt-free butter.
4 oz. fruit.

Supper

4 oz. white fish.
5 oz. root vegetables.
Salad—e.g., 2 oz. lettuce, 3 oz. tomato, 1 oz. watercress.
2½ oz. salt-free bread.
½ oz. salt-free butter.
4 oz. of fruit.

Bedtime

Any milk left from 1½ pints.

† ½ oz. salt-free butter or margarine may be added daily to complete the ration of 4 oz. of each per week. In the above table this is calculated as butter.

*1 oz.=28 g. 1 pint=0.57 litre.

Calcium and iron supplements are necessary as well as vitamin supplements (A, B complex, C, D). The actual vitamin content of fruits and vegetables is always doubtful. Food yeast, which is a good source of vitamin-B group, might be used to improve the flavour of the skimmed milk.

Drugs and Pregnancy

It is surprising how seldom drugs harm the foetus. When given in therapeutic doses during pregnancy, even those with a known oxytocic effect—for instance, ergotamine tartrate for migraine—need not be contraindicated. Quinine in the treatment of malaria will even prevent an abortion or maceration of the foetus by destroying the parasites. It has been suggested that sulphonamides might interfere with foetal development if prescribed in large doses for longer than 14 days. In the case of streptomycin, a report has been published in which a woman with pulmonary tuberculosis was treated with this drug in the early months of her pregnancy up to a dosage of 75 g. The baby was normal and on follow-up has not revealed any damage to its auditory system.

Antenatal Preparation

Increasing attention is being paid to the psychological preparation of the mother and the elimination of the fear of delivery which affects most expectant mothers, especially primigravidae. The mother must be considered as a person. The family doctor is in a favourable position to give the mother this confidence by explaining the process of birth and the changes that take place during pregnancy. He can train the mother in muscle control, breathing, and relaxation. The publications of Dr. Grantly Dick Read are familiar to all, and the late Helen Heardman's monograph, *A Way to Natural Childbirth* (Livingstone, 1948), gives useful advice. It is, of course, understood that the attendants during labour have more influence on a mother's happiness than antenatal training.

The expectant father has been too long neglected and relegated to a back place. He should be brought much more into the picture and told how he can help his wife during pregnancy and labour. An advantage of home delivery is that the husband can be present during most or all of his wife's delivery if both of them wish it. Unfortunately, the rigid regimentation so often seen in hospitals precludes husbands seeing their wives till after delivery. A husband can quickly become an adept "back-rubber" and give his wife much support, both psychologically and physically.

It is not possible in the scope of this article to give details of what should be included in a programme of antenatal preparation. The emotional aspects of pregnancy and labour have been neglected in the past. They should receive much more attention in the future.

Next Refresher Course Article.—"Chest Pain," by Dr. Howard Nicholson.

The American Army Medical Service has started an influenza vaccination programme to protect military personnel against a mild form of the disease occurring both in the United States and abroad. All American troops in Korea, and those under orders for Europe or the Far East, are receiving a one-injection vaccination which has proved effective against the A-prime virus of influenza in previous trials. Military personnel in Europe will also be vaccinated if the situation warrants. Major-General George E. Armstrong, Army Surgeon General, said all Continental armies and major overseas commands are making detailed reports on the occurrence of influenza in their areas and are submitting estimates of their probable requirements of vaccine. The A-prime virus, believed responsible for the current influenza outbreak, is related to strains which accounted for the disease in 1950-1. The virus was identified at Fort Leonard Wood, Missouri, on December 31, 1952.