DIETETIC FALLACIES IN CONNEXION WITH GLYcosuria AND ALBUMINURIA.

By MAJOR HERBERT FRENCH, M.A., M.D.Oxon., F.R.C.P.Lond., L.D.

Royal Army Medical Corps.
Physician to Guy's Hospital; Consulting Physician to the Aldershot Command.

The question of dietetics is always a very difficult one, but broadly speaking I think that practitioners divide themselves into two big groups upon the subject, one group being very strict, the other very lenient. Those of the strict group appear to me to assume that whatever a given patient eats is wrong in some way or other, so that this or that article of dietary must be altered or stopped; the lenient group, on the other hand, aims at allowing the patient as much latitude as circumstances will permit as regards the kind of food and drink the patient takes, keeping a watch rather upon the amount taken and the circumstances under which meals are eaten than upon the kind of food.

One has but to think of the purin-free dietists, the vegetarians, and the tabloid dietarians, to realize the lengths to which dietetic fads can be carried, and doubtless there are some individuals who are in better health upon faddy diets than they are when they eat meals such as the ordinary evolution of mankind has shown to be reasonable. Every patient has to be taken on his or her merits in regard to dietary as in regard to other things, for personal idiosyncrasy is a very important factor which in clinical medicine can never be left out of count. It is useless for example to urge crab for those who always get urticaria afterwards, or strawberries for those unlucky individuals who cannot take them without itching and scratching for hours after them. Personally, however, I belong to what I would call the lenient school, for I hold that in most individuals who are not suffering from acute disease it matters much less what they eat than how much they eat, and when they eat. Moreover it is a favourite aphorism of mine—followed by good results in ever so many cases—that it is good for most of us to eat or do each day something which is theoretically bad for us, if only to be sure that one is still young enough to be able to do so.

1An Address read before The Connaught Hospital Medical Society.
To live along absolutely physiological lines seldom makes life happy; indeed some of the physiological dietists that I have seen, who weigh their foods and calculate their calories, are amongst the most miserable I have met.

I remember a case once in which a well-known physician was consulted by a lean, unhappy-looking man, who said he was constantly suffering from dyspepsia in spite of all the care he took with his diet. This man used to go home to his dinner in the middle of the day by train, because he could not get the food he thought he needed exactly right anywhere else but at home. His physician said to him, “The cure for you, sir, is to have for your mid-day dinner, each day for the next fortnight, three new buns, followed by a bottle of ginger beer, immediately after which you will run all the way to the station to catch the train.” The real indigestion which this man got in consequence made him realize that his previous symptoms were almost as nothing and helped him to get out of his previous dietetic rut.

You will also remember the story of the man who tasted lobster for the first time and liked it very much, but suffered from such acute dyspepsia afterwards that he was awake all night in agony. Far from being a physiological dietist this man said: “My dear stomach, you may not like lobster but I do, and you have got to learn to deal with it” ; so he went down to a seaside town and gave his stomach lobster each day for a week and presently found it quite obedient.

Feeling as I do that dietetic fads are bad for those who are not actually ill, it is easy to understand that I think equally little good of dietetic fads for those who are the subject of disease. That modification of the diet in ill-health is necessary is self-obvious. The man with pneumonia cannot eat beef-steak; the patient’s own feelings by themselves limit the dietary when he is ill. We are not here this evening to discuss acute cases such as these, however, but certain chronic maladies in which it is the general habit to advise very strict dietaries, the two special ones I wish to say a word or two about being glycosuria and certain cases of albuminuria.

Turning to the question of dietetics in glycosuric cases first, I have been much impressed by the misery that is caused to many individuals who have been compelled by their doctors to eke out their dietaries with such wretched things as gluten bread and Soya bean biscuits, and things of that kind. I have often wondered whether it was worth their while; whether the strict dietetic treatment adopted actually lengthened their lives; and, even if the
lives were so lengthened, whether there was a larger amount of happiness in what remained after strict treatment was begun. Merely to prolong life and make that life unhappy cannot be a good criterion of successful treatment. The question arises whether the patients might not have lived as long or nearly as long and been very much more comfortable and happy if the dietetic treatment had not been so strict. The case which brought this most strongly home to me was one that I saw when not long qualified and newly started as a consulting physician.

The patient was a successful City man, aged 45, who, so far as he himself could tell, was in perfect health. Well nourished, active, vigorous, in the course of an ordinary examination for life insurance sugar was discovered in his urine in considerable amount. The discovery was a shock to himself and that was why he consulted a doctor to find out just where he stood. Beyond the abundant glycosuria he seemed physically sound. Fresh from books and full of theory, I told him all I thought then in regard to the things he must avoid in his dietary; and if he had followed my advice he would have been restricted to meals free from potatoes, bread, pastry, cakes, most puddings, and all visible sugar, and with some kind of special starch-free bread to take the place of ordinary bread. He listened to me until I had quite finished and then said: “Well doctor, your advice may all be very good, but I do not intend to follow it; I have indeed only one point that I want to ask you about particularly.” I asked him what that was? He said: “Well doctor, what I what to know most of all is just how long you think I am going to live.” Knowing that I could not answer this I asked him in reply why he wished to know; and then he explained. Having risen from a poor position to one of wealth he had purchased an old house down in Kent, and with the house went some capacious cellars that were well stocked with all kinds of wine from champagne to port. He was a man who knew how to enjoy life and what he wished to know was how long he still had upon this earth in order that he might divide up his supply of wines accordingly and make sure of finishing them before he died.

This is an extreme case of course, and doubtless the man ran great risks, but you will be interested to hear that without any treatment at all, and particularly no dietetic precautions, not only did he finish all the wine he then had in his cellars, but he re-stocked them and is still enjoying both his wine and his carbohydrate foods apparently, no whit the worse for not having followed any of the dietetic advice that was my instinct then to give him.
If one had dieted this man I have no doubt but that one would have attributed his long survival to the treatment that had been adopted, but when survival occurred just as successfully with no treatment at all, one wonders whether there are not thousands of other cases in which the dietetic restrictions are really not responsible for the fact that the patient does not die soon.

I feel sure that it is a fallacious criterion to rely upon diminution in the amount of sugar passed as a measure of the improvement in the patient's condition. There is a great tendency to assume that any measures which cause the patient to pass less sugar in his urine are necessarily doing that patient good. I am far from holding this view, and indeed I think the amount of time and Fehling's solution expended in estimating the sugar in diabetic urines are often entire waste. From the point of view of glycosuria all cases may be divided, broadly speaking, into two main groups, namely those with acidosis products such as acetone, diacetic acid and oxybutyric acid in the urine, and those who pass sugar but no such acidosis products. The same patient may of course pass from one group to the other, the passage taking place either way; some patients come before one with both sugar and acidosis products who under treatment still pass sugar, but cease to pass acidosis products. Others present themselves with glycosuria but without acidosis products, and as the case progresses acidosis products begin to appear and the patient passes across the line from the relatively simple to the more serious category. When there is acidosis a very great deal more time and trouble is required to discover just what should be the dietetic restrictions which will minimize or possibly get rid of the acidosis tendency; though even here harm rather than good may be brought about by too strict an elimination of carbohydrate foods from the diet. No two cases are quite alike. Nobody really understands the nature of diabetes and nobody can lay down any absolute laws in regard to the dietetic treatment of the disease. One can, however, lay down certain general laws, and although I expect what I am about to say will evoke much criticism from this meeting, I feel sure that the effort on the part of the medical adviser should always be to discover how much carbohydrate he can ingeniously eliminate from the patient's dietary, but rather how much carbohydrate he can enable his patient to take without developing dangerous acidosis. The amount of sugar passed in the urine is of very much less value as a guide in this direction than is a measure of the degree of acidosis, and personally I would very much rather rely upon laboratory estimations of the acidosis.
products in guiding treatment, than I would upon the percentage or total grammes of sugar passed per diem.

The chemistry of the body is understood very much better than it was some years ago, but even now we are almost totally ignorant of the finer points of animal and vegetable chemistry, and whereas to most of us starch is starch, I am fully convinced that from a metabolic point of view one kind of starch differs very greatly from another. Wheat starch for instance seems to be quite different in its effects in diabetics to oatmeal starch, and both of these again differ from potato starch. These three at any rate I have tested repeatedly in this respect, and the probability is that there are equally marked differences in the way arrowroot, tapioca, sago, rice, and so on can be metabolized by those whose carbohydrate machinery is defective. The greatest offenders in diabetic cases appear to be wheat starch and ordinary sugar, and we owe a debt to von Noorden, who advocated the oatmeal treatment, and to Mosso, who suggested the potato treatment in diabetes.

One has seen cases who, upon full ordinary diet containing wheat bread and ordinary sugar, were doing badly with marked acidosis; it was clearly necessary to alter the regime. When wheat starch and sugar were removed from the dietary and perhaps opium or codeia prescribed, the sugar in the urine diminished considerably but the acidosis still persisted. I have even seen it get worse. In some such cases the prescribing of four ounces dry weight—of oatmeal, made up partly into porridge eaten with milk and salt, partly with oatcake eaten with butter and cheese, caused a very pronounced diminution in the degree of acidosis simultaneously with an increase in the total amount of sugar passed in the urine. The patient, previously somnolent and threatening to go into coma, has improved forthwith, and although when such a degree of acidosis has once developed it is rare to get rid of it completely, patients of this kind will often live for a considerable time, and much more happily when this carbohydrate is permitted than when a stricter regime as regards carbohydrate is being followed. I have always adopted the oatmeal cure more frequently than the potato cure, but I can quite believe that the allowance of two or three boiled potatoes of average size each day may often be thoroughly good for the patient instead of harmful.

The difficulty is to arrive quickly at some fair idea of how much carbohydrate should be allowed, and what form it should take. For those who are sufficiently wealthy there is no better way of finding this out than by sending them to be under the care of
Herbert French

Dr. Spriggs, at Duff House, Banff, N.B. Duff House is a very large establishment, the only one of its kind in Great Britain, I believe, devoted entirely to the investigation and treatment of various disorders of metabolism, including such things besides diabetes as obesity, undue thinness, gout, and so on. Complete analyses of all foods taken, of the urine, both for sugar and for acidosis and total nitrogen and ammonia, also of the faeces, are made daily by skilled chemists, and as a rule the course of investigation lasts about six weeks, during which time the condition of the patient upon ordinary full diet, upon greatly restricted diet, and upon various intermediate diets is carried out, and at the end of the time a report upon the most favourable dietary is sent to the doctor who is in charge of the case. The trouble is the expense, and naturally a great many patients are thereby precluded from the benefits of this ideal method of determining the best dietary. In private practice it is almost impossible to have sufficiently adequate analysis carried out, and therefore some much simpler criterion has to be adopted. As I have said above, mere estimations of the sugar are a bad criterion. It is, however, possible to test the effect of different dietaries by having the degree of acidosis estimated; and the next best simple means of testing the value of any particular dietary is the weighing of the patient periodically to make sure that he suffers from no undue loss of weight.

There appears to be little doubt, from recent researches, that whatever be the patient’s ordinary tolerance for carbohydrate the adoption of periodic starvation days assists very materially in enabling the patient to deal with bigger quantities of carbohydrate than is otherwise the case. Here again, each patient has to have the best course discovered for himself, some cases requiring a starvation day once a week, others once a fortnight, others at longer and others at shorter periods. On the day of starvation it is as well that the patient should be at home and preferably he should stay in bed; he may drink as much water as he likes, and with the water he may be allowed during the day up to about two ounces of ordinary whisky; otherwise for that day he has no food at all, whether proteid, carbohydrate or fat. The next day he returns to such dietary as has already been found to suit him best, and as a rule he can metabolize larger quantities of carbohydrate in consequence of the temporary starvation treatment than he could without it. This does not, however, alter the general view I am endeavouring to express, namely, that it should be our aim to devise such dietary as is the most generous.
possible as regards carbohydrate in the particular case, utilizing
different forms of carbohydrate in the endeavour to find out that
which suits the patient best, and gauging the effect less by the
amount of sugar passed in the urine than by the concomitant
degree of acidosis.

It may be urged that I should have made a differentiation
between dietetic treatment of glycosuria in young people and the
corresponding treatment of glycosuria in those past middle age.
Clinically of course there is a very pronounced difference in the
course the disease follows, and generally speaking no matter what
one does for a patient with glycosuria at 20 years of age, with a
urine of specific gravity 1040, and acidosis products in the urine as
well as sugar when he first comes under observation, he will
die in a comparatively short time. I agree that one needs to be
a good deal stricter in the limitation of the carbohydrate food
such a patient is allowed—but even then I have often wondered
whether with all the usually severe restrictions as regards carbo-
hydrate food, one prolongs life materially—in what one might
call the average case; whilst I am certain that the patient is
often and often heard to complain of the irksomeness of his food
limitations. Moderate restriction even in the youthful diabetic
seems to be quite as reasonable as is severe restriction; in either
case the prognosis is bad and the question is which regime is
likely to make the patient the least uncomfortable. In cases of
glycosuria past middle life very slight restrictions in the
carbohydrate dietary is often quite sufficient. When I say
"sufficient" I do not mean that I base my views of the
sufficiency on the getting rid of all sugar from the urine; I
mean rather that the patient's life will not be very materially
shortened by our being as generous as we can be with carbo-
hydrate food; the fact of there being persistent glycosuria being
more or less neglected provided that there is no concomitant
acidosis.

Many authorities try to divide glycosuria up into various kinds
such as alimentary, gouty, and so on, in addition to that which
is on all hands regarded as true diabetes mellitus. Such a sub-
division represents variations in the clinical variety of the
disease, but not in my opinion a radical difference in kind.

To my mind the existence of glycosuria indicates that there is
a temporary or permanent error of metabolism, which error of
metabolism is not cured simply by diminishing the carbohydrate
that the patient takes, even if this be done to a sufficient degree
to cause the urine to be sugar-free: the error of metabolism is not necessarily fatal within even a considerable number of years unless it reaches the degree of acidosis; even when it does this the length of the patient's life is not, in many cases, prolonged so much by the very strict dietetic measures formerly adopted as to make the discomforts associated with the restrictions themselves worth while.

Turning now to the other point that I wished to refer to here—namely, the question of dietetics in relation to albuminuria—I need not run over every condition that may produce albuminuria, but will restrict my remarks to two or three of them, in each of which I have found many doctors inclined to restrict the proteid dietary to a marked degree without in my opinion affording compensating advantages to the patient.

The first of these conditions is the so-called physiological or orthostatic, or adolescent albuminuria of young persons. There was a time when any form of albuminuria was regarded as so serious that anybody with albumin in the urine was rejected for life insurance purposes forthwith. It is now recognized, however, that many young persons, between the ages of 15 and 30 particularly, passed albumin intermittently in the urine without it being of any real significance. As throwing a great deal of light on the question of adolescent albuminuria I should like to refer to the researches carried out by Dr. William Collier upon university and college men; he examined the urines of large numbers of rowing men both before and after races, and he found it the rule rather than the exception for a rowing man, who might pass entirely non-albuminous urine before a race, to suffer from albuminuria immediately after it. This led to the curious reductio ad absurdum that a man who might have been passed as a first-class life for insurance purposes, say at three o'clock immediately before a race, would, under the old regime, have been rejected as uninsurable, say, at four o'clock after the race. The general rule with life insurance companies now, when albuminuria is found in a young man, such as one of the bank clerk age, is to have several specimens of urine tested, including at least one or two passed the first thing in the morning immediately after getting out of bed. Albuminuria of serious import in young people is nearly always constant; adolescent albuminuria, on the other hand, is marked by the fact that it is not present when the patient has been resting for some hours, becoming present later in the day. If therefore the patient has the albuminuria of adolescence it is probable that the urine
passed the first thing in the morning will be quite albumin-free, whilst that passed in the afternoon may contain albumin in abundance. In a minor degree it is the same kind of case as that of the rowing men I have just referred to. One would probably also examine a twenty-four hours' urine specimen for casts, blood or bacilli to make doubly sure. If the albumin is found to be absent in the morning and there is no microscopical evidence of any gross lesion in the urine tracts, the condition may nearly always be labelled one of unimportant albuminuria of adolescence, and even though the patient may pass albumin intermittently for years he will grow out of doing so in time. Some albuminuria requires no treatment at all; least of all dietetic treatment. There are some who advise young men of this kind to eat no meat; others seem to object to eggs in particular. The ground for this objection appears to be that egg albumin in animal experiments has been found to pass through the kidneys more readily than other forms of albumen, and the dietetic treatment is based upon what I believe to be the wrong hypothesis that if albuminuria of this kind has been found, it is essential to adopt such measures as will cause it not to be in the urine. Personally, I see no reason why it matters that the albumin does pass through in the kidneys of these healthy persons, and even though the eating of eggs may cause a more definite degree of intermittent albuminuria this has never appeared to me to be in the least detrimental to the patient's health, and my own advice in such a case would be that the albuminuria may be neglected altogether and the young man eat in moderation just such ordinary proteid meals as he would be allowed to if no albuminuria had been discovered.

Almost the same applies to a senile condition of albuminuria that is very common; doubtless when men aged 60 or 70, suffering from no enlargement of the prostate, and really from no very definite symptoms, begin to pass albumin in the urine, there is some degree of degeneration in the kidneys or in the arteries; that the patient is going to gain anything, however, by being entirely penalized from eating red meats for example, is very much open to doubt; if he is already in the habit of eating far more meat than is good for anyone, starting, as some people do perhaps, with beef-steak for breakfast, and having some kind of meat at every meal in the day; naturally curtailment is advisable, but I doubt whether the curtailment is any more to be insisted upon from the fact that there is slight albuminuria than it would be in any person who has such habits of proteid over-eating. Moderation is the key-note; to
taboo meat foods absolutely and entirely is not necessary, and should the patient miss the article that has been tabooed the treatment may be actually a mistake.

There is yet a third type of albuminuria that I would refer to in this connexion, and that is the relatively abundant albuminuria of persons suffering from what is generally referred to as chronic tubal nephritis. There has been an acute nephritis in the past, treated as skilfully as was possible, but unfortunately followed by a finite permanent damage to the renal tissue, so that there is considerable leakage of albumin into the urine persisting perhaps for many years before the patient either has an exacerbation of acute nephritis or develops heart failure or uræmia. Many such cases are met with when they still have years and years to live. During the stage when there is acute inflammation in the kidney marked restriction of the proteid diet is certainly beneficial, and indeed in the acutest phase a purely milk diet is the best. As time goes on, however, and the acute nephritis has subsided, there is left behind a damaged kidney in which there is no longer any inflammation. In the kind of case I am referring to the condition is no longer nephritis any more than mitral stenosis is endocarditis. Just as mitral stenosis is the unfortunate fibrotic after-effect of a previous endocarditis, so is the kidney I am trying to bring to your mind, a damaged organ no longer inflamed but injured as the result of having been the site of previous inflammation. One particular type of such kidney is what has been called the "Rose Bradford" kidney. The urine contains albumin in abundance every day; and the clinical evidence goes to show that Rose Bradford kidneys which may cause acute uræmia and death at say 20 years of age, may often be dated back to an attack of scarlet fever say at 5 years of age. The condition is almost sure to kill in time, but in quite a number of such cases one has found that the patient has lived a life almost exactly like that of other individuals both as regards dietary and everything else, until the final acute uræmia carried him off.

Seeing that upon such non-restricted lines the patient may live so many years, one has to ask oneself whether in other patients, in whom the albuminuria of the chronic tubal Bright's disease has been recognized by accident at an earlier stage, marked restriction of the proteid dietary on account of the existence of albuminuria has really prolonged life or made it happier. My own impression is that in such cases it is important to keep
the general nutrition up to at least as high a standard as is aimed at in healthy persons, and therefore, that to restrict the dietary in any one particular should only be advised after very careful thought. To curtail the dietary by excluding red meats, and possibly other kinds of proteid, in my opinion may easily put the patient at a disadvantage, so that with his damaged kidneys in addition to his limited diet he is less able to withstand his illness than he would be if one had been more generous. Therefore in many such cases one allows the patient every form of proteid, not restricting him as to kind but only as to amount. Everyone would agree, I should think, that it would be most unwise to give a person with a damaged kidney more proteid than is the best amount for the maintenance of nitrogen balance and health. To let such a patient eat more meat than what might be called the average amount required for health would be unwise because of the unnecessary strain there would be to the kidneys in getting rid of the surplus. The amount of nitrogenous food partaken of does need watching; but the kind in my opinion is often attended to and limited to a degree which is not in the best interests of the patient. He has damaged kidneys, and as a result tends to poor health with anaemia and so on. Iron and a liberal selection of proteid foods, excluding not even sirloin of beef, will not be found to curtail the patient’s life, provided always that the amount of proteid taken daily, whether in the form of fish, poultry, vegetable proteids, eggs, or butchers’ meat, is the point to which moderate restriction is directed.

If a patient has a tuberculous kidney with active disease going on, there is probably albuminuria and pyuria, yet few people would hold that it would help the patient to get better if he were to become a vegetarian rather than to eat some meat each day. So in the case of other non-acute kidney lesions which are associated with albuminuria, it is well worthy of thought that it may be quite unwise to eliminate even butchers’ meat from the dietary entirely. Even though the degree of albuminuria may be both persistent and considerable, too much attention is often paid to the albuminuria itself without thinking of the general efficiency of the machine. Notwithstanding the existence of albuminuria the best dietetic treatment is often that which one arrives at by thinking of the treatment of the machine as a whole rather than of its localized renal defect.