

*The Urinary Deposit.*—If the centrifuge deposit shows no pus cells, red blood cells, casts, or crystals on several examinations the albuminuria, with few exceptions, is of the orthostatic type if transitory and of the benign type if persistent. An occasional cast of the hyaline or granular type may be neglected. When renal casts are present in considerable numbers—say, several in each low-power field of the microscope, or more—there is undoubtedly a destructive renal lesion present, particularly if accompanied by red blood cells. In recent lesions the casts are mostly of the epithelial type or are partly granular with adherent epithelial cells. In less recent lesions the casts are of the granular and hyaline types.

*The Blood Urea.*—A normal value of the blood urea does not exclude nephritis. It is only in the more severe degrees of acute nephritis or in the later stages of chronic nephritis that elevation of the blood-urea value occurs. In investigation of material of this type it is rare that other causes of increase of the blood urea are found. A raised blood-urea value is significant of nitrogen retention.

*The Urea-concentration Factor.*—The ratio of the blood-urea value to the urea content of the fasting sample of urine shows significant variation in the more advanced degrees of renal failure but may show little departure from normal in patients with undoubted destruction of renal parenchyma.

*The Urea-concentration Test.*—Concentration of urea in the urine after a test dose of urea and under controlled conditions is valuable in assessing the degree of renal insufficiency in renal disease, but may show normal figures in patients with subacute nephritis and with milder degrees of chronic nephritis.

*Clinical manifestations of nephritis* are more commonly present in acute and subacute nephritis than in the subchronic groups, in which evidence from clinical examination may be scanty or wholly negative.

Each case must be considered on the summation of all data available, but the occurrence of persistent albuminuria and of renal elements and blood in the urinary deposit provides the most valuable diagnostic criteria.

### Summary

The classification of 110 cases of albuminuria in adult males is discussed.

Incidental albuminuria occurs in 0.55% of otherwise healthy adult males. Of these 28% can be classed as orthostatic albuminuria, 20% as albuminuria without evidence of nephritis, 13% as subacute nephritis, 28% as subchronic or chronic nephritis, and 11% as due to various infections of the urinary tract.

Subacute nephritis of mild degree is common as a sequel of respiratory infections. Some of these cases progress to chronic nephritis.

The aetiology of chronic nephritis remains obscure.

The occurrence of persistent albuminuria with an abnormal urinary deposit provides the simplest evidence of renal pathology.

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Approximately 40,000 Jews died in Nazi Poland in 1940, according to data published by Jewish communities in Poland. This is a vast increase in Jewish mortality and has no parallel in the history of Polish Jewry. A large proportion of the two million Jews in Nazi Poland are stated to be in poor health. An investigation by a Nazi medical commission to ascertain Jews' medical fitness for hard labour established that 40% of the entire Jewish population were unfit for physical work.

## HYPERTHYROIDISM: RELATION OF THE BASAL METABOLISM TO THE CLINICAL SIGNS

BY

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A great many data bearing on the basal metabolism in thyroid disease are available, and these have been collected and reviewed by Means and Burgess (1922), Boothby and Sandiford (1924), and Du Bois (1936). In their classifications the diagnoses of exophthalmic goitre, toxic adenoma, clinical thyrotoxicosis, etc., are compared with the basal metabolic rate. In this investigation an attempt has been made to correlate the presence or absence of the clinical signs on which a diagnosis of hyperthyroidism is usually made with the basal metabolism found. A preliminary report on the earlier cases in this series has been made elsewhere (Anderson, 1937).

### Methods

The series consisted of 230 patients, of varied ages and both sexes, who had been transferred to the metabolic wards from the medical or surgical wards for determination of the metabolic rate. The presence or absence of the following clinical signs was noted:

1. *Enlargement of the Thyroid.*—Any palpable enlargement, whether generalized or local.
2. *Exophthalmos.*
3. *Tremor* of the fingers of the outstretched hands.
4. *Tachycardia.*—A pulse rate above 90 while at rest in bed.
5. *Sweating.*—Determined by palpation of the skin and from the history.
6. *Loss of Weight.*—Determined from the history given by the patient.

*The basal metabolic rate* was determined by the open method, using the Douglas bag and Haldane gas analysis. The rate was calculated with the aid of the Du Bois tables for average basal metabolism per square metre as modified by Boothby and Sandiford (Peters and van Slyke, 1932). In order to get satisfactory readings the patient practised breathing through the valves and into an old bag for several days until thoroughly used to the apparatus. Then the actual determinations, usually two or three on successive days, were made. Several days' rest in the ward and familiarity with the apparatus were found to be essential for a proper determination.

### Results

For simplicity in tabulating the results three main divisions were made—namely, enlargement of the thyroid with exophthalmos, enlargement of the thyroid without exophthalmos, and tachycardia without enlargement of the thyroid. These were further subdivided according to the number of subsidiary signs present. The basal metabolic results were also divided into three groups:  $-15\%$  to  $+15\%$ ,  $+16\%$  to  $+24\%$ , and  $+25\%$  and over, the divisions corresponding approximately to the normal range, mild or borderline hyperthyroidism, and moderate to severe hyperthyroidism respectively. The results are shown in the table overleaf, which is self-explanatory.

In 3 cases, not classified in the table, exophthalmos but no enlargement of the thyroid was noted. In only one of

these was the metabolism in the group +25% or over, and at a subsequent operation this patient was found to have an enlarged right lobe, which was in great part sub-sternal.

Clinical Signs	B. M. R.			Total Cases	
	± 15%	+16% to +24%	+25% and over		
Enlargement of thyroid with exophthalmos	1. Tremor, tachycardia, sweating, and loss of weight . . . . .	2	5	47	54
	2. Two or three of above signs . . . . .	3	2	17	22
Enlargement of thyroid without exophthalmos	3. Tremor, tachycardia, sweating, and loss of weight . . . . .	1	2	28	31
	4. Two or three of above signs . . . . .	12	7	23	42
	5. One sign only . . . . .	13	2	—	15
	6. No signs; simple goitre . . . . .	19	—	—	19
Tachycardia without enlargement of thyroid	7. Tremor, sweating, and loss of weight . . . . .	8	1	3	12
	8. Two or less of above signs . . . . .	29	1	2	32
Totals . . . . .	87	20	120	227	

### Discussion

This series of observations clearly shows a close connexion between the clinical signs and the basal metabolic rate. Cases in the first three subsections of the table might be said to be frankly hyperthyroid on clinical grounds, and the determination of the B.M.R. showed a raised metabolism in 101 out of 107 cases. In Subsection 4 some cases were clinically on the borderline and 30 out of 42 had a raised basal metabolic rate, while all (19) simple goitres were normal. The group of 44 patients showing tachycardia without enlargement of the thyroid were nearly all within the normal limits. One of the five whose B.M.R. was found to be +25% or over was a diabetic.

These results are in agreement with those of Means and Burgess (1922), who, from a study of 1,000 patients, of whom 300 were clinically thyrotoxic and 290 were borderline cases in which hyperthyroidism was suspected, came to the conclusion that those with an outspoken clinical picture of hyperthyroidism invariably show increased metabolism, those with goitres but no signs or symptoms of abnormal thyroid function for the most part show normal metabolism, and those with atypical or incomplete clinical evidence of abnormal thyroid function may show normal or abnormal metabolism. Means (1937) from a further experience of a very large number of cases is still of this opinion. Unfortunately these authors do not state what signs the diagnosis of abnormal thyroid function was made.

I have not used any of the formulae for determining the B.M.R. from pulse rate and pulse pressure. It is generally recognized that these methods give accurate results in about half of the cases only (Rabinowitch, 1935; Frank, 1935). Du Bois says: "If after making the history and physical examination the physician decides that the patient needs a basal metabolism test, it is advisable for him to record in writing his estimation of the basal metabolism rate. Experienced clinicians can usually do this with surprising accuracy, but even they find occasional large discrepancies."

The present contribution shows that from a classification of six clinical signs it is possible to draw conclusions as to the level of basal metabolism with a fair degree of accuracy, although there are occasional discrepancies. The possibility of making a reasonably accurate guess does not detract from the value of a determination of the basal metabolism in diagnosis, and this estimation is essential in borderline cases.

### Summary

In a series of 230 patients of varied ages and both sexes who clinically were cases of hyperthyroidism or were suspected of hyperthyroidism, the basal metabolic rate was determined and was compared with the occurrence of the clinical signs—enlargement of the thyroid, exophthalmos, tremor, tachycardia, sweating, and loss of weight.

When enlargement of the thyroid was accompanied by exophthalmos and any other of the clinical signs the metabolic rate was high in 71 out of 76 cases; when enlargement of the thyroid was not accompanied by exophthalmos but all other signs were present the metabolic rate was high in 30 out of 31 cases, but when only two or three signs were present—i.e., in borderline cases—the metabolic rate was normal in 12 out of 42 patients; in simple goitre the metabolic rate was normal in all 19 patients; and 37 out of 44 patients with tachycardia without enlargement of the thyroid had a normal basal metabolic rate.

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## WAR DIFFICULTIES IN DIABETIC DIETS THE LINE-RATION SCHEME

BY

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Many diabetics who use the Line-Ration Scheme have recently found great difficulty in following it, owing mainly to the restriction of protein foods in the country. Often misapprehension of the details recommended in the scheme accounts for the patient's trouble; but in other cases even the Government's two extra meat rations in place of sugar do not supply all the prescribed protein, nor is there much supplementary unrationed protein. A few notes on this diet scheme will help to minimize difficulties and justifiably reassure patients. This has been done in detail in a War-time Supplement to my *Diabetic ABC* for patients, but doctors and their patients may be glad of the following facts and explanation.

### Misapprehensions

When this scheme was first introduced in 1924 it contained a minimum of carbohydrate and a maximum of protein and fat, in the proportion of 1 C., 1.5 P., and 3 F., in accordance with the glucose:fat ratio of most diabetic diets then in use. Later the carbohydrate was increased and the fat cut down, so that the proportions for some years have been 1 C., 0.75 P., 1 F., and the scheme has been gradually modified in other ways. Originally it was stated dogmatically that equal numbers of black portions (C.) and red portions (P. and F.) must be taken to balance each other. This was soon modified in my own mind and practice, and for eight years my scheme, as published, has never insisted on this equal balance of blacks and reds, although many patients with old editions have religiously followed it—a procedure that is quite suitable for some types of patient. For some years now I have recommended that the balance of black and red portions need not be exact either in the day's total or at each meal (this I have always regretted a little, as it spoils the original naïve simplicity and dogmatism of the scheme). The explanation of the scheme states that 10 lines (10 blacks and 10 reds) should