Recent Statistics on Diabetes

Provisional data for the United States for the entire year 1952 shows that the death rate from diabetes was about 2 per cent less than in 1951 (see Table 1). In the urban population, represented by the experience among Industrial policyholders of the Metropolitan Life Insurance Company, the decline was even greater—8 per cent. The local and State areas from which data are regularly obtained show some deviations from this over-all pattern. For New York State, New York City, Baltimore and Philadelphia there was an increase in the mortality from the disease during 1952. The two Canadian cities, Toronto and Montreal, showed divergent trends. Toronto's death rate dropped appreciably while that for Montreal was up slightly.

In England and Wales, the 1952 death rate showed a sizable decline from 1951. There was a reduction of 10 per cent in the rate both for males and females. For the Administrative County of London the mortality fell 4 per cent in 1952.

The provisional data by regions of the United States, based on the 10 per cent sample of death certificates, showed variations in the direction and degree of change between 1951 and 1952 (see Table 2). The mortality from diabetes was lower in all regions except the Middle Atlantic and the Mountain States. The rate was down most in New England and the South Central section of the country. In the Middle Atlantic area there was a 15 per cent increase. An even larger rise proportionately was recorded in the Mountain States, but the size of the sample for that area is small and the rate is subject to marked fluctuations.

For the first quarter of 1953, the diabetes death rate for the United States, based on the 10 per cent sample, shows a very appreciable increase over the same period a year ago (see Table 1). Increases are recorded not only in all but three of the local areas reporting in this country and Canada but also in London. The primary cause for the rise is the prevalence of moderately severe epidemic conditions during a part of the period, which is reflected in the rise in the death rate from respiratory disease, in that from all causes, and in that from major chronic diseases particularly. Table 2 also indicates that the rise in mortality was quite general throughout the country. In assessing the different rates of change, the reader is reminded that deviations may, in part, be due to the relatively small number of deaths in the 10 per cent sample for some areas.

Final figures, as shown in Table 3, on diabetes deaths for the United States in 1950 are now available by color and sex. For the country as a whole, the number of deaths ascribed to diabetes in 1950 was 24,419, or about 3 per cent less than in 1949; as against a reduction of 4 per cent in the death rate. The rate among white males was down 3 per cent and that for white females down 6 per cent. In contrast, the rates among nonwhite persons rose 8 per cent for males and 0.5 per cent for the females.

The Demographic Year Book, published by the United Nations, contains a wealth of material on longevity and mortality in various countries. Statistics on diabetes mortality, published in the Year Book for 1952, are abstracted, with some additions from other sources, in Table 4. This table brings somewhat more up-to-date the figures reported in the May-June, 1952 issue of DIABETES.[1] The level of the rates are affected by the factors cited there. While the new figures are reported to relate to diabetes deaths classified according to the Fifth Revision of the International List, the principles adopted in connection with the Sixth Revision were already in force in England, Sweden and some other countries. Nevertheless, the table shows that the highest rates continue to prevail in the United States, parts of the British Commonwealth and certain countries of western Europe.

The Eastern Health District of Baltimore has been the scene of a long continued and intensive study of illness among a sample of the families living there. Various aspects of chronic disease have been among the important elements of the study. Consequently, the findings recently published on diabetes[2] in this small

Submitted by Herbert H. Marks, Chairman, Committee on Statistics. The Committee welcomes suggestion or actual material suitable for these papers from Association members and other readers of the Journal.

TABLE 1 Deaths and Death Rates—1951 and 1952 — and January-March, 1952 and 1953

Area	Death Rates per 100,000				Number of Deaths			
	Jan.-Dec.		Jan.-March		Jan.Dec.		Jan.-March	
	1952	1951	1953	1952	1952	1951	1953	1952
United States (10% sample)	16.2	16.5	18.9	16.6	2,525	2,528	735	634
Metropolitan Life Ins. Co.								
Industrial Policyholders	14.0	15.2	16.8	13.7	2,589	2,847	760	631
New York State	20.6	20.1	22.8	21.6	3,146	3,024	872	820
New York City	20.3	19.8	23.0	20.7	1,637	1,563	463	416
Maryland, Resident	19.3	20.4	19.3	19.9	473	489	119	121
Baltimore, Resident	22.8	22.7	22.8	26.1	218	216	54	62
Boston, Resident	26.7	29.0	29.0	31.2	216	233	58	62
Philadelphia	26.7	24.2	34.6	31.4	564	506	182	165
Toronto	14.2	17.1	16.4	12.6	95	112	27	21
Montreal	17.7	16.7	19.4	18.5	185	171	51	48
London (Administrative County)	9.2	9.6	11.4	9.5	308	324	96	80
England and Wales								
Total	7.6	8.5		8.8	3,338	3,703		955
Males	5.2	5.8		6.2	1,091	1,219		324
Females	9.8	10.9		11.2	2,247	2,484		631

Note: Rates for the states and cities are based upon local estimates of population. United States data based upon the returns from a 10 per cent sample of death certificates received in vital statistics offices, as published in Current Mortality Analysis, a monthly report of the National Office of Vital Statistics of the U. S. Public Health Service.

TABLE 2 Number of Deaths and Death Rates for Diabetes in Geographic Division; United States Reporting Area for the 10 Per Cent Sample; 1950, 1951 and 1952 and First Three Months of 1951, 1952 and 1953

Geographic Division	Death Rates per 100,000*			Number of Deaths*		
	1952	1951	1950	1952	1951	1950
U. S. reporting area	16.2	16.5	16.6	2,525	2,528	2,501
New England	20.2	24.1	22.5	191	218	206
Middle Atlantic	22.0	19.2	20.5	682	591	627
East North Central	19.2	20.1	20.8	602	623	638
West North Central	17.7	17.9	17.9	256	256	256
South Atlantic	12.5	12.9	14.0	273	279	284
East South Central	10.2	12.0	10.0	120	141	114
West South Central	10.5	12.2	11.0	158	180	162
Mountain	15.4	10.8	8.1	81	56	39
Pacific	11.0	12.5	11.8	162	184	175
			January-March			
	1953	1952	1951	1953	1952	1951
U. S. reporting area	18.9	16.6	18.1	735	634	682
New England	21.1	20.8	30.1	50	48	70
Middle Atlantic	25.1	22.0	18.1	193	169	136
East North Central	23.3	19.2	24.9	182	149	189
West North Central	20.7	19.0	19.7	74	68	69
South Atlantic	17.1	12.9	15.1	94	70	80
East South Central	11.3	11.6	9.8	32	34	28
West South Central	14.3	10.2	11.6	54	38	42
Mountain	9.6	15.4	12.6	13	20	16
Pacific	11.1	11.1	14.4	43	38	52

*Excludes Armed Forces overseas.
Note: These data from the 10 per cent sample are subject to sampling error. The number of deaths, as given, does not cover the entire United States for each month but is limited by the completeness of the reporting area. The size of the reporting area is indicated by the footnote on page 7 of each monthly issue of the Current Mortality Analysis.
Source: Data furnished by National Office of Vital Statistics of the U. S. Public Health Service.

TABLE 3 Deaths and Death Rates from Diabetes Mellitus by Race and Sex, United States, 1949 and 1950

Race Sex	Death Rate per 100,000*		Number of Deaths*	
	1950	1949	1950	1949
Total	16.2	16.9	24,419	25,089
White				
Male	12.8	13.2	8,580	8,717
Female	20.0	21.2	13,567	14,158
Nonwhite				
Male	10.0	9.3	768	714
Female	18.7	18.6	1,504	1,500

*Excludes Armed Forces overseas.
Source: National Office of Vital Statistics—Special Reports, National Summaries.

but carefully studied population are of general interest. The observations relate to cases ascertained in a sample population observed from two to five years during June, 1938 to May, 1943. The families living in 34 city blocks were visited at monthly intervals to obtain a record of illness among their members. This record covers a period of five years for families in one-half of this area, and in the remainder for three years where no persons with chronic disease were reported during the period. The investigation was extended to 34 addi-

tional blocks which were canvassed in July, 1941 and families which reported one or more cases of chronic disease were observed until June, 1943. It is not possible to estimate rates of prevalence from the data, but certain of the facts on the diabetics coming under observation are useful. Altogether, there were 89 diabetics among these families, 62 females and 27 males. Two of these cases were lodgers. The further descriptive data excludes them from consideration.

The year of diagnosis was unknown in eight of the 87 family members. Of the cases with known time of diagnosis, approximately half were made during 1938-1943, of which eighteen were new cases. In eleven, or approximately one-seventh of the total, the diagnosis was made before 1930 and the remainder were diagnosed between 1930 and 1937. This distribution, perhaps, gives some indication of a fairly high death rate in earlier years among diabetics in the class from which the sample is drawn, but it is probably influenced more by the increased frequency of discovery of cases as a result of the intensive observation of the families in the study.

Table 5 summarizes the facts on the distribution of the cases according to age at which the first diagnosis was made. This fact was known in 79 of the cases. In only four cases, all of them males, was the diagnosis made at ages under 35. The median age at diagnosis was about 55. In nearly 30 per cent of the cases the diagnosis was made at ages sixty and over. This proportion was distinctly higher in women than in men.

The disability record of the group is of interest. Of the 87 diabetics, nine were permanently disabled during the entire period of observation and one additional case became disabled during observation. Among the remaining 77 diabetics, the rates of disabling days per 1,000 person days at risk, by sex and age groups, is shown in Table 6. On the whole, the record is a creditable one.

For further interesting details on this carefully observed group of diabetics covering such items as early versus late diagnosis, severity, reported method and degree of control, amount and type of medical attendance, the reader is referred to the original article.

Pre-employment examinations afford a useful opportunity for diabetes detection at the working ages. The experience of the Hawk-Eye Works of the Eastman Kodak Company, reported a few years ago by its Medical Director, Dr. Gordon M. Hemmett, is of particular interest because of the care with which the observations

TABLE 4 Number of Deaths and Death Rates from Diabetes for Selected Countries

Country	Year	Number of Deaths	Death Rate per 100,000
United States	1950	44,790	29.7
Canada (1)	1949	2,749	20.5
Austria	1950	497	7.2
Belgium	1950	1,378	16.0
Denmark (2)	1950	966	22.6
England and Wales	1951	3,703	8.5
Finland	1950	215	5.4
France	1949	3,792	9.1
Germany, Federal Republic	1950	4,544	9.5
Ireland, Republic of	1949	250	8.4
Italy	1950	3,746	8.1
Netherlands	1949		9.3
Norway	1950	469	14.4
Portugal	1951	457	5.3
Scotland (3)	1949	536	10.3
Spain	1950	1,527	5.5
Sweden	1949	508	7 3
Switzerland	1950	573	12 2
Australia (4)	1949	1,473	18 6
New Zealand, excl. Maoris	1949	355	20.1
Colombia	1950	268	2.4
Ceylon	1949	522	7.2
Israel (5)	1949	92	10.2
Japan (6)	1949		2.3
Union of South Africa (7)	1948	259	10.3

(1) Excludes Yukon and Northwest Territories.
(2) Excludes civilian aliens.
(3) Excludes Armed Forces outside country. Rate base includes these.
(4) Excludes full-blooded aborigines. Includes armed forces outside country.
(5) Jewish population.
(6) Japanese nationals in Japan.
(7) Europeans only.
Source: Demographic Year Book—United Nations, 1952.

TABLE 5 Percentage Distribution of Diabetics According to the Age of First Diagnosis, by Sex—Eastern Health District of Baltimore, 1938-1943

Age at First Diagnosis	Both Sexes	Male Percent	Female
All Ages	100.0	100.0	100.0
Under 35	5.1	16.0	0.0
35-39	11.4	12.0	11.1
40-44	11.4	4.0	14.8
45-49	6.3	4.0	7.4
50-54	20.2	24.0	18.5
55-59	16.5	20.0	14.8
60-64	13.9	12.0	14.8
65-69	5.1	4.0	5.6
70-74	7.6	4.0	9.3
75 & over	2.5	0.0	3.7
Total-Known Ages	79	25	54

Source: Simon, K.: Characteristics of diabetes as revealed in a general morbidity study. The Milbank Memorial Fund Quarterly, Vol. 31, No. 1, January 1953.

TABLE 6 Rate of Disabling Days Among Diabetics Who Were at Risk of Disability. By Sex and Age Group—Eastern Health District of Baltimore, 1938-1943

Age Group	Rate per 1,000 Person—Days at Risk		
	Both Sexes	Male	Female
All Ages	21.4	29.6	18.3
Under 45	15.6	16.3	15.1
45-64	13.2	34.5	4.6
65 & over	55.5	20.9	58 3

Source: Same as Table 5.

were made.[3] Among 10,167 applicants for employment during 1943-1947, almost equally divided between men and women, 56 were found to have diabetes, or 5.5 per 1,000. In thirty of the cases, or 3.0 per 1,000, the diagnosis was previously known. In 26, or 2.6 per 1,000, the disease was newly discovered. This accords well with other studies which show the known and unknown cases to be approximately equal in frequency. Another point of interest is that 27 cases were found to have renal glycosuria.

A great majority—45 of the 56 diabetics—were males. This probably reflects the higher average age of the male applicants for employment .Of the total, 27 were between ages eighteen and 34, seventeen at ages 35-49 and twelve at ages 50-65. The proportion of previously undiagnosed cases is somewhat greater at ages over 35 than at the younger ages. From the rough data on the age distribution it appears that the total prevalence in the study varies little by age. This probably reflects certain characteristics of the composition of this group of applicants for employment.

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Technics of Weight Control

Whatever may be the primary defect which results in great weight gain, the only way we now have of attacking it is by dietary restriction. And so far as we now know, every case of obesity is amenable to this form of therapy, though the obstacles to success may often be exceedingly difficult to overcome. . . .

There are a few tricks, gleaned from experience, that may be worth noting. For some unknown reason, better results are achieved if the total caloric intake is divided into three even partitions, rather than having the patient eat a tiny breakfast and lunch in order to have a big dinner at night. It is remarkable how many obese persons follow the unbalanced intake method instinctively, and experimental evidence from rats indicates that food eaten all at a sitting tends to greater weight than if the same total quantity is consumed at three or four sittings.

One must watch out for alcohol. Many persons forget that the caloric value of alcohol is 7 calories per cc., so that 3 ounces of whiskey yield 315 calories.

"Appetite killers," such as benzedrine or dexedrine, have been advocated as adjuvants to dietary regimens. They are also used for the emotional lift in relieving depression and to boost morale for dietary maintenance. It has not been our practice to use these drugs (and no collaborating psychiatrist so far has recommended them for any of our patients). In reality they are crutches to lean upon, and it is usually wiser to face and work out the long-term problem squarely. . . .

There is no rationale for restricting either fluid or salt in an obesity regimen unless such is indicated by some complicating cardiac or renal disease. Nor has it ever been clear to me why antidiuretic hormone of the posterior pituitary is given to help lose weight. Sweating procedures, widely used by boxers and wrestlers to meet certain weight deadlines, obviously have no place in the subject here under discussion. Actually the amount of calories so expended is exceedingly small, and the excess appetite engendered by the procedure usually more than negates its value.

Carefully outlined postural exercises, however, are often of great benefit. Great obesity is almost always accompanied by faulty body mechanics, especially lumbar lordosis with tense back muscles and weak abdominals and glutei. Correction of such postural defects reduces the waistline, promotes erect carriage and gives such a sense of increased well-being and assurance that it is highly recommended whenever feasible. Whether really true or not, I cannot say; but it has seemed to us that, when weight is being lost by dietary means, coincident development of weak muscles of the abdomen and pelvis has seemed to make the fat come off more freely . . .

Although dietary restriction is the keystone of the weight reduction regimen—at least in the present state of our knowledge—other factors than the prescribed diet, are usually the cause of therapeutic failure. The successful regimen must be planned for the total individual, his emotions, his pocketbook, his palate; and if you are fortunate enough to have the collaboration of a dietitian, a physiotherapist and, if need be, a psychiatrist, your chances of achieving success for the patient will be greatly enhanced.

From *Obesity,* by John Eager Howard, M.D., *in the Maryland State Medical* Journal, March, 1953