

SLIDE RULE FOR COMPUTING DIETS FOR DIABETICS

Introduction



The Slide Rule for Computing Diets for Diabetics, with the accompanying *Physician's Book of Menus for Diabetics*, was designed to simplify for the physician the calculation of a proper diet for the diabetic patient. One side of the rule is employed for determination of the proper basal or maintenance caloric requirement, and the reverse side for the conversion of this caloric figure into grams of carbohydrate, fat, and protein. Individual menus for the diet prescription thus calculated are provided in the *Physician's Book of Menus for Diabetics*. A supplementary pamphlet, containing blank pages for the insertion of the menu, is available for use by the patient.

Instructions

FOR USE OF RULE



1. To determine the basal or maintenance caloric requirement:

a. Move Scale B until the height of patient in feet and inches is directly below the ideal* weight in pounds on Scale A. (See conversion scales on back page.)

b. Move the hair line until it is directly over the sex and age group of patient on Scale C.

c. Read the basal or maintenance caloric requirement on Scale D under the hair line.

The basal caloric requirement represents the number of calories required in twenty-four hours by a patient at rest in bed. Additional calories should be added, depending upon the energy expenditure of the patient and his individual response to diet. Thus, for very light sedentary occupation, 20 percent may be added to the basal requirement; for ordinary sedentary work, 30 percent. Moderately heavy work will require approximately 40 percent over the basal figure; very heavy work, 50 percent or more. It is important

* The ideal weight is the basis for determining caloric requirement and is whatever weight the physician believes to be ideal for his patient. For many adult diabetics it is probably about 5 pounds under "normal weight" and, in what follows, this is assumed to be ideal. First, determine the "normal weight" by using tables on pages 6, 7, and 8. These are average weights of normal persons wearing about 7 pounds of clothes. But, since the slide-rule computations are based on nude weight, subtract 7 pounds for the adult, 3.5 percent of the normal weight for boys, and 3 percent for girls. From this, 5 pounds may be subtracted to obtain the ideal weight for adults.

to check the weight and strength of the patient at regular intervals of about one month, so that individual variations in the caloric requirement may be adjusted as indicated.

2. *To determine the number of grams of carbohydrate, fat, and protein:*

a. Move Scale F (1) until the arrow on that scale is directly under the desired number of calories on Scale E.

b. Set the hair line of the indicator directly over the weight* of the patient on Scale F (1).

c. Read the protein requirement on Scale G (1) under the hair line, and the carbohydrate and fat requirement under the hair line on Scale H, I, J, or K, depending upon the ratio of carbohydrate to fat (1 to 1; 1½ to 1; 2 to 1; 3 to 1) preferred by the physician.

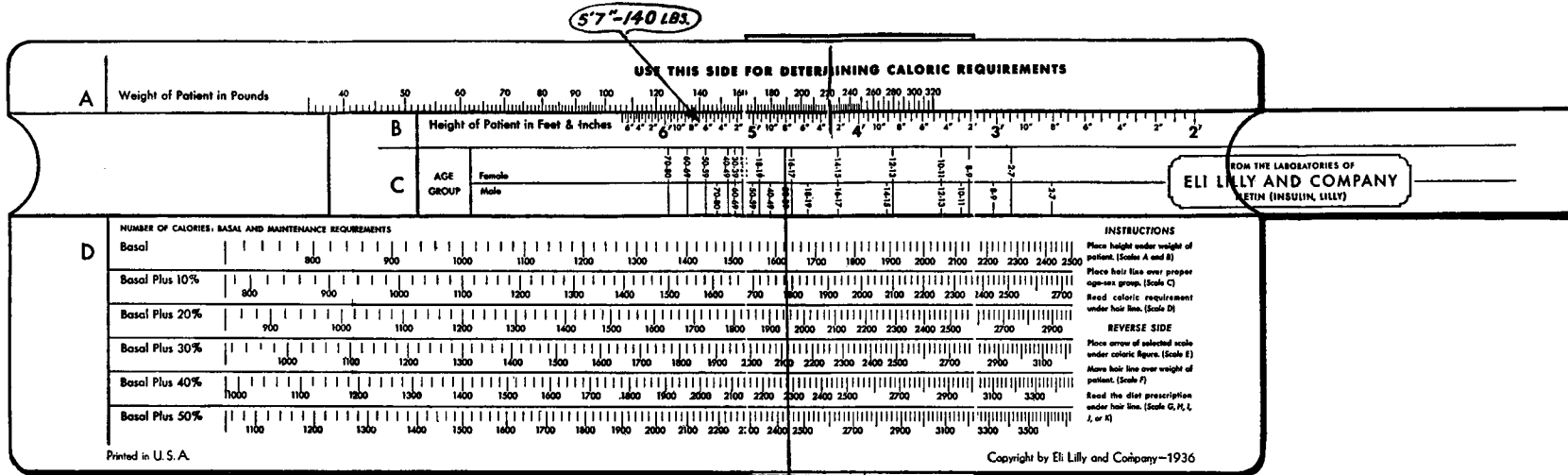
For the usual patient there is probably little choice between these ratios; obviously the 2 and 3 to 1 ratios provide for more carbohydrate than the 1 and 1½ to 1 and are in line with the increasing tendency to give the diabetic a more liberal carbohydrate allowance.

The above setting provides one gram of protein per kilogram of body weight. If two grams of protein per kilogram body weight are desired, the same procedure as given above will be followed except that the arrow and scale on F (2) will be used; if three grams of protein per kilogram body weight are desired, F (3) will be used.

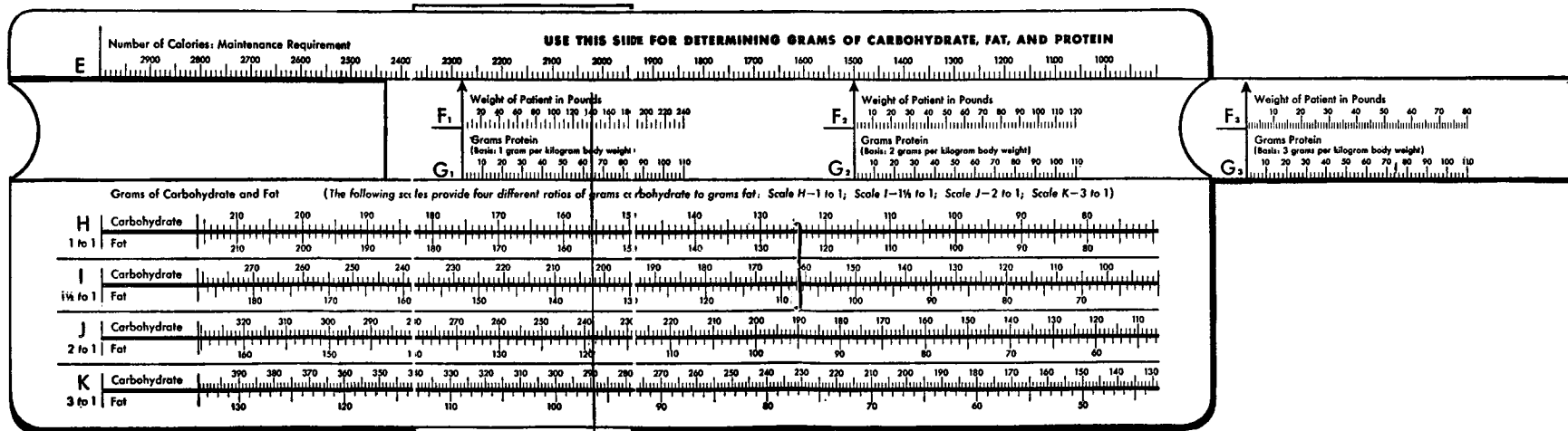
EXAMPLE

Given: A moderately active male patient; age 38; height, 5 feet 7 inches; actual weight, 182 pounds; weight to be used in determining caloric requirement, 140 pounds (normal weight less 7 pounds for clothing and 5 pounds for the purpose of maintaining slight undernutrition).

The following cut shows the proper setting on the rule for the determination of the caloric requirement; the figure is 2280 calories (or basal requirement increased by 40 percent due to the activity of the patient).



Turning to the other side of the rule, the cut below shows the proper setting for the determination of the required number of grams of carbohydrate, fat, and protein.



In this determination, one gram of protein per kilogram body weight is used. Any one of the diet prescriptions given here meets the maintenance caloric requirement. The one selected will depend upon the desired ratio of carbohydrate to fat in the menu.

*Ratio of carbohydrate to fat: 1 to 1—Scale H.

**Ratio of carbohydrate to fat: 1 1/2 to 1—Scale I.

***Ratio of carbohydrate to fat: 2 to 1—Scale J.

****Ratio of carbohydrate to fat: 3 to 1—Scale K.

	(1)*	(2)**	(3)***	(4)****
Protein	64	64	64	64
Carbohydrate	156	203	238	289
Fat	156	135	119	96

NORMAL WEIGHTS for MEN

(With Clothing and Shoes)

(Deduct 6 to 10 Pounds for Clothing)

2.2 Pounds = 1 Kilogram

Age Yrs.	5 ft.	5 ft. 2 in.	5 ft. 4 in.	5 ft. 6 in.	5 ft. 8 in.	5 ft. 10 in.	6 ft. 6 in.	6 ft. 2 in.
15	107	112	118	126	134	142	152	162
16	109	114	120	128	136	144	154	164
17	111	116	122	130	138	146	156	166
18	113	118	124	132	140	148	158	168
19	115	120	126	134	142	150	160	170
20	117	122	128	136	144	152	161	171
21	118	123	130	138	145	153	162	172
22	119	124	131	139	146	154	163	173
23	120	125	132	140	147	155	164	175
24	121	126	133	141	148	156	165	177
25	122	126	133	141	149	157	167	179
26	123	127	134	142	150	158	168	180
27	124	128	134	142	150	158	169	181
28	125	129	135	143	151	159	170	182
29-30	126	130	136	144	152	160	172	184
31-33	127	131	137	145	154	162	174	186
34-35	128	132	138	146	155	165	176	188
36-37	129	133	139	147	156	166	178	190
38-39	130	134	140	148	157	167	179	192
40-41	131	135	141	149	158	168	180	193
42-43	132	136	142	150	159	169	181	194
44-45	133	137	143	151	160	170	182	195
46-50	134	138	144	152	161	171	183	197
Over 50	135	139	145	153	163	173	184	198

NOTE: Adapted from Report, Medico-Actuarial Mortality Investigation.

NORMAL WEIGHTS for WOMEN

(With Clothing and Shoes)

(Deduct 4 to 8 Pounds for Clothing)

2.2 Pounds = 1 Kilogram

Age Yrs.	4 ft. 8 in.	4 ft. 10 in.	5 ft.	5 ft. 2 in.	5 ft. 4 in.	5 ft. 6 in.	5 ft. 8 in.	5 ft. 10 in.	6 ft.
15	101	105	107	112	118	126	134	142	152
16	102	106	109	114	120	128	136	143	153
17	103	107	111	116	122	129	137	144	154
18	104	108	112	117	123	130	138	145	155
19	105	109	113	118	124	131	139	146	155
20	106	110	114	119	125	132	140	147	156
21-22	107	111	115	120	126	133	141	148	157
23	108	112	116	121	127	134	142	150	157
24-25	109	113	117	121	128	135	143	151	158
26-27	110	114	118	122	129	136	144	152	159
28-29	111	115	119	123	130	137	145	153	160
30	112	116	120	124	131	138	146	154	161
31-32	113	117	121	125	132	140	148	155	162
33	114	118	122	126	133	141	149	156	162
34-35	115	119	123	127	134	142	150	157	163
36-37	116	120	124	128	136	143	151	158	164
38	117	121	125	130	137	145	153	160	166
39	118	122	126	131	138	146	154	161	167
40	119	123	127	132	138	146	154	161	167
41-42	120	124	128	133	139	147	155	162	168
43	121	125	129	134	140	148	156	163	170
44-45	122	126	130	135	141	149	157	164	171
46-47	123	127	131	136	142	150	158	165	173
48-49	124	128	132	137	143	152	160	167	175
Over 50	125	129	133	138	144	152	162	170	177

NOTE: Adapted from Report, Medico-Actuarial Mortality Investigation.

AVERAGE WEIGHT AND HEIGHT OF CHILDREN

(2.2 pounds = 1 kilogram)

BOYS (without clothing)

Age	Inches	Pounds
at birth	20.5	7.5
1 year	29.5	21.5
2 years	33.5	26.5
3 years	36.5	31.0
4 years	39.0	34.5

(without shoes or coats)

5 years	42.5	39
6 years	45.0	45
7 years	47.0	52
8 years	50.0	58
9 years	52.0	64
10 years	54.0	71
11 years	56.0	78
12 years	58.0	85
13 years	60.0	94
14 years	63.0	111

GIRLS (without clothing)

Age	Inches	Pounds
at birth	20.5	7.0
1 year	29.0	20.0
2 years	33.0	25.0
3 years	36.0	29.5
4 years	39.0	33.0

(without shoes or sweaters)

5 years	41.5	38
6 years	45.0	43
7 years	47.0	50
8 years	50.0	58
9 years	52.0	64
10 years	54.0	71
11 years	56.0	79
12 years	58.0	89
13 years	60.0	101
14 years	62.0	114

Note: Adapted from tables of National Child Health Council.

For boys 5 to 14 deduct 3.5 percent of above weights for clothing. For girls 5 to 14 deduct 3 percent for clothing.

