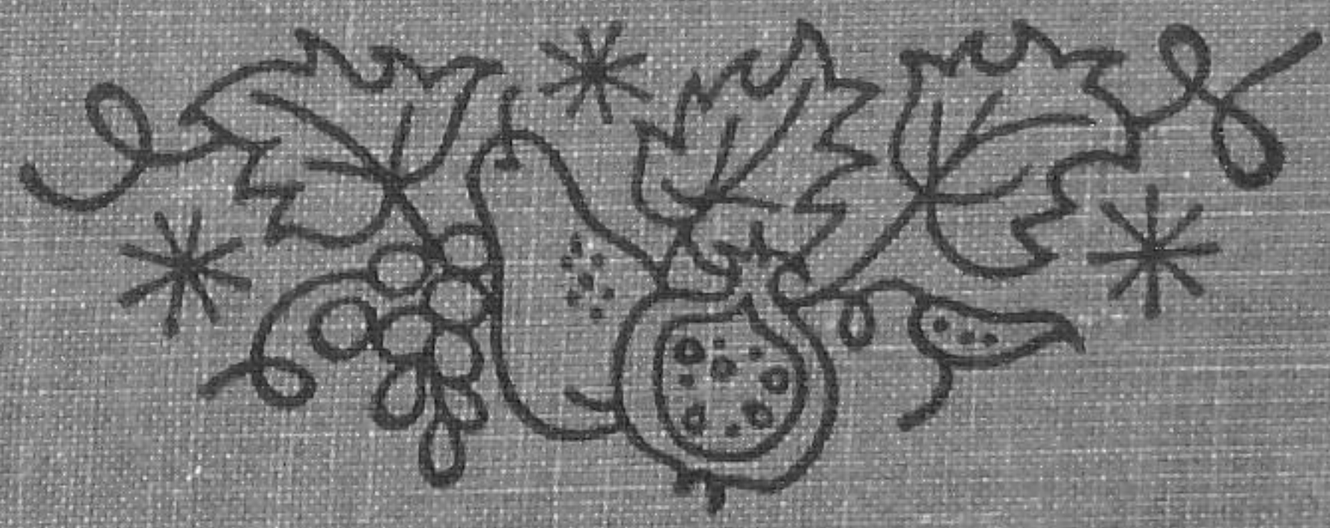
FOOD BECOMES YOU



FOOD BECOMES YOU

by

RUTH M. LEVERTON, Ph.D

Professor of Human Nutrition
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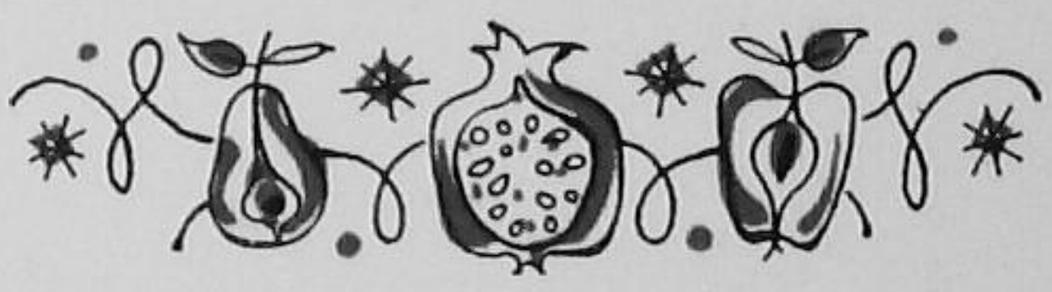

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To

THE NEBRASKA WOMEN

and

THE NEBRASKA FAMILIES

who by taking part in our research studies have added to the knowledge of the science of food and nutrition

ACKNOWLEDGMENT

"FOOD becomes YOU" is a kind of hybrid. Its information comes from research. Its philosophy comes from experience. Its style comes from years of trying to explain nutrition to college students, mothers' clubs, men's civic groups, and professional workers in related fields, as well as from discussions at staff meetings, answers to letters and telephone inquiries, and friendly arguments with colleagues.

Acknowledgment is made with pleasure and a deep sense of indebtedness for the helpfulness of many friends and colleagues, especially the Nutrition Research staff. My greatest debt is to Miss Emily Schossberger, Editor of the University of Nebraska Press, for her constant support, discerning criticism, and generous direction.

Ruth M. Leverton
January, 1952
Lincoln, Nebraska

CONTENTS

TABLES

FN17

LITTLE MISS T.

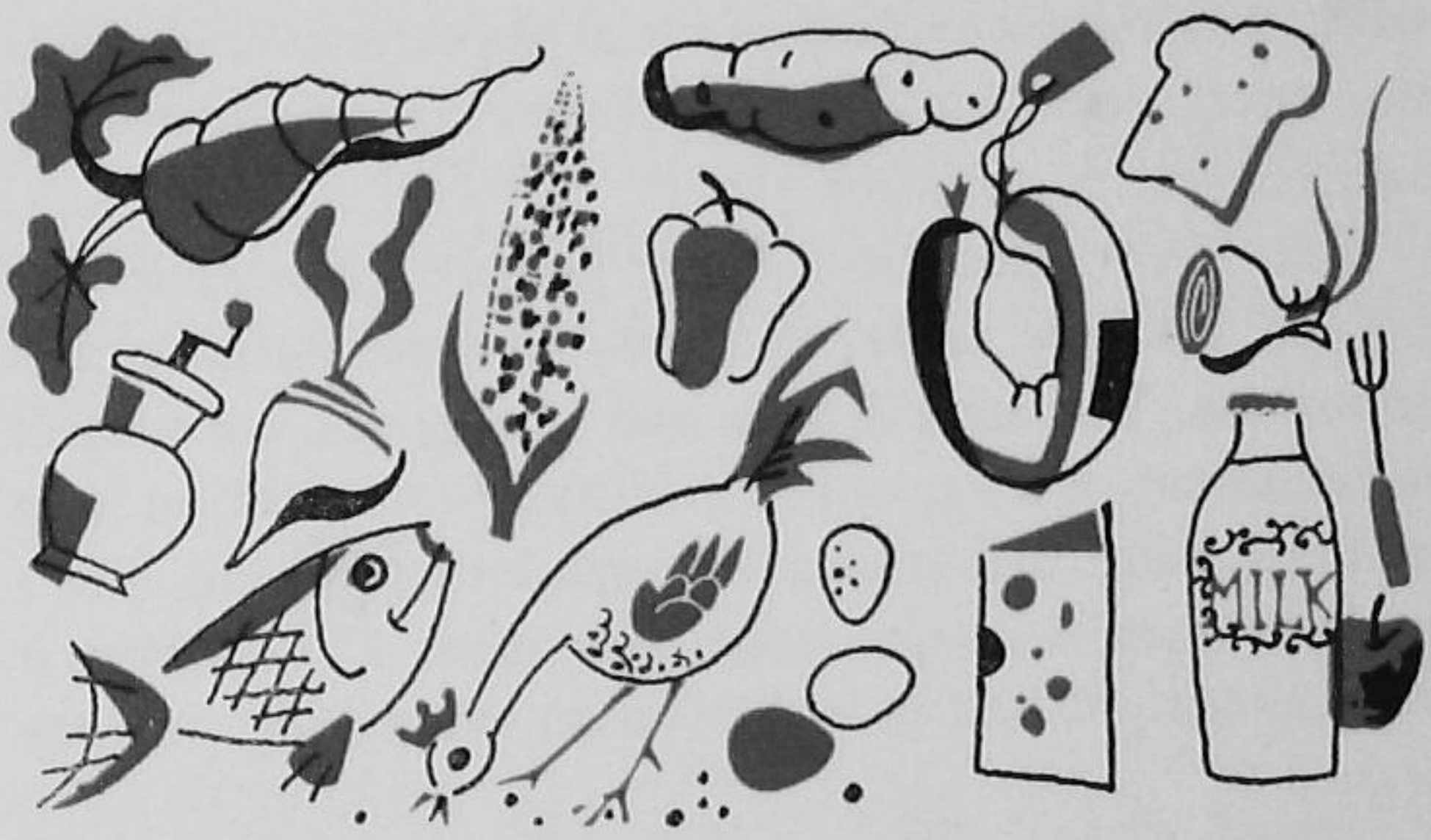
It's a very odd thing—
As odd as can be—
That whatever Miss T. eats
Turns into Miss T;
Porridge and apples,
Mince, muffins and mutton,
Jam, junket, jumbles—
Not a rap, not a button
It matters; the moment
They're out of her plate,
Though shared by Miss Butcher
And sour Mr. Bate;
Tiny and cheerful,
And as neat as can be,
Whatever Miss T. eats
Turns into Miss T.

—Walter de la Mare

Quoted by permission

chapter 1

FOOD'S THE THING



EVERYTHING in your body was once in your food.

Starting with a single cell, growing to your present size, and for as long as you live—food becomes you.

Food becomes your blood and muscles, your bones and teeth, and every part of you.

Food becomes your size, your strength, your energy, your stamina, and your ability to succeed.

Food becomes your morale, your happiness, your personality, and your attitude toward life.

Moreover, food is becoming to you—the right kind, that is. It becomes you because it gives you poise, confidence and sparkle. You will find that it wears well too.

In short, food becomes your "nutrition." Your nutrition can be a valuable asset or a dangerous obstacle depending on whether it is good or poor. If it is good, you are ambitious, enthusiastic, and emotionally stable; you have a radiant personal appearance and abundant energy and health which are easily recognized by yourself and those about you.

But if your nutrition is poor you are seriously handicapped. You tire easily, you lack stamina, purpose, and enthusiasm. You are a drudge and a drag; you are subject to discontent, worry, and irritability. Poor nutrition is an insidious thing. Sometimes it creeps into your life, like a spy, and slyly sabotages your enjoyment. Other times it attacks outright and quickly defeats everything you try to do.

There are teams of scientists, both men and women, engaged in the science of nutrition, discovering the fundamental facts and working out ways to use them for human betterment. But it depends on you whether these facts are used to make your everyday living better, more effective, and more satisfying.

Perhaps you are thinking that you don't know how. Do you have to be a master mechanic to own and drive a car? No, of course not; you can enjoy your car and the service you get from it if you have a dependable source

of information, if you follow the directions given by experts for its care and upkeep, and if you use common sense in its operation.

Neither do you have to be a nutritionist or a food scientist in order to select the food that becomes you. If you have a dependable source of information, follow the directions intelligently, and if you use reason in what you expect of your body, you can supply the materials for eating wisely and enjoy abounding health.

In the chapters ahead is your source of information—a handbook to guide you in selecting the food that becomes *you*. Follow it confidently and achieve buoyant health.

chapter 2

YOU GET THE HABIT

HABIT is a powerful force in determining what food becomes us. We eat according to our established food habits—and like all habits they can be good or bad.

Food habits are the sum of our attitudes and ideas, our likes and dislikes, and our experience and practices of choosing and eating food.

Our food habits are good when we are willing to eat the kinds and amounts of food which science has proven we need for nutritional prosperity. "Willingness to eat"

does not mean that we have to *like* all kinds of food equally well. Most of us have definite preferences, favorite foods, and also acute dislikes. A "willingness to eat" means a promise to ourselves that we will not confine our food selections to favorite foods, especially when doing so leads to poor diet and on to nutritional bankruptcy. Good food habits mean that we know food becomes us, that we mean to supply the best and become the best.

Poor food habits mean that we eat only what we like, and are in the habit of eating only this, regardless of what we need; and that we have a closed-door policy toward change if it means getting used to unfamiliar foods and flavors. Poor food habits lead us to judge our health by absence from disease; but we are unaware of such things as buoyancy and sparkle in health. Poor food habits imply a lack of interest in and awareness of what is going on in the world of science and human nutrition; they suggest we are traveling in a streamliner age with equipment from the horse-and-buggy days. Often we don't realize that our food habits are built on whim and prejudice and ignorance. When we become aware of this dangerously flimsy basis for our food selection, we have taken the first step toward building better food habits.

FOOD AND FIRST IMPRESSIONS

Where do our food habits come from? Food habits begin to form with our earliest experience with food. As

babies we had our first experience with people through food, and from this got our first impression about the world in general. If we had food when we wanted and needed it, then we got the idea that people were nice and friendly and comforting and the world was rosy. But if we had to cry until we were exhausted each time before we got any food, our impression wasn't good. People seemed to be against us because they fed us only after a battle; and the world was a tough place, where we had to fight even for our greatest need—food. Certainly we didn't have a happy association between people and food.

The present trend in infant feeding is to let a baby set his own feeding schedule according to his hunger instead of our clock. This makes him more satisfied and comfortable; he gets the impression that food is wonderful and the world is a nice place with nice people in it.

Perhaps as children we were greatly confused about the place of food in our world. Even though it was a basic need like shelter and clothing, food was used in many ways that had nothing to do with our need for it. Sometimes we had to eat things that mother said were "good-good" and yet nobody else ate. Other times we couldn't eat things because they were "bad-bad" and yet everyone else ate them and had second servings. Soon we learned to use food as a weapon to fight back at the world and parental authority in particular.

Sometimes poor food habits got started because parents were not observing. Perhaps a child overate because

no one noticed that she ate faster, longer, and oftener than she should. On the other hand, she may have habitually eaten too little because she shared her food with a sister or brother and thus gained pleasant attention by being a fussy eater.

FOOD AND ASSOCIATIONS

We connect certain foods with certain experiences or situations and these associations are part of our food habits. As adults we may connect soft, milky foods with illness and therefore consider them undesirable for well folks; we connect salads with feminine preferences and hence "sissy foods" for men; we think that because puddings are eaten with a spoon instead of a fork they are "low class" or childish food. Often being raised on a farm makes us believe that skim milk is fit only for pigs. Most of us think that organ meats like liver and heart are second-rate. We have special associations with the foods we ate on busy, steamy wash-days, the foods we had when company came, and the foods we ate when we were away from home, at grandmother's house, at church suppers, and at Fourth of July picnics. Sunday foods and holiday foods were an important part of our childhood experiences.

It is not uncommon for people from war-torn countries, or for our war veterans, to have an extreme revulsion for the kind of food they were given during times of stress, even though the food saved their lives. Sometimes long

afterwards, through association alone, they become ill just from the sight or smell of it.

The thought of what the Jones eat, what foods are "high class," hard-to-get, or expensive and therefore have social prestige, also influences our food habits. On the other hand foods used for feeding disaster victims, or distributed free among relief clients, or included in low-cost diets are "low class" and suggest charity to us.

OUR APPETITE

A great deal has been written about the self-selection of food. The theory is that our appetite will automatically direct us to eat what our body needs. There is much evidence, however, that *appetite alone is not a reliable guide to what we need*. This is especially true in our present environment where there are many foods low in nutritive value but high in appetite appeal. One study of self-selection of food by children indicated that they naturally chose the foods they needed for normal growth. But the children did not have the same foods to choose from as they would have had at home; they had no candy, sweet desserts, soft drinks, none of the foods with high appetite appeal and low nutritive value, and they didn't see anyone else eating them. Any food they chose made some contribution toward meeting their needs. This is not the situation in the ordinary home nor in the society where we must learn to live and take responsibility for supplying our own needs.

A LITTLE CHECK-UP

It is not difficult to check up on our food habits. We will see ahead the kinds and amounts of food which are needed for prosperous nutrition and we can check to see if we are eating them regularly. How we look and feel tells something about our food habits. We may think we are all right until we are alerted to some of the plus values which go with good nutrition and which we don't have.

Ridding ourselves of poor food habits is not difficult if we give the problem some attention instead of finding excuses for ourselves. Usually it helps to look into the reasons for our poor food habits. Often we find we do not know, or that we have forgotten the unpleasant associations which are responsible for our dislike of certain foods. Often unpleasant food associations and habits of omission can be seen for what they are—thieves of good nutrition. We can start to build pleasant associations with these foods or if we can not achieve pleasant ones, at least we can get rid of prejudice and achieve a neutral attitude. We can decide who is boss of our nutrition—our poor food habits, or our knowledge of what we need and our interest in buoyant health.

IT'S EASIER THAN IT LOOKS

Just as we go about improving things about ourselves and our surroundings, so we can improve our food habits.

The first step is to recognize that something is wrong. The second is to get authentic information, and the third to apply it.

The perplexing thing about poor food habits is that we hate to give them up; we are so resistant to changes for the better. In most things we love to experiment, to have new adventures, and to do things better than we have ever done them before. Why doesn't this attitude carry over into our food practices? It does for many of us—and more of us all the time are beginning to enjoy the reward of improved food habits and positive health.

It is usually poor food habits and reluctance to change them that make us turn to food faddists and quacks. We are looking for a quick and easy way out of our nutritional difficulties caused by a lifetime of poor food habits. The food and health field is particularly attractive and profitable to these fakers who originate and promote fads, exaggerations, fancies, and often complete untruths about food and health. They sell advice and health products usually both of their own making.

BEWARE!

The success of a quack or faddist lies in experience, super salesmanship, aggressive claims, and appeal to people's emotions. He dramatizes his story of what will happen to people if they don't buy his product and promises them magical improvement if they do—so they are eager to

buy it. The many different systems or schemes of food quackery are much the same in operation. In general they require the omission of some foods you have been eating and the addition of some special health products that the promoter is selling. To guarantee success, some of the schemes include health rules, and exercises, and advice to "work at something you enjoy" or "have faith in your diet." These are likely to benefit anyone who has been violating the common sense rules for good health.

The schemes also have advice and products for treating disease. This is the most dangerous part because it often delays getting needed medical care for a person who thinks he doesn't need it.

The weight-reducing "eat-as-usual-and-grow-thin" systems are a fake unless they involve harmful materials to increase the energy expenditure by increasing thyroid activity. Many schemes are built around some special preparation which must be taken to reduce weight. However, the directions with such products usually tell you that you'll reduce better while you are taking the product if you also cut down on the amount of food you eat. An appetite-killing and pick-me-up drug has recently enjoyed dangerous popularity. In some cases it causes serious symptoms, in others its effect is lost because the body soon builds up a resistance to it. Like any quick reducing scheme the drug does nothing to correct the eating habits which caused the overweight and which will probably bring it back.

The quack's diet is easily recognized. It is far removed from a normal varied diet or insists on the addition of special health foods or formulas. It often makes spectacular claims, cites fantastic testimonials, and suggests self-diagnosis—all of them dangerous. So beware of anything that has one or more of these earmarks—it's not for you.

FOOD LORE AND LEGENDS

There is another less obvious kind of food lore which is dangerous too: all the myths and legends and superstitions which have been woven around food and handed down from one generation to another. Some of us who would be horrified at the idea of following a food fad believe in "old wives' tales" about the good and bad qualities of different foods. Here are just a few examples:

Milk is a food only for babies.

Milk should not be eaten with fish or with acid fruits like cherries.

Meat is hard on the kidneys.
Men need more meat than women.

A child doesn't like strawberries because his mother got sick on strawberries when she was pregnant.

Potatoes are fattening.

Honey and molasses can be used when sugar isn't allowed; they never make fat.

Food will never turn to fat if you drink lots and lots of orange and grapefruit juice.

Foods, especially acid ones, are poisonous when cooked in aluminum pans.

Are you surprised to hear that taking vitamin pills is a poor food habit? It almost always means that we don't want to bother to eat the foods we need. It is not uncommon to hear a person say, "I can eat anything I want to because I take vitamin pills."

The scientists haven't learned all there is to know about vitamins and how they affect us; they probably haven't discovered all the vitamins that exist. But they do know that vitamins cannot take the place of food, because food has other essentials too. Most vitamin preparations, which we can buy almost any place, are "concentrates" meaning that a single dose contains many, many times our daily requirement. Again the scientists know that metabolism can be upset by great excesses of some of the vitamins and that there are other harmful effects of huge amounts of different vitamins.

Vitamin concentrates are wonderful things to have for the prevention and treatment of disease and related problems, but we should use them only when our doctor prescribes them for us—not for a friend or relative whose symptoms we can match.

When vitamin concentrates are prescribed they should be thought of as "crutches" for use in an emer-

gency. Then, like crutches, they should be discarded as soon as the emergency is over, and we can depend on good food habits to support us. Only in cases where there are special problems of supply, or utilization, or allergy, could the constant use of vitamin or similar concentrates be justified. We need good food habits for many reasons other than getting our vitamins.

ACTION PLEASE!

Information from recognized scientific sources is the surest safeguard against such pseudo-nutrition. But information is of no value until we apply it to our eating habits and to our ideas about food. We will need freedom from prejudice and superstition plus a generous amount of common sense.

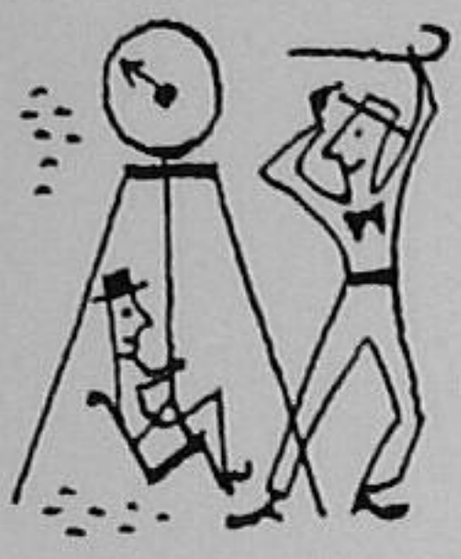
In the chapters ahead, we will see how scientific information can help us in the everyday task of choosing wisely the food that becomes us. We'll find it can be fun and rewarding.

chapter 3

WISE WEIGHT

SOMETHING that interests almost everyone is weight—the question of taking it off, putting it on, or just keeping it normal. Weight is one of the most talked-about subjects, and rightly so—for weight affects our vitality, our poise and appearance, our personal and public relations, our emotional adjustments and also our length of life.

True, weight alone does not tell the whole story of our health—but it is a very important chapter. Buoyant health and happiness will not follow us if we stray far in



either direction from the path of normal weight. Many of us who are overweight or underweight insist that we are perfectly healthy. But we would probably be very much surprised to find out how much better we felt if our weight were normal.

WHAT IS NORMAL WEIGHT?

The normal or ideal weight for each of us depends on our age, height, and body build.

Usually body weight continues to increase during the late teens and through the twenties. Although we stop growing in height some time between our fifteenth and twentieth birthdays, the body goes on building in other ways. If there are materials available from a good diet, the body deposits more minerals inside the bones to make them stronger. It puts more protein into the muscles and the vital working organs to make firmer, sturdier tissues. It tucks some fat here and there for shock absorbers, insulation, and pleasing curves. Finally it builds up a nutritional savings account for use in emergencies. By the time we are thirty this growing is over and so is our need for gaining weight.

After we reach the age of thirty our weight should not increase. When we are 40 we have no reason to weigh more than when we were 30, nor when we are 60 to weigh more than when we were 50. In spite of this, a great many men and women gain about a pound a year after age 30 or 40. A pound a year seems a negligible thing.

However, by the end of 10 or 20 years that many extra pounds can seriously threaten our health and vigor.

Height is important in determining our normal weight. The taller we are the more we must weigh to be well-proportioned and well-nourished. Each added inch of height means longer and heavier bones, larger muscles, more blood and blood vessels and slightly larger vital working parts.

Body build refers to the size and width of our bone structure in relation to our height; this proportion, too, affects what we should weigh. The larger our build, the more we need to weigh to look and be well. Narrow shoulders and hips and small wrists mean a small build. Such people are often also shorter than average. Wide shoulders and hips and large wrists mean a large build and often go with greater than average height.

Most of us have a medium build, neither extra small nor large for our height. We can judge our own build by comparing the size of our bones with that of other people who are about the same height. Here's a warning though: if we are overweight we are likely to overrate our build and decide we have a large build when we really have a medium or maybe even a small build. We do this quite unconsciously in trying to justify our extra weight. Our framework would look much smaller if we could see it without so many layers of padding. If we are underweight we are likely to underrate our build trying to justify our lack of weight.

TABLE 1. NORMAL WEIGHT FOR HEIGHT AND AGE*

Height		Men				Women			
		Age in Years				Age in Years			
		15	20	25	30	15	20	25	30
Feet	*Inches*								
4	8	—	—	—	—	101	106	109	112
4	9	—	—	—	—	103	108	111	114
4	10	—	—	—	—	105	110	113	116
4	11	—	—	—	—	106	112	115	118
5	0	107	117	122	126	107	114	117	120
5	1	109	119	124	128	109	116	119	122
5	2	112	122	126	130	112	119	121	124
5	3	115	125	129	133	115	122	124	127
5	4	118	128	133	136	118	125	128	131
5	5	122	132	137	140	122	128	131	134
5	6	126	136	141	144	126	132	135	138
5	7	130	140	145	148	130	136	139	142
5	8	134	144	149	152	134	140	143	146
5	9	138	148	153	156	138	143	147	150
5	10	142	152	157	161	142	147	151	154
5	11	147	156	162	166	147	151	154	157
6	0	152	161	167	172	152	156	158	161
6	1	157	166	173	178	—	—	—	—
6	2	162	171	179	184	—	—	—	—
6	3	167	176	184	190	—	—	—	—
6	4	172	181	189	196	—	—	—	—
6	5	177	186	194	201	—	—	—	—

*Courtesy of the Life Extension Institute Inc., New York City.
For men these figures include shoes but not coat and vest; for women, indoor clothing and low heels.

We inherit our height and build but we ourselves control how much weight we carry on this body structure. Table 1 tells us what the normal weight is for our height and age if we have a medium build. For a small build we should subtract 10 per cent from the weight given for our height and age, and for a large build add 10 per cent. The normal weight for a woman 30 years old, 5 feet 5 inches tall, and of medium build is 134 pounds. It would be 13 pounds less or 121 pounds if she has a small build. A woman of this height is not likely to have a large frame but if she does, her normal weight would be 13 pounds more, or 147 pounds.

We are permitted a range from 3 pounds above to 3 pounds below the figure given in the table when our normal weight is under 135, or 5 pounds above or below if our normal weight is over 135 pounds. We mustn't abuse this range by stretching it!

GOOD TO REMEMBER

Here are two things to remember about getting weighed. First, get weighed at the same time of day and if possible on the same scale each time. Your weight may vary as much as 2 or 3 pounds during a single day depending on your water intake and loss, and on the number of hours since the last meal. If you have a scale at home the best time to get weighed is when you first get up and before you get dressed. Not all scales weigh the same,

especially the ones with springs. Make friends with your grocer—he has the best scale, a big platform style. You hang weights on the end of the weighing arm and then shove another weight along the arm until it just balances. Try to wear about the same kind of clothes, especially shoes, each time. Wearing shorts one time and a suit-with-vest the next, or "flats" one time and sling pumps the next, will surely confuse the weight record. If you are checking on your weight very closely it would be wise to get weighed every other day for a week and use the average of these weights as a starting point.

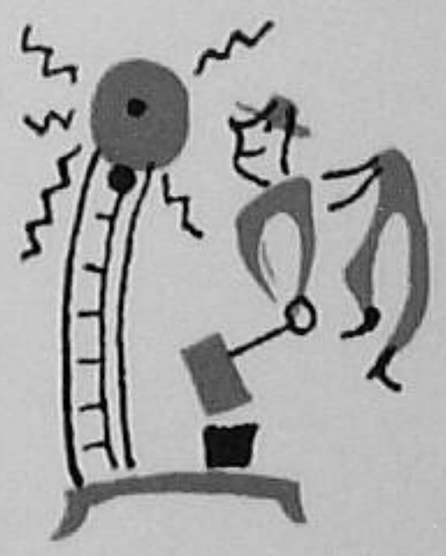
COMPARISONS

Second, compare what you weigh with your normal weight, as well as with what you weighed last time. Suppose you weighed 140 pounds today and you said, "That's just a pound more than last week—a pound doesn't mean anything because my weight varies more than that in a day." But wait! Did you say the same thing last week, and the week before that? You should be saying, "I weigh 5 pounds more than my normal weight—last week it was only 4 pounds, and the week before only 3 pounds. I'd better stop gaining!" Unless you compare your weight with what it should be, you will edge pound by pound toward overweight and all its problems. There is the same danger if you are slowly losing weight and not regaining it because you compare your weight with what it was last week or last month instead of what it should be.

SUPPLY AND DEMAND

What determines our weight? We know it's more than just the food we eat. First, let's ask, "What determines our bank balance?" We know it's not just the size of our pay check. No, it's the balance between what we earn and what we spend—our supply and our demand—that determines whether we have money left over, are in debt, or just come out even. The same thing determines our weight—the balance between our supply and our demand, not of money, but of energy.

Energy is the stuff the body needs for all its activities: to move, to breathe, to keep the heart beating, to keep warm, and to help in growth and upkeep. Supplying energy is one of the chief jobs of the food we eat. First the food is digested and then it is taken by the blood stream to the cells in all parts of the body. The blood stream also picks up oxygen from the lungs and takes it to the cells. The food combines with the oxygen—we say it is "oxidized"—and energy is released for our needs. Foods are the storehouses of energy. A sandwich can't supply energy as it waits in your lunch box, but when it is digested and then oxidized the stored energy is released for your many needs.



TO MEASURE ENERGY

We measure energy in "calories" just as we measure height in inches or weight in pounds. The energy stored

in food is measured in calories and so is the energy we use for all our body activities.

When we eat just the right number of calories to meet our energy demands our weight does not change. Actually we don't eat calories, we eat foods which later release calories, but it is shorter to say, "eat calories."

When we eat more calories than we need to meet our energy demands, the left-over calories are stored in the body as fat and we *gain* weight.

When we eat too few calories to meet our energy demands, body fat is oxidized to release energy to make up the shortage, and we *lose* weight.

THAT CHECKING ACCOUNT

So our weight is the balance in our energy or calorie checking account. If we deposit just enough to cover what we use, our balance does not change; if we deposit more than we use, our balance goes up; and if we deposit less, it goes down.

It is the figure 3500 calories that we need to remember as the energy value of one pound of fat, whether it is moving in or moving out of the body.

To lose a pound of body fat we have to overdraw our energy account 3500 calories. To cover this debt, the body oxidizes stored fat and one pound supplies 3500 calories. Then the body weighs a pound less.

To gain a pound of fat we have to deposit in our

energy account 3500 calories more than we need. Then the body weighs a pound more.

Many things going on both inside and outside the body influence our supply and demand of calories.

Appetite and hunger affect our supply of calories by affecting the amount and kind of food we eat. Appetite is our *desire* for food, hunger is our *need* for it. Few of us ever feel the pain that goes with real hunger, because our habit of eating several times a day renews our energy supply before hunger broadcasts any urgent distress signals. Appetite is aroused by pleasant thoughts of food, the smell of good food cooking, its attractive appearance, and its good flavor; and it is depressed by unpleasant thoughts, and poor, unattractive food and surroundings.

TAILOR-MADE APPETITES

Appetite is not always a safe guide to follow in deciding what and how much to eat. It is too easily led astray by misinformation, prejudices, and fads. Also, an unruly appetite can soon get us into the habit of eating more or eating less than we need to keep a normal balance between our energy supply and demand. We can't wear a size 36 suit if we have a size 42 appetite, nor will a size 10 appetite fit our needs if we are size 16. Appetites have to be tailor-made to fit our individual needs and nothing is more becoming than a well-fitting appetite. It doesn't bulge or wrinkle in the wrong places, it doesn't draw or pull too

tightly over our figure, and it gives us style and poise. A poorly fitting appetite is unsightly; it spoils our figure and threatens our health.

The suggestions and tools given in this book will help you tailor your appetite to fit your needs. Perhaps your appetite has always fit you well—then you can just check it occasionally and replace any out-of-date ideas with a New Look. Or perhaps it doesn't fit you well at all—then you'll have some remodelling to do, like making it smaller and adding some new material.

Emotions, too, affect our calorie supply. When we are upset some of us find comfort, reassurance, or escape in overeating, while others lose interest in food and eat very little. Sometimes this overeating or undereating becomes a habit and we forget how it started or that there is no longer any reason for it.

Our demand or need for calories depends on both the voluntary and involuntary activity of the body. Voluntary activity is what we choose to do, using our muscles for walking, bending, sitting, writing, singing, or any motions over which we have control. The calories required for this vary with different activities depending on the size and number of muscles we use and how long and how hard we use them. Involuntary activity includes the automatic actions of the body, the work of the heart and lungs, and the keeping alert of the muscles so they can act on any given command. The calorie need for involuntary activity is an absolute must and has to be met every minute

TABLE 2. YOUR DAILY CALORIE NEED

Your weight in Pounds	*Your Activity*									
	Sedentary			*Moderately Active*			*Very Active*			
	Boys	*Girls*	*Men & Women*	*Boys*	*Girls*	*Men & Women*	*Boys*	*Girls*	*Men*	*Women*
90	—	1620	1440	—	1980	1800	—	2340	—	2160
95	—	1710	1520	—	2090	1900	—	2470	—	2280
100	2000	1800	1600	2700	2200	2000	3500	2600	2900	2400
105	2100	1890	1680	2835	2310	2100	3675	2730	3045	2520
110	2200	1980	1760	2970	2420	2200	3850	2860	3190	2640
115	2300	2070	1840	3105	2530	2300	4025	2990	3335	2760
120	2400	2160	1920	3240	2640	2400	4200	3120	3480	2880
125	2500	2250	2000	3375	2750	2500	4375	3250	3625	3000
130	2600	2340	2080	3510	2860	2600	4550	3380	3770	3120
135	2700	2430	2160	3645	2970	2700	4725	3510	3915	3240
140	2800	2520	2240	3780	3080	2800	4900	3640	4060	3360
145	2900	2610	2320	3915	3190	2900	5075	3770	4205	3480
150	3000	2700	2400	4050	3300	3000	5250	3900	4350	3600
155	3100	2790	2480	4185	3410	3100	5425	4030	4495	3720
160	3200	2880	2560	4320	3520	3200	5600	4160	4640	3840
165	3300	2970	2640	4455	3630	3300	5775	4290	4785	3960
170	3400	3060	2720	4590	3740	3400	5950	4420	4930	4080
175	3500	—	2800	4725	—	3500	6125	—	5075	—
180	3600	—	2880	4860	—	3600	6300	—	5220	—
185	3700	—	2960	4995	—	3700	6475	—	5365	—
190	3800	—	3040	5130	—	3800	6650	—	5510	—
195	3900	—	3120	5265	—	3900	6825	—	5655	—
200	4000	—	3200	5400	—	4000	7000	—	5800	—

of our lives regardless of other needs. We need about 10-12 calories for each pound of our normal weight each day for this purpose, sometimes called metabolic rate. Often the number of calories needed for this involuntary activity is more than half of the day's total calorie need.

The pace-setter for both voluntary and involuntary activity is a chemical made by the thyroid gland in the neck. Occasionally there is too much of the chemical and the pace is too fast, or there is not enough and the pace is too slow. Measuring the speed, or metabolic rate, is the doctor's job. He can treat the abnormal rates to make them behave normally.

HOW MANY CALORIES?

Our total calorie need for both voluntary and involuntary work depends on our age, our size, and our activity. Adults have smaller calorie needs than boys and girls from 16 to 20 years who are still growing. But at all ages calorie need increases as size and activity increase. A large person needs a few more calories than a small person because he has more body substance to keep up and to carry around.

Our activity can be rated as sedentary, moderately active, and very active depending on how much and how fast we move around in our work and play. Here is a general description of each of the three activity groups to help you rate your own activity. Try not to overestimate your activity and thus your needs. Most of us think we are much more active than we really are.

Rate yourself as sedentary if:

You work at a desk or in an office or have almost any white-collar job and work inside as a lawyer, dentist, banker, salesman, teacher, non-athletic student, clerk, beauty operator, merchant, taxi driver, or a homemaker who does her own housework in a small house and has one child. Many doctors who do not make house calls and do not do surgery are also in this group.

These jobs require light muscular activity. Even though some of them require a good deal of standing you move around in a relatively small space. Most of your recreation is taken sitting down, or walking around a golf course, or at an occasional dance.

For the sedentary group the daily calorie needs per pound of body weight are: boys 20, girls 18, men and women 16. The total calories for different weights are given in Table 2.

Rate yourself as moderately active if:

You are a mechanic, carpenter, postman, bus or truck driver, gardener, a farmer during times when the work is light, or an active doctor; a waitress, cook, factory worker, janitress, a girl student active in sports or a homemaker who does her own housework and has at least two children.

These jobs require either more muscular work or more continuous light work than the sedentary ones. The recreation is the same—mostly mild.

For the moderately active group the daily calorie needs per pound of body weight are: boys 27, girls 22, men and women 20. The totals for different weights are in Table 2.

Rate yourself as very active if:

You are a farmer in the busiest season, a miner, logger, longshoreman, or a student in competitive sports such as track, basketball, or football and practicing several hours a day; or a homemaker who is doing all the housework for a large family on a farm, and taking care of the garden and chickens. Your recreation is relatively quiet.

For the active group the daily calorie needs per pound of body weight are: boys 35, girls 26, men 29, and women 24. Again, the totals for different weights are in Table 2.

If your weight varies more than 10 per cent from what it should be, use your normal weight to find your calorie need in Table 2 instead of your actual weight.

CALORIES IN FOOD

We need energy for everything we do, but only three kinds of substances in food can supply us with it. Their chemical names are Proteins, Fats, and Carbohydrates. They each have different and very complex chemical natures and they all contain the elements carbon, hydrogen, and oxygen. Proteins contain nitrogen too,

which gives them extra special importance in the body. We talk about carbohydrates as "starches and sugars."

The energy values, or the number of calories, these substances will give when oxidized in the body are:

Proteins:	115	calories per ounce
Fats:	255	calories per ounce. This is 2¼ times more calories than from proteins or carbohydrates
Carbohydrates:	115	calories per ounce

The number of calories in a serving of food depends on how much protein, fat, and carbohydrate it contains. If large amounts of these energy-giving substances are present, the food is called *high* in calories; if only small amounts are present it is *low* in calories. Low calorie foods like most fruits and the bulky vegetables have a large amount of water and fiber; these substances are valuable to the body but they do not supply calories. Other low calorie foods like skim milk have lots of water and little or no fat. High calorie foods like cakes and pies contain a large proportion of the energy-givers and relatively little water and fiber. Just compare a piece of cake with a bowl of tossed vegetable salad. The piece of frosted cake contains plenty of protein, fat, and carbohydrate from the eggs, milk, sugar, shortening, and flour. They add up to at least 300 calories. The salad, on the other hand, contains foods high in water and fiber, no fat, not enough protein to count, and only enough carbohydrate to supply about 25 calories. But if you add one tablespoon of mayonnaise to

the salad you add 100 calories, because mayonnaise is high in fat and fat is highest of all in calories.

THE LONE WOLF

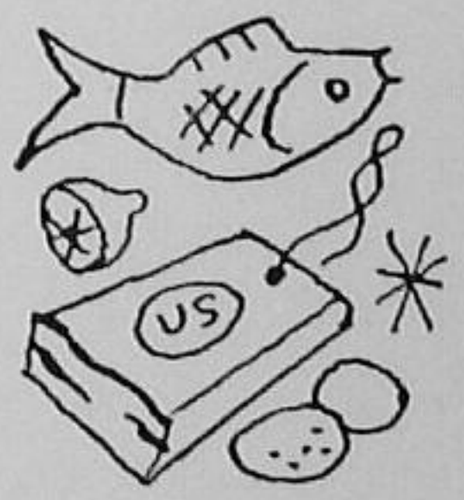
Calories are often referred to as "keeping company" with the other nutrients present in foods. We often hear the admonition, "Choose your calories by the company they keep." The calories in milk, for example, keep company with lots of protein, calcium, and riboflavin; the calories in meat keep company with protein, thiamine, and important minerals. On the other hand, calories in sugar, some cooking fats, and some unenriched refined cereals do not keep company with respectable amounts of other nutrients. These we call "lone-wolf" calories to describe their lack of nutritive companions. Alcohol has lone-wolf calories too—200 per ounce—but it is not classified as a food because it can harm the body.

Each year the people in this country use enough sugar, candy, and sweetened soft drinks to give them an average of 400 lone-wolf calories per person per day! Those who use alcohol add another 200 calories making a total of 600 lone-wolf calories a day. Such a lot of lone-wolf calories in our diets has serious consequences. Either they crowd out the calories which keep company with essential nutrients and thus cause poor nutrition or they increase our calorie supply above our requirement and cause overweight.

Lone-wolf calories must not dominate what we eat, even though they are pleasant and enjoyable. We can welcome such calories into our diet *after* we have supplied our other nutritive needs and *until*, but not after, we have supplied our calorie requirement.

The most practical thing for us to know is the calorie value of ordinary servings or the amount we usually eat at one time. Most of us know pretty well how much to visualize when we think of servings of common foods. Some foods like apples and many other fruits have a natural serving size—one is a serving. Some servings can be described in kitchen measures, such as teaspoons, tablespoons, cups, and fractions of a recipe. Other servings can be described in shopping units such as slices of bread (if you buy it sliced), fractions of a head of lettuce, and the number of servings in a pound of meat. Some foods like milk have two serving sizes—a glass when you are at home, and one-half pint when you buy a serving away from home.

It is true that a serving of food is not exactly the same size every time and every place we eat it, but it is similar enough to be a reliable guide for counting calories and other nutritive values.



GROUPING FOODS

The calorie value of servings of our most common foods are given in the Calorie Chart. Foods which are

similar in composition and in the way we use them are grouped together. We always associate foods such as meat, fish, and poultry together like teammates whether we are planning a meal, hunting them in the food market, or learning their nutritive value. The same is true of fruits and vegetables, dairy products, breads and cereals, fats and sugars. Then there are desserts, and all extras like candy and fountain and bar specialties. Grouping the foods this way makes it easy to find and compare the calorie values of different kinds of foods.

The size of each serving is described here and will not be repeated for all foods each time the other nutritive values are given. Most of the serving sizes you know already or will learn quickly, but if in doubt you can refer to the Calorie Chart.

CALORIE CHART

Vegetables

The size of a serving of vegetable depends on its compactness. A serving of vegetables, mashed or in tiny pieces, like corn and peas is one-half cup. Vegetables like string beans or broccoli or coarsely cut cabbage take up more room because of the shape of their pieces, and then a serving is three-fourths to one cup. If the vegetables are in stalks like asparagus or celery, or uncut string beans, then 5 or 6 strips as long as a paring knife make a serving. A serving of raw vegetables is about the same as a serving of cooked vegetables, except something like spinach that wilts and packs down when it is cooked; then a serving of raw is about half as much as a serving of cooked. Most servings of vegetables have about the same weight—3 to 3½ ounces.

Here are the calorie values of the common vegetables:

	Calories
Lettuce, ⅕ of a head weighing 1 pound, or 4 large leaves	15
Cucumber, ½ medium	
Radish, about 7 red ones	
Asparagus	25
Broccoli	
Cabbage and *sauerkraut*	
Cauliflower	
Celery	
Greens, such as *spinach*	
Snap beans	
Summer squash	
Green pepper, ½ medium	

	Calories
Tomato, 1 small or ½ cup cooked or ½ cup juice	
Beets	40
Brussels sprouts	
Carrots	
Pumpkin	
Onions	
Turnips	
Winter Squash	
Corn	100
Lima beans	
Parsnips	
Peas	
White potatoes, 1 medium, or ½ cup mashed	
Sweet potatoes, ½ large or ½ cup mashed	125

Dried Beans and Nuts

Peanuts, 1 shelled nut	5
1 shelled nut, buttered	7
All other nuts, 1 shelled nut	10
1 shelled nut, buttered	13
Peanut butter, 1 tablespoon	100
Boiled beans or dried peas or lentils ½ cup after cooking	100
Baked beans with tomato sauce and pork ½ cup	150

Fruits

	Calories
Cantaloupe, ½ small melon	35
Strawberries, ⅔ cup, about 10 medium berries	
Tangerine, 1	
Apricots or *plums*, 3	50
Apple, 1 small	
Cherries, *sour*, ½ cup pitted	
Cherries, *sweet*, 15 small	
Grapes, 40 small or 20 large	
Grapefruit, ½ small	
Orange, 1 small	
Orange juice, *grapefruit juice*, ½ cup	
Peach, 1 small	
Pineapple, fresh, 1 slice	
Pineapple juice, ⅓ cup canned	
Raspberries, ½ cup small berries	
Medium size of fruits listed in this group	75
Large size	100
Banana, 1 small	80
Prunes, cooked and sweetened, 3	100
Raisins, *dried*, ¼ cup	
Watermelon, ½ slice, 2-inch thick, 10 inches across	
Avocado, ¼ small	150
Rhubarb, cooked and sweetened, ½ cup	

Fruits canned in sugar sirup or frozen with sugar have about twice as many calories as unsweetened fresh fruit, or fruit canned in water.

Meat, Fish, Poultry, and Eggs

It is hard to describe the size of a serving of meat, fish, or poultry because there is so much variation in the shape and thickness, and in the amount of fat and bone in different pieces. Our best guide is the weight of what we eat which is called the "edible portion." It does not include bone nor the extra fat we can see around the edges.

The weight of the servings used here is from ⅕ to ¼ of a pound, raw. If we measured the size of the edible portion it would be about as large around as an ordinary cup and a little thicker than a pencil, and would weigh 3 to 3½ ounces.

If we buy solid lean meat, like cube steak or ground round steak, which will not shrink much when cooked at a medium temperature, one pound will make five servings. But if we buy meat that has more water and fat which make it shrink when it is cooked, then a pound will make only four servings. If we buy meat that is very firm and has a small amount of bone, a pound will make four servings, but if the bone is large and heavy a pound will make only two or three servings.

Here is the calorie value of a serving of different kinds of meat, fish, and poultry after cooking in the ordinary ways:

	Calories
Pork, ham	300
Beef, veal, lamb, mutton, fried fish, creamed fish	250
For dried beef the usual serving is only 1 ounce or 2 large slices because it has so little water	60

	Calories
Chicken, 2 pieces; *turkey*, 1 piece; *smoked fish; liver, heart, kidney, brains; sardines in oil; canned tuna fish*, ½ cup	200
Whenever any of these servings is greasy, or you eat some of the surrounding fat, add 100 calories	
Clams, oysters, 5 large; *canned crab meat, salmon*, or *shrimp*, ½ cup; *smoked fish*, 1½ oz.	125

For luncheon meat or "cold" meats bought ready-to-eat, the usual serving is 2 ounces. It is all edible portion so a pound makes 8 servings.

Minced ham and different kinds of *prepared sausages*, 2 slices; *1 frankfurter; 2 link sausages*	150
Egg, 1 medium, raw or cooked without adding fat	75

Fats

Butter or margarine	
1 tablespoon	100
1 teaspoon	35
Cooking fats, lard, corn and *cottonseed oils, and other fats*	
1 tablespoon	125
½ cup	**1,000**
Mayonnaise, 1 tablespoon	100
French dressing, 1 tablespoon	60
Bacon, 2 slices cooked and drained	100

Milk and Milk Products

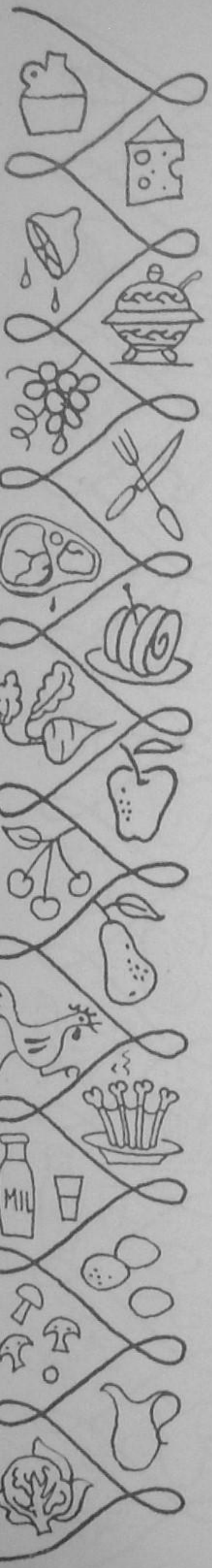
	Calories
Milk	
Skim milk, 1 cup	85
¾ cup or 1 glass	65
Buttermilk, country style or cultured, 1 cup	85
¾ cup or 1 glass	65
Whole milk, plain or homogenized, or diluted evaporated, 1 cup	165
¾ cup or 1 glass	125
Chocolate milk, 1 cup	185
¾ cup or 1 glass	140
Dry milk, whole 1 tablespoon	40
non-fat solids (skim) 1 tablespoon	28
Cream	
Light, table, or coffee, 1 tablespoon	30
1 cup	490
Heavy or whipping, 1 tablespoon	50
1 cup	780
Cheese	
Cottage, 1 ounce or 2 tablespoons	30
All other types, 1 ounce of any solid cheese (1 ounce equals a 1-inch cube) in soft cheese 1 ounce equals 2 tablespoons	115
White Sauce	
1 tablespoon, rounding	40
1 cup	430

Breads and Cereals

	Calories
Crackers	
Oyster cracker, 1	5
Ritz or other thin wafer	15
Soda or saltine or Melba toast	25
Graham	25
Breads	
Bread, any kind, 1 slice	63
Pancake, 1 average, 4″ across	75
Waffle, 1 section	80
Roll, Parkerhouse 1, 16 per pound	80
Roll, 1 plain, 12 per pound	100
Biscuit, muffin, doughnut, 1	120
Cereals	
Cooked cereals—oatmeal, farina, cornmeal, rice, spaghetti, macaroni, noodles, ½ cup after cooking	80
Ready-to-eat cereals, 1 cup	80
Popped corn, not buttered, 1½ cups	80
Flour, white	
1 level tablespoon	25
1 cup, sifted	400

Sweets

Sugar, white or brown	
1 cup	770
1 tablespoon	50
1 teaspoon	17
Sirup, molasses, jam, jelly, or *marmalade*	
1 tablespoon	60



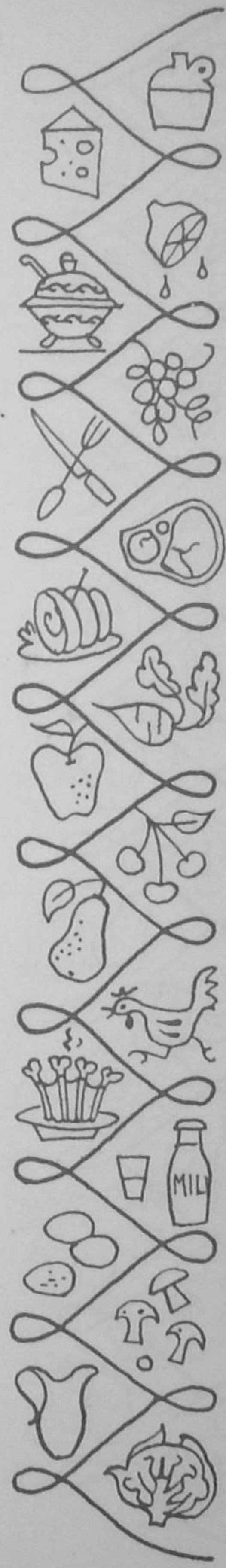
Desserts

	Calories
Plain gelatine dessert, ⅕ package	65
with fruit	100
Milk and egg puddings and *custards*, ½ cup	150
Ice cream, milk sherbet, fruit ice, ordinary commercial varieties	
1 small scoop, ⅛ pint	75
1 large scoop, ⅕ pint	120
¼ pint or ⅛ quart	150
⅓ pint or ⅙ quart	200
Count special brands and mixes ½ serving extra	
Cakes (the calorie value is calculated on the basis of the recipe)	
Plain cake which contains approximately 2 cups flour, 1 cup sugar, ½ cup shortening, ¾ cup milk, and 2 or 3 eggs. This makes 2 layers in 8 or 9-inch pans which makes *12 pieces* or *18 cupcakes:*	
1 piece, 1/12 of recipe	225
frosting	75
1 cupcake, 1/18 of recipe	150
frosting	75
If one and one-half recipes are used for a 3-layer cake:	
1 piece, 1/12 of recipe	335
frosting	125

	Calories
Rich cake which contains about twice as much shortening and eggs as does the plain cake:	
1 piece, 1/12 of recipe	325
frosting	75
1 cupcake, 1/18 of recipe	210
frosting	75
If one and one-half recipes are used for a 3-layer cake:	
1 piece, about 1/15 of recipe	400
frosting	125
Meringue shell, size of a teacup	100
Pie	
Crust, 1/6 of an average size single crust	110
Cream or fruit pie complete with crust and filling, 1/6 average size pie which is usually 9 inches across	325
Cookies	
Plain, generous size, dropped or rolled	100
Rich with nuts or chocolate, thin slice or teaspoonful of dough dropped	100
Brownie, 2-inch square	150

Extras

Candy	
Five-cent candy bar	200
Rich chocolate cream or fudge, 1 medium size piece	125
Fondant mints, 1 medium size	40
Gum drops, 1 tiny	5
1 large	30
Hard candy, 1 slim stick	40
Marshmallows, 1	25



Fountain and Snack Bar Specialties	*Calories*
Ice cream soda	350
Ice cream sundae	350
Malted milk	500
Soft drinks, carbonated or plain, 8 ounces or 1 cup	100
Popcorn, buttered, 2 cups	300
Chili con carne with beans, 1 cup	300
Hamburger, including bun	300
Hot dog, including bun	250
Potato chips, 10 chips	100
French fries, 8-10 strips	200
Mustard or chili sauce, 1 tablespoon	15
Olive, green or ripe, 1 medium	10
Pickles, 1 dill or sour	15
1 sweet	25
Bar Specialties	
Beer or ale, 1 bottle or can, 12 ounces	150
Sherry, port, small glass or ¼ cup	150
Cocktails	150
Whiskey, gin, rum, and brandy, 1 jigger or 1½ ounces	110
Plain wine, small glass or ¼ cup	80
Cordials, cordial glass or ⅛ cup	80

In order to keep the Calorie Chart easy to use, the less common foods have been omitted. In many cases you can estimate the calorie value of such a food by finding one on the Chart which is similar and using that calorie value. For example, cranberry sauce is not listed on the Calorie Chart. In hunting through the list of fruits on the Chart you will find rhubarb sauce as a pos-

sible twin. Both rhubarb and cranberries are sour and both are cooked and sweetened for sauce. And it is true that a half cup of cranberry sauce has about the same number of calories as a half cup of rhubarb sauce.

The hardest things to describe in any calorie table are the cakes and pies and other desserts. Recipes vary and our individual cooking habits vary. One person will say, "I'll just add a little more sugar than the recipe calls for," while another person says, "I don't want this quite so sweet so I'll leave out a little sugar and add some more butter." Except for extreme variations, the figures in the Chart are reliable for these foods as customarily eaten.

Sometimes we want just a very quick general guide to calorie values—something to tell us if a food is high or low in calories. We can get a hint of calorie value from certain characteristics of flavor and texture that sugar, fat, fiber, and water give to foods. Try this as a guide:

If it is:

Thin, watery, or dilute
Bulky or has lots of fiber or coarseness
Watery-crisp instead of greasy-crisp

Then it is relatively low in calories.

If it is:

Thick, oily, or greasy-crisp
Slick, smooth, or gooey
Sweet or sticky
Compact or concentrated
Alcoholic

Then it is relatively high in calories.

Now you can compare a chocolate malt with a glass of skim milk or a rich cookie with a piece of Melba toast! See how easy it is?

The next two chapters are written for the people with weight problems. If you have a problem, perhaps you will find here the road back to normal weight and all its advantages in health and happiness.

chapter 4

TRIMMING THAT FIGURE

When weight is mentioned around us, the first reaction of the greater part of us will be: "My goodness, I am putting on more than I should." If you belong in this category, this chapter is for you. For no one really wants to be overweight. It has handicaps and dangers. Excess fat spoils our looks, threatens our vanity, and often makes us an object of ridicule. It is inconvenient and inefficient and brings us emotional problems. So, why not avoid it?

Even more concrete than these handicaps is the health hazard. Compared with people of normal weight, the overweight people are more likely to have gall bladder trouble, diabetes, gout, and arthritis; they are poor surgical risks, and less resistant to infections. They are twice as likely to have hardening of the arteries and high blood pressure as lean people; and fat men are twice as likely to be affected as fat women. In addition to all this, overweight places an extra burden on the heart.

Overweight also carries a death penalty. Just compare the death rate of men who are overweight with men who are normal in weight. For every 100 deaths among men of normal weight there are:

122 among those who are 5% to 15% overweight
144 among those who are 15% to 25% overweight
174 among those who are 25% or more overweight

Overweight is more serious after 45 years of age than before. Again compare figures: For every 100 deaths among men *under* 45 years old and of normal weight, there are 114 deaths among men of the same age but overweight. For every 100 deaths among men *over* 45 and of normal weight there are 139 deaths among men of the same age but overweight. The death penalty is similar among women.

Overweight results when the calorie supply from the food we eat is greater than the calorie demand of our body. When this happens the calories we don't need are stored in the body as fat. Again we need to recall the

figure 3500. Each 3500 calories over and above body need makes one pound of fat.

There are many false ideas about overweight. You have heard them often—maybe you have even used them as alibis for your own plumpness. Let's have the scientific facts about some of them.

False: Overweight is inherited. "I come from a fat family."

True: Overweight people, like everyone else, inherit their build but not their weight. Our calorie supply depends on our eating habits and the habit of overeating brings overweight. Overeating is often a family habit—then the whole family will be overweight. The thing "inherited" is poor judgment in estimating supply and demand. Did you ever eat for awhile with a family that "inherited" overweight? If so, you probably had foods cooked in extra butter and cream to add flavor, second and third helpings so the food won't be wasted, rich desserts, and bedtime snacks that alone would supply half the day's calorie need.

False: Overweight people need less energy than normal people do because their metabolism is low. "Everything I eat goes to fat because my metabolism is low."

True: Overweight people have normal metabolism rates. Their overweight does not come from a subnormal calorie need. (In the very few cases where it is subnormal it can be treated successfully by the doctor.) Actually they need more energy to do a piece of work than normal people do. It takes more calories to support the overweight person, and to move her around, to take her upstairs or any place. Just ask yourself which is less work, moving a straight chair or an overstuffed davenport?

False: Overweight people use their food more economically than normal people do. "I get more from my food than you do from yours."

True: Overweight people get more calories only because they eat more food. Just follow them around for a day or sit beside them at a meal sometime. They don't think they eat anything much between meals, just a few hundred calories, and at lunch time they eat the extra roll and butter you don't want and use your coffee cream because you drink yours black.

False: Overweight people could soon get rid of their fat if they would exercise regularly. "I wouldn't be fat if I would just exercise."

True: No one can depend on exercise to melt away solid fat. First of all, exercise usually increases appetite and so does the cold shower taken

afterward. Then, if the exercise is strenuous it increases our need for rest. The calories we save while resting may balance those we used up in exercising. If we don't rest we get too tired and being tired wrecks our determination to eat-less-and-lose weight.

Table 3 shows how long a 150-pound person has to exercise to use up 500 calories. The time seems unbelievably long.

This information helps us see why it is easier to lose weight by eating less rather than by exercise and excuses.

The reasons for overeating and overweight can often be found in the answers to certain searching questions. Knowing the answers usually makes it easier to start and stay with a reducing plan. When you decide to reduce try having a private talk with yourself to get honest answers to these questions:

What and how much do I eat?

For three days keep a list of everything you eat and how much. It may enlighten you as much as it has enlarged you. Probably it is a little less than you usually eat because keeping a list makes you self-conscious, so you try to eat less. You may find you are eating more of everything than you realized. Perhaps you don't feel well when you try to eat less because then you choose mostly lone-wolf calories; you skip the calories that keep good company and put life in your food.

When do I eat?

You may be eating between meals more often than you think you do, or you may be skipping meals to make up for between-meal snacks, or you may be eating constantly although you eat only small amounts each hour or so. Eating so often and irregularly may be a sign that you are worried, lonesome, dissatisfied or just restless. Instead of wearing your heart on your sleeve you may be wearing your "frustrations" on your frame.

Why do I eat more than I need?

Every time you start to eat ask yourself, "Why am I eating this? You'll be surprised at some of your answers, especially if you can look farther than just what they seem to be. They'll be something like these: "I'm eating to put off doing something I don't want to do." "Something disagreeable has happened and eating will help me forget it." "Something wonderful has happened and I'm eating to celebrate." "I'm discouraged and eating makes me feel better." "Everybody but me is having fun at the dance so I'm trying to drown my sorrows in this extra thick malt." Or you may blame habit, or the demands of your social life for your overeating.

What do I get from being overweight?

Do you think you've been happier since you've been overweight? Maybe so, but what was happening at

the same time you were gaining weight? Perhaps you started to gain soon after you were married. You were exceedingly happy and perhaps not working as hard as you had been before. Then, as your family and responsibilities grew, you worked harder and you thought you needed lots of extra food, so you ate more and your weight gradually went up. Was it being overweight that made you happier? No, it was the fullness of your life; overweight just tagged along.

Maybe you started to gain weight after your children grew up and there were just the two of you left to rattle around in the house or move to a streamlined apartment. You became less busy and more rested and relaxed. You had more social life, time for bridge and nuts, or golf and snacks, and friends and rocking. At the same time you could look back on a job well-done and forward to spoiling your grandchildren. All these are the sources of your happiness; overweight just followed along.

Perhaps you began to gain weight after you landed the job you had always dreamed of. Then came more prestige and security, more money and more of the right contacts in your business and social life. These made you happier and not the excess baggage you accumulated on your frame as you went along.

Are you among the many men and women who complain loudly that they can't lose weight or that they actually gain on a reducing diet? They follow a diet for a few

days or a week and then get disgusted and leave it because they don't lose pounds and inches almost overnight. Usually they have been accumulating and supporting excess weight and size for many years and yet they expect it to vanish fast.

Losing weight seems like a very slow process. We can't see a change in our weight each time we say "no" to a piece of cake or feel a little hungry and righteous because we ate less than usual for lunch. Sometimes we have to keep on saying no and being a little hungry for two or three weeks before our weight will start down. It is such a slow-poke about going down because the body exchanges fat for water when we begin to eat fewer calories than we need.

A drop in weight cannot happen until after the use of stored fat for energy gets a good head start. When body fat is called into service to supply energy, water temporarily fills the space it vacated. This water weighs as much as the fat did, so body weight doesn't change. But the water isn't there to stay, it will leave eventually. You may have to be on a low calorie diet for two or three weeks before the body begins to discard this excess water through the kidneys. When this happens you begin to weigh less. Your weight may go down quite fast for a few days; then you'll feel gloriously happy and proud that you had the will power to stay with your diet. That is a stair-step pattern of losing weight—going along with no change for some time and then making a sudden drop,

TABLE 3. HOW TO USE UP 500 CALORIES

Choose Your Activity Here	*Keep At It This Long*
WALKING OR HORSEBACK RIDING	
Walking very fast, over 5 miles an hour	¾ hour
Walking fast, about 4 miles an hour	1½ hours
Walking slowly, about 3 miles an hour	2½ hours
Horseback riding, when the horse gallops	1 hour
Horseback riding, when the horse trots	1½ hours
Horseback riding, when the horse walks	3 hours
SEVERE EXERCISE	
Walking upstairs	½ hour
Walking downstairs	1½ hours
But you usually take 10 seconds for one flight of fifteen steps which requires 3 calories going up and 1 calorie going down.	
Swimming, moderate speed Running Bicycling, at steady high speed Tennis, fast game	1 hour
MODERATE EXERCISE	
Bowling or Bicycling at moderate speed Skating, Dancing, Playing Ping Pong or Golf Mowing the lawn, without a power mower Washing and waxing the car	2 hours
LIGHT EXERCISE	
Washing clothes, light Ironing, Dishwashing, Sweeping Playing the Piano or other instrument Typing, rapidly Driving the car	3½ hours

Remember this is *In Addition* to your present activity.

Mild but regular exercises are helpful for keeping the skin and muscles firm and circulation good. Directions for such exercises can be found in many magazines and leaflets.

and then another flat stretch followed by another drop, and so on until you get as far down as you want to be. If you know what is happening and what to expect, you're not so likely to get impatient at having to stay on one step for awhile waiting to take the next step down.

Here is what happened to Mrs. Homemaker when she started to reduce. She followed a low calorie diet faithfully for a month. The diet supplied all her nutritional needs except for being short 500 calories a day, so she had to make up this calorie deficit every day by using body fat. She expected to lose about a pound a week or between 4 and 5 pounds in a month.

The first week she gained a pound. Was she ever discouraged!

The second week she lost a pound. At least she was back where she started from—but half the month was gone!

The third week she neither gained nor lost. Now she was nearly desperate!

In four days of the fourth week she lost 4½ pounds, or the calculated loss for the entire month. Now life was beautiful.

These 4½ pounds would never have disappeared if she had given up her diet at the end of the second or third week and gone back to overeating.

It takes a lot of patience and will-power to stay on a diet during this discouraging time when the scales don't budge even though you know you have overdrawn your calorie account and used body fat for energy.

This shifting of fat and water in the tissues leads some people to say that you should not use salt or drink much water while you are trying to lose weight. This is not true. Too little water and salt at any time can make you extremely tired, as well as interfere with normal body functioning. Therefore, they should not be restricted on a low calorie diet. You need to be able to drink water whenever you are hungry or thirsty or tired. Often drinking water between meals can take the place of a snack and give the same refreshing effect. Salt is lost from the body through perspiration, so in hot weather, or any time when you perspire freely, it is wise to use a little extra salt on your food as well as to drink plenty of water.

A low calorie diet containing very little salt and only a small amount of liquid would take off weight a little faster than the same diet with normal amounts of salt and water. But some of the weight loss would be water instead of fat and it would be gained back as soon as you drank a normal amount of water. The low-salt-low-water intake upsets the body functioning by "dehydrating" or taking water away from the tissues and discarding it. The "dried up" condition is not healthy but it will right itself as soon as water and salt are supplied.

If you are deciding, "I think I can reduce," here are some look-before-you-leap warnings.

First, go to your doctor for an examination. Besides needing his approval from a medical standpoint you will find his interest and moral support most encouraging.

Then second, set a reasonable goal or weight to attain within a certain time—not longer than three months. Be realistic about it but still make it worthwhile. Rather than put off starting because a holiday is coming up, allow a little leeway in setting your goal, but start now.

Third, decide what you are going to do with the bushels of advice you will get—some of it good and some of it bad, but all of it free. If you can listen with a smile of gracious acceptance, refrain from arguing or giving your views, and then promptly forget the whole thing, your success is assured. Nothing can weaken your confidence and hinder your progress as much as being susceptible to every bit of advice that is tossed at you—often by the fattest people who couldn't use it themselves.

Then, fourth, prepare for an occasional "battle of wills." It is sort of a game and goes like this: Your host or hostess or luncheon companion urges you, "Do have some of this."

You: "No, thank you, I'm reducing, you know."

They: "Oh, but this is special, you must have some."

You: "No, really I can't."

They: "Of course you can, just one little piece—don't be silly." Poor you—which reply will you make:

"No, I guess I'll just have to be silly then, because I'm determined to lose weight," or

"Well, all right, since you insist, but I really shouldn't." If this is your answer, your hostess has proven

her will is stronger than yours. Losing battles like this one won't lose you weight.

And fifth, if this applies to you, remember—alcohol is a caloric problem child that belongs to the family of Social Hazards to Reducing. For some people, especially men, it may be the chief cause of overweight. One way to handle the menace is to develop the social art of making one drink take the place and the time of three or four. It's also a good idea to beware of the tag-along foods, like canapes and nuts and popcorn, served with drinks and eaten ad infinitum. They're loaded with calories.

THE COMMON-SENSE DIET

Here is a common-sense reducing diet for you. It supplies everything the body needs except calories, in generous amounts to safeguard your health. It also complies with this code for reducing diets approved by the Council on Foods and Nutrition of the American Medical Association.

1. It is low enough in calories to make the body use its stored fat for some of its energy needs. This is about 1200 calories for women and 1700 calories for men.
2. It is high enough in calories to maintain normal body functions.
3. It is adequate in protein, vitamins, and minerals.
4. It develops food habits that will keep a desired weight.

5. It is carefully planned to help control the appetite.
6. It includes a wide variety of foods distributed among at least three meals a day.

INSTRUCTIONS TO GO WITH YOUR COMMON-SENSE DIET FOR LOSING WEIGHT

Sorry, but these specifications have to be rather rigidly met to keep the calories down, the nutritive value up, and send your weight away. It will be definitely wise to:

Use enriched white bread except when rolls are specified.

Use skim milk or buttermilk.

Remove fat from the meat.

Bake or broil the meat to avoid adding fat—but if this isn't practical in your case, pan-fry it using the least possible amount of fat.

Serve salads without dressings except lemon juice or vinegar and seasonings.

Serve vegetables without sauces or added fats.

It will be permissible to:

Use lettuce in the sandwiches even though it isn't specified.

Use tea and coffee without sugar and cream whenever you wish.

Change the desserts occasionally as long as you don't change the calories.

Change a food from one meal to another as long as you eat some breakfast and have some milk, meat, or egg in every meal.

Save a serving of food from one meal to use as a between-meal or a bed-time snack.

Probably it will be simpler to follow your diet as it is listed than to try to remember the list of permissibles!

Every day—The person on the 1700 calorie diet is to choose 100 calories of any food he wants. The diet listed is only 1600 calories.

YOUR COMMON-SENSE DIET
For Losing Weight

	1200 calorie diet	*1700 calorie diet*
SUNDAY		
Breakfast		
Orange juice	½ cup	same
Egg, boiled or poached	1 medium	same
Bread	1 slice	same
Butter, margarine	½ teaspoon	1 teaspoon
Milk	1 glass	same
Lunch or supper		
Vegetable soup		
Carrots, tomato, celery, cabbage	¾ cup	same
Beef or chicken broth without fat	1 cup	same
Crackers	3	6
Processed cheese	0	1 slice (1 oz.)
Baked apple	1 small	same
Brown sugar	1 teaspoon	same
Milk	1 glass	same
Dinner		
Baked chicken	1 serving	same
Riced potatoes	½ cup	same
Cooked carrots	½ cup	same
Relishes: Celery	2 stalks	same
Green pepper	3 strips	same
Radishes	3 small	same
Parkerhouse roll	1 small	2 small
Butter, margarine	½ teaspoon	1½ teaspoon
Ice cream, plain	¼ pint	same
Milk	1 glass	same

MONDAY	*1200 calorie diet*	*1700 calorie diet*
Breakfast		
Grapefruit	½ small	same
Oatmeal	½ cup	same
Sugar	1 teaspoon	same
Top milk	0	2 tablespoons
Bread	1 slice	same
Butter, margarine	½ teaspoon	1 teaspoon
Milk	1 glass	same
Lunch or supper		
Cheese sandwich		
Bread	2 slices	3 slices
Butter, margarine	½ teaspoon	3 teaspoons
Processed cheese	1 slice (1 oz.)	1 slice (1½ oz.)
Carrots	2-3 strips	same
Apple	0	1 small
Milk	1 glass	same
Dinner		
Baked pork chop, lean	1 chop; ¼ lb. raw weight, small bone	same
Baked potato	½ medium	1 medium
Tossed salad with lemon juice or vinegar		
Lettuce	2 leaves	same
Radishes	3 small	same
Tomato	1 small	same
Bread	1 slice	same
Butter, margarine	½ teaspoon	1 teaspoon
Apricots, fresh or water-pack	3 medium	same
Milk	1 glass	same

TUESDAY	*1200 calorie diet*	*1700 calorie diet*
Breakfast		
Orange	1 small	same
Egg, boiled or poached	1 medium	same
Bread	1 slice	same
Butter, margarine	½ teaspoon	1 teaspoon
Milk	1 glass	same
Lunch or supper		
Chicken sandwich		
Bread	2 slices	3 slices
Butter or margarine	½ teaspoon	3 teaspoons
Roast chicken	1 slice (1 oz.)	1 slice (1½ oz.)
Celery	3 stalks	same
Plums, fresh or water-pack	3 medium	same
Milk	1 glass	same
Dinner		
Broiled ground beef	1 serving or ⅕ pound raw weight	same
Mashed potatoes	½ cup	same
Baked squash	½ cup	same
Salad in lettuce leaf		
Cabbage	½ cup	same
Apple	½ small	same
Parkerhouse roll	1 small	same
Butter, margarine	½ teaspoon	1 teaspoon
Cupcake, plain, unfrosted	0	1 medium
Milk	1 glass	same

WEDNESDAY	*1200 calorie diet*	*1700 calorie diet*
Breakfast		
Grapefruit	½ small	same
Egg, boiled or poached	1 medium	same
Bread	1 slice	same
Butter, margarine	½ teaspoon	1 teaspoon
Milk	1 glass	same
Lunch or supper		
Liverwurst sandwich		
Bread	2 slices	3 slices
Butter or margarine	½ teaspoon	3 teaspoons
Liverwurst	1 slice (1 oz.)	1 slice (1½ oz.)
Tomato	1 small	same
Apple	1 small	same
Milk	1 glass	same
Dinner		
Creamed drief beef		
Dried beef	3 slices (1½ oz.)	same
White sauce*	½ cup	same
Peas	½ cup	same
Relish		
Celery	2 stalks	same
Radishes	4	same
Parkerhouse roll	1 small	same
Butter, margarine	½ teaspoon	1 teaspoon
Cookie, plain	1 medium	2 medium
Milk	1 glass	same

* White sauce—1 tsp. fat, 1 tsp. flour, ½ c. skim milk

THURSDAY	*1200 calorie diet*	*1700 calorie diet*
Breakfast		
Tomato juice	½ cup	same
Egg, boiled or poached	1 medium	same
Bread	1 slice	same
Butter, margarine	½ teaspoon	1 teaspoon
Jelly	0	1 tablespoon
Milk	1 glass	same
Lunch or supper		
Peanut butter sandwich		
Bread	2 slices	3 slices
Butter or margarine	0	2 teaspoons
Peanut butter	1 tablespoon	1½ tablespoons
Green pepper or celery	4 strips	same
Orange	1 small	same
Milk	1 glass	same
Dinner		
Baked ham, lean	1 serving	same
Mashed sweet potatoes	½ cup	¾ cup
Salad in lettuce leaf		
Apple	½ small	same
Grapes	10 medium	same
Pears	¼ medium	same
Bread	1 slice	same
Butter, margarine	½ teaspoon	1 teaspoon
Milk	1 glass	same

FRIDAY	*1200 calorie diet*	*1700 calorie diet*
Breakfast		
Orange juice	½ cup	same
Ready-to-eat flakes or puffs	½ cup	1 cup
Sugar	1 teaspoon	2 teaspoons
Top milk	0	2 tablespoons
Bread	1 slice	same
Butter, margarine	½ teaspoon	1 teaspoon
Milk	1 glass	same
Lunch or supper		
Egg salad sandwich		
Bread	2 slices	3 slices
Butter or margarine	½ teaspoon	2½ teaspoons
Egg, hard cooked	1	1½
Dill pickle	¼ pickle	½ pickle
Carrots	3 strips	same
Banana	0	1 small
Milk	1 glass	same
Dinner		
Broiled liver or fish	1 serving, or ⅕ pound raw weight	same
Baked potato	1 medium	same
Green beans	½ cup	same
Tomato	1 small	same
Bread	1 slice	same
Butter, margarine	½ teaspoon	1 teaspoon
Ice cream, plain	¼ pint	same
Milk	1 glass	same

SATURDAY	*1200 calorie diet*	*1700 calorie diet*
Breakfast		
Grapefruit	½ small	same
Egg, boiled or poached	1 medium	same
Bread	1 slice	same
Butter, margarine	½ teaspoon	1 teaspoon
Milk	1 glass	same
Lunch or supper		
Ham sandwich		
Bread	2 slices	3 slices
Butter or margarine	½ teaspoon	3 teaspoons
Boiled ham, lean	1 slice (1 oz.)	1 slice (1½ oz.)
Gelatin salad		
Cabbage	½ cup	same
Carrots	¼ cup	same
Green pepper	2 strips	same
Milk	1 glass	same
Dinner		
Broiled cube steak	1 serving, or ⅕ pound raw weight	same
Mashed potatoes	½ cup	same
Beets	½ cup	same
Head lettuce salad	⅕ head	same
Bread	1 slice	same
Butter, margarine	½ teaspoon	1 teaspoon
Cup cake, plain, unfrosted	0	1 medium
Milk	1 glass	same

For the best results you will have to follow this diet carefully—not in a hit-or-miss fashion. Leaving out any of the foods or cutting down on the amounts will reduce your nutritional well-being. A few substitutions are permissible but not many are advisable. Pears can be used in place of peaches or lettuce in place of cabbage, without decreasing the nutritive value of the diet. However, using white potatoes for sweet potatoes on a day when no other green or yellow vegetable is served, would mean a diet deficient in Vitamin A value. Also making substitutions to meet our individual preferences is likely to increase the calories. For instance, when you use lettuce in place of cabbage you may use salad dressing on the lettuce when you would have used lemon juice or vinegar on the cabbage.

YOU CAN'T DO WITHOUT IT

An indispensable ingredient in a diet of any kind is will-power and won't-power. If you think you need a lecture on these you might give yourself one. You know all the arguments and all the pitfalls. You know it is up to you to decide who is boss—your appetite or you. Experience shows that when one is convinced of the importance and the advantages of losing weight and understands what has to be done and why, the decision to lose weight provides the necessary will-power.

If the climb down to your ideal weight is a long one, give yourself a reward at certain "scale" points. Each time

you have lost five pounds allow yourself a 500-calorie bonus and spend it for any foods you want. Take a shopping tour through the Calorie Chart. Perhaps you will want to spend it all for candy, or maybe you will want to spend 100 calories for peanuts, another 100 for a soft drink, and what is left for a piece of cake. Or make yourself a Bonus Catalogue of the things you miss the most and then do your shopping from this each time you have earned a bonus.

Have you ever wondered why friends so often tease, tempt, and almost force you into breaking over your diet "just this once" instead of giving you praise or moral support for staying on it? It may help you to say "no" if you realize that very likely they are urging you to eat not because they are concerned about *you*, but because they unconsciously hope that you will *not* succeed. When you succeed in losing weight, your overweight friends have a guilty feeling that they should reduce too. They are more comfortable if you fail, because then they can say, "It can't be done so there is no need for me to try it."

But don't be unkindly critical of these friends. We are all guilty of doing the same thing. We have to remember that food is a vital part of our sociability and friendship. When we want to do something nice for people we offer them food—either invite them to come to our home or take them out to some eating place. We don't know how to entertain without using food and if we did we wouldn't dare try it. When anyone refuses our food we are likely

to be offended. Refusing food without giving offense requires tact and graciousness. It helps tremendously when the host and hostess as well as the guest have these traits.

IT'S FUN TO EXPERIMENT

When you have arrived at your goal of normal weight, what next? Now you are ready to start experimenting to find how much food you need to keep your weight where you want it. Much of the success of keeping your new weight depends on how accurate and observing an experimenter you turn out to be.

Here is your experiment.

First rate your activity as sedentary, moderately active, or very active according to the descriptions in the last chapter. Then look in the table of Calorie Needs and find how many calories you need for your weight and activity. Start slowly to build up your calories to this figure. You don't want to add calories too fast because there will again be a time lag between the increase in calories and what the scales say about it. You will need the Calorie Chart now.

The first and second week add 200 calories a day to your reducing diet. Add them to any meal, or if you prefer, spread them over two or three meals. Choose these calories from fruits, vegetables, meats, and milk products. You can choose different foods each day to give variety to your diet.

The third and fourth week add another 200 calories a day and choose these from fat, bread, cereals, and sweets. You may still be losing a little weight but don't let it worry you.

Now your calorie supply is 1600 if you're a woman, or 2100 if you're a man. Before you add any more calories you need to leave your diet and develop the food habits that will make you independent in choosing your own food and calories. There are some basic menus in Chapter 8, which will guide you in choosing the foods you need for buoyant health.

After a week of choosing your own food and not gaining weight you can begin adding calories again. Now add only 100 calories at a time until you are eating the amount of food that will keep your weight right.

BE HONEST WITH YOURSELF

During this calorie-training period some honest bookkeeping is necessary. Each day write down what your total calorie budget is for that day. Then write down the number of calories in the foods you eat *when you eat them* and add them to the calories you have already eaten. This keeps an up-to-the-minute record of how much of your calorie budget you have already spent, and how much you have left to spend. You'll know then whether you can afford a second home-made roll, or a dish of ice cream or anything else you like. Honest balancing of your calorie

accounts each day will keep you within your budget and save you a lot of discouragement and despair. After all, if you are going to the trouble of being on a diet, you certainly want the good results to last.

You can stop counting calories as soon as you can depend on your revised food habits to guide you in choosing the kind and amounts of foods that will keep your weight normal and your health sparkling.

Your weight need not be as much of a problem to you in the future as it has been in the past. You know too much to let it get the best of you again. The prestige of your success in losing weight, your pride in your new figure, and your enjoyment of better health will all keep you enthused about staying the right weight. The Calorie Chart, and basic menus will give you information about the food you need. Getting weighed once a week or every other week will be a check on how good your judgment is in matching your calorie supply to your calorie need.

Occasionally you may find that you have been overestimating your need. Then you will have to be a little stricter with counting calories for a while. It is so much easier to get rid of excess fat as soon as a little arrives than to wait until there is a stockpile of it.

chapter 5

ROUNDING THAT FIGURE

Now, if you belong in the category that wistfully looks upon those of us who seem to carry around enough weight on our frames, this chapter is for you. For being underweight is a serious affair; it brings handicaps and dangers. Too little fatty tissue to cover the bones and to serve as padding and insulation is disfiguring. It is also a threat to our vanity. Underweight means lowered resistance, less insurance against emergencies, fatigue, and

decreased physical and emotional stability. The death penalty is not as great for underweight as it is for overweight. The death rate among men from 5 per cent to 15 per cent underweight is no greater than among men of normal weight. Among men who are more than 15 per cent underweight, the death rate increases about 10 per cent. The greatest danger of underweight comes before 45 years of age as contrasted with overweight where the greatest danger comes after 45. The death rate from tuberculosis rises sharply as body weight drops below normal.

Underweight results when the food supplies fewer calories than are needed to meet the energy needs of the body. Then body tissue must be used to supply the calories which the food has not supplied.

Again the figure *3500* is important. It takes 3500 calories in excess of the body's calorie need to make a pound of fat. Therefore, to add a pound of fat we must eat enough food to supply 3500 calories more than the body needs.

There are many false ideas about underweight. You have heard them often. Maybe you have even used them as alibis for your own thinness. Let's have the scientific facts about some of them.

False: Underweight is inherited. "I come from a thin family."

True: Underweight people like everyone else inherit their build but not their weight. Our calorie sup-

ply depends on our eating habits. The habit of not eating enough to meet our needs results in being underweight. Eating too small amounts may be a family habit—then the whole family will be underweight, but that does not mean that the underweight is inherited.

False: Underweight people require more energy than do normal people because their metabolism is high. "I can never eat enough to gain weight."

True: Underweight people have normal metabolism rates and do not require more food than people of normal weight. Actually they need less energy to do a piece of work than normal people do, because while they are light weight they require fewer calories to move around walking, going up stairs, etc. In a few cases the metabolic rate is high and a physician must be consulted.

False: An underweight person is more energetic and ambitious than a person of normal weight.

True: The energy and ambition of an underweight person usually comes from nervousness and wears out quickly. Such a person tires more easily and is likely to be less stable physically and emotionally than a person of normal weight. Extreme thinness makes him jumpy, jittery, and tense instead of calm, relaxed and poised.

The reasons for underweight and not eating enough can often be found in the answers to certain searching

questions. Knowing the answers usually makes it easier to start and stay with a gaining plan. When you decide to gain weight, try having an honest talk with yourself.

What and how much do I eat?

Perhaps you are making your body run on half rations. For three days keep a list of everything you eat and how much. Probably it is a little more than usual because keeping a list makes you self-conscious and you try to eat more. Compare the foods on your list with the list of your daily food needs given in the next chapter. Count the calories and compare them with what is given in the table of Calorie Needs for your activity and your normal weight. You will find several places where you could improve on the quality and quantity of what you eat.

When do I eat?

You may be eating much less than you think you are. You may be skipping meals because you think you aren't hungry or when you are hungry eating only very small amounts. On the other hand you may be eating frequently but the caloric value of the food is not enough to cover your demands. If you eat frequently you may consciously try to eat less at meal time, or your appetite may be so dulled that you are not interested in food and you eat very little.

Why don't I eat more?

This is probably a matter of habit. You think you "get full" with very little food. Your stomach is not in the

habit of holding as much food as you need because you have let it get out of the practice of being adequate to your needs. Every time you sit down to a meal or to a snack try to eat three more bites than you think you want. These will not make you uncomfortable but will gradually stretch your stomach so that it can hold enough food at a meal to supply the energy you need until the next meal.

What do I get out of being underweight?

To answer this you must be extremely honest with yourself and try to see behind the front that you present to the world. Very likely you are getting some kind of special attention because you are underweight and it is not always flattering attention. Your friends may worry about you and talk about you a lot—and urge you to eat more. Or they envy you and say "Oh, if I could only be small like you," or "I don't see how you eat so little and do so much." Your thinness may give you a feeling of superiority, especially when you hear your friends fussing about their appetites and their hip- or waistlines. You may unconsciously wish to stay underweight because you enjoy the satisfaction of being superior to your friends. It is not uncommon for a man or woman to use an underweight condition to express martyrdom to a family or to a job. Someone like that wants you to think he is so important to the scheme of things that he cannot waste his precious time or thought on taking care of

himself. It is a sort of self-sacrificing attitude calculated to get attention. Needless to say such a person is not showing much judgment or common sense.

Are you among the many men and women who complain that they can't gain weight or that they actually lose on a high calorie diet? They follow a high calorie diet for a few days or a week and then get discouraged and discard it because they don't gain almost overnight.

Gaining weight seems like a very slow progress. We can't see an addition to our weight each time we eat a few hundred calories extra. Sometimes it takes two or three weeks of eating more than we're used to before our weight starts up. In underweight just the same as in overweight, there is the problem of water balance in the tissues.

A gain in weight cannot happen until after the storage of fat gets a head start. Where there are extra calories to be stored as fat, the body discards some of the water in the tissues and stores the fat in its place. This shifting brings no weight change. But the water has to return eventually to make a tissue of normal composition. When this happens, weight increases.

You can eat as much as 500 calories a day more than you need and stay about the same weight for a week or more. Finally, the newly deposited tissue absorbs water to become normal in composition and then the scales record a sharp gain in weight. Even though a gain may look quite sudden it comes only as a result of the body having stored fat for some time.

It's hard to stay on a diet during this discouraging time when the scales won't budge even though you know you have deposited many hundreds in your calorie account.

Here is some background information which you need before you start on your gaining efforts. An underweight person usually needs to build additional muscle and supporting tissue, and to improve the over-all functioning of the body as well as to deposit some fat. This means that the food must supply an abundance of the materials required for such building and storage, and for operating with more vitality and sparkle.

In some particularly difficult cases of underweight which required hospital care it was found that small meals given five or six times a day were more acceptable and meant better gains than the usual three.

Both smoking and alcohol can hinder your gaining weight. When you use them for a pick-up between meals or before meals they satisfy your hunger and you lose interest in food. Using them after you have eaten the food you need instead of before, will keep them from interfering with your appetite.

Just as the best way to save money is not to spend it, so the best way to gain weight is not to spend calories unnecessarily. Additional rest is a thrifty way to save some energy. You don't want to omit all exercise—mild exercise is needed for developing good muscle tone and normal appetite. You should, however, spend some time during the

day in resting, preferably lying down. If you can't sleep, reading is permissible and almost as restful. Don't wait until you have a free hour or two before starting to rest. Fifteen minutes of complete relaxation taken two or three times a day are much more saving of your energy than two hours when you are restless and have frequent interruptions.

You need just as much patience and will power in gaining weight as you do in losing weight. Sometimes your problem is even bigger because you have to dig out some of your unconscious and deep-seated pride or satisfaction in being underweight. You have to replace these with intelligent recognition of the need for normal weight and the advantages of increased vitality, better appearance and greater emotional stability.

There is no seven-day diet for you as there is for the overweight people. Why? Because, when you look at the kind of diet that is usually given for underweight people, you say, "Oh, I could never eat that much." And you're right; you can't hold large quantities of food, and you would be ill if you tried to stuff yourself willy-nilly.

You have two hurdles; first to develop the habit of eating the quality of food you need for normal upkeep, and then to add some extra calories for storage. For this you require some individual attention rather than a general diet. The directions here have been developed especially to help you clear these hurdles and land feet-first on the side of wise weight.

For at least a week and maybe two, do just this:

Forget about calories and your weight.

Find in the chapter ahead the table of food needs and the basic menu which applies to you.

Follow this carefully, omit nothing and add anything else you want.

Use this time to practice some of the things you will need to do when you start to gain.

Find 15 minutes each day for extra rest; try not to smoke or use alcohol just before meals; try to drink water between meals instead of with meals, to leave more space for food at meal time.

For a day or two count your calories and compare them with what the table on page 30 shows you need for your present weight. If you are eating as many or more calories than the figure in that table says you need, you are ready to start on your gaining project. If you are eating fewer calories than you need take another week to try to increase them, then start.

THE COMMON-SENSE WAY

The aim of your project is to tuck 500 calories a day into your regular food in such a way that they won't show too much. You can hide at least half of them in the foods you regularly eat if you use some nuggets that are small in size but large in calorie value. Here are a few you can practice tucking away:

Brick cheese, 1-inch cube has 100 calories
Use it with mid-morning coffee instead of a

cracker, put a sliver on poached or fried egg, a few slivers on a creamed vegetable, or with your usual sandwich filling.

Cream or fat

Don't use too much and do try to *hide* it
Mix with mashed potatoes, cereals, desserts—
Take a little more cream in coffee or tea
Put ½ teaspoon more butter or margarine on your bread.

Undiluted evaporated milk, 1 tablespoon has 20 calories

Add this to other milk dishes, 2 tablespoons in a custard, gravy, creamed vegetables, cereal cream, mashed potato

You can do the same thing with dry milk solids; 1 tablespoon has 40 calories or if non-fat dry milk solids, 1 tablespoon has 28 calories.

Probably you don't eat cooked cereal but if you do or decide to try it, cook it in fresh milk or add dry milk while its cooking.

Jellies, jams, and sugar will show a little.

In the Calorie Chart you will find other foods too that will give you ideas for your new hobby of calorie tucking.

It's likely that some of these 500 calories will have to show. They may look like this—another half-slice of bread, or serving of vegetable; a little bit larger serving of dessert; a bedtime snack of fruit juice and a cracker with peanut butter; or salted nuts and small candies used after a meal or for a snack.

When you have reached your normal weight you will want to begin to drop some of those extra 500 calories. Drop 100 calories and then wait a week before dropping another 100. Watch your weight to see that it stays up for you might find that your body needs part of those extra calories to keep from shedding weight.

HONESTY AGAIN

You would be wise to do a little honest bookkeeping of your calorie need and supply while you are tapering off the calories. First, write down how many calories you need a day for your normal weight. Then write down the calorie value of everything you eat, as you eat it, and add it up as you go along. This gives you an up-to-the-minute record of how much more you must still spend. Calorie accounting like this will help you develop the habit of eating enough and save you from the discouragement of losing weight again. You can stop counting calories as soon as your food habits can support this new weight.

Your weight won't have to be as much of a problem to you in the future because you know too much about it to let it pull you down again. You will want to get weighed about every two weeks to check on how good your judgement is in matching your calorie supply to your calorie need. You want to be on the alert so if the hard-earned weight starts to go AWOL you can bring it back fast.

chapter 6

HERE'S WHAT YOU NEED

ENERGY is an absolute necessity but it isn't all we need. We need materials for the body's growth and repair and upkeep. During growth we must have large amounts of every kind of building material for muscle, bone, blood, vital organs, and other tissues. When growth is complete, smaller amounts of the same materials are needed for upkeep and repair. Also we need materials to regulate body processes, to keep everything about the body running in an efficient, orderly fashion.

All these different needs require different kinds of materials. The food we eat can supply us with these materials which we call *nutrients*. There are several dozen different nutrients but fortunately we don't need to know about each one. Some are more important than others for us to know about because of the many different jobs they do for us and because they are "leaders" of other nutrients. By knowing how to choose foods that supply the leaders we get the nutrients that always play follow-the-leader and so are in the same foods. The leaders are usually sort of special nutrients that can do something more or better than their followers.

Here are the leaders of the nutrients and the reasons why the body needs each of them.

Protein is a vital part of every cell and is needed for
building and repairing all body tissues
formation of antibodies in the blood to fight infection
energy

Calcium is a vital part of every cell and is needed for
making the cementing material that holds the cells together
building bones and teeth and giving strength to our framework
blood clotting
contraction and relaxation of muscles
delays fatigue and improves the recovery of the muscle

shares in regulating the action of the heart muscle
voluntary and involuntary nervous system

Vitamin D is needed for
helping control the use of calcium
promoting absorption of calcium from the intestine
regulating the amount of calcium in the blood
helping convert calcium and phosphorus into bone

Vitamin A is needed for
growth and repair of bones, teeth, and other tissues
health of the skin, to keep it smooth and soft, and of the lining or mucous membrane of the nose and mouth and other body cavities, as an aid in resisting infection
health of eyes and protection against night blindness which is the inability to see in dim light or darkness after being in a bright light, as when you step into a dark theatre or are blinded by headlights of an approaching car
delaying old age

Thiamine is sometimes called by its older name, Vitamin B. It is needed for
growth and repair
normal appetite, digestion, and tonus of the gastro-intestinal tract
normal functioning of the nervous system and preventing irritability
fertility and lactation (milk secretion)
the body's normal use of carbohydrate for energy

Riboflavin is sometimes called by its older name, Vitamin G. It is needed for

growth and repair

helping all the cells use oxygen

health of the eyes, to help prevent cloudy cornea, dimming vision, cataracts and sensitivity to light

health of the skin and tongue, to prevent cracking at the corners of the mouth and scaling, greasy skin around mouth and nose

"preserving the characteristics of youth and deferring old age"

Ascorbic acid is sometimes called by its older name, Vitamin C. It is needed for

growth and repair, especially of bones and teeth making the cementing material that holds the cells together

health of the blood vessels, to prevent fragile walls and bleeding

firm gums

helping to resist infection and prevent fatigue

wound and fracture healing

Then there are these important followers that do essential jobs in a well-functioning body:

Carbohydrate is needed for energy, especially for the quickly available stores of energy

Fat is needed for energy and for reserve supplies of energy; also for the health of the skin

Water is needed for

health of all the body cells

help in carrying nutrients to cells and waste products away

building tissue
regulating of body temperature
aiding digestion
replacing daily water loss

Minerals

Phosphorus is needed in the soft tissues of the body and to combine with calcium to make bones and teeth. It follows protein and calcium.

Iron is needed to make the red substance or hemoglobin of the blood and to help the cells use oxygen. It follows protein and thiamine.

Copper helps the body make iron into hemoglobin. It follows most of the nutrients.

Iodine is needed so the thyroid gland can make the hormone called thyroxin, which regulates the speed of body processes. Iodine follows protein in sea-food but most of it comes from the air which picks it up from the sea, carries it over land and drops it on the soil and on garden foods and into water supplies. The sea air can't climb over mountains so there isn't enough iodine in the north central states. When we don't get enough iodine the thyroid gland works overtime trying to make up the lack, but it can't. Instead it enlarges and forms a "goiter." Iodized salt was developed to supply iodine to the people who live where there isn't any iodine brought in by the sea air.

Fluorine may not be needed for normal development of bones and teeth but it helps teeth resist decay. It follows some water supplies and not others. Too much fluorine in the water is more serious than too little.

Vitamins

Niacin is needed for the health of the skin, tongue, and digestive system and for helping cells use oxygen. It follows thiamine and riboflavin.

Folic acid, pyridoxine, pantothenic acid and Vitamin B_{12} are essential for normal functioning of various tissues and cells. They follow thiamine and riboflavin.

MAYBE OTHERS

Scientists believe there are still undiscovered followers, and maybe even leaders, in our food. This is why "vitamin pills" are not as reliable as food for supplying our needs; the vitamin pills contain only the things we know about and can reproduce in the laboratory.

When they are all together in the body, the nutrients are like the furniture in our house. Each piece has some specific purposes that no other can fill. But when you consider them all together, they are more than just so many isolated pieces. Each piece contributes toward giving an overall effect of beauty and comfort and this effect in turn enhances each piece.

When the body is carefully furnished with all the nutrients, there is an overall effect that is more than just a total of the individual nutrients: it is buoyant health.

HOW MUCH?

We have reliable information on the amounts of the different nutrients needed by men and women in different

activities, and by children of different ages. It comes from a group of scientists known as the Food and Nutrition Board of the National Research Council. These experts have evaluated and summarized the results of research work done by different scientists to determine the nutritional needs of adults and children.

On the basis of this information, Table 4 was worked out to show the need for the different nutrients for the boy and girl 16 to 20 years old, for the man and woman, and for the woman during pregnancy and when she is nursing her baby. The needs for the adult woman are underlined because we will use them later as a basis for comparing the needs of the different people described in the table.

Don't let this Table scare you with its variety of terms and numbers. Soon the figures will be changed to simpler terms for convenience and easy use. Think of Table 4 as you do of the descriptive leaflet that comes with a new piece of equipment such as a television set, power lawn mower, or automatic washer. The information in the leaflet helps you understand your new piece of equipment so you can use it intelligently and follow the simplified directions. You don't expect to remember all of it but you can refer to it whenever you need to—which gives you confidence in using your equipment.

Here is the descriptive material to go with Table 4: It will be here for you to refer to anytime, so you don't have to remember everything the first time you read it. The amounts of the different nutrients are expressed in dif-

ferent terms. The grams which measure protein, and the milligrams which measure some of the vitamins are measures of weight. There are 454 grams in a pound and 1,000 milligrams in a gram. The International Unit, or I.U., is a measure of strength for Vitamin A and Vitamin D.

A SAVINGS ACCOUNT

There is something special about the amount of the different nutrients which are necessary for abounding health: they provide us with a nutritional savings account. The savings account is partly for use in emergency and partly for the body's improved functioning. It applies to everything except our calorie need which has a built-in savings account.

When something interferes with our food supply, or the body doesn't make good use of it, an emergency exists and withdrawals are made from the savings account. Sometimes the body has extra needs or the nutritive value of the food varies and the savings account is again used. Deposits are made when things get back to normal, so the account is ready for the next emergency.

The savings account means that the body functions with more efficiency and with more zest than if it had only the least amount required. It's the difference between how we feel when we say, "I am not sick," and when we say, "I feel wonderful."

Compare this situation with your finances. Think of how you feel when you have just enough money and never

TABLE 4. OUR DAILY NEEDS FOR IMPORTANT NUTRIENTS*

Person	*Protein grams*	*Calcium grams*	*Vitamin A I.U.*	*Thiamine milligrams*	*Riboflavin milligrams*	*Ascorbic Acid milligrams*	*Vitamin D I.U.*
Man	70	1.0	5,000	1.2	1.8	75	**
Woman	60	1.0	5,000	1.0	1.5	70	**
During the 4th, 5th, and 6th months of pregnancy***	75	1.3	5,500	1.3	2.0	85	400
During the 7th, 8th and 9th months of pregnancy	8	1.5	6,000	1.5	2.5	100	400
During the nursing period	100	2.0	8,000	1.5	3.0	150	400
Boy, from 16 to 20 years old	100	1.4	6,000	1.7	2.5	100	400
Girl, from 16 to 20 years old	75	1.0	5,000	1.0	1.8	80	400

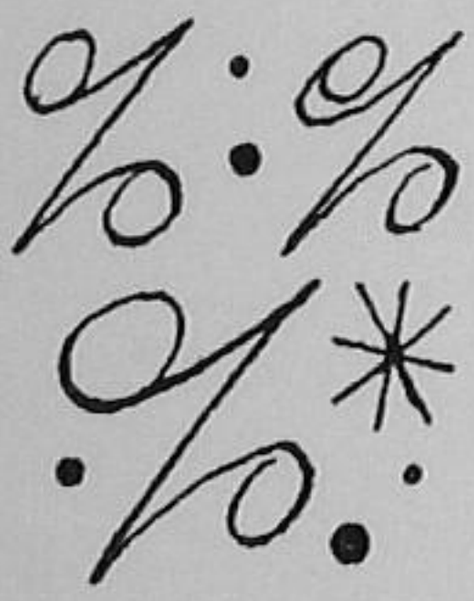
Adapted from "Recommended Daily Dietary Allowances," Revised 1948, Food and Nutrition Board, National Research Council.

***Probably healthy adults living a normal life get enough Vitamin D from a good diet and from their usual exposure to sunlight. For persons working at night and for nuns and others whose habits shield them from the sunlight, and for elderly persons, the addition of small amounts of Vitamin D is desirable.*

****During the first three months the needs are the same as before pregnancy.*

a bit extra—enough to keep you adequately dressed, enough to pay the rent, enough to buy food and other necessities, but not enough to build a savings account or take the family on a vacation or do something extra. Contrast this with how you feel when you have a margin of safety. You're not extravagant just because you have some extra money, but how much better you feel! You spend what you need with less worry because you know you will not be penniless if an emergency does arise. Because of this your morale is lifted and your whole outlook on life is brighter.

The body responds to its supply of nutrients in much the same way that we respond to our supply of money. If there is only just enough and no more of each nutrient, the body must operate on a strict budget and has no prospect of even starting a savings account. On the other hand, if there is a generous supply of nutrients the body can function with buoyancy and sparkle.



PERCENTAGE—IT'S EASY

After seeing Table 4 you are ready to have the figures expressed in simpler terms—percentage. Percentage is used because we are all familiar with it and know what it means—hundredths, or parts in a hundred parts. We hear *per cent* used to express such things as rates of taxes and interest, the content of foods and fabrics, the mark-down of prices at a sale, the results of public opinion polls, housing surveys, and many other things.

Per cent will be used to express the nutritional needs of different people. The needs of the woman will be taken as 100 per cent and the needs of other people described in the table will be expressed as percentages of her needs. These are her needs and each figure is 100 per cent of her need for that nutrient.

Protein—60 grams
Calcium—1 gram
Vitamin A—5000 International Units
Thiamine—1 milligram
Riboflavin—1.5 milligrams
Ascorbic Acid—70 milligrams

The needs of the others described in Table 4 are figured this way:

A man needs 70 grams of protein

If 60 grams = 100 per cent, then
70 grams = 70/60 x 100 or 115 per cent of the woman's need, so we say his protein need is 115 per cent.

His calcium and riboflavin needs are the same as the woman's, so they are 100 per cent. His thiamine need is 1.2 grams as compared with 1.0 gram for her.

1.2 grams = 1.2/1.0 x 100 or 120 per cent of the woman's need, so we say his thiamine need is 120 per cent.

The needs of each person described in Table 4 for each nutrient have been calculated in this way and put into

TABLE 5. OUR DAILY NEEDS IN PERCENTAGE TERMS

Person	*Protein*	*Calcium*	*Vitamin A*	*Thiamine*	*Riboflavin*	*Ascorbic Acid*
Man	115	100	100	120	120	105
Woman	100	100	100	100	100	100
During the 4th, 5th, and 6th months of pregnancy*	125	130	110	130	130	120
During the 7th, 8th, and 9th months of pregnancy*	140	150	120	150	165	145
During the nursing period	165	200	160	150	200	215
Boy, from 16 to 20 years old	165	140	120	170	165	145
Girl, from 16 to 20 years old	125	100	100	100	120	115

**During the first three months the needs are the same as before pregnancy.*

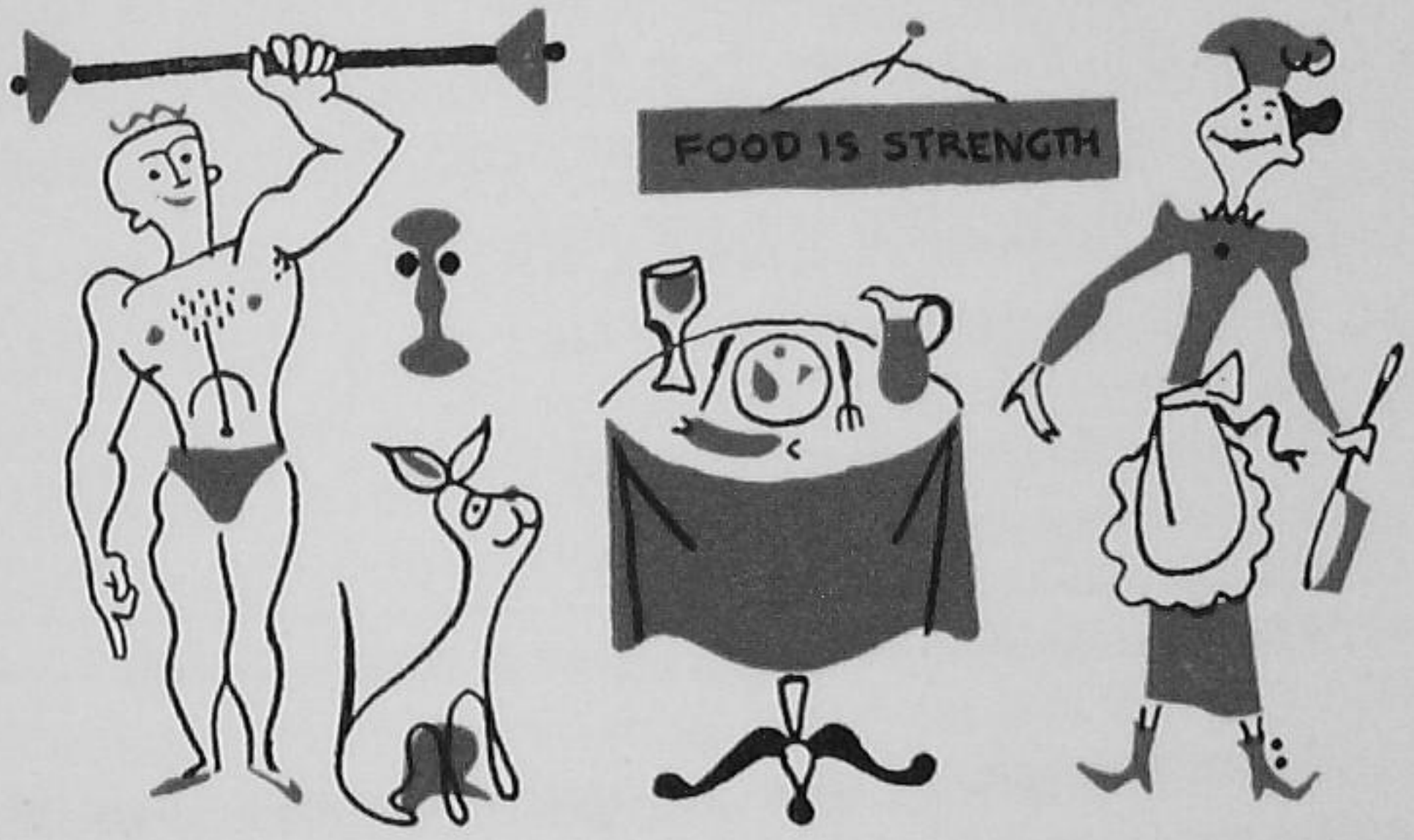
Table 5. The needs of the woman are underlined to remind us that they are the basis for our comparisons.

We can see that men need a little more of every nutrient, except calcium and Vitamin A, than women do. Boys need more of everything than their fathers; girls a little more than their mothers. The woman who is nursing her baby needs the most; it takes more of everything to feed a baby after he is born than it does to provide for his growth before birth.

Next, our interest will turn to these questions: Where do we get these nutrients? Which foods will supply which ones? How much of each do we need for buoyant health?

chapter 7

HOW FOOD DOES IT



Food can supply all the nutrients we need and in sufficient quantities too. The grocery store, the meat market, the dairy, the garden, the frozen food locker, and the food storage cellar are the supply houses of health. Knowing the kinds of foods to eat, and how much, is the key to these storehouses of good nutrition.

There is fun and satisfaction in learning new facts and gaining new skills. Do you remember how elated you were when you learned to drive a car, the sense of power you

felt in being able to manage it? We have the same good feeling when we master any job, whether it's selling an insurance policy or servicing a car, learning to speak Spanish, or making a pie. Nothing is as personally rewarding as knowing how, and we can know how to achieve radiant health through the food that becomes us.

Carrying out the percentage idea from the previous chapter, the nutritive value of ordinary servings of food is expressed in the per cent they furnish of the daily needs of the woman for the different nutrients. Again the needs of the woman represent 100 per cent.

Protein—60 grams
Calcium—1 gram
Vitamin A—5000 International Units
Thiamine—1 milligram
Riboflavin—1.5 milligrams
Ascorbic Acid—70 milligrams

As an example of how to figure nutritive value in percentage, here is the protein content of meat, fish, or poultry. To learn from scientific sources that a serving of these foods contains 21 grams of protein doesn't mean much as an isolated fact. But let's look at it this way:

A woman needs 60 grams of protein
If 60 grams equals 100 per cent, then
21 grams equals 21/60 x 100, or 35 per cent.

Therefore, the protein value of the serving of meat, fish, or poultry is 35 per cent of her day's protein need.

Here is an example of the calcium value of milk:

A cup of whole, skim, or buttermilk contains .33 grams of calcium.
A woman needs 1.0 gram of calcium
If 1.0 gram equals 100 per cent, then
.33 gram equals .33/1.0 x 100 or 33 per cent.

Therefore, the calcium value of a cup of any kind of milk is 33 per cent of her day's calcium need.

The percentage nutritive value of servings of ordinary foods has been calculated in this way to make a streamlined table which we'll call our Percentage Counter. The Counter is the tool we can use for counting the nutritive value of all the foods we eat and comparing the total with what we need. Our goal will always be a variety of foods so that their nutritive values will add up to our needs as shown in Table 5 in the previous chapter. The woman wants the nutritive values of her choices to add up to 100 for each nutrient. The man wants his to add up to 100 for calcium and vitamin A, 120 for thiamine and riboflavin, 115 for protein and 105 for ascorbic acid.

PERCENTAGE COUNTER

Per cent	Protein
35	Meat, fish, or poultry, cooked 3 ounces
13	Milk, whole, skim, buttermilk, or diluted evaporated, 1 cup
10	Milk, all kinds, 1 glass or ¾ cup Cheese, hard and semi-hard varieties, 1-inch cube or 1 ounce Cottage cheese, 2 tablespoons or 1 ounce Luncheon meat, 2 ounces Meat with "extender" such as noodles, macaroni, cereals, and vegetables, and in salad, 1 cup Egg, 1 Dried beans and nuts, 1 serving
5	Cream cheese, 2 tablespoons or 1 ounce Ice cream and milk desserts, ½ cup Cream pie, ⅙ pie White sauce, ⅓ cup White potato, 1 serving Peanut butter, 1 tablespoon
3	Bread, enriched or whole wheat, 1 slice Cereal, enriched or whole wheat, ½ cup cooked or 1 cup ready-to-eat Vegetables and fruits, 1 serving Cream, ¼ cup

PERCENTAGE COUNTER

Calcium

Per cent	
33	Milk, whole, skim, buttermilk, or diluted evaporated, 1 cup
25	Milk, all kinds, 1 glass or ¾ cup Cheese, hard and semi-hard varieties, 1-inch cube or 1 ounce
10	Ice cream and milk desserts or soups, and light cream, ½ cup White sauce, ⅓ cup Cream pie, ⅙ pie
3	Bread, or cereals, enriched or whole wheat, 2 servings Cottage cheese, 2 tablespoons or 1 ounce Egg, 1 Potato, 1 serving Vegetables and fruits, 1 serving (do not include greens) Dried beans and nuts, 1 serving Cream, ¼ cup

PERCENTAGE COUNTER

Vitamin A

Per cent	
500	Liver, cooked, 3 ounces
200	Carrots and greens, 1 serving
125	Squash, sweet potatoes, 1 serving Cantaloupe, ½
65	Broccoli and pumpkin, 1 serving Liver sausage, 2 ounces Apricots, 3
20	Tomatoes and asparagus, 1 serving Peaches, 1 medium
10	Egg, 1 Peas and green beans, 1 serving Butter or fortified margarine, 3 teaspoons Coffee cream, ¼ cup Whipping cream, 2 tablespoons
5	Milk, whole, 1 cup, also 1 glass or ¾ cup Cheese, hard and semi-hard and cream varieties, 1 inch cube or 1 ounce Yellow corn, 1 serving

PERCENTAGE COUNTER

Thiamine

Per cent	
50	Pork, fresh or cured, cooked, 3 ounces
10	Other meats, fish, and poultry, cooked, 3 ounces
	Luncheon meat, 2 ounces
	Egg, 1
	White potato, 1 serving
7	Milk, whole, skim, buttermilk, or diluted evaporated, 1 cup
5	Bread, enriched or whole wheat, 1 slice
	Cereals, enriched or whole wheat, ½ cup cooked or 1 cup ready-to-eat
	Milk, all kinds, 1 glass or ¾ cup
	Ice cream and milk desserts, ½ cup
	Cream pie, ⅙ pie
	White sauce, ⅓ cup
	Vegetables and fruits, 1 serving
	Dried beans and nuts, 1 serving
	Peanut butter, 2 tablespoons

PERCENTAGE COUNTER

Riboflavin

Per cent	
33	Milk, whole, skim, buttermilk, or diluted evaporated, 1 cup
25	Milk, all kinds, 1 glass or ¾ cup
10	Cheese, hard and semi-hard varieties, 1-inch cube or 1 ounce Ice cream and milk desserts, and light cream, ½ cup Cream pie, ⅙ pie White sauce, ⅓ cup Meat, fish, poultry, cooked, 3 ounces Egg, 1
5	Cottage cheese, 2 tablespoons or 1 ounce Dried beans and nuts, 1 serving
3	Bread, enriched or whole wheat, 1 slice Cereals, enriched or whole wheat, ½ cup cooked or 1 cup ready-to-eat White potato, 1 serving Vegetables and fruits, 1 serving Cream, ¼ cup

PERCENTAGE COUNTER

Ascorbic Acid

Per cent	
70	Orange, 1 small Grapefruit, ½ Orange and grapefruit juice, ½ cup Strawberries, fresh or frozen, 1 serving Cantaloupe, ½ Broccoli, 1 serving
30	Liver, cooked, 3 ounces Tomato, 1 serving raw or cooked Greens and cabbage, 1 serving raw or lightly cooked—if cooked more than 15 minutes, do not count. Green pepper, raw, ¼ medium
10	White and sweet potatoes, 1 serving Vegetables and fruits not already mentioned, 1 serving raw or lightly cooked—if cooked more than 15 minutes do not count. Lemon and lime juice, 1 tablespoon Do not count dried fruits or vegetables

AN EASY TOOL

The Counter has six sections—one for each of the important leader nutrients—protein, calcium, Vitamin A, thiamine, riboflavin, and ascorbic acid. The figures along the left side of each section show what per cent the foods contribute to the woman's daily need for the different nutrients and thus what per cent we can count on when we select foods to equal our own total need.

As you get acquainted with the Percentage Counter you will notice that sometimes a whole food team is listed, such as meat, fish, and poultry. Other times individual members of a team are listed, such as milk and cheese and eggs of the dairy products team because not all members of a food team are equally efficient in meeting nutritive needs. Almost every team has a few outstanding members or "stars" which excel at special jobs.

In the team of fruits and vegetables, for instance, some members have very specialized talents. Among the fruits, the citrus members and strawberries and cantaloupe are the best food sources of the vitamin ascorbic acid. One serving supplies 70 per cent of our daily allowance. These fruits not only surpass other fruits but also all other common foods in their ability to supply this vitamin.

Similarly among the vegetables certain members surpass all others in their ability to meet our Vitamin A needs. Carrots, greens, yellow squash, and sweet potatoes do an outstanding job and need no help from their teammates.

One way to grow familiar with the Counter is to learn from it the best sources of the different nutrients. These include:

(1) The foods which per serving supply the highest percentage:
The citrus fruits, liver, and certain green and yellow vegetables just discussed are examples of such foods.

(2) The foods which do not supply the highest percentage per serving but supply a significant amount because we use several servings each day:
Bread and cereals are a good example. One slice of bread or serving of cereal supplies only 3 per cent of the protein needs but when we use three slices of bread and a serving of cereal in a day the protein value of these totals 12 per cent.

The best source of *protein* is the group of meat, fish, and poultry; while milk and eggs are good sources.

The outstanding source of *calcium* is the group of milk and milk products.

Vitamin A is supplied in huge amounts by liver and otherwise chiefly by certain green and yellow vegetables and cantaloupe.

Foods from plant sources contain a special bright yellow substance called carotene which the body can change to Vitamin A which is colorless. Therefore, to be correct we speak of the Vitamin A-value of vegetables and fruits. Foods from animal sources contain the Vitamin A already formed.

The outstanding source of *thiamine* is pork. Meat other than pork, fish and poultry; eggs, potatoes, and legumes are the next best sources.

The outstanding source of *riboflavin* is milk.

Ascorbic acid is supplied mainly by citrus fruits, strawberries, cantaloupe, and broccoli.

THEY CAN'T TRADE JOBS

The Percentage Counter shows why we need a variety of foods each day. One food team cannot do the nutrition job of another team. The meat, fish, and poultry team cannot supply the calcium and riboflavin supplied by milk. Milk cannot supply the ascorbic acid of citrus fruit nor the thiamine of pork. Moreover, a super-abundance of one kind of food cannot completely make up for the lack of another kind. If we do not use milk, we cannot eat enough of any other group to supply our allowance for calcium; if we do not eat pork it is very difficult to eat enough of other foods to supply our thiamine need.

Here we have a perfect parallel with our clothes. A raincoat cannot do the job of a housedress and no one tries to make an extra hat substitute for a shoe, or an extra sock take the place of a necktie.

Many of us, however, expect one kind of food, especially foods we like most, to do the nutrition job of many others, usually foods we like least. This cannot be done. A well-chosen variety of foods is our only passport to good nutrition.

GLEANINGS FROM HERE AND THERE

These are bits of information which could not be shown in the Percentage Counter or the Calorie Chart.

We hear and read a great deal about the importance of cooking food properly—both to develop the best flavor and to preserve the nutritive value. Many up-to-date cook books have a section which gives valuable information on nutrition and cooking the nutritious way. Such a book is an asset in every home.

We are particularly blamed for *overcooking* vegetables. This is hard on the flavor, the texture, and the ascorbic acid value. Also we are more likely to get tired of vegetables which are cooked until they have a hay-like flavor, a mushy texture and a muddy bleak color, than we are of lightly cooked vegetables with a fresh flavor, a semi-crispy texture, and a clear sparkling color. Then too, the lightly cooked vegetables are a better source of ascorbic acid.

SO MANY VARIETIES

Milk, Cream, and Cheese

The most common kind is *whole* milk which contains, along with other nutrients, 3.25 to 3.50 per cent fat. Laws in most states set the minimum requirement for the fat content at 3 per cent. Guernsey and Jersey milk is preferred by some people because of its richness. It is about one per cent higher in fat than milk from other breeds.

Goat's milk is similar to cow's milk in composition but the nature of the protein is somewhat different. This means that goat's milk can be used sometimes in place of cow's milk when there is an allergy to cow's milk.

Homogenized milk is whole milk in which the fat particles have been mechanically broken into much smaller pieces or globules. When the milk is homogenized the fat particles are too small to huddle together and climb to the top as cream. Instead they remain evenly distributed throughout the milk and thus make it seem richer than milk which is not homogenized.

Evaporated milk is made by evaporating approximately half the water from whole milk and then canning the concentrated milk. It is usually re-constituted and diluted by using equal parts of milk and water. Condensed milk has sugar added before it is evaporated so that it has about 2½ times more calories than the evaporated form.

Vitamin D is often added to fresh and evaporated whole milk to give a potency of 400 I.U. per quart.

Skim milk is whole milk minus the fat. Commercially skimmed milk has much less fat than milk we skim at home. Skimming off the fat reduces only the Vitamin A and the calorie content. The other nutrients remain unchanged.

Buttermilk is similar to skim milk. In country-style buttermilk the fat has been removed by churning while in cultured buttermilk the acid-forming organisms have been added to skim milk.

Dry milk is made from either whole or skim milk. It is re-constituted by mixing one part of dry milk in four parts of water. One cup of dry milk and four cups of water make approximately four cups of re-constituted milk.

Cream is designated by its fat content. Coffee cream approximates 18 to 20 per cent fat and whipping cream is 35 to 40 per cent fat. When cream is whipped it doubles in measure. Thus one-half cup of cream will whip into one cup of whipped cream.

American or *cheddar type cheese* is made in such a way that it contains all the nutrients in milk only in a more concentrated form. This is not true of cottage cheese, which is made from skim milk by separating the curds from the whey by heating with a weak acid, such as vinegar. Most of the calcium dissolves in the whey and is discarded. Unless we imitate little Miss Muffet and eat both the curds and whey we cannot count on cottage cheese to supply much calcium. It is very high in protein, and low in calories, unless it is mixed with cream to add flavor and calories. Cream cheese is high in fat and calories.

Bread and Cereals

In recent years the nutritive value of bread and cereals has been improved by "enrichment." Enrichment means adding to flour or cereal products some of the nutrients which have been discarded in the milling and refining process. Thiamine, riboflavin, niacin, and iron are added so that white flour will approach what the nutritive value

of the product would have been if made from the whole wheat.

The enrichment program was started as an emergency measure during World War II and is now permanent in many parts of the country. In twenty-six states there are laws which require enrichment of all white flour used in baker's white bread and set the amount of these nutrients which it must contain. It applies to the white flour we buy too.

This is how enriched bread compares with plain white and whole wheat breads:

Nutrients in one pound of:

Nutrient	*Plain*	*Enriched* (100 per cent) *Least*	*Enriched* (100 per cent) *Most*	*Whole Wheat*
Thiamine, milligrams	.3	1.1	1.8	1.3
Riboflavin, milligrams	.5	.7	1.6	.7
Niacin, milligrams	3.0	10	15	16
Iron, milligrams	3.9	8	12.5	11.8
Calcium, milligrams	254	254		272
Protein, grams	39	39		43

from USDA AIS-39

Rice and *cornmeal* have been enriched also but have received less attention because they are not as widely used. In the south where cornmeal is the chief cereal in the diet, some states have laws requiring the enrichment of cornmeal from which the germ has been removed.

"Restored" is a term used to describe other cereal products and grains. It means that nutrients taken out by

the milling and processing have been replaced so that the finished product has the same amount as the whole grain. Standards have not been set by law for this. Most breakfast cereals of wheat products, both the ready-to-eat and the ready-to-cook, have had nutrients restored and are labeled accordingly. Whole grain cereals such as oatmeal, cracked wheat, and whole wheat do not need to be enriched.

Products made entirely of whole wheat flour are labeled "100% whole wheat." Otherwise most products we call "whole wheat" do not contain a large proportion of whole wheat. The usual "whole wheat" breads on the market contain 25-30 per cent whole wheat flour, and sometimes as much as 50 per cent; the rest is white flour which ordinarily is not enriched and is not required to be.

Because the term *whole wheat* as it is used now is misleading, the U.S. Food and Drug Administration is working for more careful labeling. A label should tell what flours are used and in what relative amounts—perhaps naming the flour used in the largest amount first. Thus the one described above should be called, "white-and-whole wheat bread."

We are often warned by certain promoters and food faddists that white bread and refined cereals are the curse of civilization and that whole grain products offer the only nutritional salvation for us. This is not true.

Whole grain products have some small nutritive advantages over enriched white ones, but they have not been

widely accepted by the people who, for economy reasons, use large amounts of breads and cereals in their diet. Something had to be done to improve the nutritive value of these diets, so enrichment was tried and found successful. When enriched, breads and cereals are important sources of thiamine and other nutrients. Also they are less expensive than most other foods. Ten cents spent for enriched white bread will usually buy more calories, protein and thiamine than ten cents spent for any other ordinary food.

Fats

Butter and margarine are usually equally good sources of vitamins A and D and they are the only fats which supply these vitamins. All margarine is now "fortified" to make sure the consumer gets the amounts of Vitamin A or its equal in Vitamin A value, and Vitamin D in margarine which occur naturally in butter.

Solid and liquid fats and oils are similar in composition, nutritive value and use. Lard has a particularly high content of the unsaturated fatty acids essential for specialized body functions. Plant oils such as corn, cottonseed, peanut, soy and olive may be treated and made into solid or semi-solid fats.

Sugars

Sugars are important for their flavor and satisfaction qualities but they do not furnish any nutrients except calories. The unrefined dark molasses has some minerals in-

cluding iron but it can not replace any other kind of food, and it does not lend itself to wide usage in our ordinary food patterns.

The fermentation of sugar in the mouth, on the surface and in the crevices around the teeth, is one of the causes of tooth decay. For this reason the teeth should be brushed or at least the mouth thoroughly rinsed after eating sweets.

The foods mentioned here are only a few of the many kinds which help in the job of keeping us well and happily fed.

chapter 8

READY-TO-EAT

This is a chapter of road maps to guide us through three meals a day to our destination of buoyant health. The maps will keep us on the right highway and going in the right direction; they show us the kinds and amounts of food which will fill our daily need for each nutrient, except calories. These are listed in Table 6, and labeled "Daily Food Needs for the Man and Woman." The figures from the Percentage Counter show what each food contributes and how much, and how the total figures compare

with our needs. This is not the only way to build a diet that supplies everything we need. We can build one our own way with a different assortment of foods, provided we use the Percentage Counter to be sure that the total of the nutritive values fulfills our needs.

In making the tables of Daily Food Needs it is not expected that the totals for each nutrient will be exactly the same figure as the needs for it; usually it's slightly higher. Often we have to add a serving of some food to contribute more thiamine even though we already have plenty of the other nutrients that the food contains. Or perhaps half a serving would have been enough but a whole serving fits better into our menu plans. The excess is no disadvantage; the important thing is to supply enough of every nutrient.

In the tables of the Daily Food Needs, two kinds of food are star performers on their food teams—pork with a 50 per cent thiamine value, and the green and yellow vegetables and cantaloupe with 125 to 200 per cent Vitamin A value. These foods do not need to be used every day but our need cannot be met unless they are used at least every two or three days. Liver, too, is a star performer for supplying Vitamin A though many of us neglect to use its talent.

The total calorie value of the foods in the table of Daily Food Needs depends on such things as the amount of fat in the meat, the kind of bread and cereals, and vegetables and fruit we choose, and the kind of milk we pre-

fer, whether whole or skim milk. For the man, a choice of low calorie foods from the different food groups in the table provides a total of 1500 calories a day; a choice of ordinary foods provides 1900 calories. Similar choices for the woman provide 1200 and 1600 calories.

This road map takes us almost to our destination, but not quite. We have to go a little farther to reach our calorie need. For this last lap of the way we can take any road we choose; there is no danger of losing our way. We must keep going until we reach the end of our journey—the table of Calorie Needs on page 37 will tell us when *—but we must not whiz past it.*

We can choose any foods we want—more servings of the foods already mentioned, more variety, or extra foods such as sauces, sweets, and desserts. They all add interest and calories. Often they add small amounts of other nutrients too, but we are not usually dependent on their help to reach our destination when the energy need of the man is above 2400 calories and of the woman 2000 calories.

You will recall that thiamine is needed for the body's normal use of carbohydrate for energy. Therefore, if your calorie needs are high you need more thiamine to help release the calories. A safe guide for thiamine for the adult is to add 25 per cent to the 100 per cent figure for thiamine for each 500 calories over 2000, or 125 per cent thiamine for 2500 calories, 150 per cent for 3000 calories, 175 per cent for 3500 calories, 200 per cent for 4000 calories. The

TABLE 6. DAILY FOOD NEEDS OF THE MAN AND WOMAN

Kind and Amount of Food	*Percentage Nutritive Value*					
	Protein	*Calcium*	*Vitamin A*	*Thiamine*	*Riboflavin*	*Ascorbic Acid*
FOR THE WOMAN						
Bread and cereals, enriched or whole wheat, 4 servings	12	6	—	20	12	—
Butter or margarine, 3 teaspoons	—	—	10	—	—	—
Milk, whole, 3 glasses	30	75	15	15	75	—
Meat, fish, or poultry, including pork at least every 3 days to meet thiamine need, 1 serving	35	—	—	23	10	—
Egg, luncheon meat, or cheese, 2 servings	20	6	10	20	20	—
Potato, white, 1 serving	5	3	—	10	3	10
Fruit, citrus or its equal in ascorbic acid, 1 serving	3	3	—	5	3	70
Other vegetables and fruits, 3 servings—including some to give an average of 75 per cent Vitamin A daily	9	9	75	15	9	30
TOTAL FOR THE WOMAN	114	102	110	108	132	110
HER NEED	100	100	100	100	100	100
FOR THE MAN						
He needs this much *more* than the woman:						
Bread and cereals, enriched or whole wheat, 2 servings	6	3	—	10	6	—
Butter or margarine, 3 teaspoons	—	—	10	—	—	—
Fruit or vegetable, 1 serving	3	3	—	5	3	10
TOTAL FOR THE MAN	123	108	120	123	141	120
HIS NEED	115	100	100	120	120	105

The foods for the woman supply between 1,200 and 1,600 calories.
The foods for the man supply between 1,500 and 1,900 calories.
Add any foods you want until your calorie need is met.

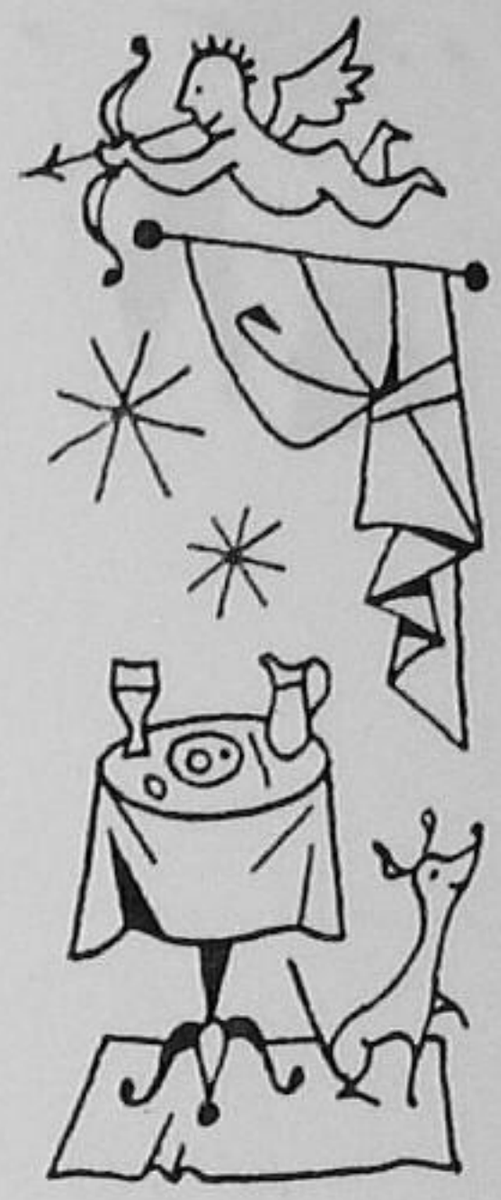
special thiamine needs for growth and reproduction are already included in the Daily Food Needs for these people.

The body's need for water is even more urgent than that for food. We need about 2½ quarts a day but much of this amount is present in the food we eat. It is a good plan to drink 6 to 8 glasses of water a day and some of this may be in beverages like tea and coffee.

The foods necessary to provide the daily food needs have been distributed into a Basic Menu for the day. This menu and others which will be given with each list of daily food needs are only suggestions, not rigid rules—like a travel guide of places to eat and stay overnight. There are many good ways to distribute the foods we need among three meals, or among three meals and a snack or two. Our preference and work routine determine whether we want dinner at noon or in the evening or perhaps we need two dinners. Breakfast varies less than our other meals. Most of us want fruit for breakfast, although some may want it later. Some of us don't want an egg for breakfast *ever*, so either the egg itself or its equal in protein value should be used at another meal. Some of us don't want milk at every meal; we would rather have more at one meal or use it for snacks. If we don't like to drink milk we mustn't try to get all we need in cooked food or cheese and ice cream; it can't be done. It would take a cup of milk soup, plus a cube of cheese, plus a custard, plus ½ cup of ice cream, plus 3 extra slices of bread or servings of vegetables and fruits *every day* to supply the same

amount of calcium as we get from 3 glasses of milk. Since there is no substitute for milk we have to get used to drinking it. For us busy people it seems silly to waste time fretting and stewing about it instead of just drinking it down and going on to something more interesting.

BASIC MENU FOR THE MAN AND WOMAN



Breakfast	
Citrus fruit	1 serving
Bread or cereal	2 servings for the man 1 serving for the woman
Egg	1 serving
Milk	1 glass
Lunch or Supper	
Luncheon meat, cheese, or egg	1 serving
Vegetable or fruit	1 serving
Bread	2 servings
Milk	1 glass
Dinner	
Meat, fish, or poultry	1 serving
Potato	1 serving
Vegetable or fruit	3 servings for the man 2 servings for the woman
Bread	2 servings for the man 1 serving for the woman
Milk	1 glass
During the day	
Butter or margarine	6 teaspoons for the man 3 teaspoons for the woman

TWO NEEDS

There are two facts we can't ignore in planning meals. One, we need to eat breakfast; and two, we need protein from some source such as meat, milk, or egg in each meal.

It is difficult to eat all the foods in the necessary quantities each day if we skip breakfast. We can't do a day's work or earn a day's salary if we don't start until noon—there is not enough time. If we don't start on the road to our nutritional destination until noon, we can't complete the trip by the end of the day. Moreover, the body needs regular re-fueling and re-nourishing especially at the beginning of the day. Working all morning without eating breakfast is like spending our money before we earn it. Then each meal or pay-check must go to make up a deficit instead of giving us some working capital for the time ahead. The slogan "eat a good breakfast to start a good day" is based on research studies which showed that people were more alert, efficient, and resistant to fatigue when they ate breakfast than when they did not. It is usual for a boy to do much better in after-school athletics as soon as he has recognized the importance of eating a good breakfast and lunch.

If you have not been in the habit of eating breakfast, you may need to start with small servings and gradually work up to eating ordinary amounts of the important foods. You will be surprised at how much better you will feel at the end of the day as well as at the beginning.

We now know that each meal must contain some food from the milk, egg, and meat teams to supply protein from animal sources. Researchers have recently learned that the body uses the protein from all kinds of foods best when there is some from animal sources in each of the three meals. A breakfast of fruit, toast, and coffee, plus a glass of milk or an egg means better nutrition for the body than leaving the milk or egg to be eaten later in the day. You can not buy just one shoe and expect the store to keep the other shoe until you have enough money to pay for it. In the same way the body can not hold over the essential substances from animal protein to use hours later.

THE LATER YEARS

Our bodies and the calendar do not always agree on when we begin to get old. Some people are still young when they are 70 years old, while others are old at 40. Age is judged more by activity, muscular agility, endurance and by our attitudes and outlook on life than by the number of years we have lived.

Our body functions less efficiently and we have less strength and endurance as we grow older. The intelligent person adjusts his activities to a slower pace and learns to live within his physical budget; this way he avoids putting unnecessary strain on an aging body.

Food habits, too, must be adjusted. As activity decreases, fewer calories are needed, but needs for protein,

calcium, and the vitamins, remain the same as during more active life. The table of Daily Food Plan Needs is still our best road map, but we will probably have to cut down on some of the extras like fats, sweets, and rich gravies and desserts because there is less room for lone-wolf calories.

Few of us are fortunate enough to have good teeth in later years when we need particularly to chew food thoroughly to aid in its digestion. The paring knife, the food chopper or blender, a little extra cooking to soften the sturdy fibers, and sometimes even the sieve must substitute for the teeth of our younger days. Often raw vegetables cause discomfort because of their rough-and-tumble capers in the intestinal tract. But the same vegetables after being cooked and mashed or sieved are dignified and important contributors to our Daily Food Needs. Raw fruits are often better tolerated than raw vegetables; and grinding or chopping meat is particularly helpful in making it ready for digestion.

Many older people need to eat more often than when they were younger, and smaller meals and between-meal snacks are more suitable than larger meals eaten less frequently.

An older person has to exert more effort to be well fed when living alone than when living with a family where generous meals are prepared routinely. People alone often slip into the habit of living on foods like tea and toast, or soup and crackers, because these are easy to fix. Such poor meals start a merry-go-round of fatigue, physical

and mental sluggishness, poor appetite, lack of interest in food, and round again to poor meals, fatigue, etc.

But if we start early to form good food habits it's easier to eat less as our activities slow down. If we can avoid the pitfalls of poor food choices and the premature aging they bring, we can usually enjoy good health in the pleasant, rewarding "later years."

ALMOST ADULTS

Boys and girls from 16 to 20 years old are in the period of late adolescence or pre-adulthood. They still have some growing and maturing to do and need more food than adults. Table 7 shows their Daily Food Needs and it is followed by a Basic Menu for them.

These young people need more Vitamin D than they can get from ordinary food or can depend on getting from sunshine. Either Vitamin D milk or a Vitamin D concentrate prescribed by the doctor is needed.

The boy is growing more and faster than the girl and needs much more food. Sometimes he seems to be and is "hollow from the ankles up." Some boys at this age are embarrassed by the comments everyone makes about how much they eat, so they eat less than enough at meal time and fill up on lone-wolf calories between meals. Other boys enjoy the attention and overeat to show off. The fact remains—they do need a lot of food.

By the time she has her sixteenth birthday, a girl has usually passed her period of most rapid growth; but she

TABLE 7. DAILY FOOD NEEDS OF THE GIRL AND BOY

From 16 to 20 Years Old

Kind and Amount of Food	*Percentage Nutritive Value*					
	Protein	*Calcium*	*Vitamin A*	*Thiamine*	*Riboflavin*	*Ascorbic Acid*
FOR THE GIRL						
Bread or cereals, enriched or whole wheat, 4 servings	12	6	—	20	12	—
Butter or margarine, 3 teaspoons	—	—	10	—	—	—
Milk, whole, 3 glasses	30	75	15	15	75	—
Meat, fish, poultry, including pork at least every 3 days to meet thiamine need, 1½ servings	53	—	—	35	15	—
Egg, luncheon meat, or cheese, 2 servings	20	6	10	20	20	—
Potato, white, 1 serving	5	3	—	10	3	10
Fruit, citrus or its equal in ascorbic acid, 1 serving	3	3	—	5	3	70
Other fruits and vegetables, 4 servings —including some to give an average of 75 per cent Vitamin A daily	12	12	75	20	12	40
TOTAL FOR THE GIRL	135	105	110	125	140	120
HER NEED	125	100	100	100	120	115
FOR THE BOY						
He needs this much *more* than the girl:						
Bread or cereals, enriched or whole wheat, 3 servings	9	5	—	15	9	—
Butter or margarine, 3 teaspoons	—	—	10	—	—	—
Milk, whole, 1 glass	10	25	5	5	25	—
Meat, fish, or poultry, ½ serving	17	—	—	12	5	—
Potato, white, 1 serving	5	3	—	10	3	10
Other vegetables and fruits, 2 servings	6	6	—	10	6	20
TOTAL FOR THE BOY	182	144	125	177	188	150
HIS NEED	165	140	120	170	165	145

The foods for the girl supply between 1,400 and 1,800 calories.
The foods for the boy supply between 2,000 and 2,400 calories.
Add any foods you want until your calorie need is met.

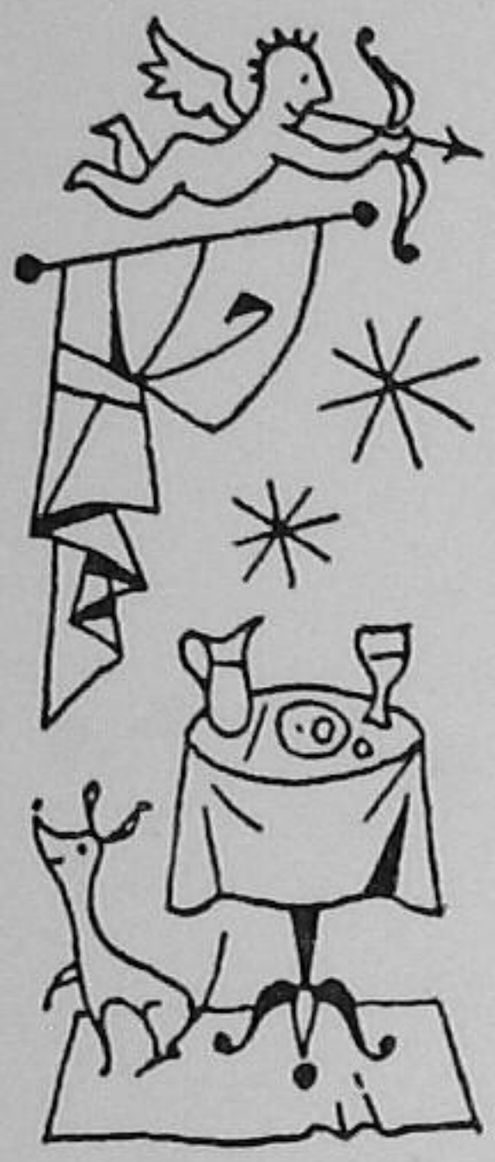
still has some growing and much storing and maturing to do. It is not unusual for a homemaker and mother to be under 20 years old. Then this young mother has the nutritional demands of pregnancy and lactation added to her own needs for completing growth and maturation.

Food habits and appetite can suffer badly, especially in girls, if too many lone-wolf calories work their way into the eating pattern. But the rewards in appearance and vitality and stamina make a strong appeal for wise eating at this age. If overweight or underweight is a problem, now is the time to attack it—there will never be a stronger incentive than the teen-ager's need for being socially accepted and sought-after.

The feeling of security, satisfaction, and well-being that goes with being nutritionally well-fed has great value during adolescence; it can make the process of growing up less chaotic for both parents and children.

For all of us the late teens and early twenties are especially crucial years nutritionally. It is usually during these years that we become independent of our family, and along with other things, take over the job of supplying our food and being responsible for our nutritional status.

The most enduring gifts we can receive from our parents are a good nutritional background and a set of good food habits. It depends on us what happens next. We can treasure and strengthen them so our nutritional prosperity will continue or we can squander them and head for nutritional bankruptcy.



BASIC MENU FOR THE BOY AND GIRL

Breakfast	
Citrus fruit	1 serving
Bread or cereal	2 servings for the boy 1 serving for the girl
Egg	1 serving
Milk	1 glass
Lunch or Supper	
Luncheon meat, cheese, or egg	1 serving
Vegetable or fruit	3 servings for the boy 2 servings for the girl
Bread	3 servings for the boy 2 servings for the girl
Milk	2 glasses for the boy 1 glass for the girl
Dinner	
Meat, fish, or poultry	2 servings for the boy 1 serving for the girl
Potato	2 servings for the boy 1 serving for the girl
Vegetable or fruit	3 servings for the boy 2 servings for the girl
Bread	2 servings for the boy 1 serving for the girl
Milk	1 glass
During the day	6 teaspoons for the boy
Butter or margarine	3 teaspoons for the girl

If on the other hand, we have arrived at the age of 16 with a poor nutritional background and a set of poor food habits, there is still time to make startling improvements. Nutritional improvement can come at any age, if a good diet replaces a poor one, but the earlier the better. The younger we are, the more active are the growth impulses which can replace poor tissues with good ones and thus overcome as much as possible a poor nutritional start. Then we have paved the way for continued improvement during adulthood.

THE ATHLETE

There are two extra special needs for the young man who is an athlete. One is an easily available source of energy, and the other is recovery from fatigue. The energy is not hard to supply, and the easily available stores in the liver and muscles are kept filled when the diet is generous in calories and all other nutrients.

Recovery from fatigue is more complicated. This is probably what happens: During exercise an acid is formed in the muscles. The harder the exercise, the greater the formation of acid. An accumulation of the acid causes fatigue (this may be what makes us stiff after unusual exercise). Part of the acid leaves by being carried in the blood to the lungs. The rest of the acid does a chemical reverse and then goes back to the muscle's store house of energy.

The blood carries a weak alkali to speed up the disappearance of acid any place in the body. The body can keep an "alkaline reserve" or stockpile if the food supplies it. The best source is citrus fruit juice—orange or grapefruit or lemon. These build up the body's alkaline reserves. They also supply quickly available energy. An athlete may need as much as a quart of citrus juice daily during periods of strenuous activity.

Most athletic competitions and preparations for them require the greatest physical effort and endurance. Yet seldom has the young athlete completed his physical growth and maturation. He must have large quantities of all the nutrients, perhaps double his usual need, so that the stress of athletics will not interfere with the final stages of his development. The athlete himself, his parents, and his coach have a great responsibility at all times for protecting his health through food.

chapter 9

PARENTS-IN-WAITING

THIS CHAPTER is written for a special group of you readers—the men and women who are going to be fathers and mothers. Of course it is the woman who, through her food, supplies the materials for the baby's growth. But the father, too, wants to know what makes a healthy mother and child. Understanding their food needs is his first step toward becoming a good father and taking his share of the responsibilities of parenthood. Nothing is as

helpful to the expectant mother as an understanding and informed expectant father.

When a woman becomes pregnant she meets some special problems in nutrition. Normal as is the process of having a baby, it does make extra demands on the mother's body. A good diet protects her health and helps to make a healthy happy baby. It also helps the mother get ready to nurse her baby.

Here is just one of the many proofs of how important diet is during pregnancy. It comes from a clinic in Toronto where expectant mothers received medical care. Their diets were poor—none of the women ate enough of the right kinds of food to meet their needs. Some of the doctors decided to see what effect better food would have on these women. They gave 90 of them extra food daily during the last four months before the babies were born. Milk, oranges, cheese, eggs, tomatoes, and some vitamin A and D capsules were all added to make their usual poor diets into good diets. Then the progress of these women on good diets was compared with the progress of 120 women who had been left on their usual poor diets. The doctors who rated them were not told which women were on good diets and which were on poor diets.

Table 8 shows how the two diets affected the mothers and babies. The mothers on the good diet were in better condition during pregnancy, had a shorter and easier labor, and no miscarriages or stillbirths. Also more of them nursed their babies.

The babies born of mothers who had the good diets were healthier in every way. All of them lived and none of them had rickets. Also they had fewer colds and much less anemia than babies whose mothers had poor diets.

Of course no mother means to injure her health or the health of her baby by being careless about her diet. Nor does any father mean to be so thoughtless as to complain about the size of the food bills or how often his wife has to eat. It is just that neither of them realizes the importance of the right food. When finances are limited it seems that good food takes more than its share of the family budget. Even so, it is still the cheapest and most pleasant form of health insurance. Often when the mother learns to buy the best foods to supply good nutrition and becomes an "informed shopper" as described in Chapter 11, she finds that her money buys much more than she ever dreamed it could. In most communities there are agencies that will help a mother who can not buy all the food she needs at this time.

So much for generalities—now let's talk about *you*. "You" means the mother, because it is her food needs that interest us—and "us" means fathers too.

Now your food will become the baby too. From food you can supply enough for his growth and development without using any of your own body materials or stores of nutrients. The blood stream is the only connection between you and your baby. Through this must pass all the materials that become the baby. There is no nerve connec-

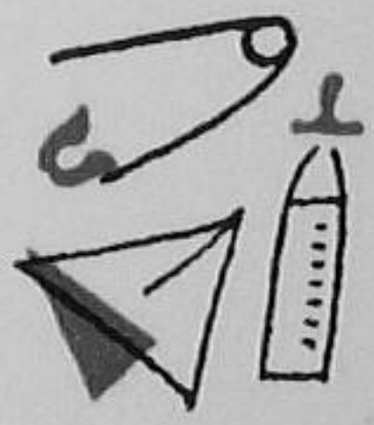
TABLE 8. EFFECT ON MOTHERS AND THEIR BABIES OF GOOD AND POOR DIETS DURING PREGNANCY

	Occurrence among mothers who had been on	
	Good diets	*Poor diets*
	per cent	*per cent*
RECORDS OF THE MOTHERS		
Poor progress in pregnancy	6	34
Threatened miscarriage	1	8
Miscarriage	0	6
Difficulty in labor	3	24
Hours of labor		
1st baby	15	20
2nd and 3rd baby	9	11
Stillbirths	0	3
Poor recovery	4	12
Able to nurse her baby		
In the hospital	95	81
Still nursing her baby six weeks later	86	59
RECORDS OF THE BABIES of these mothers during the first six months of life		
Frequent colds	5	21
Pneumonia	1	5
Rickets	0	5
Anemia	9	25
Deaths	0	3

tion so your ideas, impressions, and emotions are never transferred to the baby. He is, however, affected by your fatigue or worry when they interfere with your food supply or its availability to him.

Your food needs are not the same during all nine months of pregnancy. They increase gradually as the baby grows and becomes more active and as your body prepares for the work of producing milk for him. During the first three months your needs are much the same as before pregnancy. Your need for most of the nutrients increases about 30 per cent during the fourth, fifth, and sixth months, about 50 per cent during the seventh, eighth, and ninth months. Your calorie need does not increase this much; it is 10 per cent greater in the second three months and increases another 10 per cent during the last three months. You can see that you do not need to "eat for two" as the old saying goes.

You need a table of Daily Food Needs for the first three months, another for the second three months, and still another for the last three months of pregnancy.



THE FIRST THREE MONTHS

If you have not been following the list of Daily Food Needs for your age (either 16 to 20 years or adulthood) now is the time to start. Don't put it off a single day.

If you have been following the list, there are only a few changes to make. You *do* need to eat more frequently

but you *don't* need any more calories than before you were pregnant. Your Daily Food Needs are listed in Table 9. Your Basic Menu is made so that you can have small snacks between meals without adding calories.

The snacks are needed to help prevent the nausea or morning sickness that some women have during the first months of pregnancy. The nausea, that may begin any time during the day, comes from hunger, emotional factors, and the physical changes that are going on in the body. The saying, "An ounce of prevention is worth a pound of cure," was never truer than in the case of morning sickness. Eating prevents the empty feeling that often starts the nausea. Once started the nausea causes a "chain-reaction" that is harder to stop than to prevent. Wise eating and a calm happy frame of mind are the best preventive measures. Here again the attitude and helpfulness of the expectant father are ever so important. You may need several small snacks—one before you get out of bed in the morning (this is a *must*), others between meals and at bedtime and sometimes one at 2 or 3 o'clock in the morning.

Needing to eat so often makes it hard not to overeat. You don't want to gain weight this early unless you are underweight, and then gaining is desirable. If you are overweight it is safe for you to lose a few pounds if you do it by leaving lone-wolf calories out of your diet.

When you see your doctor he will tell you how much or how little you may gain during the nine months. Most doctors allow a total gain of 18 to 25 pounds, depend-

ing on whether you have a large or a small body build.

In the months ahead your need for Vitamin D will increase greatly because Vitamin D regulates the use of the minerals which make the bones. You can not get enough Vitamin D from food alone, and what you get from sunshine varies with the season and how much you are out of doors. Therefore, your doctor will undoubtedly give you a prescription for a Vitamin D preparation and tell you when to begin to take it.

As important as anything during the first few months is for both mother and father to check up on their food habits. You both need to ask yourselves if you are eating the kinds and amounts of foods you know are essential for good health. Are your ideas about food and the importance of good nutrition correct and up-to-date or do you let lots of food fads and prejudices keep you from eating wisely? Will your food habits set a good example for your child so he will be guided toward a lifetime of good health? You may find that you need to work on improving some of these habits. How do you rate on "willingness to eat" as described in the second chapter? Parents can be counted on to be heroes in an emergency. But many parents are cowards when faced with eating foods they don't like, or think they don't like, or aren't used to. They work hard to give their child the best possible social and educational advantages; yet they sometimes deny him abounding health because they set such a poor example of what to eat and what to think about food.

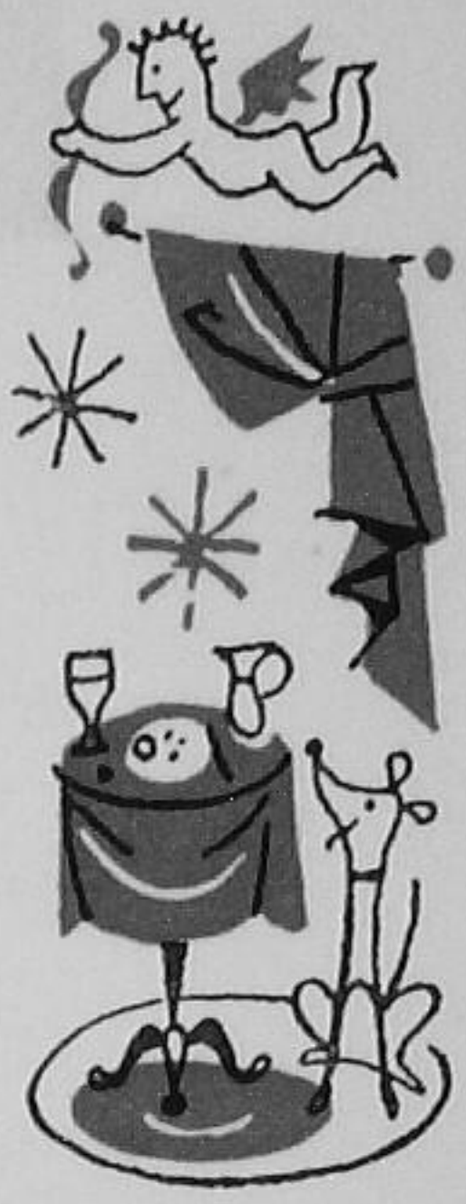
TABLE 9. YOUR DAILY FOOD NEEDS FOR THE FIRST THREE MONTHS OF PREGNANCY

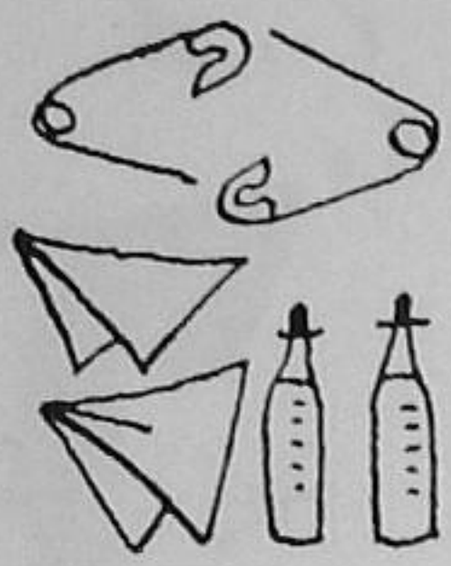
Kind and Amount of Food	*Percentage Nutritive Value*					
	Protein	*Calcium*	*Vitamin A*	*Thiamine*	*Riboflavin*	*Ascorbic Acid*
Bread and cereals, enriched or whole wheat, 6 servings...	18	9	—	30	18	—
Butter or margarine, 3 teaspoons.....	—	—	10	—	—	—
Milk, whole, 3 glasses.....	30	75	15	15	75	—
Meat, fish, or poultry, including pork at least every 3 days to meet the thiamine need, 1 serving.....	35	—	—	23	10	—
Egg, luncheon meat, or cheese, 2 servings.....	20	6	10	20	20	—
Potato, white, 1 serving.....	5	3	—	10	3	10
Fruit, citrus or its equal in ascorbic acid, 1 serving.....	3	3	—	5	3	70
Other vegetables and fruits, 4 servings—including some to give an average of 75 per cent Vitamin A daily.....	12	12	75	20	12	40
YOUR TOTAL.....	123	108	110	123	141	120
YOUR NEED.....	100	100	100	100	100	100

These foods supply between 1,400 and 1,800 calories. Add any foods you want until your calorie need is met.

BASIC MENU FOR THE FIRST THREE MONTHS OF PREGNANCY

Before you get out of bed	
Citrus fruit	½ serving
Melba toast or crackers	1 serving
Breakfast	
Citrus fruit	½ serving
Bread or cereal	1 serving
Egg	1 serving
Morning Snack	
Bread or crackers	1 serving
Milk	1 glass
Lunch or Supper	
Luncheon meat, cheese, or egg	1 serving
Vegetable or fruit	1 serving
Bread	1 glass
Milk	
Afternoon Snack	1 serving
Fruit	1 glass
Milk	
Dinner	1 serving
Meat, fish, or poultry	1 serving
Potato	1 serving
Vegetable or fruit	1 serving
Bread	½ glass
Milk	
Bedtime Snack	1 serving
Fruit	1 serving
Bread or crackers	
During the day	3 teaspoons
Butter or margarine	





SECOND THREE MONTHS

Your nutritional needs increase about the fourth month of pregnancy and remain the same during the fourth, fifth, and sixth months. Expressed as percentages of your needs before pregnancy they are:

Protein	125 per cent	Thiamine	130 per cent
Calcium	130 per cent	Riboflavin	130 per cent
Vitamin A	110 per cent	Ascorbic Acid	120 per cent

Your calorie requirement increases only about 10 per cent. This means that you must add foods which supply 30 per cent more calcium, thiamine, and riboflavin without adding more than 10 per cent to your calories. It is like having the cost of living go up 30 per cent when your income goes up only 10 per cent. You have to choose things more carefully and buy what will do you the most good.

Your Daily Food Needs which are listed in Table 10 now include more milk and more fruit to supply your greater need for protein, calcium, riboflavin, and ascorbic acid. More enriched or whole wheat bread and cereals supply the thiamine. More meat could also supply the extra thiamine but if you have to think of cost, bread and cereals will do it. The calorie value of this plan is low enough so you can still choose some trimmings.

Your Basic Menu has in it fewer snacks than during the last three months because you may not need them

any more. If you get along better having the snacks keep it up but keep within your calorie budget.

During these months you can begin to gain weight. An average gain of one-half pound a week is usually permitted during the fourth, fifth, and sixth months.

About at this stage in pregnancy some women develop "cravings" for certain foods. The cravings are not an indication of need but may come from restlessness, a desire for more attention, and sometimes because the mother wants to follow the same pattern as other expectant mothers she knows who crave things. There is no reason why the cravings can't be humored unless they become unreasonable or interfere with the mother's eating the food she needs.

LAST THREE MONTHS

Another increase in your nutritional needs comes about the seventh month. During the seventh, eighth, and ninth months your baby triples his weight and in every way gets more and more ready to be born and to live an independent life. You too must get ready nutritionally to nurse your baby because this will give him the best possible start in life.

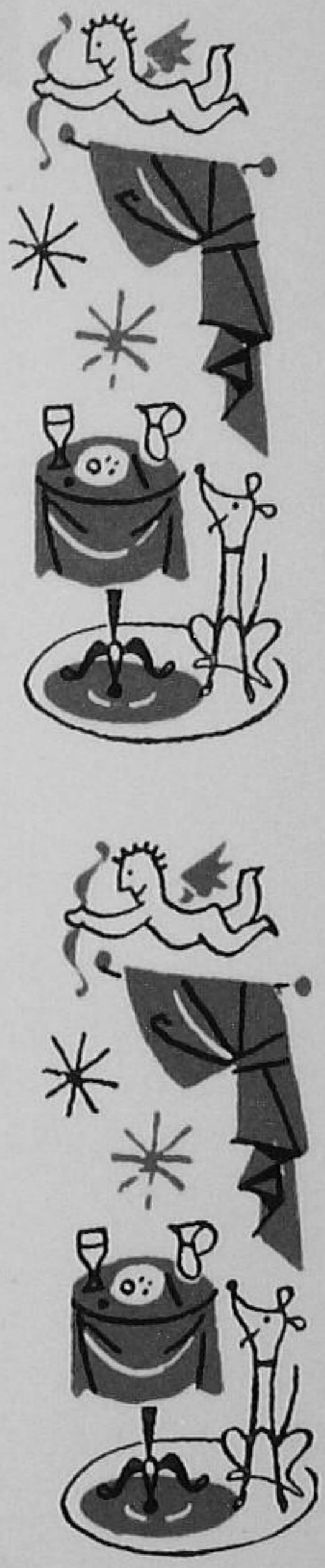
For all this growing and getting ready you now need these percentage amounts, as compared to your needs before pregnancy.

TABLE 10. YOUR DAILY FOOD NEEDS FOR THE SECOND THREE MONTHS OF PREGNANCY

Kind and Amount of Food	*Percentage Nutritive Value*					
	Protein	*Calcium*	*Vitamin A*	*Thiamine*	*Riboflavin*	*Ascorbic Acid*
Bread and cereals, enriched or whole wheat, 6 servings...	18	9	—	30	18	—
Butter or margarine, 3 teaspoons.....	—	—	10	—	—	—
Milk, whole, 4 glasses.....	40	100	20	20	100	—
Meat, fish, or poultry, including pork at least every 3 days to meet thiamine need, 1 serving.....	35	—	—	23	10	—
Egg, luncheon meat, or cheese, 2 servings.....	20	6	10	20	20	—
Potato, white, 1 serving.....	5	3	—	10	3	10
Fruit, citrus or its equal in ascorbic acid, 1 serving.....	3	3	—	5	3	70
Other vegetables and fruits, 5 servings—including some to give an average of 75 per cent Vitamin A daily.....	15	15	75	25	15	50
YOUR TOTAL.....	136	136	115	133	169	130
YOUR NEED.....	125	130	110	130	130	120

These foods supply between 1,500 and 1,900 calories. Add any foods you want until your calorie need is met.

BASIC MENU FOR THE SECOND THREE MONTHS OF PREGNANCY



Breakfast	
Citrus fruit	1 serving
Bread or cereal	1 serving
Egg	1 serving
Milk	1 glass
Morning Snack	
Bread or crackers	1 serving
Milk	1 glass
Lunch or Supper	
Luncheon meat, cheese, or egg	1 serving
Vegetable or fruit	2 servings
Bread	2 servings
Milk	1 glass
Dinner	
Meat, fish, or poultry	1 serving
Potato	1 serving
Vegetable or fruit	2 servings
Bread	1 serving
Milk	1 glass
Bedtime Snack	
Fruit	1 serving
Bread or crackers	1 serving
During the day	
Butter or margarine	3 teaspoons

You may space the snacks as you find them best for you.

Protein	140 per cent	Thiamine	150 per cent
Calcium	150 per cent	Riboflavin	165 per cent
Vitamin A	120 per cent	Ascorbic Acid	145 per cent

Your Daily Food Needs are in Table 11 and a Basic Menu follows it.

Now you have another serving of bread or cereal, milk, and meat. Some citrus fruit or its equal must be added because other fruits will not meet the need for ascorbic acid as they did during the previous three months. If large meals make you uncomfortable, you will need to have smaller meals oftener.

You need 10 per cent more calories than you did earlier or a total of 20 per cent more than before pregnancy. During these last months it may be all right for you to gain as much as a pound a week.

Good food for the mother during pregnancy has far-reaching benefits. It safeguards her health for the present and for the future. This in turn increases the joys of motherhood and the possibility of her nursing her baby. The right food for the mother gives the baby the best possible start toward a healthy happy life. Finally, if it has not been present before, the habit of eating well becomes established in the family and everyone benefits.

PLANNING AHEAD

Your next interest is in supplying the baby with the food that becomes him best after he is born—mother's milk.

Whether or not you can nurse your baby successfully depends more than anything else on your health, your diet before and after the baby is born, and your interest in nursing him. To be completely successful you have to be interested enough to eat everything you need, to keep a calm happy disposition, and to avoid getting overtired. Naturally, these things are easier to read about than to do. Just as no mother means to injure her health or the health of her baby by being careless about her diet during pregnancy, she does not mean to give her baby less than the best food after he is born. Again it is realizing the importance of food, both for her and her baby that can make her successful in providing the best food—mother's milk.

The importance of inherited tendencies in lactation is not exactly known. In some cases heredity, either directly or indirectly, probably accounts for a mother being unable to nurse her baby even though she tries conscientiously.

AT THE HOSPITAL

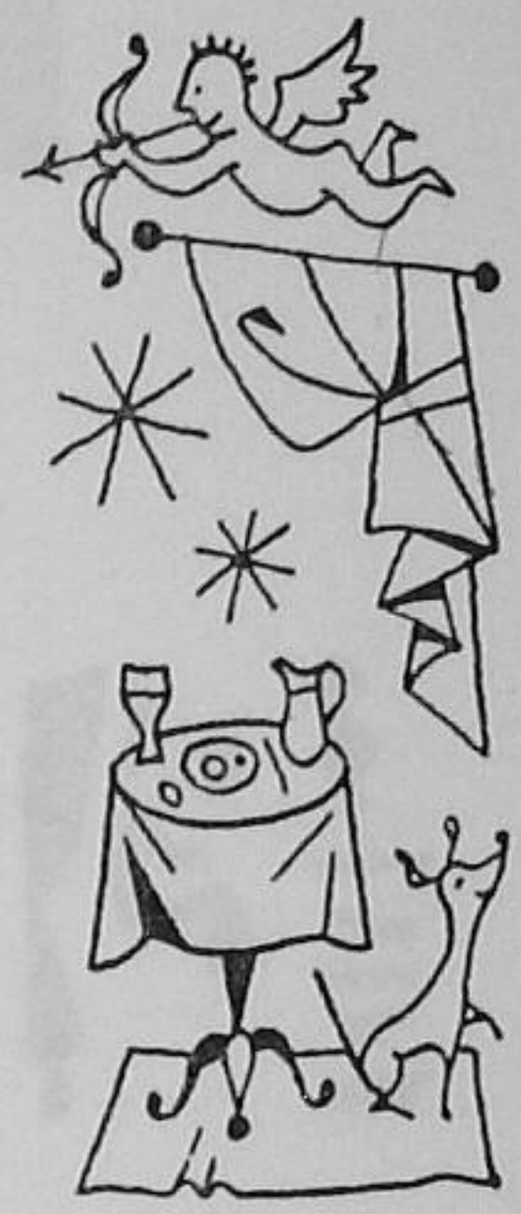
Sometimes the rigid schedule of the hospital prevents the early relationship of mother and baby which is needed to start satisfactory milk production and nursing. More and more hospitals are using the "rooming-in" plan, or keeping a baby in the same room with his mother instead of putting him in a nursery. A mother is more likely

TABLE 11. YOUR DAILY FOOD NEEDS FOR THE LAST THREE MONTHS OF PREGNANCY

Kind and Amount of Food	*Percentage Nutritive Value*					
	Protein	*Calcium*	*Vitamin A*	*Thiamine*	*Riboflavin*	*Ascorbic Acid*
Bread and cereals, enriched or whole wheat, 7 servings...	21	11	—	35	21	—
Butter or margarine, 6 teaspoons.....	—	—	20	—	—	—
Milk, whole, 5 glasses.....	50	125	25	25	125	—
Meat, fish, or poultry, including pork at least every 3 days to meet the thiamine need, 2 servings.....	70	—	—	46	20	—
Egg, luncheon meat, or cheese, 1 serving.....	10	3	5	10	10	—
Potato, white, 1 serving.....	5	3	—	10	3	10
Fruit, citrus or its equal in ascorbic acid, 1½ servings..	5	5	—	7	5	105
Other vegetables and fruits, 4 servings—including some to give an average of 75 per cent Vitamin A daily.....	12	12	75	20	12	40
YOUR TOTAL.....	173	159	125	153	196	155
YOUR NEED.....	140	150	120	150	165	145

These foods supply between 1,800 and 2,200 calories. Add any foods you want until your calorie need is met.

BASIC MENU FOR THE LAST THREE MONTHS OF PREGNANCY



Breakfast	
Citrus fruit	1½ servings
Bread or cereal	2 servings
Egg	1 serving
Milk	1 glass
Morning Snack	
Bread or crackers	1 serving
Milk	1 glass
Lunch or Supper	
Meat, fish, or poultry	1 serving
Vegetables or fruits	1 serving
Bread	2 servings
Milk	1 glass
Dinner	
Meat, fish, or poultry	1 serving
Potato	1 serving
Vegetable or fruit	2 servings
Bread	1 serving
Milk	2 glasses
Bedtime Snack	
Fruit	1 serving
Bread or crackers	1 serving
During the day	
Butter or margarine	6 teaspoons

You may space the snacks as you find best for you.

to be able to nurse her baby if she has the satisfaction and pleasure of holding him and loving him often and feeding him whenever he is hungry instead of seeing and feeding him only by the clock.

If you do not have enough milk for the baby while you are in the hospital, don't be discouraged for that in itself will reduce your milk supply. You can look forward to having more milk when you are at home and near your baby, and able to care for him and yourself.

AN ANSWER BOOK

For the months ahead you will want a reliable book on infant care and feeding. There are several excellent ones. Such a book will answer many of the usual questions every mother needs to ask, at least with the first baby; then you can call your doctor for answers to the special questions.

chapter 10

FOOD AT FIRST

NOTHING can equal the advantages of breast feeding when mother and baby are healthy.

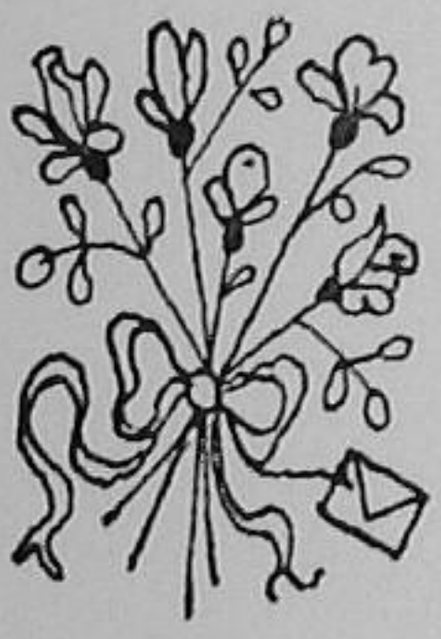
When artificial feeding first became very popular there was a higher death and sickness rate among babies fed this way than among babies given mother's milk. Now there is not as much difference because more is known about making substitutes for mother's milk. Even so, nothing is ever quite as good.

Lactation is the scientific name for the process by which the glands in the breast secrete or produce milk.

Modern science has given us a new appreciation of the nutritional and other values of mother's milk, and now most doctors are emphasizing breast feeding.

Mother's milk is the ideal food for the baby. When it is compared with the usual formulas of bottle-fed babies it has these advantages: it has better quality protein, its minerals are better absorbed, it is more easily digested and thus less likely to cause digestive upsets, it is always the right temperature, it is always free of harmful bacteria, and it is more economical of the mother's time and energy. Also nursing gives both mother and baby a satisfaction that is almost impossible to get from bottle-feeding.

When bottle-feeding is necessary many things are done to reduce the disadvantages of cow's milk and safeguard the baby's health. Thus a bottle-fed baby does not need to start life with a serious handicap.



VERY SPECIAL

For the first three or four days after the baby is born the secretion of the breasts is not milk but a substance called colostrum. It contains more protein and salts than milk and certain substances which give the baby resistance to infection; also it acts as a laxative. Colostrum is of very special value to the new-born baby as he starts to nourish his own body. For about two weeks the milk keeps some of the qualities of this colostrum.

YOUR DIET AGAIN

It may be hard for you to realize that you need more food while you are nursing a baby than when you were pregnant. A baby requires more of everything after he is born and now he is dependent on your milk to supply what he needs. He needs energy for his own breathing, his heart action, muscle tone, and temperature control. He is growing faster than before he was born and most of his body is made up of very active tissue. He needs 45-50 calories per pound per day during his first year. Contrast this with your requirement of 15-20 calories per pound.

You need more of every nutrient, except thiamine, than you did during pregnancy. Your needs expressed in percentages of those before pregnancy are:

Protein	165 per cent	Thiamine	150 per cent
Calcium	200 per cent	Riboflavin	200 per cent
Vitamin A	160 per cent	Ascorbic Acid	215 per cent

Your Daily Food Needs are in Table 12 followed by a Basic Menu. You will need to eat often to keep from getting too tired and to keep your body supplied with everything you need for the growth of your baby and for your own health.

The quality of your milk depends on the food you eat and on the stores of nutrients you have in your body. The protein and calcium you stored during pregnancy are for use now; you need them in addition to your daily supply. If for any reason you didn't have enough protein,

TABLE 12. YOUR DAILY FOOD NEEDS WHILE YOU ARE NURSING YOUR BABY

Kind and Amount of Food	*Percentage Nutritive Value*					
	Protein	*Calcium*	*Vitamin A*	*Thiamine*	*Riboflavin*	*Ascorbic Acid*
Bread and cereals, enriched or whole wheat, 7 servings...	21	11	—	35	21	—
Butter or margarine, 6 teaspoons.....	—	—	20	—	—	—
Milk, whole, 7 glasses.....	70	175	35	35	175	—
Meat, fish, or poultry, including pork at least every 3 days to meet the thiamine need, 2 servings.....	70	—	—	46	20	—
Egg, luncheon meat, or cheese, 1 serving.....	10	3	5	10	10	—
Potato, white, 1 serving.....	5	3	—	10	3	10
Fruit, citrus or its equal in ascorbic acid, 2½ servings..	7	7	—	13	7	175
Other vegetables and fruits, 3 servings—including some to give an average of 100 per cent Vitamin A daily	9	9	100	15	9	30
YOUR TOTAL.....	192	208	160	164	245	215
YOUR NEED.....	165	200	160	150	200	215

These foods supply from 2,000 to 2,400 calories. Add any foods you want until your calorie need is met.

BASIC MENU WHEN YOU ARE NURSING YOUR BABY

Breakfast	
Citrus fruit	1 serving
Bread or cereal	2 servings
Egg	1 serving
Milk	1 glass
Morning Snack	
Bread or crackers	1 serving
Milk	1½ glasses
Lunch or Supper	
Meat, fish, or poultry	1 serving
Vegetable or fruit	1 serving
Bread	2 servings
Milk	1 glass
Afternoon Snack	½ serving
Citrus fruit	1½ glasses
Milk	
Dinner	1 serving
Meat, fish, or poultry	1 serving
Potato	2 servings
Vegetable or fruit	1 serving
Bread	1 glass
Milk	
Bedtime Snack	1 serving
Citrus fruit	1 serving
Bread or crackers	1 glass
Milk	
During the Day	6 teaspoons
Butter or margarine	

your milk would be low in both protein and fat and would not satisfy the baby's needs or hunger.

Vitamins are transferred from your supply to the milk and the vitamin content of your diet determines how much is in your milk. There is never a generous enough supply of Vitamin D and ascorbic acid, so your doctor will prescribe a Vitamin D preparation for both you and the baby and probably orange juice for the baby.

CALORIES FOR TWO

Your calorie need changes with the baby's size and age as well as with your activity. The best calorie guide is your weight. You should eat whatever amounts of food are needed to keep your weight normal. This guide to your calorie need may help until you get used to knowing how much food to eat.

For you

From the table of Calorie Needs on page 37 find how many calories you need daily for your size and activity.

For the baby

Add to your own daily need, 60 calories for each pound your baby weighs. Suppose he weighs 7 pounds; you add 60 x 7 or 420 calories. When he gains a pound add another 60 calories. After he is three months old, add 50 calories for each pound instead of 60.

These few facts about your milk and its secretion may

help you get started right. It is important to empty the breast completely at each nursing for this stimulates milk secretion; nursing also stimulates it. On the other hand the accumulation of milk in the breast discourages secretion. Heavy work and getting too tired also reduce the secretion. Your milk is richer in the morning after a night's rest than at night after a day's activity. You might need to shorten the time between nursings or let the baby nurse a little longer toward the end of the day.

The flavor of spices and condiments in your food is transferred to your milk and may upset the baby. You will want to avoid these. Occasionally strong flavored vegetables like onions and cauliflower act the same way.

Emotional factors have a great influence on your ability to produce milk for your baby. Being worried or excited and getting too tired interferes with both the quantity and quality of your milk. But being calm, happy, and affectionate stimulates milk production.

BABY KNOWS

Babies differ in how much and how often they need to be fed. For this reason their schedules need to be personalized. A personalized schedule does not mean feeding a baby every time he cries. But it does mean considering him as an individual who wants to be comfortable and happy but can't be when he is thirsty or hungry. It means respecting a certain amount of variation in his needs.

A healthy baby is a better judge of when he needs

food than a clock is. Whether breast-fed or bottle-fed he will develop a fairly regular daily schedule as soon as he is getting enough to eat.

The schedule may start at a different time each day but the time between feedings will be similar from day to day. If he needs to be fed during the night he will let you know, and he will gradually break himself of a night feeding when he doesn't need it. When he sleeps longer, he is hungrier when he wakes up, so the first two feedings in the morning may need to be closer together than the feedings later in the day.

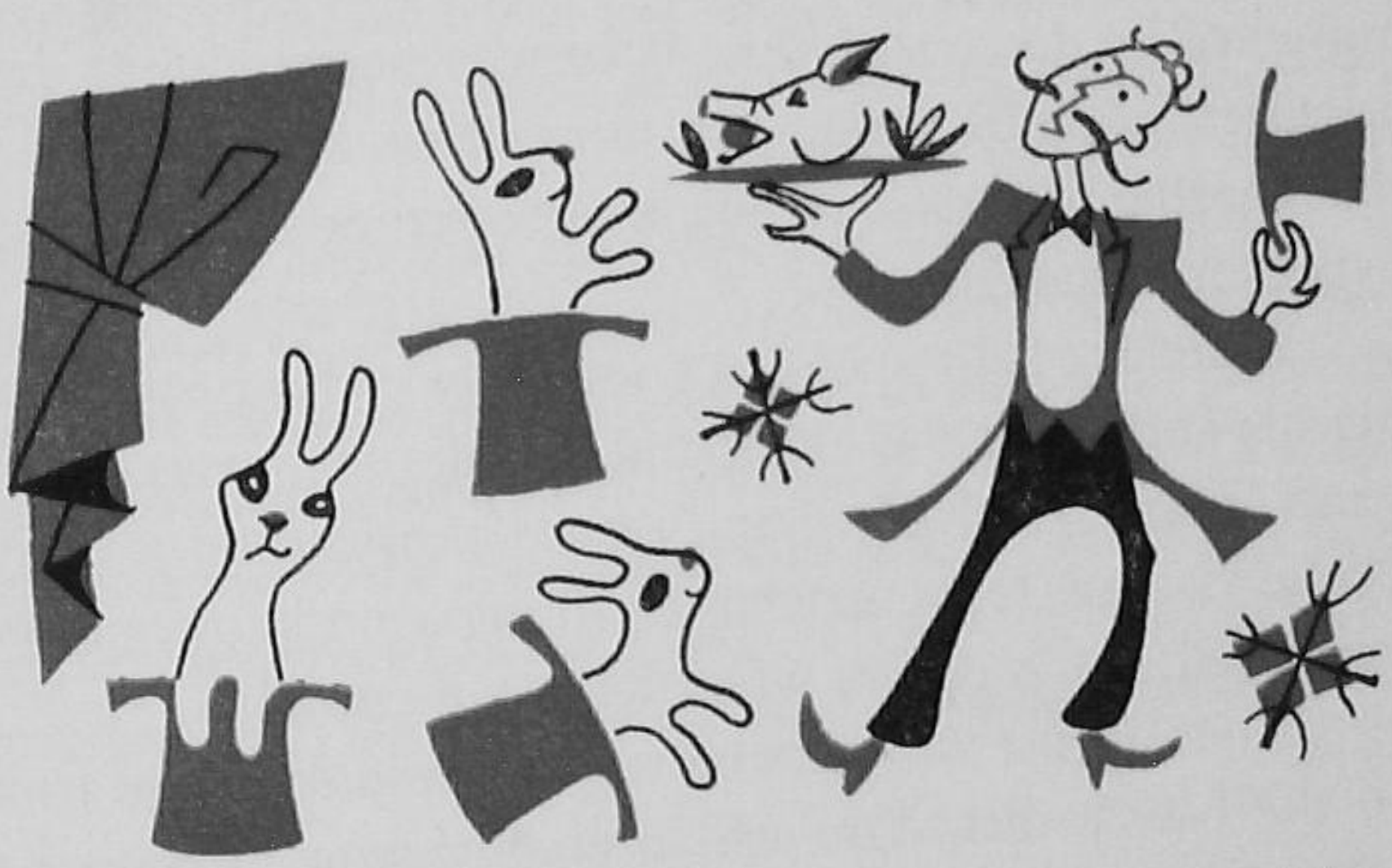
A hungry baby spends a good share of his life expressing his outrage at the clock and people who watch it instead of him. Much of what used to be diagnosed as baby's "colic" is now recognized as his hunger and anger at not being fed; it disappears when he is fed enough.

Your doctor will tell you when to add different foods to the baby's diet. You will probably stop nursing him when he is six or seven months old.

If you can nurse your baby for only one or two months instead of six or seven you have still given him some health insurance that he could not have had any other way and that will benefit him always.

chapter 11

UNEXPECTED VALUES



MANY OF US complain about the high cost of food because we have to spend so much of our income for it. Actually the pay for an hour's work here in the United States buys more food than in any other place in the world. We spend a smaller part of our income for food and yet buy more and better food than do people in other countries.

Buying the food we need means investing in good nutrition and pays us generous dividends in health and

happiness. The amount of money we spend for food depends on how much we earn and how many persons we have to feed. The smaller our salary, the greater is the proportion of it that must go for food; and of course, the more people we have to feed the larger our food bill.

A small amount of money spent wisely can buy better nutrition than a large amount spent carelessly. But the less money we have to spend the more carefully we have to plan, buy, and prepare food in order to have everything we need for good nutrition.

There is no getting around the fact that if we really want good nutrition we have to pay for it. When we are unwilling or unable to buy the food we need we face nutritional bankruptcy. Knowing the nutritive value of foods helps us choose the less expensive ones when we need to, but even these are not free. Just a yard of material will not make a dress, regardless of how carefully we plan and shop for it.

ALL THIS AND SATISFACTION

How dull life would be if we bought food only for its nutritive value! Money spent for food buys other values too, which are not measured in terms of calories, protein, minerals, and vitamins.

One value is the satisfaction we get from buying what we prefer—steak instead of stew meat, fresh milk instead of canned, strawberries out of season, and a host of other

preferences. Fresh milk has the same nutritive value as canned evaporated milk but it costs more. The additional cost does not buy extra nutritive value but pays for the work of handling such a perishable product and keeping it available so we can buy it whenever we choose.

Another value is the security which comes with having a plentiful supply of food, well-stocked cupboards and refrigerator, buying ahead of our needs and knowing we can have food whenever we want it.

Still another and more tangible value is the time and labor we save ourselves when we buy food that someone else has prepared, whether it is a ready-to-serve item that we take home from the grocery store or whether it is a meal away from home. This is a typically American value which is in line with our ideas of mechanization and efficiency, but it can be expensive. Buying certain ready-to-serve foods is practical for many of us, especially if we are employed away from home. Yet when we have company we are likely to apologize for using them! It is part of our American heritage that money can buy no substitute for the pride and prestige which goes with the simple statement "I made it myself," and no courtesy is greater than inviting someone in to share a home-cooked meal.

How much we can afford to spend to save ourselves time and labor depends on our income and on the money-value of our time if we are employed. Many of us can afford to eat out only to celebrate a special occasion

like the new promotion or an anniversary. The more money we decide to spend for the occasion the more service, silverware, variety, and atmosphere we can buy. If we spend enough we can buy exotic foods, entertainment, and swish galore. With this we are buying recreation too.

Always having food on hand so that any one in the family can bring his friends in for a raid on the refrigerator or snacks-at-all-hours is usually money well spent. It brings satisfying returns in fun, sociability, and prestige. However, it should be charged to our recreation budget rather than to our food budget. Some of us can not afford to buy these values because it would mean dangerous skimping on our own food supply.

THE PRESTIGE VALUE

Then some of us buy prestige when we spend money for food. Buying unusual foods, or a great variety of foods, or entertaining frequently and elaborately all ooze with prestige. A certain snob appeal goes with buying imported foods, having a charge account at a specialty food shop, or ordering groceries by telephone and having them delivered. Of course the cost of these frills has nothing to do with the cost of nutritive value but the frills are fun if we can afford them. Or we may buy social or business prestige by eating and by being seen at the "right places" and by entertaining the "right guests" at the "right places." It may be important for a business man or woman

to eat lunch where other business people eat, even though they could have a better meal for less money elsewhere.

WHAT SHALL IT BE?

The problem we all face is deciding which values, in addition to nutritive value, we can afford. Few of us can afford all the different values all the time. Sometimes it may be buying a few ready-to-serve items, another time inviting some company in to dinner, or eating away from home, and still another time having a favorite food when it is out-of-season and therefore expensive. Regardless of which we choose, the important thing is for us to know what we are paying for when we spend our money for food.

SHOPPING HABITS

Our shopping habits make a difference in what our food costs. Good shopping habits mean that when we spend money for food we get the greatest possible returns in nutritive value, satisfaction, and pleasure. Poor shopping habits mean just the opposite—that we get small, poor returns on the money we spend and that we spend unnecessarily large amounts for food.

Planning is an essential ingredient of good shopping habits. It means that we go to the store with a definite idea of how much and what kind of food we need. If our shopping list is short we may trust it to our memory; if

the list is long we have to write it down. To make a good list we have to spend some time checking the food supplies on hand, making at least a skeleton menu for the meals immediately ahead, and then listing the foods we need to buy. Here again we will find a good cookbook helpful. It will have a table showing the approximate amount of food to buy for 1 serving, or it will tell the number of servings in a pound of different kinds of foods. If we shop at a store that advertises in the newspapers, the ads may help us in our planning. Listening to radio or television marketing programs before we go shopping is another way to find out about bargains and foods which are plentiful and therefore a good buy. Also helpful in planning is the National Food Guide and Basic Seven Chart developed by the Bureau of Human Nutrition and Home Economics in the U. S. Department of Agriculture and available free on request.

A good list is flexible within limits. It is flexible enough to let us take advantage of a real bargain when the store features something we can fit into our plan, but yet not so flexible that it lets us buy anything willy-nilly just because it is cheaper than usual. The time we spend in planning is profitably spent because it makes our shopping more pleasant, efficient, and economical; it saves our energy and patience; and it results in meals that rate high in nutrition and satisfaction.

Planning is particularly important if the woman works outside of the home and has to do her shopping at busy

hours. Often impatience and hurry lead her to buy expensive foods because they are the quickest to prepare. Actually these may not be the foods she needs or can afford, or that give her the greatest return for the money spent.

We have to shop around for a food store to suit our needs and our pocketbooks. Here again, we must ask ourselves what values we want. We may decide that the convenience and personal service of the small neighborhood store make it the best place to do our shopping. Or we may think that we save money and find a greater variety of food in the super-market, although it is farther away. Perhaps we save enough money from the lower prices there to pay for using the car, or perhaps we can combine our food shopping with other business when we have the car out. If we have a busy schedule, we may want to phone in our grocery orders and have them delivered. Of course, we must be willing to pay for such services through slightly higher food prices or delivery charges.

A GARDEN TOO

A garden is likely to be an excellent shopping habit, too. With a little planning we can invest our time and effort in a small piece of land and get a relatively large amount of food and nutritive value in return. In addition we can enjoy the satisfaction of a job well done.

When we have vegetables and fruits from the garden, we eat more than when we have to buy them. The same is true when we can or freeze them for use later. Compare

how you use tomatoes, or any similar food, in your meals when you buy them one or two cans at a time with when you go to the "food cellar" and see rows and rows of quart jars of tomatoes and similar quantities of other good things waiting to be used.

Buying certain staple and canned food in quantity is a good habit for some of us and usually saves money. We have to be sure we have good storage space for such supplies so they will keep well. When we use things we have bought in quantity we are not as conscious of what they cost. This can either make us wasteful or give us more and better food for the money we spend.

SHOPPING BY GRADE

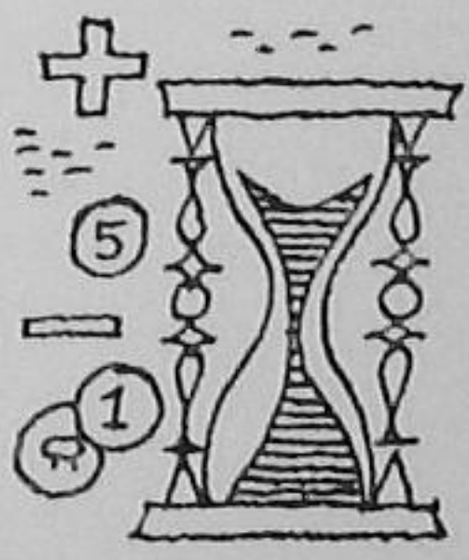
We get the most value for our money when we are "informed" shoppers.

We know that grading of meat, of canned goods, of potatoes, and fruits has little to do with nutritive value and flavor of the foods. Grading of meat refers to the age of the animal, the texture of the muscle, and the amount and distribution of fat. Grading of potatoes and citrus fruit is based on size and whether or not there are blemishes on the skins.

The average family buys 200 pounds of canned food each year—so being an informed shopper can mean a real saving on this item.

Grading of canned foods is based on certain quality

factors, such as size, uniformity of size, color, clearness of liquid, age or stage of maturity. Grades are expressed in letters A, B, or C or terms Fancy, Choice, or Extra Standard, and Standard. In some products there is a substandard grade which is often an excellent bargain. The initials "U.S." mean that the grading was done by a government inspector. The best and most economical grade to buy depends on how the food is going to be used. For company dessert we may want a Grade A pack for large peaches. But for a gelatin salad where color and size are not the most important qualities a Grade C is just as good and much more economical. Descriptive labels on canned goods are worth reading; they tell such things as texture, weight, measure, and the number of servings of a certain size in the can. When two or more foods are canned together they are named on the label in the order of the amounts present—whatever there is the most of must be listed first. There is a difference between a can of "Beef gravy and ground beef" and one of "Ground beef and gravy." Reading labels carefully and experimenting with different grades and brands for different uses help us decide which are the most satisfactory and economical kinds to buy for different purposes.



SPEND MORE TIME–LESS MONEY

Saving money by buying food wisely often seems difficult. Although a large share of our budget goes to buy

food, we spend relatively small amounts at one time. We feel we have saved a lot when we save five dollars by buying the less expensive of two dresses. However, we buy food much oftener than we buy dresses and a small saving at each time that we do our shopping can amount to a real saving over a period of a few months or a year.

There is more to planning than just shopping at the grocery store. We have to think of the meals we eat away from home—especially if we routinely eat certain meals out. We know that everything has to cost more when we pay some one else to prepare it for us, but we learn from experience what foods are the cheapest and what are the most expensive to buy away from home. When we have limited equipment and space and time for preparing food, eating out gives us a chance to have the foods which we cannot prepare at home. This is especially true when we work, or when we live alone, or have only two in the family. It is cheaper to pay the cost of having some one else bake a pie which we can buy than for us to pay rent on a larger apartment which has space and equipment so that occasionally we can bake one ourselves. Sometimes we eat at a boarding house where we do not have enough of the foods we need. Then we must plan to piece out our meals either by paying extra to have them provided at our regular meals or by eating one meal a day at some other place where we can fill the gaps in our diet.

When we are eating out all the time and paying for each meal separately we have to be especially careful to buy

everything we need. It is a temptation to think "This salad or this vegetable costs a little too much, I'll have something cheaper." Perhaps our greatest error is thinking that milk is a beverage instead of a food. When we order coffee we omit milk instead of buying milk too.

A study made in some mid-western colleges showed that the girls who had the best diets were those whose parents had paid for their board in advance. The girls who had the poorest diets ate "around at different places," and paid for each meal separately. Although they meant no harm they were cheating their health to get more money for clothes and recreation. Skimping on the food we need is no economy—it is dangerous.

The money we save we usually have to spend to repair our health. How much more enjoyment we get from life when we protect that health with good food as we live along.

UNFAIR COMPETITION

One more thought about the cost of good nutrition. It is true that food is only one of the many things which our income must buy. Money for food must compete with money for rent, for clothes, for recreation, and many things. Sometimes we do not give money for food an equal chance to compete with other things we need. We obligate ourselves for continuous fixed expenses like rent, insurance, and club dues which in reality may be more

than we can comfortably or safely afford. It is not uncommon to hear our friends discussing how they are trying to save enough from the food budget to buy a new pair of shoes or a lamp, to make a payment on the television set, or to buy some other item entirely unrelated to their nutrition and health. Then our food budget has to take what is left and often this is not enough to feed us well.

chapter 12

THE ROAD AHEAD

You HAVE just had a personally conducted tour through the science of food and nutrition. So it's not surprising if you are panting with information. You saw flood lights turned on some facts that were of special interest to you; back in the shadows you saw the dim outlines of less interesting and harder-to-explain facts; and you had some facts described with great care so you could learn to use them in selecting the food that becomes you.

Here's a summary of that tour:

Habit is the strongest force in determining what we eat and our habits are based on previous experiences and examples. We can correct poor food habits.

Wise weight is important and we can learn to match our appetite to our need. The Calorie Chart helps us here.

Overweight and underweight are serious and occur when calorie supply and demand are not equal. The reducing and gaining diet plans help us here.

Food contains many different nutrients and each one has special jobs to do. When the leader nutrients are supplied in adequate amounts from food, plenty of other nutrients are supplied.

Food can supply enough of all the nutrients for good health. Different kinds of food supply different amounts of the nutrients. Our Percentage Counter helps us here.

The kinds and amounts of food to supply the daily needs of the adults and older adolescents have been arranged in a Basic Menu. Any foods we choose can be added to the Basic Menu until our calorie need is met.

Food needs increase as pregnancy advances, and the quality of the mother's diet has a definite effect on her and her baby.

Mother's milk is the best food for a baby. Nursing a baby means the mother has to eat larger amounts of food than at any other time in life.

When we spend money for food we can buy many extra values in addition to nutritive ones. Our problem is to decide which extra values we can afford.

With your new awareness of food and health you will notice more what people eat and how they look. You will see many with poor food habits who look poorly nourished and you'll ask, "Why don't people eat the foods they need?" There are several causes of not eating wisely. They are often referred to as barriers which block our progress toward good nutrition. They must be removed before an individual or a nation can achieve good nutrition through good food habits.

The first barrier is *low standards*—thinking of health as a mere absence of obvious disease rather than as a positive state of well-being. Too often we accept early aging, wearing out in middle age, chronic fatigue, sagging muscles, poor teeth, vague aches and pains, mental stagnation and emotional instability as common and unavoidable accompaniments of the aging process.

Another barrier is *ignorance*—not knowing the importance of nutrition and its far-reaching influence on our physical, mental, and social development at every stage in life.

Inertia is a barrier to good nutrition because as a result of poor nutrition it keeps us from doing things which would improve our nutrition. We may know food is important, we may know we should eat the right kinds and amounts of food; but our inertia keeps us from collecting enough determination to make a change; it's a vicious circle.

Still other barriers exist: *Poor management* or the in-

ability or unwillingness to plan, market, and prepare the food we need; *poverty* or not enough money to buy food; and *poor food habits* and *resistance to changing* any part of our eating pattern.

The body's ability to resist sudden changes in its composition and functioning is another barrier. You will recall that in losing or gaining weight the body has to get a head start on its tissue metabolism before there is any evidence of weight changes. It's much the same in changes toward better or poorer nutrition. They have to get a head start, before there can be noticeable evidence of how the body is affected. The delay between cause and effect is discouraging when we are trying to improve our nutrition. But perhaps we had some nutritional debts that we didn't know about and these had to be paid before we could attain nutritional prosperity. On the other hand, the delay encourages the person who is ignoring his food needs because it makes him think he is "getting by" without penalties. Some of us are managing to eke out a passable degree of fitness for a while even with poor food habits, because we are drawing on a nutritional savings account which our parents started for us. But in time outward evidence always catches up with what is happening inside the body. Then comes the reward for being conscientious or the penalty for putting off the job of eating wisely.

You are not alone in your new interest in food and health. In fact you are in excellent company.

Nowhere else in the world are there as many people

working in as many different places and on as many different phases of food and health as in the United States. This is as it should be because our progress brings with it a huge responsibility for further research and application.

There are scientists who are constantly trying to increase our knowledge of the complex functioning of the body, and its needs, and the interrelationships of body processes and various factors in our food and environment. They are also studying food from the standpoint of the effect of variety, soil, climate, and methods of handling, storage, and marketing on its nutritive value, and then the effect of methods of preparation and storage on the flavor, nutritive value, and acceptability of the food.

You will find them at our state universities, at our state Agricultural Experiment Stations, in government regional and centralized laboratories, in medical centers, and in private laboratories and industrial laboratories.

To be of some value the results of the research must be applied where they will do the most good. For this there must be a middleman between the scientists and the all-important Mr. and Mrs. Public and Johnny and Susie. This is the chief duty of the large group of home economists and others in the educational and business and industrial fields—teachers, dietitians, food service managers, nutritionists, editors of newspapers and magazines, radio, and television, extension agents, field workers, and consultants in public health and related fields.

Being aware of the importance of food in our lives and the value of the right food, together with eating the food we need, make us helpful citizens of the world. Just as food becomes us, so food becomes the world. Just as we are subject to fatigue, discontent, worry, and irritability when there isn't enough of the right food, so is the world. It is easy prey to any system that by word or deed offers food, and with it the implied return to strength, security, happiness, and high morale.

The powerful role of food and nutrition in the world today was recognized when the Food and Agriculture Organization was the first special service of the United Nations to be activated. The first chairman, Sir John Boyd Orr, was awarded the Nobel Peace Prize in 1949 for his contributions toward solving world food problems. He worked with the conviction that only when every nation is well fed and thus the people have positive, buoyant health can there be lasting peace between governments.

Regardless of how powerful a force food is in the world, its foundation is still the food and health of the individual—it's *you*.

INDEX

N

O

P

Q

R

S