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# Keeping Fit

A 4-H ACTIVITY



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Edition

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UNIVERSITY OF ILLINOIS · COLLEGE OF AGRICULTURE  
Extension Service in Agriculture and Home Economics

## TO THE OWNER OF THIS BOOK

By studying and using this book, you can learn what good physical condition is, how to achieve it, and what progress you are making in your efforts.

To get the most good from the KEEPING FIT activity, you will want to keep this book for at least two years. Take good care of it, for it won't stand rough use.

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## MY BOOK AND RECORD

Name \_\_\_\_\_ Boy \_\_\_\_\_ Girl \_\_\_\_\_

County \_\_\_\_\_ Post office \_\_\_\_\_

Date of birth \_\_\_\_\_  
month day year

# KEEPING FIT

By D. M. HALL, Assistant Professor of Agricultural Extension

WHEN YOU raise your hand and pledge "My health to better living," do you realize the responsibility you have accepted? Keeping fit and strong is now *your* job — not a job that you can expect your doctor, nurse, or parents to do for you.

Health and fitness, like everything else worth having, can't be had by just wishing. It is something you must work for. Fitness must be built while you are young. If you don't build it now, it will be hard to make up for your neglect after you are grown.

Few people, probably, have worked harder to be physically fit than Glenn Cunningham. As a result he became one of the most amazing runners the world has known.

When he was eight years old, Glenn lay in a Kansas hospital, his legs so horribly burned from a school fire that it seemed doubtful whether he would ever walk again. His left toes and arch were almost gone; his right leg was crooked and deformed by scar tissue. It was months before he was allowed even to slide to the edge of his bed and touch his feet to the floor. The first time he tried to put his weight on his legs they buckled beneath him and he crashed to the floor.

But Glenn wanted to use his legs — he wanted to run. The doctor, knowing that muscles grow by being used, prescribed daily massaging for the burned legs. Then Glenn was told that if he would begin running — just a little at a time at first — and keep it up, the exercise might restore the lost tissue. So everywhere he went — about his father's farm, off to school, and home again — he ran.

There was farm work to do too. At the age of 12 Glenn was pitching hay in the burning sun; at 14 he was loading wheat at the elevator. Such work made his chest broad and his heart powerful. He still limped, but his legs were growing sturdier. Soon they would be ready to carry him to victory in race after race.

He won his first mile while still attending the rural school. Before he graduated from high school, his home town of Elkhart sent him to two meets in Chicago. At one of them he made the mile run in 4:24.7, breaking the world's record for high school students.

As a student at Kansas University in 1932 he won the Big Six Championship in 4:14.3. During the next six years victories continued and records fell. By hard and steady training he got his time down to 4:12, to 4:08, to 4:06, and finally to 4:04.4 — a world's record which stood nearly ten years.

Glenn Cunningham put everything he had into the job of turning himself from a cripple into the world's champion runner. He wanted to run, and the price of success was training. You probably have no such handicap to overcome, and you may not care to be a world champion. But if you want to be strong and healthy you will need to keep training just as Glenn Cunningham did.

## YOUR FITNESS PROGRAM

Health — total health — means these four things:

**1. A sturdy physique.** This means that you are growing as you should. Your body should be well developed for your age and should have the proper proportions of bone, muscle, and fat. If your weight is right for your height and body type, this is a pretty good sign that you are growing as fast as you should.

**2. Organic fitness.** Your heart and lungs should be strong and able to do their work well. Organic fitness also means a good digestive system, normal sensory organs (that is, good eyes, ears, etc.), and freedom from disease and body defects.

**3. Motor fitness.** This means that you have trained your muscles so that you can work and exercise without tiring.

**4. Body protection.** This is the ability to protect your body from dangers. To do this you should know something about sanitation, disease prevention, safety first, and first aid; and you should know how to swim.

Your fitness program should help you to improve on all four of these points. This is what you pledge when you raise your hand and say, "My health to better living."

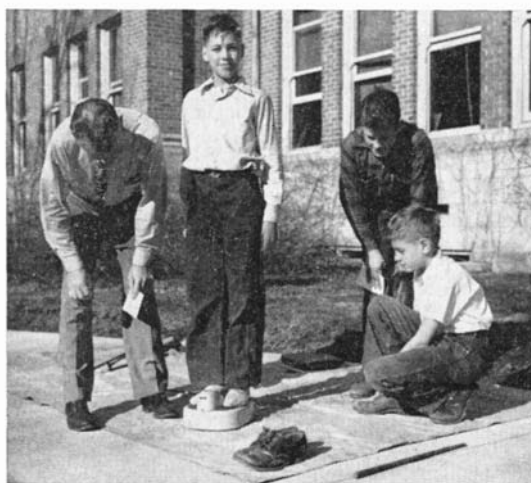
The following pages describe tests and measures that help you to tell whether your weight is right for you, how strong your heart and lungs are, and how well your muscles are trained.

The tests are given at your County Fitness Field Day, but you should repeat them at home and at your local club meetings to find out how much you are improving. Keep the record of your growth and test scores on pages 22 and 23. Next year, bring this book back to the Field Day and have your official scores entered again. By that time you should have repeated some of the tests at least four times.

So far there has been no opportunity for testing your knowledge of body protection during the Fitness Field Day. But learning ways to protect your body from danger should become a part of your club program. You can get pamphlets about first aid, safety first, fire prevention, and swimming tests from your farm advisers.

## ARE YOU GROWING ACCORDING TO SCHEDULE?

**Measure your weight and height.** Weigh yourself without your shoes or heavy clothing. Write this figure on page 22.



Weigh-up



Measure

## AVERAGE WEIGHT FOR AGE AND HEIGHT: BOYS AND GIRLS

Height in inches	Age in months or years											
	120m 10y	132m 11y	144m 12y	156m 13y	168m 14y	180m 15y	192m 16y	204m 17y	216m 18y	228m 19y	240m 20y	264m 22y
	Weight in pounds											
47	50	..	..	..	..	..	..	..	..	..	..	..
48	53	..	..	..	..	..	..	..	..	..	..	..
49	55	55	..	..	..	..	..	..	..	..	..	..
50	58	58	58	..	..	..	..	..	..	..	..	..
51	61	61	61	..	..	..	..	..	..	..	..	..
52	64	64	64	64	..	..	..	..	..	..	..	..
53	67	67	68	68	..	..	..	..	..	..	..	..
54	70	70	71	71	72	..	..	..	..	..	..	..
55	73	73	74	74	74	..	..	..	..	..	..	..
56	77	77	77	78	78	80	..	..	..	..	..	..
57	80	81	82	82	83	83	..	..	..	..	..	..
58	84	84	85	85	87	87	..	..	..	..	..	..
59	87	88	89	89	90	90	90	..	..	..	..	..
60	91	92	92	93	94	95	96	101	106	111	112	114
61	..	95	96	97	99	100	103	106	111	116	117	118
62	..	100	101	102	103	104	107	111	116	122	123	124
63	..	105	106	107	108	110	113	118	123	127	128	128
64	..	..	109	111	113	115	117	121	126	130	131	132
65	..	..	114	117	118	120	122	127	131	134	135	136
66	..	..	..	119	122	125	128	132	136	139	140	141
67	..	..	..	124	128	130	134	136	139	142	143	144
68	..	..	..	..	134	134	137	141	143	147	148	149
69	..	..	..	..	137	139	143	146	149	152	153	154
70	..	..	..	..	143	144	145	148	151	155	156	157
71	..	..	..	..	148	150	151	152	154	159	160	161
72	..	..	..	..	..	153	155	156	158	163	164	165
73	..	..	..	..	..	157	160	162	164	167	168	169
74	..	..	..	..	..	160	164	168	170	171	172	174
Average yearly gain in weight	6	7	9	11	15	11	8	4	3	1	1	1
Average height in inches	54	56	58	60	63	65	67	68	69	69	69	69
	Weight in pounds											
47	50	..	..	..	..	..	..	..	..	..	..	..
48	53	..	..	..	..	..	..	..	..	..	..	..
49	56	56	..	..	..	..	..	..	..	..	..	..
50	59	61	62	..	..	..	..	..	..	..	..	..
51	61	63	65	..	..	..	..	..	..	..	..	..
52	64	65	67	..	..	..	..	..	..	..	..	..
53	68	68	69	71	..	..	..	..	..	..	..	..
54	70	71	71	73	..	..	..	..	..	..	..	..
55	74	74	75	77	78	..	..	..	..	..	..	..
56	78	78	79	81	83	..	..	..	..	..	..	..
57	82	82	82	84	88	92	..	..	..	..	..	..
58	84	86	86	88	93	96	101	102	103	104	106	108
59	87	90	90	92	96	100	103	104	105	106	107	109
60	91	95	95	97	101	105	108	109	111	112	112	113
61	..	99	100	101	105	108	112	113	116	116	116	116
62	..	104	105	106	109	113	115	117	118	118	118	119
63	..	..	110	110	112	116	117	119	120	120	121	122
64	..	..	114	115	117	119	120	122	123	123	124	125
65	..	..	118	120	121	122	123	125	126	126	127	128
66	..	..	..	124	124	125	128	129	130	130	131	132
67	..	..	..	128	130	131	133	133	135	135	135	135
68	..	..	..	131	133	135	136	138	138	138	138	139
69	..	..	..	..	135	137	138	140	142	142	142	142
70	..	..	..	..	136	138	140	142	144	144	144	145
71	..	..	..	..	138	140	142	144	145	146	147	149
Average yearly gain in weight	8	10	13	10	6	4	3	1	0	0	0	1
Average height in inches	54	56	58	60	62	63	64	64	64	64	64	64

American Child Health Association. Thos. D. Wood, Personal Health Standard and Scale, Teachers College, Columbia University. Figures for ages above 17 are from medico-actuarial tables.

Still without your shoes, stand with your heels, buttocks, shoulder blades, and head touching the wall. Have someone hold a small box or book against the wall, resting it on your head. Place your hands on your hips, take a deep breath, and stretch tall. Step away and measure the height of the lower edge of the book. Record this figure on page 22.

**What percentage is your weight of normal?** Find the average weight of boys or girls of your age and height in the table on page 6. Divide your weight by this average weight to find out what percentage your weight is of normal. Enter this percentage on page 22.

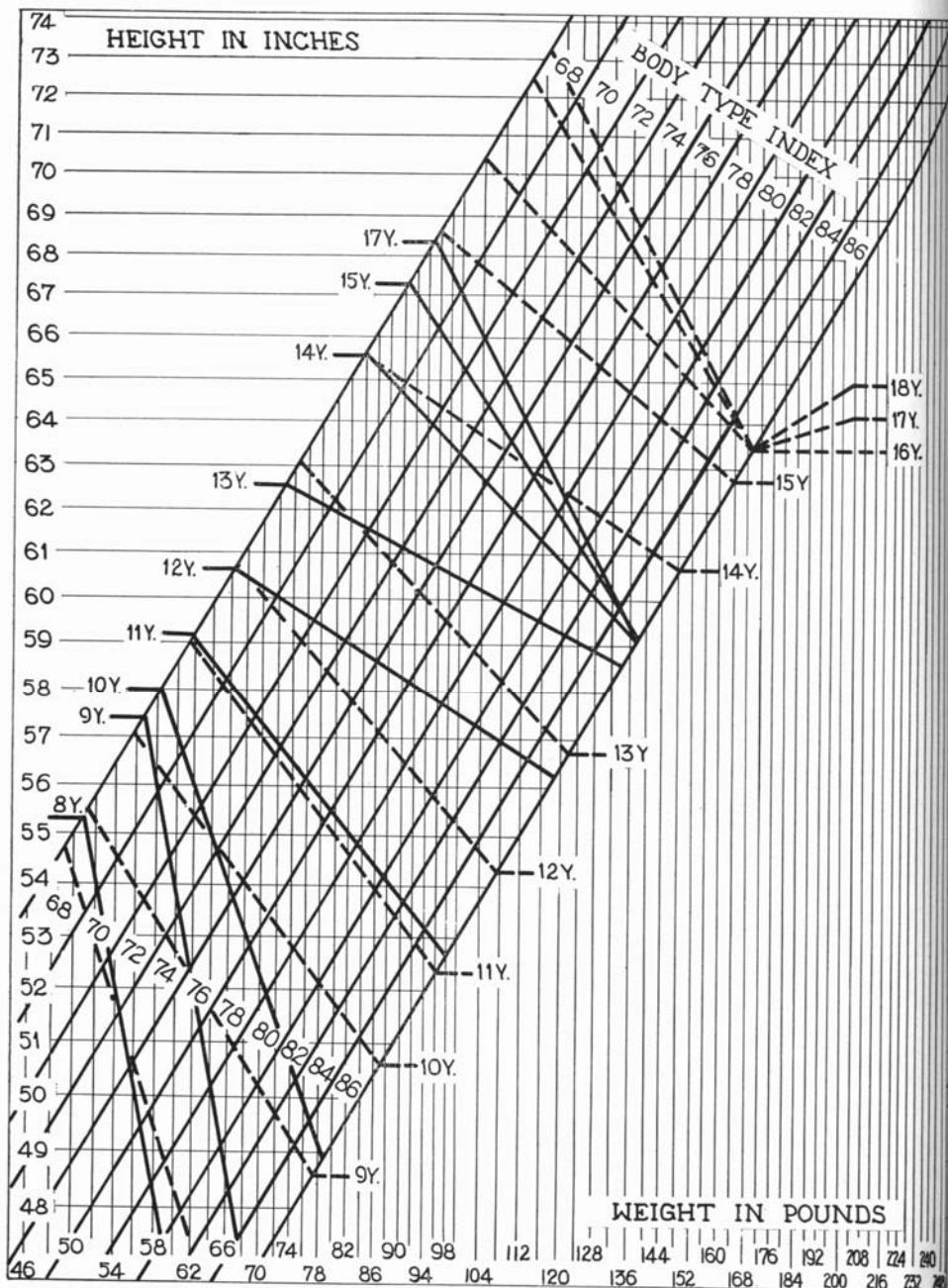
Most people have percentages between 90 and 115. People who rate below 90 may not be well enough nourished. Those who rate above 115 may be overweight. People who are underweight or overweight usually tire quickly, lack strength and speed, and have little endurance. If you are below 90 or above 115, it would be wise to go to your family doctor for a complete health check-up. You may need a special diet and a program of exercise.

**What is your body type?** There are many different body types, ranging from the very thin to the very thick. Most people, however, are in the normal or athletic group. You can learn which group you are in by using the chart on the next page.

Find your height in inches on the left side of the chart, and your weight at the bottom of the page. Put a dot where the line for your weight crosses the line for your height. (It may be that your weight or your height will come somewhere between the heights and weights given on the chart. In that case your dot will not come exactly on the line.)

Now look at the heavy diagonal lines, forming ten channels and running from the lower left-hand corner to the upper right-hand corner of the chart. Your dot will probably come in one of these channels. The number in your channel tells you your body-type index.

If your index figure is 76 or 78, you have the normal, athletic type of body. If you are 72 or below, you belong in one of the slim-body groups. If you are above 80, your body is inclined to be thick.



**BODY-TYPE CHART.** An explanation of this chart and directions for using it are on pages 7 and 9. Ask your leader to help you if you do not fully understand it.



Unless you are underweight or overweight, your body type should not change much,<sup>1</sup> except that during the year or two when you grow fastest in height your body-type index loses about 2 points. It then should return to its former value and remain there as you grow older.

You can find out whether you are staying in the same body-type group by making a new dot on the chart each time you are weighed and measured. Join the dots with a line. Your line should proceed up the same body-type channel as you grow taller and heavier (unless tests show that you should change your body type). If it crosses more than one channel to the right or left, it would be wise to have a complete physical examination. You may be losing or gaining weight because of some disease or defect.

The dotted lines crossing the channels show the *average* weight and height each year for one group of boys of different body types as they grew from 8 to 18 years of age. The spaces between the lines therefore show about how much a boy should advance each year in his channel. The unbroken lines crossing the channels give similar information for girls. Since these lines represent averages for the different ages, your dot may not strike exactly on the crossline.

**Three steps for gaining or reducing.** Many people with body-type indexes of 70 or below are underweight and find it very difficult to keep their weight up to standard. Those with index figures above 80 are usually overweight and gain very easily. It is not good to be underweight or overweight.

There are three things that you should do to bring your weight up if you are underweight, or to bring your weight down if you are overweight. These three things are important for people of normal weight too.

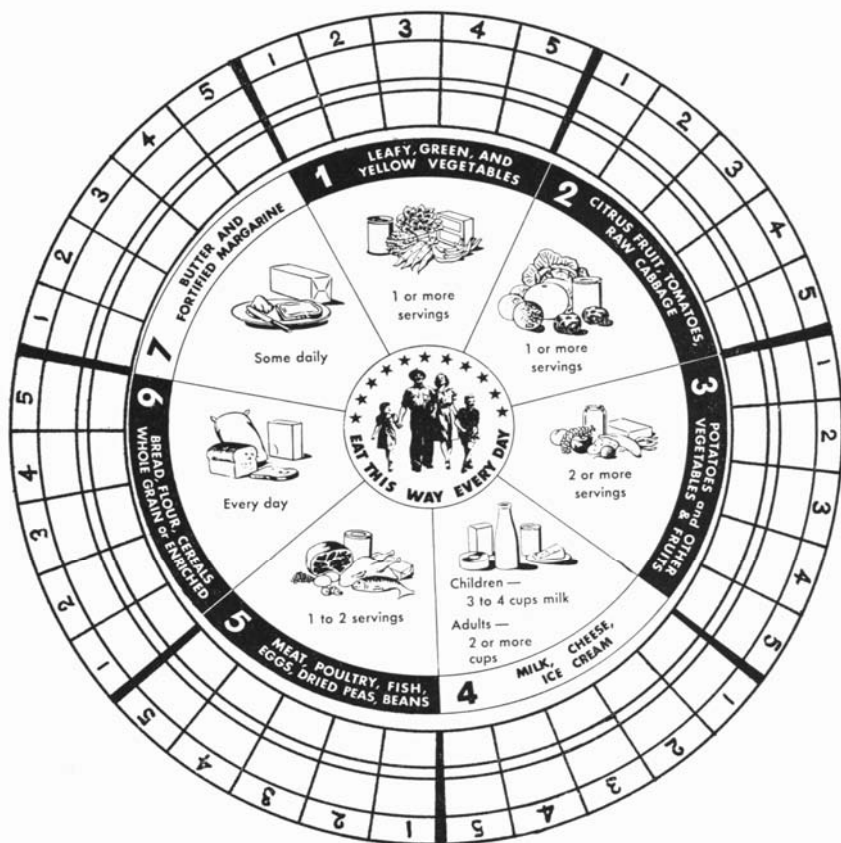
First, you should eat plenty of the *right* kinds of food. Second, you should average at least 8 hours of sleep a night. And, finally, you should get plenty of exercise. Since overweight people put on weight so easily, it is important that they follow an extra-heavy exercise program.

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<sup>1</sup> At the official testing, certain measures of your body thickness will be taken to determine more accurately how much you should weigh and what your body index should be. Then you will know whether you should try to gain or reduce and thus change your body type.

## For Good Health

## EAT THE RIGHT FOODS



People who have studied foods and health have divided our common foods into seven groups. For good health we need to eat foods from all these groups. This chart will help you check on your food habits and see whether you are eating what you should.

Around the rim of the wheel you will find some blank spaces. These spaces represent two periods of 5 days each. Use the inner circle of spaces to check your food habits for the first 5-day period. If you eat foods from each of the basic seven food groups on the first day, place a check (✓) in each of the seven No. 1 spaces. If you have missed some group of foods that day, put a zero (0) in the No. 1 space for that group. Make this same kind of record in the No. 2 spaces on the next day, and so on through the fifth day.

During some later week check the outer circle for 5 successive days in the same way. If you did not include all seven groups of food each day of the first 5-day period, see if you can't do it in the second period.

Get into the habit of thinking how the foods you eat fit into these seven groups, and keep on checking yourself even though you don't do it on a chart.

**Are you eating what you should?** The seven kinds of food that everybody needs are shown in a chart on page 10. Study this chart and then make two 5-day checks to see whether you are eating properly. The directions below the chart tell you how to do this. Pay particular attention to foods that contain vitamins and minerals. These are green and yellow vegetables, citrus fruit (especially oranges and grapefruit), tomatoes, milk, and whole-grain cereals.

Perhaps you may say, "I can't eat some of these things because I don't like them." But food likes are largely habit. You have learned to like most of the foods you eat, and you can learn to like others if you want to. Other people like them. If they are good for you, isn't it worth your while to learn to like them too?

## HOW SOUND ARE YOUR HEART AND LUNGS?

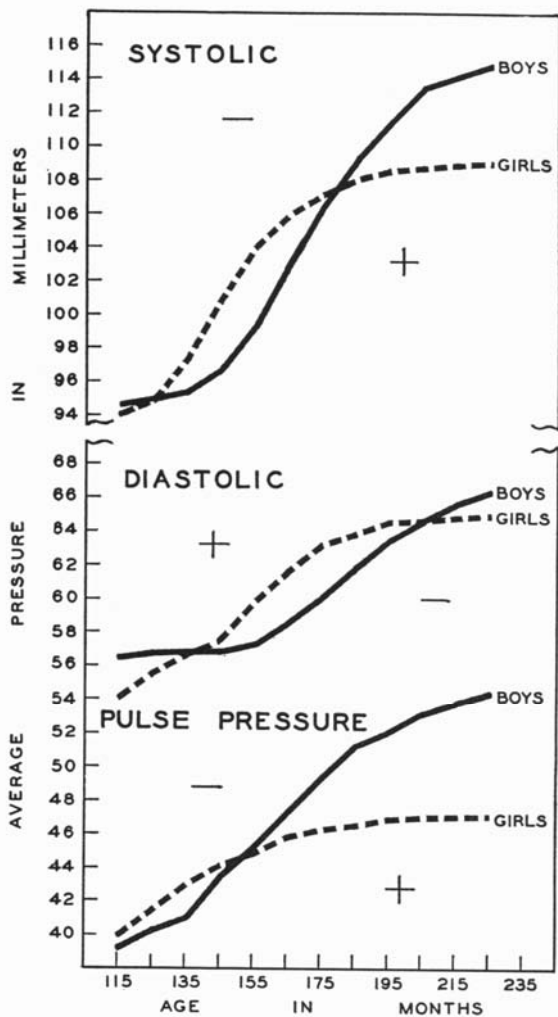
Your blood carries food and oxygen to all the cells of your body. It gets the food from your digestive system and the oxygen from your lungs. Your heart is the pump that keeps the blood flowing through your body.

Your heart is a muscle. In fact, it is the best muscle in your body. Like any other muscle, it grows big and strong from exercise, proper food, and sleep. Big strong hearts can pump more blood with each stroke than small hearts. Like a big motor, a big heart can do the same work at a slower speed than a small heart. Slow hearts rest longer between beats than fast hearts. At 70 beats a minute, the heart rests about one-half the time; and as the rate decreases, the rest period increases.

By the time you are grown your heart should be about twelve times as large as when you were born. But it cannot grow to that size unless you furnish it with nutritious blood by eating the right kinds of food and also give it plenty of exercise. A good exercise for the heart is long-distance running.

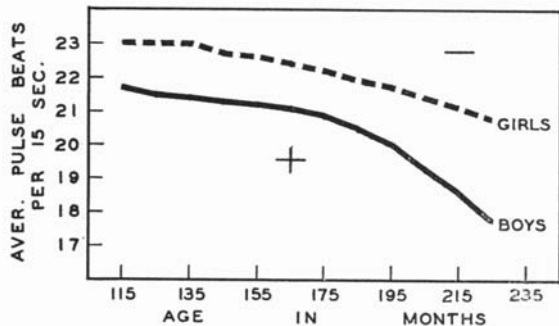
A normal heart is never hurt by the physical work it has to do; heart injuries, or lesions, are caused by infectious diseases and not by physical overwork in youth.

At the same time that you are exercising your heart you will be exercising your lungs. They will then be able to furnish the



**AVERAGE BLOOD PRESSURES.** Average systolic, diastolic, and pulse pressures for boys and girls from 9 years, 7 months to 19 years, 7 months are shown. See page 13 for an explanation of these blood pressures.

Plus and minus marks show that it is good to be slightly below average in systolic and pulse pressure, slightly above average in diastolic pressure.



**PULSE RATE.** Girls' pulse rates average somewhat higher than boys'. Both boys' and girls' pulses slow down as they grow older.

blood with all the oxygen it needs. If you don't exercise your heart and lungs, neither will develop properly. Your heart will remain small, and your lungs will not be as efficient as they should be. People whose heart and lungs have not developed properly are handicapped because they can't resist disease as well as they should.

### Tests for Your Heart and Lungs

Because efficient body organs are so important, doctors and other scientists have long sought ways to test organic fitness, particularly the fitness of the heart. Among the measures of heart efficiency that have been found are the pulse rate and blood pressures. These will be taken on the official check-up.

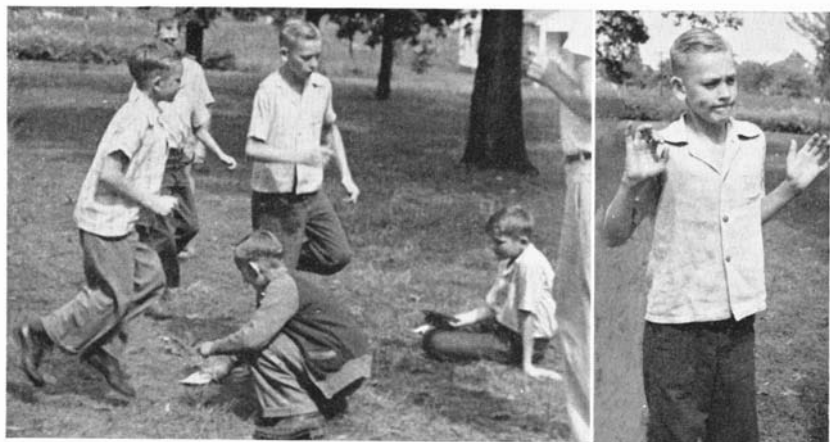
**Pulse rate.** The best-trained persons have lower pulse rates (or heart rates) than the untrained. As training goes up, the pulse rate goes down. The heart rate of one boy went down from 69 to 56 beats a minute during a four-year training period. The chart at the bottom of page 12 shows the average pulse rate for 15 seconds for the boys and girls we have tested.

**Blood pressures.** Systolic pressure is the blood pressure in the arteries at the time of the pulse beat, while diastolic pressure is that during the resting period between beats. If you have ever pumped water, you know that on the up-stroke of the pump the water pressure is higher than on the down-stroke. The systolic blood pressure resembles the up-stroke of the pump—the diastolic, the down-stroke. The difference between the systolic and the diastolic blood pressure is known as the pulse pressure.

In general, it is good to have a systolic pressure slightly lower than average, a diastolic pressure higher than average, and a pulse pressure below average. High systolic pressure, sharp increases in pressure during exercise, and slow return to normal after exercise indicate poor condition. Diastolic pressure generally varies less widely. It should stand at about two-thirds the level of the systolic.

Two tests that you can take yourself to measure the efficiency of your heart and lungs are the breath holding and hops tests. The 600-yard run (page 19) is also an excellent test of the condition of your heart and lungs.

**Breath holding.** If a muscle gets plenty of oxygen, it doesn't become tired easily. But muscles soon tire and begin to ache if inefficient lungs and blood cells don't furnish them with enough oxygen.



Run in place 1 minute

Then hold your breath

Exercise increases the need for oxygen. When the average person is resting, he uses about 250 cubic centimeters of oxygen every minute. This amount increases about 10 times with increasing exercise, and trained athletes use as much as 4,000 cubic centimeters a minute. Training, if continued, increases the chest capacity and the efficiency of the lungs and blood cells in gathering and carrying oxygen.

Holding your breath as long as you can will test the efficiency of your lungs and blood cells. As you keep training, you should be able to increase the length of time you can hold your breath.

For this test you need a partner to watch your feet. Your leader will count 1, 2, 1, 2, etc., at the rate of two counts each second, for 1 minute. During this time you are to run in place, taking a step at each count (the speed is very important), and lifting each foot 6 inches high. Your partner must tell you if you do not lift your feet at least 6 inches. Your leader will stop you at the end of 1 minute and tell you to take three deep breaths. As you inhale, raise your arms; as you exhale, lower them. On the third up movement, your leader orders "Hold it," and you hold your breath as long as you can while he counts off the seconds from his watch. When you can hold no longer, lower your arms — *but don't give up* too easily. Your partner will catch the count of your leader and record it as your score on page 22.

**Hops test.** Lie quietly for several minutes. Then count the pulse on your neck for 15 seconds. Count for several 15-second periods, or until the rate does not change. Record the last count on page 22.

Now hop at the rate of two hops a second for 15 seconds. Hop five

times on the left foot, then five times on the right foot, and keep changing from one foot to the other every five hops. Then run in place for 45 seconds, taking four steps a second. (Your leader will count steadily, going from 1 to 10 twice every 5 seconds.) Then lie down, grasp your neck, and get ready to count your pulse. Begin to count exactly 5 seconds after the end of the exercise. Count for 15 seconds, rest 15 seconds, count for 15 seconds, rest 15 seconds, and then count again. Have your partner time you, and write down each count. Then add these three counts to make your score. The lower the score, the better.

If your pulse rate at rest is low, if it increases but little when you exercise, and promptly returns to normal after exercise, your condition is likely to be good. But if your pulse rate is high when you are at rest, if it increases greatly when you exercise, and returns slowly to normal, your heart probably has not been trained to good condition. (The chart at the bottom of page 12 shows you about what your pulse rate should be.)

## HOW FIT ARE YOUR MUSCLES?

Some people think that muscular fitness means just strength. Strong muscles are very important, but for all-around muscular fitness you need to have balance, flexibility, agility, and endurance, as well as strength.

Flexibility means the ability to turn and stretch your body easily. Agility is quickness and accuracy of movement. If you are trained in flexibility and agility, your movements will be easy and graceful. Endurance takes both strong muscles and strong will power. It is the ability to "stick it out" when you are doing hard work and exercise.

Following are some tests of all-around muscular fitness. By repeating the tests over and over you can better your scores and improve the fitness of your muscles.

### Tests of Flexibility

Our bodies have more than 200 bones joined in over 250 places. Each of these points should be strong and flexible. If our flexibility is low, we are muscle-bound; if our strength is low, we are flimsily bound. Both of these things make us clumsy and awkward.

Begin each exercise period by warming up — by stretching, twisting, and bending. This will increase your flexibility, help you keep a good posture, and prepare your muscles for active movement.

**Trunk forward.** Flexibility in the trunk region seems more important to your general well-being than flexibility in other joints. "Trunk forward" is a good exercise for measuring your trunk flexibility.

Sit on a 2-inch block and extend your legs, keeping your heels just 18 inches apart. Put your hands behind your back (palms out) and



clasp one thumb with the other hand. Two partners hold your legs down by grasping them just above your knees. You bend slowly forward, trying to touch the floor between your legs with your forehead. Your leader holds a yardstick upright in his right hand and points his index finger at your eyebrows.

Thus, by sliding his hand down the yardstick, he will measure the distance between your forehead and the floor as you bend forward. Record your score in inches on page 22.

**Trunk backward.** Lie face downward and clasp your hands as for "Trunk forward." Your partner grasps your ankles and holds your feet down while you raise your head as high as you can. Again your leader will hold a yardstick upright in front of you. As you raise



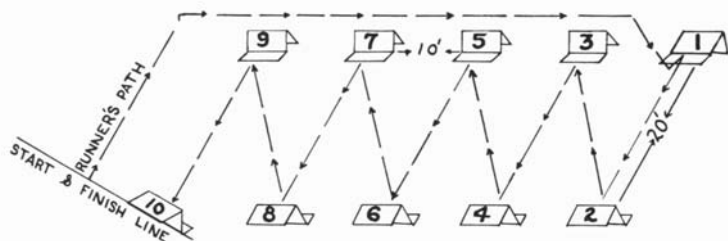


your head, he will slide his hand up the yardstick, sighting along his index finger toward the middle of your ear. He reads the mark, and your partner records it on page 22. On Fitness Field Day we do this test in a different and more accurate way.

### Tests of Agility

Each muscle is controlled by a motor nerve. And a part of the brain known as the motor brain directs the motor nerves, telling each muscle what to do. Differences in speed seem to be mainly differences in brain and nerve energy. When you make a slow, easy movement, you use only a few muscle fibers and only a small amount of energy from the motor brain and nerves. But a fast and powerful movement calls into play many muscle fibers. The brain and a large number of nerves have to work together. Unless we can learn to call forth the right amount of energy at exactly the right time, we remain clumsy and slow in our movements. We can develop ease and agility or quickness of movement only through continued practice.

**Agility run.** Lay out a running course according to the diagram below. Stake the bases to the ground.



Lie face down, with your head at the starting line. At the signal GO, run as fast as you can along the course marked by the dotted line and arrows. Touch each base (1 to 10) in consecutive order as you go. This is a test of your agility and your speed in changing directions. The picture shows you how to pivot.

Your leader will time you in seconds. Record the time on page 22.



**Sixty-yard run.** This is a test of speed on the straightaway. Measure off 60 yards on a smooth, level stretch. Have your leader time you in seconds as you run your very best. Write your time on page 22.

### Tests of Strength

If carrying a 20-pound basket makes your arm and shoulder muscles ache, your muscles are too weak. They are being strained to the limit, and all the muscle cells must tighten at once. They remain tense and all the blood is squeezed out. Soon the starved cells begin to ache.

If, however, you strengthen your muscles so that you can carry 40 pounds, then when you have to carry 20 pounds your muscles will not tire. The load will shift back and forth from one half of the muscle cells to the other half. That way, half the muscle cells can rest while the other half are working.

By exercise, work, and play, you can build up your muscles until they are so strong that you need only half of them to do your normal work while the other half rest. This means that you must train at a higher rate of activity than your daily work requires.

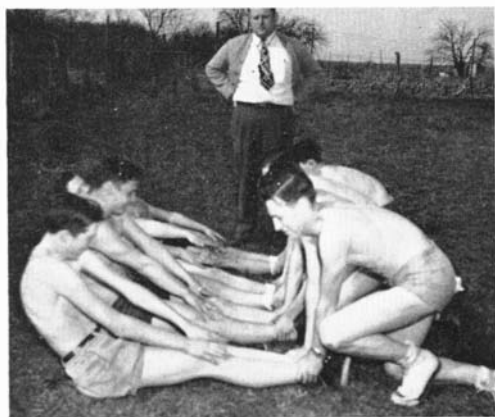
When you first start training hard, your muscles will probably ache and you will feel bad. If this happens, most people will tell you to rest. But when you rest your fitness level goes down. If you tire easily, you need more, not less exercise. Muscles never get bigger and stronger by being rested. They only grow by being worked.

**Arm pull.** This is a test of arm and shoulder strength. You pull against a spring scale. Since you will not have this machine at your local club, you may use the chins test instead and keep a record of the number of times you can chin yourself.

**Chins.** Put a horizontal bar high enough to keep your feet from touching the ground when you are hanging by your hands. Pull yourself up until your chin touches the bar. Then let yourself down to full arm's length. Repeat as many times as you can. Go all the way up and all the way down, and do not stop to rest. Count one chin for each time you touch your chin to the bar.

**Sit-ups.** This exercise tests the endurance and strength of your abdominal, back, and leg muscles. Lie on your back and put your

hands, palms down, on top of your thighs. Have your partner grasp your ankles and hold your legs down while you sit up. As you pull yourself up, slide your hands down your legs until you touch your



ankles. (If you can't quite reach your ankles, have your partner grasp your legs as close to the ankles as you are able to reach. Then touch his hands on each sit-up.)

Do as many sit-ups as you can in  $2\frac{1}{2}$  minutes. Do not stop to rest. Have your partner keep count. Record your score on your fitness achievement record, page 22.

**Broad jump.** This is a test of leg strength. Stand toeing a mark and jump as far as you can. You must not fall backward. Measure the distance to your heel mark. Record the score in inches on page 22.

### Tests of Endurance

Of all the qualities that go to make up motor fitness, endurance is by far the most important, because training for endurance also means training your heart and lungs. Endurance is the ability to complete a difficult and sometimes disagreeable task, even though you may want to quit. The will to endure starts in your brain, and your muscles complete the task at the brain's command.

To develop endurance, you need to regularly tax your muscles, heart, lungs, and brain to their maximum performance level. Of course they must be supported too by proper food and proper sleep. And you should have frequent examinations by the doctor to insure that you have no body defects.

**600-yard run.** Being able to run a long distance in a short time shows that your muscles are hard and strong, your heart is sound, and your lungs efficient. For these reasons there is no better conditioning



On your mark!



The finish

exercise than long-distance running. Every young person should do a lot of it and continue it even after he or she has grown up. Some boys and girls can run 600 yards under 2 minutes; most will finish under 3 minutes; and all should finish in less than 3.5 minutes. Write your time on page 22.

When you practice for the 600-yard run, start with slow runs, or alternate running and walking. Then gradually increase the length of your run and at the same time try running a little faster. In that way you will build up your endurance. Walking is not fast enough and sprinting does not last long enough to improve endurance.

**Drop-off.** The drop-off score is a test of your endurance. You figure it from the 600-yard and 60-yard scores. First, multiply the time you made on the 60-yard run by 10. Subtract this product from the time you made on the 600-yard run. This is the drop-off score. Record it on page 22.

## HOW DO YOUR SCORES COMPARE WITH OTHERS?

Having completed all the tests of organic and muscular fitness, you will want to know how your scores compare with those made by other boys and girls. The standard score tables on pages 24 to 31 will help you to find this out. There is a table for every test of muscular fitness and also for the breath-holding test.

To use a table, first find your score in the left-hand column. Then follow across that row until you reach the column for your age. Here you will find your standard score. If you write your

standard score for each test on page 22, then average the figures, you will find your fitness score at the time you were tested.

The advantage of the standard scores is that they can be compared even when they are for different tests or when they are for people of different ages or for yourself at different ages. A standard score of 50 is the average for the Illinois boys or girls that have been tested. The higher your standard score, the better.

The fitness level of boys generally rises rapidly between 13 and 16 years of age; then it should continue to rise at a slower rate until the age of 25. Often, however, this does not happen; in fact, for many the level begins to fall at about 20 years, and that is not good.

Girls should show the greatest increase in fitness between the ages of 11 and 14, and their fitness level should keep rising until they are 23. Many Illinois girls, however, reach their highest fitness level shortly after they are 12 years old, and by the time they are 18 they have fallen back until their scores are no better than those of the 10-year-olds.

This means that Illinois young people, particularly girls, are growing up with less pep and strength than they should have. We often think that farm boys and girls are hardy and fit because they live in the country, but the tests show that this often is not true.

## HOW MUCH CAN YOU IMPROVE YOUR SCORES?

After you know your standard scores on the different tests, you can plan a training program to improve your weak points. Most of the tests described so far can be used as part of the 4-H club program. You can also practice the exercises by yourself or with a partner. Each time you take a test you can compare your new score with your last score. That way you can find out how much progress you are making.

The two circulars, *Fitness Is Fun* and *Tumbling Is Fun*, contain stunts, games, and conditioning exercises that can become an important part of your training program. They suggest games for club meetings, exercises and contests for you and your friends, and stunts and tumbling acts for programs.

## MY FITNESS ACHIEVEMENT RECORD

These tests are numbered the same as on your Keeping Fit Score Card. However, Tests 2, 6, 7, 8, and 9 on the score card are omitted from this record, and there are two tests in this record that are not on the score card. These two tests are marked with a star.

Repeat the tests four times during the year: columns are provided for two years. Refer to the tables on pages 24 to 31 to find the standard scores.

Date of test (month, day, year).....	_____		_____		_____	
Age in months today.....	_____		_____		_____	
1. Actual weight.....	_____		_____		_____	
3. Standing height, inches.....	_____		_____		_____	
* Normal weight (p. 6).....	_____		_____		_____	
4. Percent actual weight is of normal weight.....	_____		_____		_____	
5. Actual body type.....	_____		_____		_____	
10. Predicted weight.....	_____		_____		_____	
11. Predicted body type.....	_____		_____		_____	
2. Systolic pressure.....	_____		_____		_____	
3. Diastolic pressure.....	_____		_____		_____	
4. Pulse pressure (12 minus 13).....	_____		_____		_____	
5. Pulse rate (15 sec.).....	_____		_____		_____	
6. Muscle firmness.....	_____		_____		_____	
	My score	Standard	My score	Standard	My score	Standard
7. Trunk forward, inches.....	_____		_____		_____	
8. Trunk backward, inches.....	_____		_____		_____	
9. Arm pull, pounds.....	_____		_____		_____	
* Chins, times <sup>1</sup> .....	xxx		xxx		xxx	
10. Broad jump, inches.....	_____		_____		_____	
1. Agility run, seconds <sup>2</sup> .....	_____		_____		_____	
2. Breath holding, seconds <sup>2</sup> .....	_____		_____		_____	
3. 600-yd. run, seconds <sup>2</sup> .....	_____		_____		_____	
4. 60-yd. run, seconds <sup>2</sup> .....	_____		_____		_____	
5. Drop-off (600-yd. score) - (10×60-yd. score)	_____		_____		_____	
6. Sit-ups, times.....	_____		_____		_____	
7. Hops test	_____		_____		_____	
(a) Pulse before hops.....	_____		_____		_____	
(b) Pulse starting 5 seconds after hops	_____		_____		_____	
(c) Pulse starting 35 seconds after hops	_____		_____		_____	
(d) Pulse starting 65 seconds after hops	_____		_____		_____	
(e) Sum of all 3 pulse rates after hops	_____		_____		_____	

<sup>1</sup> No standard scores are available.

<sup>2</sup> On official tests these are recorded in hundredths of a minute.



## STANDARD SCORE TABLES

## BOYS AND GIRLS, TRUNK FORWARD: Standard Scores (All Ages)

Score in inches	Standard score		Score in inches	Standard score		Score in inches	Standard score	
	Boys	Girls		Boys	Girls		Boys	Girls
0.....	..	99	9.....	60	57	18.....	16	12
1.....	98	96	10.....	55	52	19.....	11	7
2.....	94	91	11.....	50	47	20.....	6	2
3.....	89	86	12.....	45	42	21.....	1	..
4.....	84	81	13.....	40	37	Average score in inches:		
5.....	80	76	14.....	35	32	Boys—11.00		
6.....	74	72	15.....	30	27	Girls—10.35		
7.....	69	67	16.....	26	22			
8.....	64	62	17.....	21	17			

## BOYS AND GIRLS, TRUNK BACKWARD: Standard Scores (All Ages)

Score in inches	Standard score		Score in inches	Standard score		Score in inches	Standard score	
	Boys	Girls		Boys	Girls		Boys	Girls
25.....	..	97	16.....	67	59	7.....	20	22
24.....	..	93	15.....	62	55	6.....	14	18
23.....	..	88	14.....	56	51	5.....	9	13
22.....	98	84	13.....	51	47	4.....	4	9
21.....	93	80	12.....	46	43	3.....	..	5
20.....	88	76	11.....	40	38	Average score in inches:		
19.....	83	72	10.....	35	34	Boys—12.74		
18.....	77	68	9.....	30	30	Girls—13.76		
17.....	72	64	8.....	25	26			

## BOYS AND GIRLS, BREATH HOLDING: Standard Scores (All Ages)

Time Sec. or Min.	Standard score		Time Sec. or Min.	Standard score		Time Sec. or Min.	Standard score	
	Boys	Girls		Boys	Girls		Boys	Girls
54 .90	99	..	30 .50	72	76	6 .10	15	21
51 .85	97	99	27 .45	68	72	3 .05	1	6
48 .80	94	96	24 .40	63	67	Average time:		
45 .75	91	93	21 .35	57	61	Boys—.290 minutes		
42 .70	88	90	18 .30	50	55	Girls—.259 minutes		
39 .65	84	87	15 .25	43	49			
36 .60	80	84	12 .20	36	41			
33 .55	76	80	9 .15	26	32			



## BOYS, ARM PULL: Standard Scores

	Age in months									
	120- 129	130- 139	140- 149	150- 159	160- 169	170- 179	180- 189	190- 199	200- 209	210- 219
<b>Pounds pulled</b>	<b>Standard score</b>									
300.....	..	..	..	..	..	..	..	..	..	99
290.....	..	..	..	..	..	..	..	..	..	95
280.....	..	..	..	..	..	..	..	..	..	99
270.....	..	..	..	..	..	..	99	99	93	85
260.....	..	..	..	..	..	..	95	94	88	80
250.....	..	..	..	..	..	..	90	88	82	75
240.....	..	..	..	..	..	99	85	82	76	70
230.....	..	..	..	..	..	93	80	76	71	65
220.....	..	..	..	..	99	87	74	71	65	60
210.....	..	..	..	..	94	81	69	65	60	55
200.....	..	..	..	97	88	75	64	59	54	50
190.....	..	99	99	90	81	69	59	54	48	45
180.....	99	92	91	82	74	63	54	48	43	40
170.....	92	84	83	75	67	57	49	42	37	35
160.....	84	77	75	68	60	51	44	37	32	30
150.....	76	69	67	60	54	45	39	31	26	25
140.....	68	62	58	53	47	39	34	25	20	20
130.....	60	54	50	46	40	33	29	20	15	15
120.....	52	46	42	38	33	27	24	14	9	10
110.....	44	39	34	31	26	21	19	8	4	5
100.....	36	31	26	24	20	15	14	2	..	..
90.....	28	24	18	16	13	9	9	..	..	..
80.....	20	16	10	9	6	4	4	..	..	..
70.....	12	8	2	2	..	..	..	..	..	..
60.....	4	1	..	..	..	..	..	..	..	..
Average in pounds . . .	117.3	124.6	129.4	135.9	144.6	157.8	171.4	183.5	192.8	199.6

## GIRLS, ARM PULL: Standard Scores

	Age in months									
	120- 129	130- 139	140- 149	150- 159	160- 169	170- 179	180- 189	190- 199	200- 209	210- 219
<b>Pounds pulled</b>	<b>Standard score</b>									
210.....	..	..	..	..	..	..	99	99	99	..
200.....	..	..	..	99	99	99	93	92	93	99
190.....	..	..	..	94	94	92	85	85	86	94
180.....	..	..	99	88	87	85	77	79	80	86
170.....	..	96	94	81	80	77	70	72	73	77
160.....	99	89	87	75	73	70	62	65	66	69
150.....	92	82	79	68	66	63	54	59	59	61
140.....	84	75	71	62	59	55	46	52	52	52
130.....	76	68	64	56	52	48	39	46	45	44
120.....	68	61	56	49	45	40	31	39	38	35
110.....	60	54	48	43	38	33	23	32	31	27
100.....	52	47	41	37	31	26	15	25	24	18
90.....	44	40	33	30	24	18	8	19	17	10
80.....	36	33	25	24	17	11	1	12	10	2
70.....	27	26	18	18	10	4	..	6	3	..
60.....	19	19	10	11	3	..	..	..	..	..
50.....	11	12	2	5	..	..	..	..	..	..
40.....	3	5	..	..	..	..	..	..	..	..
Average in pounds . . .	97.7	104.2	112.1	120.8	127.1	132.8	135.4	136.7	137.4	137.7

## BOYS, BROAD JUMP: Standard Scores

Inches	Age in months											
	120- 129	130- 139	140- 149	150- 159	160- 169	170- 179	180- 189	190- 199	200- 209	210- 219	220- 229	230- 239
112.....	..	..	..	..	..	..	..	..	..	96	..	99
108.....	..	..	..	..	..	..	..	98	95	89	95	91
104.....	..	..	..	..	..	..	97	91	88	83	88	84
100.....	..	..	..	..	..	98	90	85	82	76	80	76
96.....	..	..	..	..	..	91	83	78	75	70	72	69
92.....	..	..	..	..	94	84	77	72	68	63	64	62
88.....	..	..	..	97	87	77	70	65	61	57	56	54
84.....	..	..	99	89	80	71	64	58	54	51	48	47
80.....	..	99	92	82	73	64	57	52	47	44	40	39
76.....	99	91	84	74	66	57	51	45	40	38	33	32
72.....	90	82	75	66	59	50	44	38	33	31	25	25
68.....	81	73	67	59	52	44	38	32	26	25	17	17
64.....	71	64	58	51	44	37	31	25	20	18	9	10
60.....	62	55	50	44	37	30	24	18	13	12	1	2
56.....	53	46	41	36	30	23	18	12	6	6	..	..
52.....	44	37	33	29	23	16	11	5	..	..	..	..
48.....	34	28	24	21	16	10	5	..	..	..	..	..
44.....	25	19	16	13	9	3	..	..	..	..	..	..
40.....	16	10	8	6	2	..	..	..	..	..	..	..
36.....	6	1	..	..	..	..	..	..	..	..	..	..
Average in inches	54.8	57.8	60.1	63.3	67.1	71.8	75.6	79.0	81.6	83.6	84.8	85.7

## GIRLS, BROAD JUMP: Standard Scores

Inches	Age in months									
	120- 129	130- 139	140- 149	150- 159	160- 169	170- 179	180- 189	190- 199	200- 209	210- 219
88.....	..	..	..	..	..	..	99	97	97	97
84.....	..	..	..	99	97	95	94	89	90	90
80.....	..	..	99	93	89	88	86	82	82	82
76.....	..	95	90	85	82	80	78	75	74	74
72.....	98	87	82	77	74	72	70	68	67	66
68.....	88	78	74	69	66	64	62	60	59	58
64.....	79	70	65	61	58	56	55	53	52	50
60.....	69	61	57	54	51	49	47	46	44	43
56.....	60	53	48	45	43	41	39	38	36	35
52.....	50	44	40	38	35	33	31	31	29	27
48.....	40	36	32	30	28	25	24	24	21	19
44.....	31	27	23	22	20	17	16	16	14	12
40.....	21	19	15	14	12	10	8	9	6	4
36.....	12	10	7	6	4	2	..	2	..	..
32.....	2	2	..	..	..	..	..	..	..	..
Average in inches	52.0	54.7	56.7	58.2	59.6	60.7	61.6	62.4	63.1	63.7

**BOYS, AGILITY RUN: Standard Scores**

		Age in months											
		120-	130-	140-	150-	160-	170-	180-	190-	200-	210-	220-	230-
		129	139	149	159	169	179	189	199	209	219	229	239
Time		Standard score											
Sec. or Min.													
17	.28	..	..	..	..	..	..	99	99	95	98	97	98
18	.30	..	..	..	..	..	98	94	93	87	89	88	88
19	.32	..	..	99	96	95	90	86	84	79	80	79	79
20	.34	99	95	92	88	86	81	78	76	71	71	70	69
22	.36	91	87	84	80	78	73	70	67	64	63	60	60
23	.38	84	80	76	72	69	65	61	59	56	54	52	50
24	.40	76	72	68	64	61	57	53	50	48	45	43	40
25	.42	69	64	61	56	52	48	45	42	40	36	34	31
26	.44	61	57	53	48	44	40	37	33	32	28	25	21
28	.46	54	49	45	40	35	32	29	25	24	19	16	12
29	.48	46	42	37	32	27	24	20	16	16	10	6	2
30	.50	39	34	29	24	19	15	12	8	8	1	..	..
31	.52	31	26	21	16	10	7	4	1	1	..	..	..
32	.54	24	19	13	9	2	..	..	..	..	..	..	..
34	.56	16	11	5	1	..	..	..	..	..	..	..	..
35	.58	9	3	..	..	..	..	..	..	..	..	..	..
36	.60	1	..	..	..	..	..	..	..	..	..	..	..
Average in minutes.....		.470	.458	.447	.436	.426	.416	.408	.401	.394	.389	.384	.380

**GIRLS, AGILITY RUN: Standard Scores**

		Age in months									
		120-	130-	140-	150-	160-	170-	180-	190-	200-	210-
		129	139	149	159	169	179	189	199	209	219
Time		Standard score									
Sec. or Min.											
18	.30	..	..	..	..	..	..	..	..	..	99
19	.32	..	..	..	..	..	..	..	99	99	94
20	.34	..	..	..	..	99	98	96	92	92	87
22	.36	..	96	98	96	92	90	89	85	85	81
23	.38	95	89	90	88	84	82	82	78	77	74
24	.40	88	81	82	80	77	75	74	71	70	68
25	.42	80	74	74	72	69	67	67	64	63	61
26	.44	72	66	66	64	61	60	60	58	55	54
28	.46	64	59	59	56	54	52	52	51	48	48
29	.48	56	51	51	48	46	44	45	44	41	41
30	.50	48	44	43	40	38	37	38	37	34	34
31	.52	41	36	35	33	31	29	31	30	26	28
32	.54	33	29	27	25	23	21	23	23	19	21
34	.56	25	21	19	17	16	14	16	16	12	14
35	.58	17	14	12	9	8	6	9	9	4	8
36	.60	9	6	4	1	..	..	1	2	..	1
37	.62	1	..	..	..	..	..	..	..	..	..
Average in minutes.....		.496	.483	.482	.476	.470	.465	.467	.458	.455	.453

## BOYS, 600 YARDS: Standard Scores

		Age in months									
		120-	130-	140-	150-	160-	170-	180-	190-	200-	210-
		129	139	149	159	169	179	189	199	209	219
Time		Standard score									
Sec. or Min.											
84	1.40	..	..	..	..	..	..	..	99	96	96
90	1.50	..	..	..	..	..	98	94	90	86	84
96	1.60	..	..	..	..	98	88	84	79	76	74
102	1.70	..	..	..	97	89	79	75	69	67	64
108	1.80	99	98	95	88	80	71	66	59	58	55
114	1.90	93	90	86	80	72	64	58	49	50	46
120	2.00	85	82	78	72	64	57	50	40	42	38
126	2.10	78	75	70	64	56	50	43	32	34	30
132	2.20	71	68	62	56	49	43	36	24	27	22
138	2.30	64	61	55	49	42	37	29	16	20	15
144	2.40	57	55	48	42	35	31	22	9	14	8
150	2.50	51	49	41	35	29	25	16	2	8	2
156	2.60	45	43	35	28	23	19	10	..	2	..
162	2.70	39	37	29	22	17	14	5	..	..	..
168	2.80	33	31	23	16	11	9	..	..	..	..
174	2.90	28	26	17	11	6	4	..	..	..	..
180	3.00	23	21	11	6	1	..	..	..	..	..
186	3.10	18	16	6	1	..	..	..	..	..	..
192	3.20	14	12	1	..	..	..	..	..	..	..
198	3.30	9	8	..	..	..	..	..	..	..	..
204	3.40	5	3	..	..	..	..	..	..	..	..
Average in minutes....		2.54	2.49	2.39	2.31	2.21	2.11	2.03	1.96	1.91	1.88

## BOYS, 60 YARDS: Standard Scores

		Age in months											
		120-	130-	140-	150-	160-	170-	180-	190-	200-	210-	220-	230-
		129	139	149	159	169	179	189	199	209	219	229	239
Time		Standard score											
Sec. or Min.													
5	.09	..	..	..	..	..	..	..	99	..	..	98	..
6	.10	..	..	..	..	..	..	99	99	94	98	99	86
7	.11	..	..	..	..	99	97	91	89	82	84	93	75
7	.12	..	99	99	95	89	85	79	76	70	70	73	63
8	.13	97	93	89	84	78	73	68	63	57	56	54	51
8	.14	87	82	78	73	67	61	56	50	45	41	34	39
9	.15	77	72	67	61	56	49	44	37	33	27	15	28
10	.16	66	61	56	50	44	37	32	24	20	13	1	16
10	.17	56	50	44	39	33	25	21	11	8	1	..	4
11	.18	46	39	33	27	22	13	9	..	..	..	..	..
11	.19	36	28	22	16	11	1	..	..	..	..	..	..
12	.20	25	18	11	5	1	..	..	..	..	..	..	..
13	.21	15	7	1	..	..	..	..	..	..	..	..	..
13	.22	5	..	..	..	..	..	..	..	..	..	..	..
Average in minutes.....		.176	.170	.165	.160	.155	.149	.145	.140	.136	.134	.132	.131

(Girls' standard scores for the 600-yard run and 60-yard are on page 29.)

**GIRLS, 600 YARDS: Standard Scores**

		Age in months									
		120-	130-	140-	150-	160-	170-	180-	190-	200-	210-
		129	139	149	159	169	179	189	199	209	219
Time		Standard score									
Sec. or Min.											
102	1.70	..	..	..	..	..	97	99	..	..	..
108	1.80	..	..	..	100	95	91	93	96	97	..
114	1.90	..	95	98	94	88	85	87	89	90	92
120	2.00	93	89	91	87	82	79	81	83	83	85
126	2.10	87	83	85	81	76	74	75	77	77	78
132	2.20	81	77	79	75	71	69	70	72	71	72
138	2.30	76	72	73	69	66	64	65	66	65	66
144	2.40	70	67	67	63	61	59	60	61	59	60
150	2.50	65	62	62	58	56	55	55	56	54	54
156	2.60	60	57	57	53	51	51	51	52	49	49
162	2.70	55	53	52	48	47	47	47	47	44	44
168	2.80	50	49	47	43	43	43	43	42	39	39
174	2.90	44	45	42	39	38	39	39	38	34	34
180	3.00	41	41	38	34	34	35	35	34	30	29
186	3.10	37	36	33	29	30	31	31	30	26	25
192	3.20	32	32	29	25	26	28	27	26	22	21
198	3.30	27	28	25	21	22	25	23	23	18	17
204	3.40	24	25	21	17	19	22	20	19	14	13
210	3.50	21	21	17	13	16	19	17	16	10	9
216	3.60	18	18	14	9	13	16	14	13	7	5
222	3.70	14	14	11	6	10	10	11	10	4	1
228	3.80	11	11	8	3	7	7	8	7	1	..
234	3.90	8	5	4	..	3	4	4	3	..	..
240	4.00	4	2	..	..	..	1	1	..	..	..
Average in minutes.....		2.83	2.79	2.74	2.67	2.64	2.65	2.65	2.65	2.60	2.62

**GIRLS, 60 YARDS: Standard Scores**

		Age in months									
		120-	130-	140-	150-	160-	170-	180-	190-	200-	210-
		129	139	149	159	169	179	189	199	209	219
Time		Standard score									
Sec. or Min.											
7	.11	..	..	..	..	..	..	99	..	99	99
7	.12	..	..	99	99	99	99	92	96	93	90
8	.13	99	99	92	94	88	89	83	86	83	81
8	.14	94	89	82	83	78	78	73	75	73	72
9	.15	84	79	72	73	68	67	63	65	63	62
10	.16	74	69	63	62	57	56	54	54	53	53
10	.17	63	58	53	52	47	46	44	44	43	43
11	.18	53	48	43	42	36	35	34	33	33	34
11	.19	43	38	33	31	26	24	25	23	23	24
12	.20	32	27	24	21	16	13	15	12	12	15
13	.21	22	17	14	10	5	3	6	1	2	6
13	.22	12	6	4	1	..	..	..	..	..	..
14	.23	1	..	..	..	..	..	..	..	..	..
Average in minutes.....		.183	.178	.173	.172	.167	.166	.164	.164	.163	.163

**BOYS, DROP-OFF: Standard Scores**

	Age in months									
	120- 129	130- 139	140- 149	150- 159	160- 169	170- 179	180- 189	190- 199	200- 209	210- 219
	Base score					Standard score				
1.....	..	..	..	..	..	..	99	95	98	91
2.....	97	99	98	97	95	92	87	82	85	79
3.....	87	87	87	85	82	80	75	71	73	68
4.....	78	78	77	75	71	68	65	61	61	58
5.....	70	69	67	65	62	58	55	52	50	49
6.....	62	61	59	56	53	49	47	44	41	41
7.....	55	54	52	48	45	40	39	36	33	33
8.....	49	47	45	41	37	32	32	29	25	26
9.....	43	41	38	34	29	25	25	23	17	19
10.....	37	35	32	28	22	18	19	17	11	13
11.....	32	29	26	22	16	11	13	11	5	7
12.....	27	24	20	16	10	5	7	6	..	1
13.....	22	19	15	10	5	..	1	..	..	..
14.....	17	14	10	5	..	..	..	..	..	..
15.....	13	10	5	1	..	..	..	..	..	..
16.....	9	6	1	..	..	..	..	..	..	..
17.....	5	2	..	..	..	..	..	..	..	..
18.....	1	..	..	..	..	..	..	..	..	..
Average base score.....	7.8	7.6	7.2	6.8	6.3	5.9	5.6	5.3	5.1	4.9

**GIRLS, DROP-OFF: Standard Scores (All Ages)**

Base score	Standard score	Base score	Standard score	Base score	Standard score
1.....	99	13.....	38	25.....	7
2.....	93	14.....	35	26.....	5
3.....	86	15.....	32	27.....	3
4.....	79	16.....	29	28.....	1
5.....	73	17.....	26		
6.....	68	18.....	23		
7.....	63	19.....	20		
8.....	58	20.....	18		
9.....	54	21.....	15		
10.....	50	22.....	13		
11.....	46	23.....	11		
12.....	42	24.....	9		
				Average base score: 9.86	

**BOYS, SIT-UPS: Standard Scores**

	Age in months									
	120- 129	130- 139	140- 149	150- 159	160- 169	170- 179	180- 189	190- 199	200- 209	210- 219
Number of sit-ups	Standard score									
100.....	..	..	..	..	..	..	..	..	98	..
95.....	..	..	..	..	..	..	..	..	95	98
90.....	..	..	..	..	..	..	96	..	91	94
85.....	..	..	..	99	97	98	93	99	87	90
80.....	..	97	96	95	93	94	89	94	83	86
75.....	97	93	92	91	89	90	85	89	79	82
70.....	93	89	88	87	85	86	81	84	75	77
65.....	89	85	84	83	81	81	77	79	71	72
60.....	85	81	80	79	77	76	72	74	67	67
55.....	80	77	76	74	72	71	67	68	63	62
50.....	75	73	72	69	67	66	62	62	58	57
45.....	70	68	67	64	62	61	57	56	53	52
40.....	65	63	62	59	57	55	51	50	48	46
35.....	60	58	57	54	52	49	46	44	43	40
30.....	54	53	51	48	47	43	40	39	38	34
25.....	48	48	46	42	41	36	34	33	32	28
20.....	42	42	40	36	35	29	28	27	26	21
15.....	36	36	34	30	28	22	21	21	20	14
10.....	29	29	28	24	21	15	14	14	13	7
5.....	22	22	21	17	14	7	6	7	6	..
0.....	14	15	13	9	6	..	..	..	..	..
Average number of sit-ups.....	26.4	27.9	28.8	31.8	33.8	36.4	38.9	40.8	42.4	43.5

**GIRLS, SIT-UPS: Standard Scores (All Ages)**

Number of sit-ups	Standard score	Number of sit-ups	Standard score	Number of sit-ups	Standard score
65.....	100	35.....	66	5.....	24
60.....	95	30.....	60	0.....	15
55.....	90	25.....	54		
50.....	84	20.....	47		
45.....	78	15.....	40		
40.....	72	10.....	32		
				Average number of sit-ups:	22.2

## A NATIONAL NEED

PHYSICAL FITNESS is one of the most important assets that an individual or a nation can have. Yet as a nation we are not so physically fit as we imagine. We no longer have to do the vigorous outdoor work which our forefathers did. The automobile and modern labor-saving machines have cut down our muscular activities. As a result we have lost in strength and endurance and in vitality.

If we expect America to keep her position of world leadership, we must have a high degree of fitness. Total fitness means not just physical fitness, but also mental and emotional fitness. Physical activities, however, are very closely related to mental activities. As we build up physical fitness, we will make it easier to develop total fitness.

It is particularly important that the young people of America maintain their vitality. Conditioning exercises, running, athletics, and certain types of informal games will develop the strength, endurance, agility, and coordination which are all part of total fitness.

THEODORE P. BANK, *Chairman*  
*Illinois State Committee on*  
*Physical Fitness*