

Table 1. Calorie values for different activities

type of activity:	Calories per hour
Sleeping	60
Sedentary activities, such as: reading; writing; eating; watching television or movies; listening to the radio; sewing; playing cards; typing; record keeping; and other activities done while sitting that require little or no arm movement.	80 to 100
Light activities, such as: preparing and cooking food; personal care; doing dishes; dusting; hand washing small articles of clothing; walking slowly; driving tractor or light cultivation; driving tractor along road; driving pickup.	110 to 160
Moderate activities, such as: making beds; mopping and scrubbing; sweeping; light polishing and waxing; laundering by machine; light gardening and carpentry work; walking moderately fast; plowing with tractor; milking cows (varies with layout and equipment); driving tractor using front-end loader.	170 to 240
Vigorous activities, such as: heavy scrubbing and waxing; hand washing large articles of clothing; hanging out clothes; stripping beds; walking fast; walking through crusted snow; pushing 300 lbs. in wheelbarrow; carrying 50 lbs. on shoulder upstairs; shoveling shelled corn 15 shovels per minute, 16 lbs. a load.	250 to 350

Table 2. Sample chart of one day's calorie output.

Activity	Hours	Cal/hour	Total
Sleeping	7	60	420
Dressing, personal care	1/2	160	80
Milking cows	2	240	480
Eating	1/2	100	50
Driving pickup	1	160	160
Light cultivation	2	160	320
Eating	3/4	100	75
Repairing fence	3	240	720
Hauling hay	1	160	160
Milking cows	2	240	480
Eating	1	100	100
Checking farmstead	1	100	100
Record keeping	3/4	100	75
Watching TV	1	100	100
Showering	1/2	160	80
24 hours			3400 Calories

extra pounds over months, or maybe years, by eating a bit more than your body needed. Eating an extra hundred calories-just 10 potato chips-each day means gaining one pound in slightly more than a month.

Likewise, a 10-minute moderately fast walk for a moderately heavy person could mean 250 calories spent in a week or about four pounds lost in a year. That's a good return considering an investment of only 10 minutes a day.

Start increasing your activity in little ways. Here are some ideas:

- Answer the phone farthest away.
- Use farthest bathroom.
- Hang clothes outside instead of using the dryer.
- Stand instead of sit. Sit instead of lying down whenever possible.
- Walk to children's rooms to talk to them instead of raising your voice to be heard.
- Take articles upstairs making several trips throughout the day rather than piling things on the steps for a later trip.

But Use Good Judgment

When doing heavy work, there are several factors that will reduce the risk of over-exertion and possible accident and heart wear:

Rate of work-if you double your speed on some jobs, you'll use two or three times more energy per minute. On the other hand, you may be able to do a job that would ordinarily be too hard simply by doing it at a slower pace.

Distribution of work

load-peak load for short periods may call for more energy than you can afford at one time. Don't try to do a two-farmer job.

Weather-you can't do as much work safely on a hot, humid day as on a cool one, The heart has to work extra hard supplying the muscles with blood plus blood to the skin to keep the body cool.

Weight-keep your weight normal. Additional weight overworks the heart and leads to premature exhaustion and potential accidents.

Age-must be kept in mind. An older person can't work as hard as when younger. Generally speaking, at 50, your capacity, assuming good health, will be about 70 percent of what it was at 25; at 70 it will be about 50 percent. Farmers must learn to live with their physical capacity at their current age.

The Best Activity For You

Recreational activities can be of value in promoting good physical health Dr. Wally Hutchison, an exercise physiologist at Iowa State University, gives the following advice when undertaking a physical activity program. Before beginning an exercise program you should have a careful physical examination including a graduated stress test. This is especially important if you are over 35 or have not been active.

Also, a graduated build up in any exercise program is advised, Most people exercise too hard too soon. They become discouraged and quit. If you progress too rapidly, you increase the chance for muscle or bone damage.

Exercise sessions should last from 20 to 30 minutes. You should try to exercise five times per week but at least three times each week.

A dynamic, or cardiovascular, type exercise program has the most effective conditioning effect on the heart.

This exercise causes the heart rate to be pushed to two-thirds its maximum capacity and maintained for 20 to 30 minutes.

The following are popular activities that can provide a conditioning effect to the heart and promote good physical health.

Walking-Six calories/minute

- Good, all-around exercise. Maintains heart endurance and muscle tone. Promotes weight control. Good for beginning exercise.

- Brisk pace needed for conditioning effect. Must walk for longer period to gain same effect as from other exercises.

Swimming-10 calories/minute

- Excellent conditioner. Especially good for people over 50. Promotes weight control. Exercises many different muscles.

- Availability of pools may be limited. Persons with heart problems need doctor's permission.

Tennis-Eight calories/minute

- Good all-around physical activity. Strengthens arms and legs. Improves coordination and balance. Promotes weight control.

- Must move continually to have conditioning effect. Need to participate regularly. Singles preferred to doubles.

Jogging-12 calories/minute

- Very good conditioner. Builds heart and lung capacity. Improves leg strength and body shape. Promotes weight control.

- Hard on muscles and joints. Preconditioning necessary. Tendency to overdo. Special shoes required.

Skiing-10 calories/minute

- (Cross country) One of the best conditioning exercises. Strengthens legs and arms. Builds endurance and promotes weight control.

- Preconditioning important. Better for those under 40. Exposure to the cold may be hazardous.

Bicycling-10 calories/minute

- Excellent for circulation. Strengthens leg and thigh muscles. Promotes body shape.

- Should pedal continually for conditioning effect. Pedal 13 miles per hour for best results.

Jumping rope-Six calories/minute -

- Enhances coordination and builds leg strength. Gives arm, chest, and shoulder muscles a workout. Good indoor exercise.

- May cause joint or muscle problems. Effort required to maintain enthusiasm. Should average 50 to 60 skips per minute.

Golfing-Five calories/minute

- Relaxing. Good for older persons and less fit. Teeing off improves flexibility of arm, upper body, and thigh muscles.

- Very little conditioning involved. For best results must walk briskly and carry own clubs.

The above activities, if performed briskly, are beneficial because they increase the oxygen supply in the body, the amount of blood pumped by the heart, and the rate at which the heart works. This has the effect of strengthening the heart and body so that more strenuous work can be performed with less stress on the cardiovascular system. It is an excellent form of preventive medicine-building

endurance and reducing potential heart disease-that helps you feel better physically and mentally.

What Role Do Calisthenics Play?

Calisthenics-such as sit-ups and arm swings-help muscles retain a firm tone. When you don't exercise, the muscles become soft and flabby. In fact, much of what some people consider fatness in the abdominal region is really due to weak stomach muscles. Weak muscles allow the internal organs to sag forward. Exercised muscles act like a built-in girdle.

Iowa State physical education specialists recommend a calisthenics program both to improve muscle tone (four to five times a week) and to warm up your muscles before engaging in any vigorous activity. The following eight simple exercises take about 15 minutes each time.

Arm circling-Stand erect. Reaching out on each side, make big circles with your arms. Rotate forward about 10 times, then backward in smooth, fairly rapid circles. This is good for arm and shoulder muscles and for the chest and back.

Trunk twisting-Stand with a wide stance. Bring your arms to shoulder height with elbows bent. Turn as far as you can from side to side, always looking straight ahead. About 10 to 15 twists to each side will help exercise upper back and trunk muscles.

Windmill-Take wide stance and raise arms outward. Bend at waist, reach over and touch right toe with left hand. Stand. Then bend and touch left toe with right hand and return to standing position. Keep knees straight to stretch muscles in backs of legs. This exercise also strengthens back muscles. Do about 10 to 15.

Sitting toe touch-Sit erect on floor with legs widespread. Reach with both hands toward one toe, then the other. Do not bend knees. Reach 10 to 15 times for each toe-and another 10 times straight forward. This stretches the lower back muscles and backs of legs.

Leg swings-Stand sideways beside a sturdy support. Swing one leg forward and then back. Keep the leg straight and try to make smooth swings. Do five to 10 swings like this with each leg. Then swing each leg straight out to the side of the body five to 10 times. Keep head up and back straight. This firms leg muscles, hips, and buttocks.

Sit-ups- Lie flat on back with knees bent. Tuck toes under heavy piece of furniture or have partner hold them. Slowly curl to a sitting position (don't come up with a straight back) and then lie back down the same way. At first, you may need to grab hold of your upper legs to help. Or loop a short rope around the knees to help pull yourself up. Eventually, sit up with arms above the head. The arms behind the neck position is the most difficult sit-up and should be for advanced exercisers only. Work up to at least 20 to 25 sit-ups in a row.

Arm and leg lifts -Lie flat on stomach with arms straight past your head. Lift head, arms, and legs at the same time. Hold for a few seconds, then relax back to the floor. May start by lifting one leg at a time-then two legs. Add arms and head as exercise becomes easier. Five of these are a good back strengthener.

Push-ups Try the easier push-up from a hands and knees position. Instead of keeping the entire body straight, just keep straight from head to knee. Do not bend at waist or hip. Keep abdomen and back tight. About 20 to 25 of these will shape up backs of flabby arms. An even easier push-up is to stand about two feet away from the wall with hands flat against wall. Lean forward and push away about 20 to 25 times. Do not bend at waist or hip.

Other publications in the **Stress on the Farm** series include: NCR-192a, *An Overview*, NCR-192b, *Farming and Fatigue*, NCR-192c, *Team of Experts*; NCR-192e, *Skills for Stress Management*.

Information cited on disease among farmers is taken from J. R. McDonough, et. al., "Coronary Heart Disease Among Negroes and Whites in Evans County, Georgia," *Journal of Chronic Disorders* 18 (1965). 443-468.

Some of the material in this publication is adapted from *Weight Control: Physical Activity Makes the Difference* by Pauline Mairs, former Extension Nutritionist, Cooperative Extension Service of Iowa, 1977.

File Family Life 7

Written by Randy Weigel, extension specialist in human development and family life. Edited by Barbara Abbott, communications specialist, Iowa State University.

In cooperation with NCR Educational Materials Project. Issued in furtherance of Cooperative Extension work, Acts of Congress of May 8 and June 30, 1914, in cooperation with the U S. Department of Agriculture and Cooperative Extension Services of Illinois, Indiana, Kansas, Michigan, Minnesota, Missouri, Nebraska, North Dakota, Ohio, South Dakota, and Wisconsin. Robert L Crom, director. Cooperative Extension Service, Iowa State University, Ames, Iowa 50011.

and justice for all

The Iowa Cooperative Extension Services programs and policies are consistent with pertinent federal and state laws and regulations on nondiscrimination regarding race, color, national origin, religion, sex, age, and handicap.



Exercise for the Health of It

"I don't need to exercise; I'm always on the go!" "On the go" for this young farmer meant operating the milking parlor, driving to a livestock sale, driving the combine in the field, taking a load of grain to the elevator, hauling feed to livestock. As farming becomes more sophisticated and mechanized, the opportunities for physical effort decrease. In the home, labor-saving devices are becoming a must for today's farm families.

The need for exercise can best be illustrated in a study of coronary heart disease among farmers. Those farm owners who did none of their own physical work had a six to seven times higher incidence of heart attacks than those who did all the physical work.

Exercise is only half of the issue, though. The modern farmer faces two choices in keeping weight down: increase physical activity or always be slightly hungry. A more practical approach is to combine the two- decrease food intake and increase physical activity.

Why Exercise

Exercise is necessary for good health. If you are too fat, your chance of developing some chronic disorder is increased. Obesity is associated with high blood pressure, increased cholesterol, and common types of diabetes. All of these, in turn, are associated with increased risks of heart attacks and strokes.

Physical fitness can mean different things to different people, but a common goal is implied-feeling good. It's having good health plus the capacity to perform everyday tasks and still have energy for fun things or emergencies.

Whatever your present attitude toward exercise, life will be better through regular, dedicated exercise. You will have a better outlook, more energy, and a calmer attitude toward pressures of modern day farming,

Although some individuals truly overeat, the high amount of obesity in the U.S. today is due to general physical inactivity. Americans eat less than they did in 1900. Yet despite this, Americans weigh more than they did then. Why? We use our bodies less. To be physically fit in today's lifestyle takes a conscious effort to be more active.

Daily Calorie Use

Your daily calorie need is the number of calories your body needs each day to maintain weight-without gaining or losing. Part of your daily calorie need is spent to keep the body functioning. The remainder is the amount each person uses each day in the physical activity of work and play.

So how do you figure your own daily calorie usage? The best way is to keep a chart of your daily activities for several days. Use table 1 (calorie values for different activities) to figure how many calories you usually use in a day. Do this for several typical days. (See table 2.) Are you really as active as you think you are?

Compare the total calories you spend in a day with your daily food intake of calories from food. (Most cookbooks contain calorie charts.) This tells you the balance between the energy you take in and the energy you spend.

In table 1 a range of calorie values is given to allow for differences in activities and persons. For example typing uses more calories than watching television and some people use more calories to carry out an activity than others. Values closer to the upper limits of a range probably give a better picture of calories used by men and those in the lower limits a

better picture for women. The figures in table 1 include the calories for basic needs.

Working It Off

If you're taking in more energy than you use, one idea is to add more activity. The amount of energy needed for physical activity depends on the number and size of muscles you use and how fast, hard, and long you use them.

You do not necessarily have to jump right into a vigorous fitness program to effectively increase your use of calories. Many small increases will make a difference. For the person with a lot of weight to lose, a gradual approach is probably more realistic.

After all, whether going on or coming off, those calories have a cumulative effect. You stored them up, putting on



North Central Regional
Extension Publication 192d
January 1983

Co-sponsored by the Cooperative Extension Services of Indiana, Iowa, Michigan, Minnesota, Nebraska, Ohio, Wisconsin; in cooperation with SEA-Extension, USDA