STAYING HEALTHY THROUGH MIDLIFE AND BEYOND

University of Illinois at Urbana-Champaign
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Many people think of health negatively; in other words, they give serious thought to their lifestyle only when they become ill. But a good healthful lifestyle is more than a matter of fate; it is something over which you have some control. Of course, to improve your health you may have to make some changes in the way you live. To begin with, you will need to recognize that your health depends upon

- the way in which you respond to stress
- your eating and drinking habits
- the amount of rest and exercise you get
- how safe you are at home, at work, and in your vehicle

Most importantly, you must first recognize that it is within your power to improve your health and your quality of life. Wellness begins when you see yourself as a growing, changing person. Specifically, wellness means

- taking care of your body
- using your mind constructively
- channeling stress energies positively
- becoming creatively involved with others
- staying in touch with the environment

All these aspects of wellness become even more important as you move into midlife and beyond. This book presents some helpful tips for feeling and staying healthy in this important period.

You can begin by taking a look at yourself. The following list is designed to help you review your current lifestyle and identify your unhealthy habits. Respond to the following questions by circling Y (yes) or N (no).

1. Do you eat three meals each day without snacking? ........................................... Y N
2. Do you wear a seat belt when driving an automobile? ........................................... Y N
3. Do you watch less than two hours of television a day? ........................................... Y N
4. Do you participate in physical activities at least three times a week? .................... Y N
5. Do you freely consume fruits and vegetables daily? ........................................... Y N
6. Do you generally sleep between seven and eight hours a night? ......................... Y N
7. Are you familiar with first-aid procedures? ....................................................... Y N
8. Are you maintaining the proper body weight for your height and body size? ........ Y N
9. Have you reduced or eliminated the use of sugared soft drinks? ................. Y N
10. Do you always drive below the speed limit? .... Y N
11. Do you always make use of clothing and equipment provided for your safety at work? ... Y N
12. Do you always eat a good breakfast? ................. Y N
13. Are you seeking alternatives to meat such as beans, lentils, and peas? ................. Y N
14. Have you reduced or eliminated the use of alcoholic beverages? .................. Y N
15. Are you satisfactorily managing stress in your life? ................................. Y N
16. Do you eat whole grain, unrefined cereals such as brown rice? .................. Y N
17. Do you (or would you) always wear a helmet and protective clothing when riding a motorcycle? ................................. Y N
18. Do you drink plenty of clean water? ................. Y N
19. Have you reduced or eliminated your exposure to tobacco smoke? .................. Y N
20. Do you support others in practicing the above behaviors? .................. Y N

Each statement represents a positive behavior and should be viewed as a healthy practice. If you answered **Yes** to:

- **18-20 questions**, then your lifestyle is extremely healthy.
- **15-17 questions**, then your lifestyle is healthier than average.
- **11-14 questions**, then your lifestyle is average.
- **6-10 questions**, then your lifestyle is somewhat unhealthy.
- **1-5 questions**, then your lifestyle is very unhealthy.

Your **No** answers may indicate areas of your life where you may wish to make adjustments in your lifestyle.

In today's society many classes, discussions — even arguments — take place on "What does health mean?" We probably agree that it is not simply an inherited quality that we lose as we grow older. Rather, it means freedom from emotional hang-ups, mental confusion, pain, and disability.

Nevertheless, many people — not being well informed in health basics — neglect and abuse themselves during their years as an adolescent and an adult. These same people often react with indignation, surprise, sadness, and even anger as they grow older and find themselves with aches, stiffness, coughing, and intractable ailments.

To become more informed, we must first recognize that some of the most important elements of healthy living are motion, movement, and play. Observe how children are always restless, in motion, grasping, growing, falling and getting up, expressing feelings openly, and exploring. Later in school they have to learn to sit motionless for periods of time. The adult world of work is also sedentary, and leisure time and relaxation for many people become synonymous with television, snacks, and beer. There develops a pattern of closing up, quieting down: the less we move, the less we want to move. The less our muscles are used, the weaker they become. Unexpressed thoughts, feelings, and playfulness fade away. In short, we become quiet, polite, and unexpressive.

So the calendar years are not the only reasons for aging. Rather, it is how each of us has learned to live those years that does it. Some become skillful in giving up a part of themselves at each step of the way: surviving at work, keeping peace in the family, and pleasing a spouse. Often they give up from personal laziness, exhaustion, or because "it's the easy way out."

Health is an entire way of seeing and experiencing the world. The word health is derived from holy, which means "whole." So health involves not just the body, but also feelings and the spirit. How you think affects your musculature, your cell chemistry, and your perceptions.

In other words, good health is based on attitude. Many are filled with a dread of pain or a fear of cancer. Today's culture often expects us to be passive, unwanted, suffering victims as we grow older. For example, the older we become, the more we are expected to step aside for those younger than ourselves. Our productivity and new ideas are expected to lessen. Even some medical environments promote feelings of suffering and helplessness. How seldom we find health professionals giving us all of the
possible alternatives in deciding how to adopt a more healthful lifestyle. The advice is often minimal and offers little explanation in simple laymen's terms.

But your life need not be lived that way. Do any of the above descriptions fit your thoughts about yourself? Then begin now to change your lifestyle habits. True, society may not be able to cure all poverty, social injustice, or illness, but you can change yourself from inside. A traumatic illness may even be an opportunity instead of a terrible fate. Try expanding and amplifying your health beliefs and attitudes to what they were when you were a child. Learn again to be active — how to play!

Managing Stress

The sections which follow deal with three very important and interrelated aspects of a healthy lifestyle: stress management, physical activity, and nutrition. It is hoped that these materials will encourage you to be active and that they will ultimately help you improve your health and well-being.

Assessing Your Stress Level

This exercise lists some of the most common causes of stress. Read each question and circle Y (yes) or N (no) to indicate whether or not that event has occurred in your life within the past year.

Points

1. Has your spouse or partner died? Y N 20
2. Have you become divorced or separated from your partner? Y N 15
3. Has a close relative other than your spouse died? Y N 13
4. Have you been hospitalized because of injury or illness? Y N 11
5. Have you married or had a reconciliation with your spouse after a separation? Y N 10
6. Have you found out that you are soon to become a parent? Y N 9
7. Has there been a major change, whether for better or worse, in the health of a close member of your family? Y N 9
8. Have you lost your job or retired? Y N 9
9. Are you experiencing any sexual difficulties? Y N 8
10. Has a new member been born or married into your immediate family? Y N 8
11. Has a close friend died?...................Y  N  8
12. Have your finances become markedly better or worse?.........................Y  N  8
13. Have you changed your job? .......... ...........Y  N  8
14. Have any of your children moved out of the family home or started or finished school?.........................Y  N  6
15. Is trouble with in-laws causing tension within your family?....................Y  N  6
16. Is there anyone at home or at work whom you strongly dislike?.................Y  N  6
17. Do you frequently have premenstrual tension?....................................Y  N  6
18. Have you had an important personal success, such as a rapid promotion at work?.....................................Y  N  6
19. Have you had “jet lag” (travel fatigue) at least twice?............................Y  N  6
20. Has there been a major domestic upheaval, such as a move or extensive remodeling of your house (though not a change in family relationships)?...........Y  N  5
21. Have you had problems at work that may be putting your job at risk? ...........Y  N  5
22. Have you taken on a substantial debt or mortgage?................................Y  N  3
23. Have you had a minor brush with the law, such as being ticketed for a traffic violation?.................................Y  N  2

Now score yourself. Add together the points to the right of each Y (yes) you have circled. Total points: ____ = My Score. The larger your score, the more stressful your life may be.

Score under 30 = You are unlikely to have a stress-related illness or accidental injury very soon.

Score 60 or above = You are more likely to have a stress-related illness or accidental injury.

Signs of Stress

Hans Selye, a noted authority on human stress, says the following in his book, The Stress of Life: "Stress is essentially the rate of all the wear and tear caused by life. And stress is not necessarily bad for people. It is actually important because without our adaptation to stress we would not even survive. But unequal stresses placed on various parts of the body are the corrosion that cause one part to wear out before another and unnecessarily shorten the life span."

Inability to manage stress contributes to a host of diseases in our high-powered, fast-paced civilization. The effects of stress begin to accumulate early in life. We are told, "Don't laugh too much; don't express feelings that those around you may not want to hear; hold back your feelings." In many ways, our culture often conditions us to live unhealthy lives. For example, we may have learned in the first grade not to explore who we are. Someone, at some time, may have said to you, "You can sit on a stool in the corner if you are going to be like that!" Were you taught to give up personal freedom for high grades, a good reputation and, in later years, money? Some people live frantically trying to meet someone else's expectations. This constant stress takes its toll as we grow older.

Your body has ways of telling you there is too much stress. Certain body organs become the targets as stress builds up. Here are some ailments that can be outward signs of this buildup:

- asthma
- backache
- blurry vision
- clenching teeth
- cough
- diarrhea
- fatigue
- grinding teeth
- headache
- hiccups
- itching
- rapid heart rate
- skin rash
- sweating
- twitching eye
- vaginal discharge
- wheezing

Many medical professionals feel that the aging process is partly caused by repeated stress reactions to chronic tension. The longer the tension continues, the more likely the symptoms will be severe. It is the reaction to stress that builds up and becomes the disease.

As already noted, people need some stress and challenge, and the body contains natural mechanisms for dealing with it. The question is how to avoid becoming overstimulated by the effects of stress. The answer is to relax. You must first learn to break the tension by forcing yourself to pause and rest. Only then will you have time to think about controlling stress, eating nutritious foods, and getting adequate physical exercise.
The following list gives some specific hints on how to keep stress from building up. Read each statement. Put a check under the appropriate column to indicate whether or not you've used this technique when stress has been crowding in on your life. The statements checked under "Have not used" may help you in the future.

1. Keep your daily routine. Eat at regular times; have a time for physical activity. You will feel more secure with a certain amount of routine.

2. Get some physical activity to release the mind. Think about the birds and nature; don't rehash your problems while you exercise.

3. Concentrate on one problem at a time. You cannot come up with adequate solutions for a whole room of problems at once.

4. Begin to sense when you are not handling stress well. Don't be afraid to say that things are too much for you to cope with.

5. When you have made up your mind to do something about one of your problems, do it at the first opportunity. Working on a solution lessens the stress of the problem.

6. Think only about the present. Thoughts about the past only increase stress. Don't worry about the future.

7. Forgive and forget. Brooding over a wrong which you have done or which has been done to you only increases stress.

8. Keep busy — not to the frantic stage, but enough so that the mind doesn't have long periods to fill.

9. Don't make bedtime the place and time to solve your problems. Train yourself not to "go over things" when you should be sleeping.

10. Find someone you can talk to about things. Listen to and value what they have to say.

For further reading on the subject of stress, see page 24.
Our founding fathers and mothers probably did not think of exercise as we do today. Jogging would more than likely have appeared foolish to our agricultural ancestors. But because they were physically active, they probably were physically fit. In today’s society, it is also possible to be physically fit and healthy by including some physical activity in each 24-hour day.

Today, modern technology has lightened the work load. Air-conditioned cars, pneumatic tractor seats, riding lawn mowers, and golf carts have all reduced our daily drudgery. But all these pleasantries have likewise reduced our physical activity and decreased our own muscular capacity to work.

Many Americans think that the middle years are a time to slow down and to do less — that physical decline is an inevitable consequence of aging. This is a false assumption. According to the President’s Council on Physical Fitness and Sports, much of the physical frailty attributed to aging is actually the result of muscular disuse and poor diet. You can decrease your rate of physical decline by eating properly and getting some physical activity. Research reports support the fact that people who exercise regularly feel and act younger, can do more without becoming fatigued, look better with their weight under control, are more relaxed after stimulating exercise, and can better handle the stresses of life.

Some people prefer to go to the gym or swimming pool for their exercise. But it is also possible to improve your physical fitness by simply making your basic lifestyle more active. For example, you can do the following:

- Play on a golf or bowling team rather than being an armchair quarterback.
- Bicycle or walk to the store rather than drive a car.
- Walk the golf course rather than ride in an electric cart.
- Use a push lawn mower rather than a riding mower, especially for small jobs.
- Do your own household chores rather than hire the boy or girl next door.
- Walk up stairs rather than take the elevator when you are in an office building.
There is a right way and a wrong way to exercise. Whether you join a formal exercise group or develop your own activity program around the home, learn to respect the principles of exercise.

Picture a man who runs onto the track and sprints by everyone with his nose high in the air. By the end of the second or third lap, this poor fellow can well be sitting beside the track with his ghostlike face between his legs. In the meantime, the more rational exercisers breeze by at a comfortable pace.

The lesson is, "Train, Don't Strain!"

"But, how do I go about it?" you ask. "How do I begin?" "How hard and how often do I exercise?" "Can I expect to react like my neighbor?"

Some answers follow.

Progression. You should begin a physical activity session at a comfortable level and then increase the amount and intensity slowly through a period of months or even years. Short-term crash programs are of little value because they do not make lasting changes. So start slowly and build up to a well-balanced program. Then you will find that maintaining fitness will become part of your lifestyle. You "just won't feel right" if you miss your exercise program.

Plan ahead for the winter months, when people in colder climates are less active. Some retired couples have given the following reasons for pulling up stakes and moving to sun country: "We can be outside all days of the year." "I can walk whenever I want to." "There's no ice on the Arizona tennis court — even in the winter!" But even if you must stay in home territory, you can do something. You can walk in shopping centers, or you can buy a stationary bicycle to ride in the home. Perhaps one of the best forms of exercise is to simply turn on some music and dance throughout the house. After several months of activity, you will have progressed to the point where you seek out your own creative way to obtain regular exercise.

Intensity. The best exercise intensity is one which moderately elevates the pulse rate and breathing rate. Don't push to where you cannot carry on a conversation with another person while exercising. Pay attention to the body's pain signals. Slow down when you become uncomfortable.

Frequency. How often you should exercise depends on the intensity of the exercise and how you feel the next day. Walking is a low-intensity exercise and can be done every day. High-intensity activities such as jogging,
swimming, or bicycling should be done less frequently at first. Beginners should be especially careful to allow the body to recover from the previous day’s fatigue.

As your body adapts, you can progress to daily physical activity sessions. Once you reach the desired fitness level, you’ll be able to maintain your newly acquired fitness without exercising at greater intensities or frequencies.

*Individual differences.* We are all different and become even more different as we grow older. Our differences affect our physical performance capacity, our potential for improvement, our body size and shape, and our interest in certain fitness activities. So assess your own abilities, interests, and needs. Do you feel you need more physical activity? If so, construct an activity program which is both beneficial and enjoyable to you. Not everyone likes to jog. Swimming, bicycling, and walking are good alternatives.

Some physical activities contribute more than others toward maintaining physical fitness and weight control. Good activities are rhythmical, repetitive, moderately demanding activities which one would do over a period of time.

**EXAMPLES:** walking, gardening, jogging, doing house chores, swimming, dancing, bicycling, rowing, reaching, and stretching

Not so good activities are those which require “explosive” muscular efforts and involve rapid twisting and turning. When done properly, they do condition the body. But often these activities are overdone or done incorrectly, resulting in injury.

**EXAMPLES:** vigorous aerobic dancing, sprint running, calisthenics, and gymnastics

The right kind of physical activity not only helps you lose weight and look more attractive; it also benefits you in other ways. Fitness has five components you should consider when developing a fitness program. They are strength, muscle endurance, cardio-respiratory work capacity, body composition (the body’s percentages of fat, bone, and muscle), and flexibility. *Strength* is developed by making muscles exert a great deal of force, muscle *endurance* by repeating activities against moderate resistance, and cardio-respiratory *capacity* and appropriate *body composition* by sustained movement that raises the heart rate to moderately high levels. *Flexibility* is best increased by slowly stretching muscle groups and tendons.
A program of exercise should be geared to these specific goals and should not cause injuries. Too many people believe that since exercise is good, more exercise and more strenuous movements are better; these people often injure themselves by doing too much too soon.

The best way to develop your strength and endurance is by exercising two to three times a week with weights or exercise machines. Weights which can be lifted comfortably ten to fifteen times are suitable for muscular development. As little as one workout a week maintains strength.

To achieve an optimum level of cardio-respiratory fitness and appropriate body fat levels, you should perform a continuous exercise like walking, jogging, swimming, or bicycle riding at an intensity that raises the heart rate to a moderately high level for 20 minutes two or three times a week. More exercise will help you burn more calories but may not greatly increase your body's ability to process oxygen, and less exercise will not give significant benefits.

Flexibility can be improved by slowly moving through the range of motion of a joint until you feel tension. At this point, hold the stretch for 5 to 10 seconds, breathing freely and comfortably. Examples of basic stretching activities are presented below:

1. Hamstring stretch. Assume a sitting position on the floor, flex the trunk forward, bending the knees if necessary, and grasp the outer edges of the feet. The trunk should be pulled down slowly.

2. Sitting groin stretch. Sit erect, with soles of feet touching and knees pointed out. Slowly push down on the knees, trying to get the knees as close to the floor as possible.

3. Lower back and hip stretch. Lie on the back, bend one knee, and slowly raise it to the chest. Pull the knee with both hands, and keep the other leg straight and on the floor. Do the same stretch with the other leg.

4. Gastrocnemius (calf) stretch. Stand facing a wall with the feet 3 to 4 feet from the wall. Lean the body forward, supporting the body weight with the arms and keeping the heels on the floor.

5. Shoulder stretch. Assume a standing position with the arms extended in front of the body and fingers interlaced. Reverse the hand position so that the palms face away from the body. Raise the arms overhead into as much hyperextension as possible.

A rational fitness program for most individuals might well be some form of continuous exercise for 20 to 30 minutes three or four times a week, and exercising the
important muscle groups against resistance two or three times a week.

If you are patient and increase the intensity of your workouts very gradually, you probably will escape injuries. Of course, it’s also important to be sure that you are reasonably healthy and can match your exercise to your health status, interests, and fitness goals. For example, if you are quite overweight, you should swim or walk rather than jog. Then, as you lose weight and develop muscular strength, you can gradually include other activities. Older people or anyone disabled by arthritis or unable to walk and run should try swimming, which is a very effective and nearly injury-free form of exercise.

A Sample Guideline

The American College of Sports Medicine recommends the following for developing and maintaining cardio-respiratory fitness and body composition of the healthy adult:

1. Frequency of training: 3 to 5 days per week.
2. Intensity of training: 60 percent to 90 percent of maximum heart rate or 50 percent to 85 percent of maximum oxygen uptake. This is considered moderately intense exercise which you can do comfortably.
3. Duration of training: 15 to 60 minutes of continuous aerobic activity. Duration is dependent on the intensity of the activity; thus lower-intensity activity should be conducted over a longer period of time. Lower to moderately intense activity of longer duration is recommended for the unathletic adult.
4. Mode of activity: Any activity that uses large muscle groups, that can be maintained continuously, and that is rhythmical and aerobic in nature; examples are running or jogging, walking or hiking, swimming, skating, bicycling, rowing, cross-country skiing, rope skipping, and various endurance game activities.

Assessing Your Exercise Needs

One way to begin thinking about yourself is to list below the physical activities that you would enjoy doing on a regular basis.

1. ________________________________________
2. ________________________________________
3. ________________________________________
4. ________________________________________
Next consider whether you have some physical limitations that might prevent you from doing some of these activities. Note them also.

1. ________________________________________
2. ________________________________________
3. ________________________________________
4. ________________________________________

Now complete the following questionnaire, which has been designed to identify the small number of adults for whom physical activity might be inappropriate or those who should have medical advice about the type of activity most suitable for them.

Common sense is your best guide in answering these few questions. Please read them carefully and circle Y (yes) or N (no) opposite the question if it applies to you.

1. Has your doctor ever said you have heart trouble? Y N
2. Do you frequently have pains in your heart and chest? Y N
3. Do you often feel faint or have spells of severe dizziness? Y N
4. Has a doctor ever said your blood pressure was too high? Y N
5. Has your doctor ever told you that you have a bone or joint problem such as arthritis that has been aggravated by exercise or might be made worse with exercise? Y N
6. Is there a good physical reason not mentioned here why you should not follow an activity program even if you wanted to? Y N
7. Are you over age 65 and not accustomed to vigorous exercise? Y N

If you answered "yes" to one or more questions, do the following:

• If you have not recently done so, consult with your personal physician by telephone or in person before increasing your physical activity or taking a fitness test. Explain your problems, or show your physician a copy of the questionnaire.
• After your medical evaluation, ask your physician whether you are suitable for unrestricted physical activity, probably on a
the Nutrition-Exercise Connection

Energy

Even when you aren’t moving around, you need energy to keep your heart beating and your lungs working. And of course when you exercise, your muscles need energy to work. The more you exercise, the more energy your muscles use.

The energy to power your body comes from the foods you eat. Three different nutrients — carbohydrates, proteins, and fats — contain energy. See Illinois Cooperative Extension Service Circular 1101, What to Eat and Why, for examples of foods that have these nutrients. To use food energy properly, the other nutrients, vitamins, minerals, and water must also be present.

A calorie is a unit used to measure the amount of energy in foods. If you take in more energy than you use up, your body stores these extra calories as fat. There are about 3,500 calories in a pound of body fat. Many of us store up too many of these extra calories. Overly fat people are more likely to get diseases like diabetes, high blood pressure, or heart disease, and are also less likely to be physically active.

What Exercise Does

Allows you to obtain enough nutrients. We can lose body weight by eating less, exercising more, or doing both. But far too many people rely on eating less as their only weapon in fighting fat. Some adults are so inactive that they must eat fewer than 1,500 calories daily to keep from gaining weight. Such a low intake is not advisable because not enough food is eaten to supply all of the nutrients needed for health. An adult woman should consume at least 1,500 calories each day and an adult man 1,800 calories to insure an adequate nutrient...
intake. There are about fifty different nutrients required for good health. Exercise allows a person to consume enough food to meet all nutrient needs and still maintain a desirable weight and body composition.

*Improves body composition.* Losing weight by food restriction alone does not change body composition because it causes both body fat and muscle to be lost. In other words, the amount of fat relative to muscle is not changed. But by increasing exercise, muscle increases relative to fat—and that’s healthier! Muscles burn more calories than fat because muscles are the work sites of the body. Thus more muscle means that more calories are needed just to maintain your ideal weight.

So to fight fat, include regular exercise in addition to controlling food intake. And remember, adults who unduly restrict food intake are probably not getting enough of all the vital nutrients they need.

*Helps control appetite.* Regular exercise also helps control body weight by helping control appetite. Of course, there are other things that influence appetite. The smell of fried chicken can make us hungry. Just the sight of corn on the cob or fresh strawberries can make our mouths water. Even our moods can affect the amounts we eat. However, we often forget what an important influence exercise has on our appetites. At healthy levels of exercise, we usually fine-tune our appetite so that we eat just enough to supply our energy needs—no more, no less. At unhealthy, low levels of exercise, however, our appetite control often goes off kilter, and we eat more food than we need. The result is fat.

So regular exercise helps control weight yet another way. Not only does it burn calories and change body composition, but it helps us control our appetites. Compared to all the gimmicks advertised to help us lose weight, exercise wins easily.

*Lowers blood fats.* Exercise and nutrition also go hand in hand to produce healthy bodies in areas other than weight control. For example, as we grow older, the amount of fat in our bloodstream may rise. Increased blood fat, particularly cholesterol, has been identified as a risk factor associated with heart disease. However, not all cholesterol in the body is in the same form. One form, LDL cholesterol (low-density lipoprotein cholesterol), has been labeled "bad" cholesterol because it is the kind associated with deposits, or plaques, in the arteries. Another form, HDL cholesterol (high-density lipoprotein cholesterol),
has been labeled “good” cholesterol because it is associated with cholesterol breakdown. A regular exercise program not only can lower total fats in the blood, but can also cause an increase of HDL cholesterol relative to LDL cholesterol, which is a more desirable situation.

**Benefits bone health.** Exercise can even influence bone health. Osteoporosis, a disease characterized by a loss of bone mass, affects many persons as they grow older. Bones may become so weak that they break. There are many factors affecting the chances of getting the disease. Low calcium intake over a lifetime is one of the contributing factors. Diets that are excessively high in protein and dietary fiber may also compromise the calcium status. Postmenopausal women are at greater risk from this bone-thinning disease.

Our bones increase in density until 30 to 40 years of age, after which time bones gradually lose density. Nothing can completely arrest this age-related loss, but many dietary and lifestyle practices can hold it to a minimum. It has been found that regular weight-bearing exercise, such as walking, not only helps increase peak bone mass during middle age, but also slows down age-related bone loss.

**Improves cardiovascular health.** Under most typical conditions of modern living, daily activities work the heart at less than one-half its working capacity. The normal “resting” heart rate ranges from 40 to 100 beats per minute, depending on age, sex, physical condition, and genetic factors. When conditions demand, the rate can increase to 160 to 180 beats per minute, and the output of blood per beat is also increased.

The law of use and disuse states, *“That Which Is Used Becomes Stronger and Efficient.”* So it is with the heart. The cardiovascular system becomes more efficient as it adapts to the stress of repeated exercise. The resting heart rate as well as the heart rate during a submaximal exercise session will usually decrease slightly because the heart squeezes more forcefully during each beat.

The normal, healthy heart is a resilient muscle capable of adjusting to our work needs. But it must be worked a little extra on a regular basis to stay efficient and to be able to handle emergency stress. Like other muscles of the body, the heart must be exercised. And without a healthy heart, many other functions decline.

When your heart rate increases during physical activity, you are using more energy and therefore more calories. So once again, regular exercise can actually decrease the fat content of the body and increase the muscle mass. This is a healthy change and may occur without a change in body weight.
Gauging Your Weight Correctly

Your body weight reflects a balance between the food calories you take in and the calories you burn up through basal metabolism and physical activity. (Basal metabolism is the internal activity of the body while it is at rest.) Theoretically, if you eat 3,500 calories more than you burn, you will gain a pound of fat; conversely, if you use 3,500 more calories than you take in, you should lose a pound.

Many people like to calculate their calorie intakes and expenditures by using tables that list the calorie content of various foods as well as the calories needed to perform various activities. However, these tables are not as precise as some would have you believe. The calorie content of your diet may be hard to estimate because the amount you consume may vary somewhat from the amount listed. The way food is prepared can also make a difference. For example, if you ate a piece of fried chicken, was the piece precisely the same size as the piece listed in the calorie chart? Was the fat drained away precisely the same way as it was with the test piece? It is easy to see why your estimate could contain a 10 percent error. For an extensive listing of the calorie content as well as the nutrient content of foods, see *Nutritive Value of Foods*, Home and Garden Bulletin No. 72, USDA. Your local Cooperative Extension Service office can tell you where to obtain a copy of this publication.

Likewise, the calories you burn may be hard to estimate because the intensity of any one activity can be quite variable. Body weight also makes a difference. The larger you are, the more effort it takes to move your body over a given distance. To complicate matters even further, some researchers suspect that the efficiency at which different individuals use calories may vary by as much as 20 percent.

So the bottom line on your individual calorie balance ledger sheet is what your scales report and what is happening to your body composition. If the scales show less poundage over time, that means you are taking in less than you are using. In fact, your scale may show no change at all and you still may be improving; increased exercise may be bringing about a healthful change in body composition. You could be losing fat and gaining...
muscle, and that's a very desirable change that may not show up on the scales.

Thus, theoretical calorie calculations help us grasp concepts and give us some ballpark figures, but they are not infallible. What is happening on the scales and what is happening to your fat-muscle ratio are the true test. As this section has shown, it is becoming increasingly apparent that effortless living and good health are not compatible. You cannot expect good health merely by eating a good diet or by doing regular exercise; you must do both. The two cannot be separated because they are too closely intertwined.

Quiz: Body Fat and You

This is an in-home activity. Read each statement. Is it true or false? Place a check (√) in the appropriate column.

1. The surest way to decrease the percentage of body fat is to increase physical activity. [True] [False]
2. If a person reduces weight by cutting down on food calories but does not exercise more, he or she probably will not change the percentage of body fat. [True] [False]
3. If a person weighs the same at age 55 as at 18, one can be sure that the amount of body fat has remained the same. [True] [False]
4. Height and weight charts can be used to accurately predict a person's percentage of body fat. [True] [False]
5. A person may have a normal weight for his or her height and still have excess body fat. [True] [False]
6. The percentage of body fat is a more accurate predictor of overall health and fitness than is one's weight in relation to one's height. [True] [False]
7. Women naturally have a higher percentage of body fat than men. [True] [False]
8. The less body fat you have, the better. [True] [False]
9. There aren't any good ways to estimate the amount of body fat a person possesses. [True] [False]
10. Exercise can at least slow down some of the changes in body composition that occur with aging. [True] [False]

For answers to the quiz, obtain copies of the two publications listed under “The Nutrition-Exercise Connection” on page 24.
Finally, you need to look closely at exactly what you are eating if you are to maintain an active, healthy lifestyle. Are you giving yourself an even break when you sit down to a meal? Here's a simple exercise you can do that will give you the answer.

**Assessing Your Eating Habits**

1. First, write down *everything* you eat or drink on Tuesday, Thursday, and Saturday of any given week. Be sure to record the amount of each item consumed. Keeping a record of just one day isn't enough. Since you eat differently on weekends than during the week, you must include Saturday.

2. Next, classify the amounts consumed into serving sizes. Use the information in Circular 1101, *What To Eat and Why*.

3. Then compare daily servings eaten from each food group with the number of servings recommended.

4. Finally, are you below the recommended number of servings for any food group for any day? If you are, what can you do to improve your diet? Write down some possible solutions. Take your own advice.

As we grow older, many changes occur that can affect our nutritional and physical well-being. Some are so gradual that they go almost unnoticed. But over time, these changes can significantly affect our nutritional status.

**Basal metabolic rate declines.** Our basal metabolic rate declines as we grow older — in other words, our body processes slow down. (As already mentioned, basal metabolism is the internal activity of the body while it is at rest.) One study found that the basal metabolic rate declines by an average of 16 percent from age 30 to 70. If, coupled with this declining rate, a person exercises less, calorie needs will go down significantly.

**Body composition changes.** Consequently, as a person ages, his or her physique will usually undergo changes. Even though body weight may remain constant for years and years, a person may accumulate fat and lose muscle. Muscle tissue is more metabolically active than is fat tissue; that is, muscle burns more calories than does fat. Therefore, calorie needs will decline as a person loses muscle and gains fat. That is why it is so important to exercise to minimize this change in body composition.

**Nutrient needs stay basically the same while calories decline.** But while calorie needs go down as we grow older, most of our nutrient needs stay about the same. We therefore need a more nutrient-dense diet as we grow older — that is, the same amount of nutrients in a
smaller amount of food. Obviously, we have to make wiser and wiser food choices.

Food is used less efficiently. Complicating the need for a more nutrient-dense diet is the fact that many changes either decrease food intake or affect how well the body can use the food that is eaten. We have a diminished sense of taste and smell as we grow older. We have fewer taste buds. Food loses some of its appeal, so some of the enjoyment of eating may be gone. We may lose some of our ability to chew foods, so we may either eat less or avoid those foods that require a lot of chewing.

Not only may aging changes influence the amounts and types of foods we eat, but some changes may affect how well we use the foods we do eat. Salivary output and other digestive enzyme secretions decline, so foods may not be digested as well. Absorption of nutrients may also decrease with age. So even when we eat nutritious foods, less of each particular nutrient may reach the body cells where it is needed.

Even though metabolic changes are occurring in your body as you grow older, buying, planning, and eating an adequate diet still need not be difficult. Basic nutrition concepts apply to all ages from 8 to 80. All you may have to do is modify your basic plans to take care of your special needs.

<table>
<thead>
<tr>
<th>Changes That Occur with Aging</th>
<th>What You Can Do About Them</th>
</tr>
</thead>
<tbody>
<tr>
<td>Decreased digestive capacity because of decreased enzyme secretions</td>
<td>Eat smaller, more frequent meals</td>
</tr>
<tr>
<td>Loss of bowel regularity</td>
<td>Give special emphasis to whole grain foods and fresh fruits and vegetables to increase dietary fiber</td>
</tr>
<tr>
<td>Appetite dulled by loss of taste and smell</td>
<td>Plan meals with more eye appeal</td>
</tr>
<tr>
<td>Loss of ability to chew foods, especially those foods high in protein, like meat</td>
<td>Take care of teeth; wear properly fitting dentures; choose foods high in protein that are easy to chew, like cheese; prepare meats to increase tenderness</td>
</tr>
</tbody>
</table>

For further reading on the subject of nutrition, see page 2.
If you want to live an independent and active life, remember, you can. Just take that first step. Little lifestyle modifications can add up to big dividends throughout a lifetime. Become more active, eat sensibly, and learn how to reduce stress. If you don't start, you could be preparing yourself for serious problems as you grow older. If you do, you will find that everything will become easier. Exercise will help you use the food you eat and will also help you relax. The beginning is always difficult because you must begin with only an attitude to motivate yourself into action. But this attitude will produce results. And the results will soon help sustain your attitude. The only hard part is now — so get it over with.

Wellness is a participatory activity. If you want to be healthy, you must get involved. Those who do get involved do so because they value health. When value and involvement come together, then a habit develops which becomes integrated into our lives. Those who integrate physical activity, good nutrition, and relaxation into their lives feel good about themselves and their bodies, and they also become more effective in their work and with their families. We all have within us the ability to take control of our lives, but we must be willing and able to make that first small, but committed, step toward a healthy, active lifestyle.

**For Further Reading**

*The Aerobics Program For Total Well-Being*, by Dr. Kenneth H. Cooper. (Write to M. Evans and Company, Inc.)

*The Fit Kit*. (Write to Rosseau Publishing Corporation, Ltd., 791 St. Clair Avenue, West Toronto, Ontario M6C 1B8.)


*Health and Fitness*. (Write to Fitness and Amateur Sport, Promotion and Communication, 365 Laurier Avenue, West, Ottawa, Ontario K1A 929.)


*Pep Up Your Life, A Fitness Book for Seniors*. (Write to Travelers Insurance Companies, One Tower Square, Hartford, Connecticut 06115.)

Walking as an Exercise. (Write to Illinois Governor’s Council on Health and Fitness, 535 West Jefferson, Springfield, Illinois 62702; telephone 217/785-0394.)

For a list of publications that describe exercise programs, write to (1) Exercise, National Institute on Aging, Building 31, Room 5C35, Bethesda, Maryland 20205; (2) The President’s Council on Physical Fitness and Sports, Department of Health and Human Services, Washington, D.C. 20201.


From: Fitness For A Lifetime, 1985 Calendar, NEP/CHEP (College of Agriculture, University of Illinois, 1985).

Nutrition and Exercise For Fitness and Weight Control, by R. J. Reber and D. K. Layman, Circular 1230 (College of Agriculture, University of Illinois, 1984).

Listed below are several excellent references that can help you buy, plan, and prepare nutritious meals for your particular situation. If you have additional questions, call your home economics adviser at your local Cooperative Extension Service office.


For Mature Eaters Only: Guidelines For Good Nutrition (National Dairy Council, 1982)


What To Eat and Why, Circular 1101 (College of Agriculture, University of Illinois, 1982).

Your local Cooperative Extension Service office can tell you where to obtain U.S. government publications.