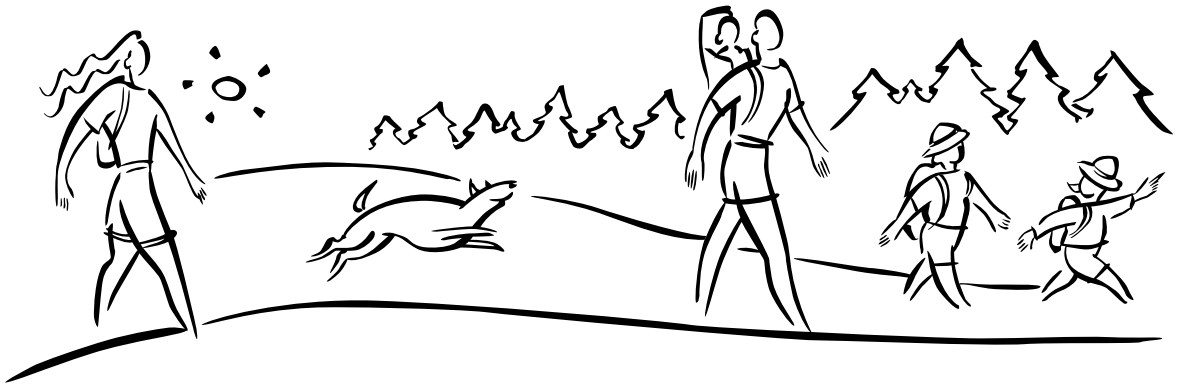
Lifestyles *Can Be* Changed!



An Exercise Prescription Manual

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Why Exercise is Important in the Obese Patient

Increased Energy Expenditure

Walking 35 miles at 3.5 mph is often quoted as the requirement to use 3500 calories (the equivalent of one pound of body fat). This ignores the ***cumulative effect:*** Walking a mile per day (or 100 cal./day) would cause a loss of 50 lbs. in five years. This is particularly important for weight maintenance since the reduced person uses less energy because of his smaller size (approximately 7 percent fewer calories for every 10 lbs.) for the same activity.

Change in Body Composition

The main thrust of effective bariatric treatment should not be ***weight loss*** but ***fat loss***. Exercise tends to replace adipose with lean tissue and a greater proportion of weight loss is fat when it accompanies a diet. It also has favorable effect on the body proportions and *shape* of the reduced individual. This is especially important in females and reinforces adherence.

Decrease in Voluntary Food Intake

Normally sedentary obese patients experience a ***decrease*** in appetite (contrary to popular opinion). It is important to distinguish between long hours of physical labor (such as in lumberjacks who work hard for eight or more hours per day) and shorter bouts of more strenuous exercise in predominantly sedentary obese persons (who do ***not*** increase food intake).

Mood Elevating Effects

Fatigue, a common symptom of the obese patient, usually improves considerably. More important are subjective feelings of self-esteem, self-satisfaction and self-confidence which accompany an improvement in self-image. The realization that it allows a more realistic food intake during the maintenance phase also has a very ***positive*** mental influence.

Metabolic Effects

Physical training appears to have a specific lowering effect on the hyperinsulinemia of the obese person which is apparently due to an improvement of peripheral insulin sensitivity. The increased synthesis of glucose, rather than fat, from endogenous lactate with a resultant decreased arteriovenous glucose concentration difference would tend to reduce the stimulatory effects on hypothalamic appetite centers. Furthermore, the thermic effect of food ingestion is more than doubled by exercise.

CVS Conditioning Effects

Since obesity is considered a cardiac risk factor either alone or in association with hyperlipidemia, diabetes and hypertension, it appears logical to include as part of the therapeutic regimen a modality which has been shown to significantly affect cardiovascular responses. Increased maximal work capacity, decreased pulse rate, increased stroke volume with a net decrease in cardiac work and blood pressure, accompany fitness.

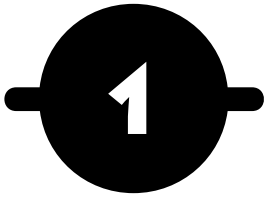
The ideal protocol

1. The exercise should be preceded by a 5- to 10-minute ***warmup*** period.
2. This is followed by a 20- to 30-minute workout of an ***aerobic***, dynamic, rhythmic and repetitive activity that can be continuously ***sustained*** for that period of time. It must also be of sufficient intensity to maintain your heart rate in the ***target zone*** (see later explanation of that term) during this entire training interval.
3. This should be followed by a 5- to 10-minute ***cooldown*** period during which the strenuousness of effort is considerably reduced to avoid an abrupt cessation.
4. These 30- to 50-minute workouts must be performed a minimum of three ***non-consecutive*** days each week.

Practical 6-Point Program

1. Mental Set
2. Limbering Stretching
3. Animation
4. Toning Isometrics
5. Walking
6. Pulse Rated Exercise

The six steps…



Step One: Induce proper mental set

A. Overcome the ***anti-activity bias*** of the sedentary patient.

B. Convince him that the words ***think thin*** are really synonymous with the words: ***think activity!***

C. Have him realize that what you are proposing is a ***no sweat*** exercise approach and that he must ***keep cool*** and comfortable throughout the prescribed protocol.

D. The other five steps in the technique will fail unless you can ***enter the mind*** of the patient to instill the right attitude.

Step Two: Limbering and stretching

Unless you can teach the obese patient to "limber up" and "stretch" first, he is likely to injure joints and ligaments which have deteriorated from disuse. This will result in multiple aches and pains causing him to prematurely discard the protocol. Any initial enthusiasm which you might have generated will terminate in what would have been a step in the right direction. The end result is no exercise at all! The following four techniques will be demonstrated:

1. Lateral and vertical neck stretch
2. Lateral torso stretch
3. Back muscles stretch
4. Full body and limb stretch

The technique is recommended on first arising and several times throughout the day as a "stretch break". The above specifics may need to be modified for different persons, but the basic principle of making "cat-like" movements is encouraged.

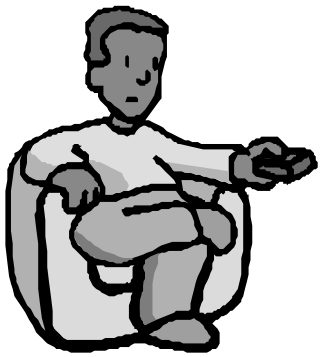
Step Three: Animation

There are basically four components of this step of the increased activity and exercise prescription:

1. Get patients to stand on their feet one hour more than they are standing now. If they are very inactive, it should be two hours more daily. Examples:
   - Stand up more at your desk (e.g., while talking on phone).
   - Stand while ironing, putting on make-up, combing hair.
   - Stand when being introduced, or when speaking to a group.
   - Remove chairs from common locations (e.g., your office).

   Exception to rule: patients should sit while eating!
2. Use ***body power*** instead of ***machine power*** whenever possible. Suggest becoming an ***inefficiency expert***. Examples:
   - Keep this principle in mind when buying new equipment: (e.g., stick shift, remote control TV).
   - Use of stairs instead of elevator, park further away in lot.
   - Store commonly used items near floor or up high.
   - Help neighbor, think of it as a chance to improve fitness.

   Demonstration: even rising from a chair can be an exercise.
3. Add movement to ***hypokinetic*** situations. Examples:
   - While waiting for bus, pace, raise on toes, shift weight.
   - When sitting, wiggle toes frequently, flex and unflex fingers.
   - When sitting still reading or watching TV, use rocking chair.
   - When immobile for long period, take periodic deep breaths.



Use body power instead of machine power whenever possible… avoid remote control TV.

Activity Diary

Make your diary entry immediately after the activity. Also, indicate intensity of activity, if possible. Diary Week Date_____to_____

	FIRST DAY Day of Week _____ Time of arising _____ ACTIVITY	time spent in the activity	SECOND DAY Day of Week _____ Time of arising _____ ACTIVITY	time spent in the activity	THIRD DAY Day of Week _____ Time of arising _____ ACTIVITY	time spent in the activity	FOURTH DAY Day of Week _____ Time of arising _____ ACTIVITY	time spent in the activity	FIFTH DAY Day of Week _____ Time of arising _____ ACTIVITY	time spent in the activity	SIXTH DAY Day of Week _____ Time of arising _____ ACTIVITY	time spent in the activity	SEVENTH DAY Day of Week _____ Time of arising _____ ACTIVITY	time spent in the activity
Before lunch														
After lunch and before dinner														
After dinner														
Daily summary	Time spent sleeping last night. Total hours		Time spent sleeping last night. Total hours		Time spent sleeping last night. Total hours		Time spent sleeping last night. Total hours		Time spent sleeping last night. Total hours		Time spent sleeping last night. Total hours		Time spent sleeping last night. Total hours	
	Lying down, not asleep		Lying down, not asleep		Lying down, not asleep		Lying down, not asleep		Lying down, not asleep		Lying down, not asleep		Lying down, not asleep	
	Sitting, total time of day		Sitting, total time of day		Sitting, total time of day		Sitting, total time of day		Sitting, total time of day		Sitting, total time of day		Sitting, total time of day	
	Standing, total time		Standing, total time		Standing, total time		Standing, total time		Standing, total time		Standing, total time		Standing, total time	
	Moving, total time spent		Moving, total time spent		Moving, total time spent		Moving, total time spent		Moving, total time spent		Moving, total time spent		Moving, total time spent	
	Time you went to bed		Time you went to bed		Time you went to bed		Time you went to bed		Time you went to bed		Time you went to bed		Time you went to bed	

Weekly summary:

Total time you spent during the week

Sleeping:_____ Sitting or Lying Down:_____ Standing on Your Feet:_____ Moving About:_____

4. Expand present chores to make them more vigorous and with more movement. Examples:
    - When arriving home at end of day, walk around on toes.
    - Brisk rubdown after shower or bath; wash and wax own car.
    - Walk back and forth more ***briskly***, turn more quickly.
    - Expand housework (even sex) into more vigorous activity.

The above four steps should be ***monitored*** by the use of an activity diary or an activity meter. See following pages for sample forms and how they are used to ***motivate*** the patient.

The activity motivator

The most neglected portion of nearly all weight control programs is the part that concerns itself with an increase in general activity. Although exercise programs are often prescribed, tried and then prematurely discarded, a general increase in daily routine activities is rarely considered as having any significant effect on one's weight. This is an unfortunate bias because the ***cumulative*** effect of expending only a few extra calories each hour is completely ignored.

One method of increasing one's general activity level would be to keep an activity diary.

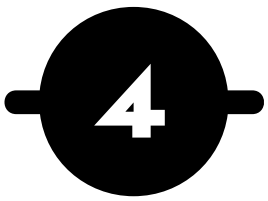
Consider the following figures:
Increasing your general activity to burn only 10 extra calories each hour during a 10-hour day amounts to 100 calories per day, or 3500 calories in slightly more than a month (35 days). Since one pound of body fat contains 3500 calories, one could easily burn off 10 lbs. in one year or 50 lbs. in five years (something certainly not to be ignored).

Conversely, conserving only 10 calories per hour by succumbing to the typical sedentariness of the obese American will put on 50 lbs. in five years ***without eating one extra morsel of food.*** Furthermore, when compared to a more time-consuming, vigorous exercise program (invariably accompanied by all sorts of excuses for omitting on any specific day), an ***increased activity program*** has none of the drawbacks and can be made a part of one's permanent lifestyle.

The problem and a solution

One method of increasing one's general activity level would be to keep an ***activity diary*** and then use the information obtained in this manner to institute gradual changes to incorporate more ***movement*** and ***animation*** into one's routine daily tasks. This method works quite well, but is quite tedious and requires a very well motivated individual to carry on for a long enough period of time to achieve any significant degree of change.

Step Four: Toning and isometrics



The disadvantage of a purely ***aerobic*** approach is that it neglects muscle strength altogether, unsound as far as the obese patient is concerned. A diminished load results in muscle deterioration, especially of those muscle groups needed for the endurance portion of the protocol. It is true that the obese person of necessity

develops a larger muscle mass to carry his heavier body around. Yet, it is not sufficient to meet extra stresses and emergencies. This is attested to by clumsiness and easy muscle fatigue so characteristic of the obese patient as long as he maintains his usual sedentary lifestyle.

The basic principle is that ***use of a muscle or organ tends to cause it to develop and conform to the demands made upon it.*** This is a basic biologic law of adaptation. Thus, lifting something requiring about 60 percent of full capacity daily would satisfy this doctrine of a daily ***overload*** to reverse deterioration. Many patients need a more ***structured*** prescription (they prefer that everything is ***spelled out*** for them). Therefore, there is a list of isometric ***"shape up"*** exercises listed on the next page. They can be done with any ordinary table and chair and require less than one minute per day to perform.

Striding is not only one of man's most natural activities, but is probably also the ideal starting exercise for the obese person.

Toning exercises, especially useful when weight loss is rapid, are described in detail in two of the references at the end of this manual (Lindner 1974 and Lindner 1975). Some will be demonstrated, including several with the use of specially designed equipment. The latter, however, are strictly an aid and motivational tool and are by no means indispensable for a perfectly adequate exercise program for the obese patient.

Step Five: Walking

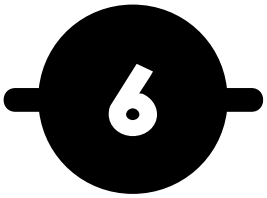
Reference is made to walking ***briskly*** or ***hitting one's stride,*** not ambling or sauntering (e.g., window shopping). ***Striding*** is not only one of man's most natural activities but is probably also the ***ideal starting exercise*** for the obese person for several reasons. It is:

1. Inexpensive.
2. Easily scheduled and worked into daily routine.
3. Usually fun and available in all seasons of the year.
4. Suitable for increased caloric expenditure.
5. Suitable for endurance training if vigorous enough.
6. Ideal for exercising most major muscle groups.
7. Endorsed as one of the best forms of exercise (AMA Committee on Physical fitness, the late Paul Dudley White, 2000 years ago: Hippocrates).
8. A good ***non-drug*** tranquilizer or aid for insomnia.
9. Even suitable for grossly obese patients, since it can be started slowly and increased ***gradually.***
10. Can help ***clear the mind*** and help concentration.

Some of our greatest men of history were famous walkers: Presidents Lincoln and Truman, poets William Wordsworth and Robert Frost who at age 87 was known to have said: ***"I have walked many miles with my dog. It has done me a lot of good. I hope it has done the same for my dog."*** The many advantages of walking briskly should be stressed by the bariatric physician to all his obese patients. They are ***all*** within ***walking*** distance!

On the next page are listed some tables to help the patient start a regular walking program. The goal should be to achieve a speed of 3.5 mph (military pace: 120 steps/minute).

Step Six: Pulse rated exercise



This refers to the ***aerobi***c or ***endurance*** portion of the protocol. The prescription is given as a ***target zone*** for pulse rate which should define the limits within which the patient should exercise. There are many options available to achieve this and they are listed on subsequent pages. Patients must learn to count their pulse rates. At the Lindner Clinic we have found the method of the world renowned Swedish exercise physiologist Per-Olof Àstrand, M.D., most easily learned by obese patients and also to give the most accurate reading.

The technique involves counting 30 pulses while timing them with a stopwatch. We have modified this to counting only 10 pulses which avoids the rapid ***drop off*** and still retains sufficient accuracy as long as a stopwatch is used.

On page 8 we present charts for converting ***time*** on the stopwatch to ***pulse rate*** (one is for counting 30 pulses, the other for counting 10 pulses). We also describe a special stopwatch which has a dial designed especially for the Lindner Clinic method. It indicates the pulse rate directly on the dial when 10 pulses are counted so no chart is needed.

The special feature of our approach is to have the obese patient make only a ***five minute per day*** commitment for staying within the target zone. There are three advantages to this technique that have become evident from experience with a considerable number of obese patients:

1. It is a ***reasonable request*** and readily accepted by the obese person. Furthermore, it avoids the deadliest enemy of any exercise program, namely, finding excuses because of ***lack of time*** or ***too tired today,*** etc., which results in no exercise at all!
2. We have shown by serial treadmill stress testing that there is a definite improvement in both ***fitness rating*** as determined by VO_2 max and a betterment in ***cardiovascular responses*** such as slower pulse with same work load, faster return to normal, etc., when this protocol accompanies a weight reduction program.
3. If at the end of five minutes a patient feels like continuing for a longer period of time, he is encouraged to do so. As he begins to feel better he will often do so, the important point being that he does not have to! The commitment is still only ***five minutes*** per day.

Pulse rated exercise refers to the aerobic or endurance portion of the protocol… a target zone for pulse rate which should define the limits within which the patient should exercise.

Pulse meter specially designed for Lindner Clinic method of monitoring pulse rated exercise

By means of this specially designed, high precision, seven jewel Swiss made stopwatch, it is necessary only to count ***10 pulses.*** An immediate heart rate in ***beats/minute*** is obtained by direct inspection of the dial.

Technique: After a clear pulse beat has been located (usually best felt in the neck) the ***start button*** of the watch is pushed to coincide with any of the pulse beats. That pulse is counted as zero. The next pulse ***after*** that counts as ONE – then TWO for the next one – then THREE for the next, etc.… When pulse number TEN is reached the ***STOP button on the watch is pushed.*** The stop watch has timed the ***interval*** of TEN pulse beats. Examination of where the pointer has stopped on the outer rim of numbers reveals the pulse rate for one minute ***directly.*** No further calculations are necessary.

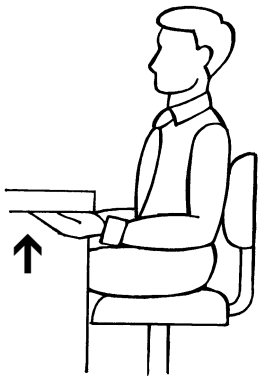
Pulse Rate Per Minute Conversion Table

Seconds	Pulse	Seconds	Pulse	Seconds	Pulse	Seconds	Pulse	Seconds	Pulse	Seconds	Pulse	Seconds	Pulse	Seconds	Pulse
15.0	40	13.5	44	11.9	50	10.4	58	8.9	67	7.4	81	5.9	102	4.3	140
14.9	40	13.4	45	11.8	51	10.3	58	8.8	68	7.3	82	5.8	103	4.2	143
14.8	41	13.2	45	11.7	51	10.2	59	8.7	69	7.2	83	5.7	105	4.1	146
14.7	41	13.1	46	11.6	52	10.1	59	8.6	70	7.1	85	5.6	107	4.0	150
14.6	41	13.0	46	11.5	52	10.0	60	8.5	71	7.0	86	5.5	109	3.9	154
14.5	41	12.9	47	11.4	53	9.9	61	8.4	71	6.9	87	5.4	111	3.8	158
14.4	42	12.8	47	11.3	53	9.8	61	8.3	72	6.8	88	5.3	113	3.7	162
14.3	42	12.7	47	11.2	54	9.7	62	8.2	73	6.7	90	5.2	119	3.6	167
14.2	42	12.6	48	11.1	54	9.6	63	8.1	74	6.6	91	5.1	118	3.5	171
14.1	43	12.5	48	11.0	55	9.5	63	8.0	75	6.5	92	5.0	120	3.4	176
14.0	43	12.4	48	10.9	55	9.4	64	7.9	76	6.4	94	4.9	122	3.3	182
13.9	43	12.3	49	10.8	56	9.3	65	7.8	77	6.3	95	4.8	125	3.2	188
13.8	43	12.2	49	10.7	56	9.2	65	7.7	78	6.2	97	4.7	128	3.1	194
13.7	44	12.1	50	10.6	57	9.1	66	7.6	79	6.1	98	4.6	130	3.0	200
13.6	44	12.0	50	10.5	57	9.0	67	7.5	80	6.0	100	4.5	133	2.9	207

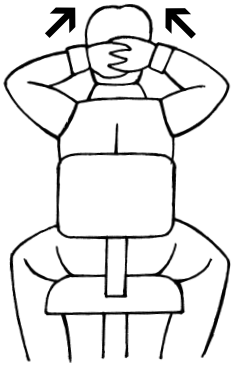
Seconds (in tenths) are listed on the left of each column. Pulse (per minute) is listed on the right of each column.
Equation for this table: Divide seconds on your stopwatch for 10 pulses into 60. Multiply above results by 10 to equal pulse beats per minute.

Shape up!

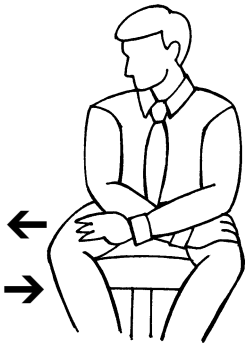
These exercises have been specifically designed for those with a desk job and can be done without ever leaving your chair. The only equipment needed is a chair and desk. At home, any table and chair will do.



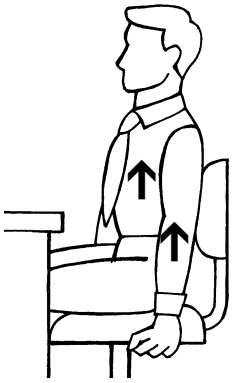
The Arm Curl: (For the upper arms.) Sit straight, grasp the underside of a heavy desk or table with palms up, forearms parallel to desk. Push up as hard as possible.



The Neck Presser: (For the neck muscles.) Sitting straight, clasp the hands behind the neck holding elbows forward. Pull forward with the hands and at the same time press the head backwards.

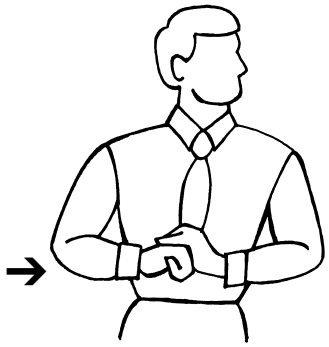


The Criss-Cross: (For chest and legs.) Placing the feet about 4 inches apart, bend forward and place hands against inside of opposite knees. Attempt to press knees together while, at the same time, holding them apart with the hands.

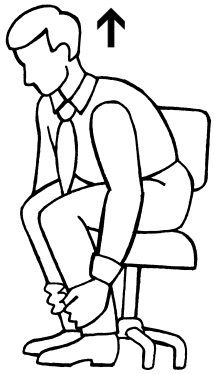


The Pull-Up: (For arms and shoulders.) Sit straight, grasp the sides of the chair tightly with both hands and pull up as hard as possible.

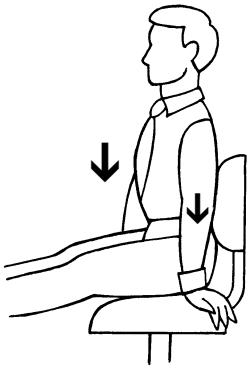
Tummy Tightener: (For waist and abdomen.) Sitting with legs together straight out, bend forward and grasp the legs just below the knees. Press down with the hands, at the same time press up against the hands with both legs.



The Hand Press: (For arms, chest and shoulders.) Sit straight with chest out and arms held across chest; place one fist inside the other. Press together using all the strength of the arms and shoulders.



The Back-Pull: (For the back.) Keep back straight and lean forward until you can grasp your legs or braces of chair. Pull straight up using back muscles only.



The Body Lift: For shoulders, arms, abdomen.) Keeping the back straight, lean forward and place the hands palms down against the side of the chair. Hold legs straight out, attempt to raise body about one inch off the chair.

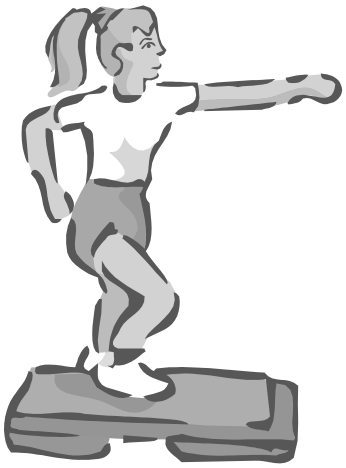
The Leg Squeezer: (For thighs, hips, calves, ankles.) While sitting on the forward edge of a chair, lean back, hold legs straight out. Hook one foot over the other and hold tightly. Rest feet on floor, keep legs straight, then try to pull the feet apart.

Bedroom exercises: various options for performing "pulse rated" exercise

Endurance training step

This exercise (abbreviated E.T.S.) satisfies the criteria of repetitive, rhythmic, dynamic activity involving large muscle groups which can be ***maintained*** for five minutes or longer and at the same time is ***fun*** to do, especially when performed to music. It consists of four hops alternating between right and left foot, somewhat similar to the time-honored ***fox-trot.*** It is described in detail in the book ***From Fatness to Fitness*** and will be demonstrated.

Step up



This is probably the simplest of this group of exercises, requires only a 12–inch stool as the only equipment, and can be performed with varying degrees of vigor…

This is probably the simplest of this group of exercises. It requires the purchase of a set of "aerobic steps" or a 12-inch stool (or stack of newspapers firmly tied together) as the only equipment. It can be performed with varying degrees of ***vigor*** to achieve the prescribed target zone for heart rate. To avoid boredom, it can be done to music.

Rope skipping

Often called the exercise adaptable to all ages because it can be performed with varying degrees of skill and ***creativeness.*** Proper rope length, coordination training with dry runs by those who have not done this since childhood, and caution to monitor pulse closely and progress ***gradually*** should be stressed by the physician prescribing this activity. The portability of the jump rope makes it particularly suitable for an exercise when ***away from home*** on extended trips.

Special equipment

In general, anything that will enable the patient to get his pulse rate to his target zone and ***maintain*** it there for a minimum of five minutes and is enjoyably ***used*** is suitable. The main purpose of all equipment is only as an ***adjunct*** to help patient motivation. It is by no means a ***requirement*** for an adequate exercise program. Of the numerous devices available the following have been found to be particularly suitable to the problems of the obese person in our clinic.

1. Treadmill
2. Cross-country ski trainer
3. Stair climber
4. Rowing machine

Determination of Speed of Walking from Time Required to Walk One Mile

Time it takes to walk one mile (minutes)	Speed of walking (miles per hour)	Time it takes to walk one mile (minutes)	Speed of walking (miles per hour)	Time it takes to walk one mile (minutes)	Speed of walking (miles per hour)
54 - 55	1.1	30	2.0	20	3.0 **Endurance effect begins here!**
50	1.2	28 - 29	2.1	19	3.2
46	1.3	27	2.2	18	3.3
43	1.4	26	2.3	17	3.5 **Ideal as minimum level!**
40	1.5	25	2.4	16	3.8
37 - 38 - 39	1.6	24	2.5	15	4.0
35 - 36	1.7	23	2.6	14	4.3
33 - 34	1.8	22	2.7	13	4.6
31 - 32	1.9	21	2.9	12	5.0

Caloric Expenditure of Level Walking at Various Speeds and for Two Levels of Body Weight

Body Weight of Walker in Pounds	Calories Burned Per Minute	Duration of Walking Time in Minutes											Speed of Walking (mph)	Minutes of walking needed to burn:		
		5	10	15	20	25	30	35	40	45	50	60		Chocolate Chip Cookie (51 cal.)	Plain Donut (151 cal.)	Hamburger (350 cal.)
		Total Calories Expended for the Time Period Above that Column														
100	2.1	11	21	32	42	53	63	74	84	95	105	126	2.0	24	72	167
200	3.6	18	36	54	72	90	108	126	144	162	180	216		14	42	97
100	2.5	13	25	38	50	63	75	88	100	113	125	150	2.5	20	60	140
200	4.5	23	45	68	90	113	135	158	180	203	225	270		11	34	78
100	3.1	16	31	47	62	78	93	109	124	140	155	186	3.0	16	49	113
200	5.2	26	52	78	104	130	156	182	208	234	260	312		10	29	67
100	3.5	18	35	53	70	88	105	123	140	158	175	210	3.5	15	43	100
200	6.1	31	61	92	122	153	183	214	244	275	305	366		8	25	57
100	4.0	20	40	60	80	100	120	140	160	180	200	240	4.0	13	38	88
200	6.9	35	69	104	138	173	207	242	276	311	345	414		7	22	51

- Calories and minutes have been rounded off to the nearest unit value for the sake of simplicity.
- Walking in a plowed field may add 36% extra calories to those expended on a level asphalt road.
- Walking up and down stairs may add 82% extra calories to those listed in the above table.Going down stairs involves about one-third the energy as going up stairs.
- For every 10-pound increase in weight, one burns up about 7% more calories for the same activity. Thus, one can calculate more exactly what his/her caloric expenditure is for his present body weight.
- This also means that for every 10-pound weight loss, one will burn 7% fewer calories for the same activity. Therefore, as one loses weight, he/she must increase either the speed or duration of walking in order to burn the same number of calories from walking than at higher body weight levels.

Animation!

Weekly performance checklist of increased general activity

Instructions: ***Circle*** a number in one of the three columns next to each line. Use the column that applies to your activity the ***past week***. Next, add up ***all the circled numbers*** to give you the total Activity Score for the past week.

The whole idea is ***move more.*** If the weekly scores are gradually increasing, you are succeeding. Remember, ***every little bit helps!*** A calorie here and a calorie there adds up. It's cumulative! Using only 100 extra calories each day, would use up the energy stored in 50 pounds of fat in five years.

Four Categories:

Added movement to idle moments	No	Occasionally	Often
Paced while waiting for bus, etc.	0	1	2
Raised up on toes repeatedly while standing	0	1	2
Wiggled toes when sitting, exercise calf muscles	0	1	2
During lull, frequently flexed and unflexed fingers	0	1	2
Used rocking chair while reading, watching TV	0	1	2
Did deep breathing exercises during idle moment	0	1	2
Walked on toes while doing chores around house	0	1	2
Stood up to do stretching exercises during break	0	1	2
During interlude performed isometric exercises	0	1	2
Other:_____	0	1	2

Added vigor to routine movements	No	Occasionally	Often
Got up and down from chair more often	0	1	2
Made rubdown after shower or bath more brisk	0	1	2
Walked back and forth more briskly than before	0	1	2
Turned more quickly than I have been doing	0	1	2
Swing my arms more whenever I open doors, etc.	0	1	2
Instead of "car wash" washed and waxed own car	0	1	2
Used more movement to comb or brush hair	0	1	2
Danced, played, sports, sex, etc. more vigorously	0	1	2
Remembered to "think activity" at every chance	0	1	2
Other:_____	0	1	2

Use body instead of machine power.

Standing up at least one hour more	No	Occasionally	Often
During activities I used to sit, I stood up	0	1	2
Standing whenever talking on the telephone	0	1	2
Stood at desk or worktable whenever possible	0	1	2
Eliminated chairs from home/jog environment	0	1	2
Stood while dressing, combing, make-up, ironing	0	1	2
Stood up whenever was introduced to someone	0	1	2
Stood, not sat, while speaking in front of group	0	1	2
Used stand-up table to do some of my work	0	1	2
Other:_____	0	1	2

Used body instead of machine power	No	Occasionally	Often
Used appliance requiring more body power	0	1	2
Avoided use of intercom, walked to person	0	1	2
Used stairs instead of elevator or escalator	0	1	2
Parked further away and walked to entrance	0	1	2
Stored commonly used items up high/down low	0	1	2
Did not ride when I could get there walking	0	1	2
Helped someone move heavier equipment, etc.	0	1	2
Picked up dropped items singly, not all at once	0	1	2
Used abdominal and leg muscles to rise from chair	0	1	2
Other:_____	0	1	2

Total Score:_____ **Week ending date:**_____

Comparative values of exercise groups

Group one

Activities good for getting you ***moving,*** but too intermittent and not ***sufficiently taxing*** to promote endurance.

- Light housework (washing small clothes, polishing furniture etc.)
- Strolling on level ground at 2.5 miles per hour or less (unless your capacity is very low and walking at this slow speed gets you to the ***target heart rate zone).***
- Golf using a power cart
- Driving a car or powerboat, flying a plane or riding a motorcycle (excitement or ***anxiety*** may cause an increase in heart rate. Since it is not ***exertional*** in nature, however, it has no meaning in the ***aerobic*** sense).
- Light woodwork repairing (auto, radio, TV, etc.), manual typing, riding a lawnmower, playing a piano and many other musical instruments.
- Bowling, billiards, shuffleboard
- Bait casting (fishing)
- Canoeing 2.5 mph or horseback riding at ***walking*** speed.

Group two

Activities which may be sufficiently taxing for building endurance if performed vigorously and continuously, but by their nature are usually too intermittent to have aerobic benefit.

- Moderate housework (mopping floors, vacuuming, cleaning windows, etc.)
- Golf (pulling bag cart), archery, horseshoe pitching
- Sailing (handling small boat), pushing light power mower.
- Horseback riding (trot)
- Volleyball (non-competitive, 6 man)
- Badminton (social doubles)
- Ping pong (easy intermittent play)
- Tennis doubles (social)
- Fly fishing (standing with waders)
- Cycling 6 mph or less on ***level*** ground (unless your capacity is very low and walking at this slow speed gets you to the ***target heart rate zone).***

Group three

Activities which can be ***made*** aerobic with ***special effort*** by carrying them out ***vigorously*** and ***continuously*** enough to reach target heart rate and ***maintain*** it for at least five minutes.

- Heavier housework (e.g., scrubbing floor)
- Painting, paperhanging, light carpentry, masonry
- Walking 3 mph (good ***starting*** dynamic exercise for obese persons with low capacity).
- Golf (***carrying*** golf clubs)
- Dancing (fox trot)
- Raking leaves, hoeing, many calisthenics and ***ballet*** exercises (continuous, rhythmic, repetitive ones only).
- Downhill skiing (runs may be risky for ***cardiacs*** because of amalgamated stress of exercise, cold weather and high altitude).

Group four

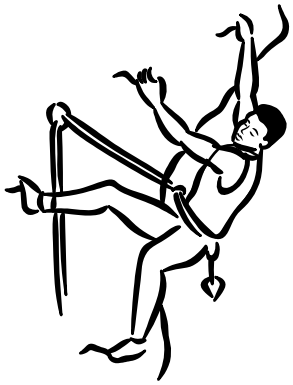
Activities which are usually good ***dynamic aerobic*** exercise.

- Walking 3.5 mph (miles per hour)
- Cycling 8 mph and canoeing 3 mph
- ***Singles*** tennis, ping pong and badminton (if played ***vigorously*** by a ***skilled*** player with an attempt to ***keep moving***).
- Stream fishing while walking in light current in waders.
- Ice skating or roller blading 9 mph, if done continuously.
- Hand lawn mowing
- Folk (square) dancing
- Swimming, rope skipping (see text)
- Horseback riding – gallop
- Basketball, ice hockey, touch football (***competitive*** element may be quite dangerous for cardiac patients).

Group five

Excellent aerobic exercises, once the individual has begun to improve his fitness. They are not recommended as ***starting*** exercises for obese persons, because they are too risky if unfit.

- Walking 4 mph
- Jogging 5 mph
- Cycling 10 mph - 13 mph
- Running 6 mph - 8 mph
- Canoeing 3 - 4 mph
- Ski touring 2.5 mph (loose snow)
- Cross country skiing



Group six

Activities which ***may*** be dangerous for the obese patient, especially if there is some impairment of heart function, because they are often associated with intermittent, sudden challenges to the system. They get heart rates up too rapidly and are generally too competitive.

- Water skiing (almost totally ***isometric*** rather than dynamic).
- Racquetball (hot playing areas are not desirable).
- Squash (competitive environment and hot room are not desirable unless you are already in tip-top physical condition).
- Digging ditches, shoveling snow, sawing hardwood (high risk for deconditioned individuals).
- Mountain climbing (same problems as above, plus additional risk at high altitude).

Weekly pulse rate & exercise log

Day of Week	Date	Exercise performed Describe type and activity. Indicate approximate intensity (e.g. mild, moderate, vigorous, etc.)	Duration of exercise (minutes)	Pulse rate			
				at rest prior to Starting	Immediately **at end of** Target Zone	**cooldown period**	
						2 Minutes After Finishing	10 Minutes After Finishing
1							
2							
3							
4							
5							
6							
7							