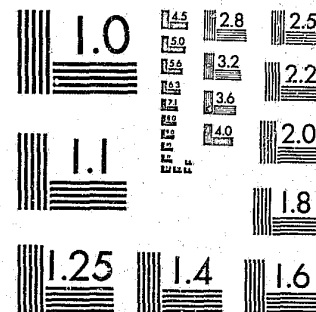


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National Institute of Justice
United States Department of Justice
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EXERCISING FOR THE INCARCERATED



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82006



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MANUAL ON EXERCISING
FOR THE INCARCERATED

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ACQUISITIONS

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THE NEED FOR EXERCISE AND PHYSICAL FITNESS IN JAILS

Physical fitness has a number of different meanings. To some individuals it means competing in sports events; to others it means a muscular body or absence of fatty tissue. To most people it refers to the degree to which a person is able to work and participate in recreational and other tasks of everyday life.

Physical activity for an inmate is extremely important to help reduce the weakening of body and mind which would otherwise occur in the idle institutional environment. The wise inmate becomes involved in a regular exercise program because it will make him or her feel better and time pass faster.

PHYSICAL FITNESS

The physical elements that are basic for adult fitness are muscular strength and endurance, flexibility and cardiorespiratory endurance.

Muscular Strength

Muscular strength is the ability of a muscle to exert a single, maximal force against a resistance. Lifting the heaviest weight or barbell you can handle at one time is an example of muscular strength. Weight resistance programs, such as working with barbells, are the most efficient means for gaining strength. The strength of the muscles of the human body is dependent on the size, condition, and work load placed on the muscles involved in generating the force.

Muscular Endurance

Muscular endurance is the ability of a muscle to exert force repeatedly against a resistance or to perform work continually. Lifting a weight several times or doing a maximum number of sit-ups, pull-ups or push-ups are examples of muscular endurance. The endurance of muscles is dependent upon their strength, condition, and the number of repetitions placed on the muscles involved.

Flexibility

Flexibility involves the ability to have a range of motion at a joint or series of joints. The rotation of movement at the shoulder joint, the bending and twisting of the spinal column, or stretching to touch one's toes with only a slight bend of the knees, are examples of flexibility. Toe touching with locked knees can be harmful to the beginner. The length and condition of the muscles, ligaments, and tendons largely determine the amount of movement possible at each joint.

Cardiorespiratory Endurance

Cardiorespiratory endurance is the ability to continue strenuous activity involving large muscle groups for long periods of time. In essence, it is the ability of the heart and lungs to supply oxygen and nutrients to your muscles and to remove carbon dioxide and other waste products. Three of the best examples of cardiorespiratory activities are jogging, swimming and cycling, when done continuously for an extended period of time. Cardiorespiratory endurance is the most essential physical component in adult fitness.

EXERCISE AND PHYSICAL FITNESS PROGRAMS

One of the most popular and effective programs for developing muscular strength and endurance is the weight training program (use of barbells). Many prisons have developed weight training programs not only because of the value of the program, but also because of their popularity. Some books are listed in the reference which pertain to weight training.

An isometrics training program, involving contraction of opposing muscles without movement, resulting in toning and strengthening of muscles, is more practical and applicable for a confined person, but it requires more instruction and motivation. Probably the most effective exercises available would be the traditional calisthenic program plus various other appropriate exercises. Several adult fitness books are listed in the references and would make an excellent supplement for the exercises listed in this monograph.

GUIDELINES AND RECOMMENDATIONS FOR EXERCISE PROGRAMS

The success of any exercise program depends in great part on the person's following certain guidelines or rules regarding the frequency, intensity, duration and regularity of exercising.

Frequency

The minimum number of times that one should exercise is 3 to 5 days a week. Daily exercising is recommended.

Intensity

It is important to begin with light to moderate efforts; then, increase work loads and progress to higher levels of exercise as your fitness improves over weeks and months.

Duration

When beginning your program, the length of time for exercising should not be longer than 15 to 20 minutes of continuous exercise for the first 3 to 4 weeks. As your physical fitness improves, the length of time should increase up to 30 - 60 minutes of continuous exercise. These are averages and allowance should be made for your overall physical condition when you enter the program.

Regularity of Training

A daily regular workout time is important so you can better see the effects of the training.

Other guidelines to follow when exercising include:

Warm-up - A gradual warm-up is suggested because sudden strenuous exercises can cause muscle pulls and injuries to joints.

Workout - The main part of the exercise program is the workout (that is, the time spent in doing your sequence of exercises).

Warm-Down - A gradual tapering off period following strenuous activity allows the body to remove excess heat and circulation and respiration to return to their normal states.

FITNESS TEST AND EVALUATION

Since most jails are not equipped to do comprehensive fitness testing, the fitness test items selected are based on ease of administration, cost of equipment and time available. The following tests have proven practical and helpful in assessing adults prior to starting an exercise program.

Equipment

- rug or mat on which to do sit-ups.
- clock or watch with sweep second hand or stop-watch.



Muscular Strength and Endurance

The One-Minute Sit-up Test:

The inmate starts by lying on his/her back, knees bent at a 90° angle and heels flat on the floor. A partner holds the feet down. The inmate then performs as many correct sit-ups (see Figure 1) as possible in one minute. In the up position, the inmate should touch the elbows to the knees and then return to a full lying position before starting the next sit-up. The total number of sit-ups performed in one minute will translate into a fitness score in the norms table (see Appendix A). This test indicates the general strength and endurance of the muscular system, especially the abdominal muscle group, an area of important concern.

Equipment

- one yardstick.
- tape or chalk for line.



Flexibility

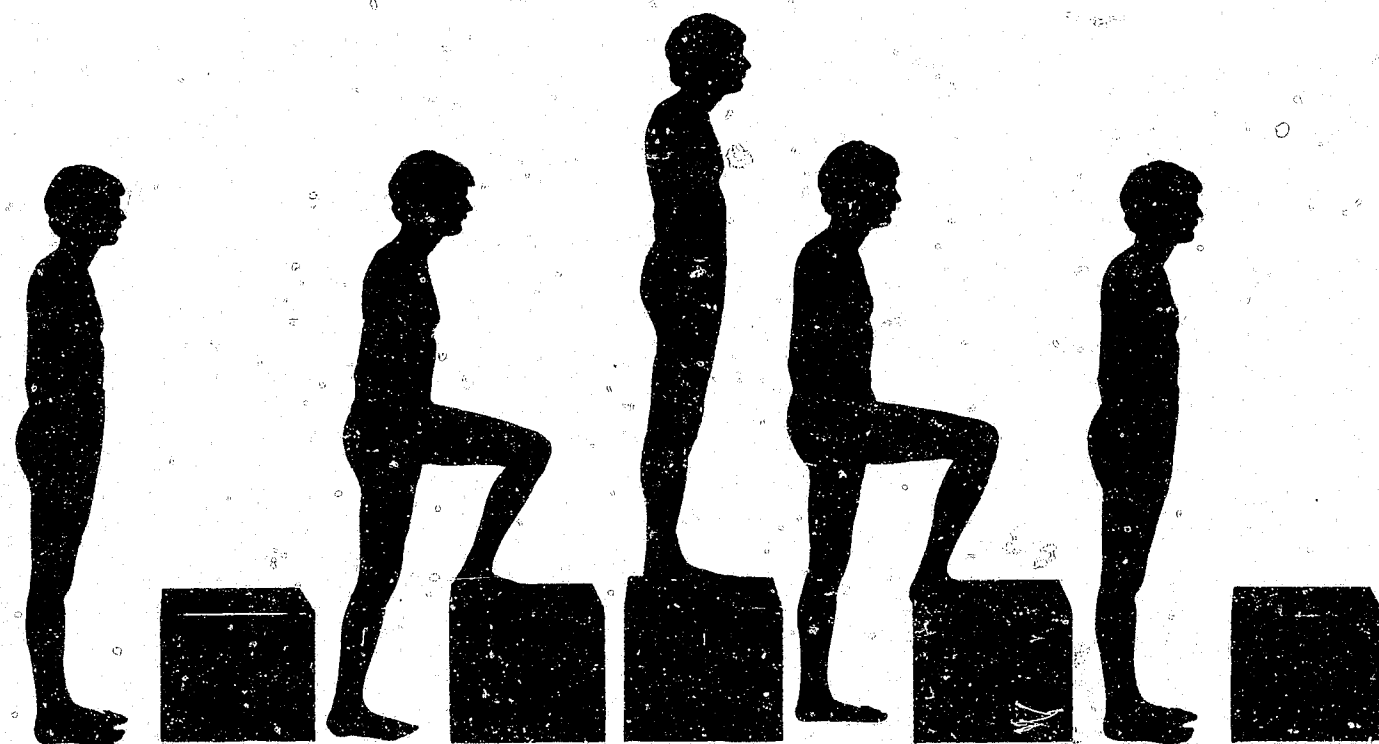
The Bend and Reach Test:

The inmate sits on the floor with legs extended at right angles to a taped or marked line, as shown in Figure 2. The heels touch the near edge of the line and are about six inches apart. A yardstick is placed between

the legs of the subject and rests on the floor with the 15 inch mark on the line. The subject slowly reaches forward with both hands as far as possible and holds the position momentarily (knees remain straight). The distance reached on the yardstick by the fingertips is recorded and the best of three trials is the flexibility score to be compared to the norms in the fitness table (see Appendix A). Prior to actual test administration, the inmate can warm-up slowly by practicing stretching. Trunk flexion serves as an important measure of hip and back flexibility and elasticity of the hamstring muscle group.

Equipment

- 12 inch bench, step, chair or box (preferably 18 inches wide).
- clock or watch with sweep second hand or stop-watch.



Cardiorespiratory Endurance

The Three-Minute Step Test:

The inmate starts by standing on the floor and in front of a 12-inch high box, bench, chair or step, any of which can be used for the step test.

On the signal "begin", the watch is started and one starts stepping on the bench. First the left foot up, then the right foot up, then the left foot down, then the right foot down (see Figure 3). (The count is up, up, down, down.) This constitutes 4 counts. Step in cadence at 96 counts per minute or 24 complete step cycles per minute. During the three-minute test, the inmate will make 72 complete stepping cycles.

Immediately after the three minutes of stepping, the subject sits down. A 60 second heart rate is counted starting five seconds after completion of stepping. (Heart rate may best be taken on the carotid artery on the side of the throat by counting the beats for ten seconds and multiplying by six to get the rate for one minute.) The heart rate count will give a fitness score to be interpreted with the norms table (see Appendix A).

Bench stepping serves as a measure of heart and lung functioning and is a most important measure of adult fitness.

BASIC CALISTHENIC PROGRAM

By the process of elimination, the best exercise program for a confined person is built around a calisthenic program. Calisthenics are the best conditioners when cost of equipment, facilities, space, time and instruction are considered. Some other conditioners are included besides calisthenics.

Individuals should record the number of minutes spent daily on each type of exercise (see Appendix B for sample).

A. WARM-UP EXERCISES

Warm-up exercises should begin gently and gradually progress to more vigorous action as you prepare for the workout.

* For unconditioned persons, the warm-up exercises should be adequate for the first two to four weeks, then add Level I of workout.

* For all stretching movements, gradually increase the degree of stretch with each repetition and be sure to do them slowly and gently, not abruptly or forcefully.

* Do the exercises in the order listed.



Jumping Jacks:

Stand with arms at sides. Jump, spreading feet to the side and at the same time swing the arms overhead; then swing the arms down and jump back to the starting position. Use a rhythmical and comfortable count. Repeat 15 times.



Side Stretcher:

Stand, feet slightly apart, one arm extended straight upward and the other at the side. Slowly bend to the side of the down arm as far as you can go and hold for five counts. (DO NOT bounce in an effort to lean farther down.) Then come up, switch arm positions and repeat on the other side. Repeat 5 times on each side.

Trunk Twister:

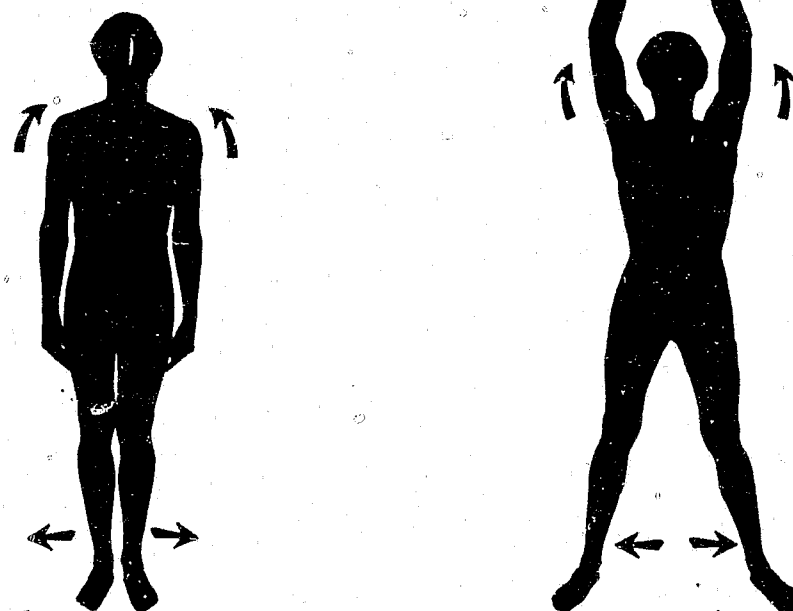
Stand, feet comfortably apart, with arms extended out from the sides, palms down. Slowly twist to one side as far as you can go, hold for five counts, and repeat on the other side. Repeat 5 times on each side.



Forward Bend and Reach:

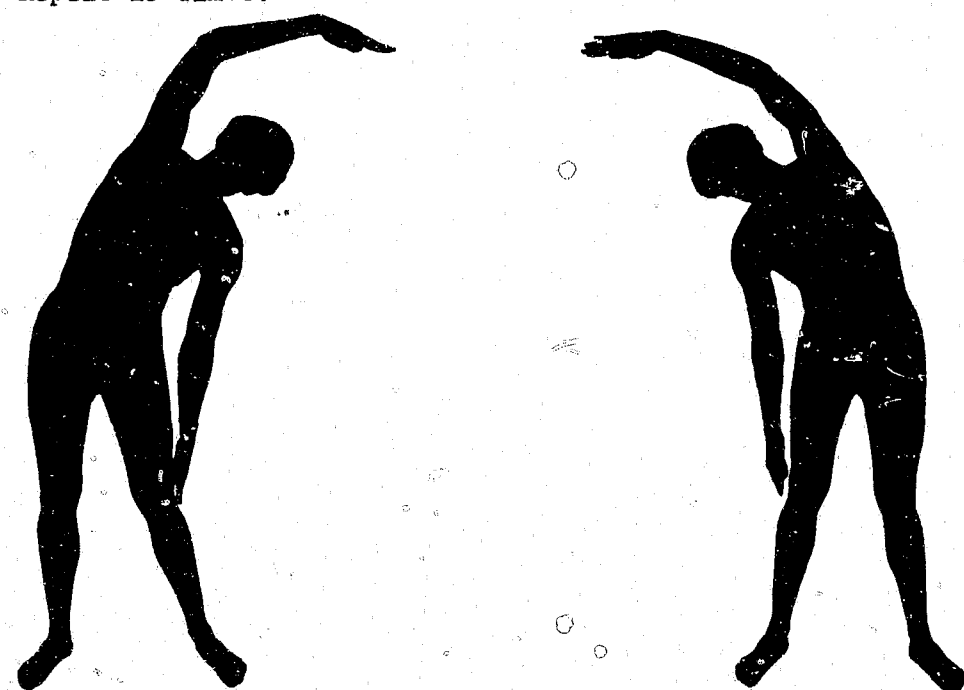
Stand with feet about 18 inches apart, knees slightly bent, arms hanging loosely at the sides. Bend forward, extend the arms between the legs and gently reach to touch the ground at about heel level. Hold for 5 counts, and then come up to a standing position. Repeat 5 times.





Jumping Jacks:

Stand with arms at sides. Jump, spreading feet to the side and at the same time swing the arms overhead; then swing the arms down and jump back to the starting position. Use a rhythmical and comfortable count. Repeat 15 times.

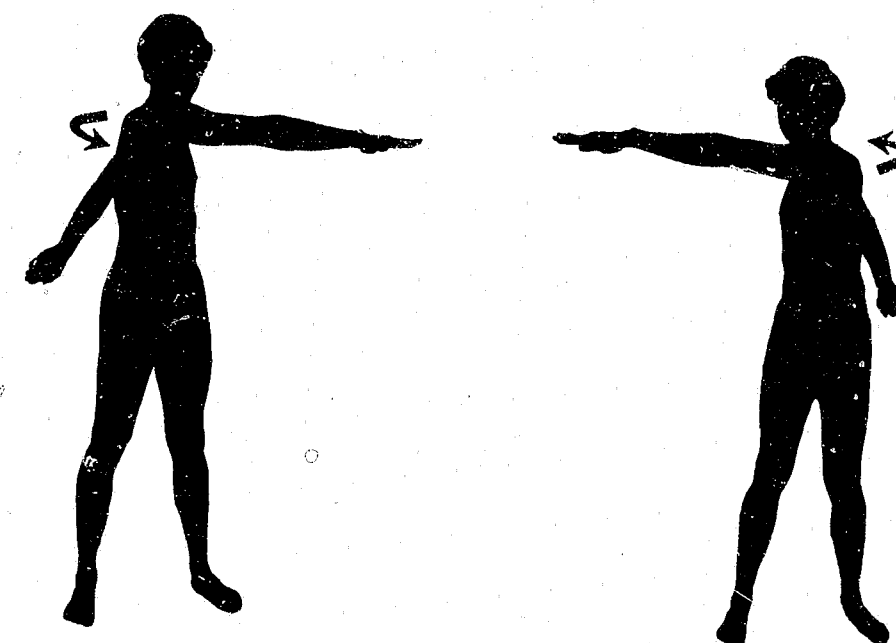


Side Stretcher:

Stand, feet slightly apart, one arm extended straight upward and the other at the side. Slowly bend to the side of the down arm as far as you can go and hold for five counts. (DO NOT bounce in an effort to lean farther down.) Then come up, switch arm positions and repeat on the other side. Repeat 5 times on each side.

Trunk Twister:

Stand, feet comfortably apart, with arms extended out from the sides, palms down. Slowly twist to one side as far as you can go, hold for five counts, and repeat on the other side. Repeat 5 times on each side.



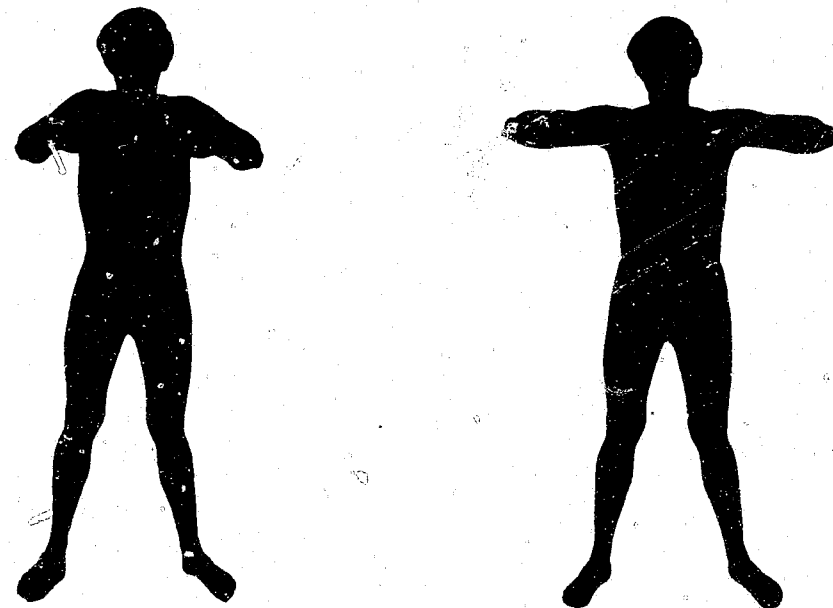
Forward Bend and Reach:

Stand with feet about 18 inches apart, knees slightly bent, arms hanging loosely at the sides. Bend forward, extend the arms between the legs and gently reach to touch the ground at about heel level. Hold for 5 counts, and then come up to a standing position. Repeat 5 times.



Shoulder Stretcher:

Stand with feet comfortably apart, with the arms bent, hands in front of the chest and the elbows out to the side. Without arching the back, rhythmically thrust the elbows backwards and return to starting position. Repeat 10 times.



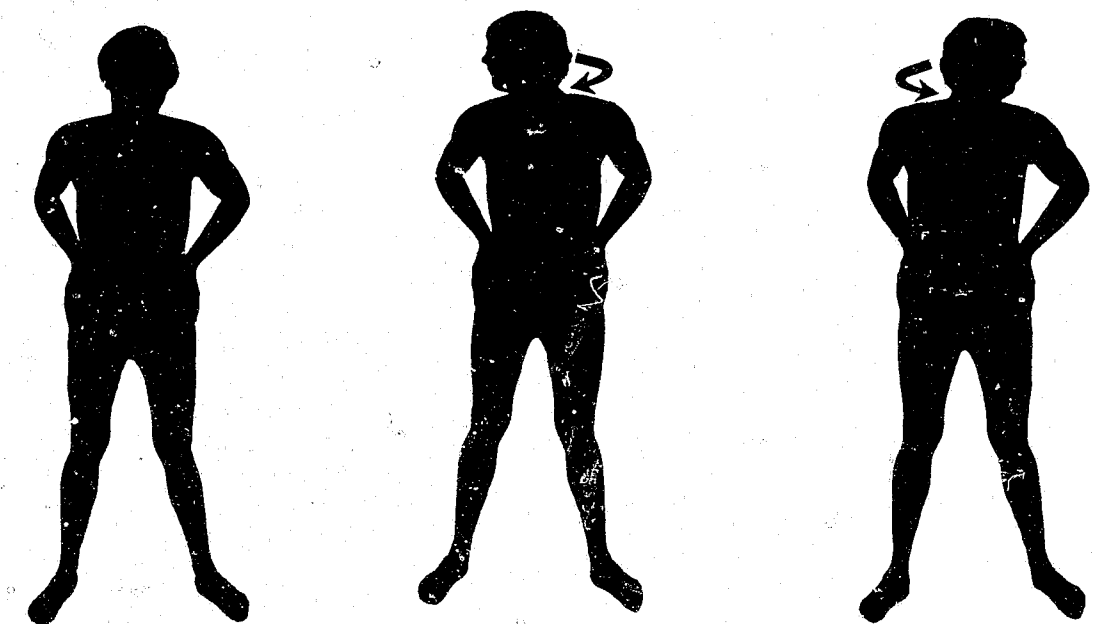
Shoulder Roll:

Stand with feet comfortably apart, with the fingers of each hand touching the shoulders. Slowly rotate the elbows in a full circle - forward, up, back, and down. Repeat 5 times, then reverse the rotation.



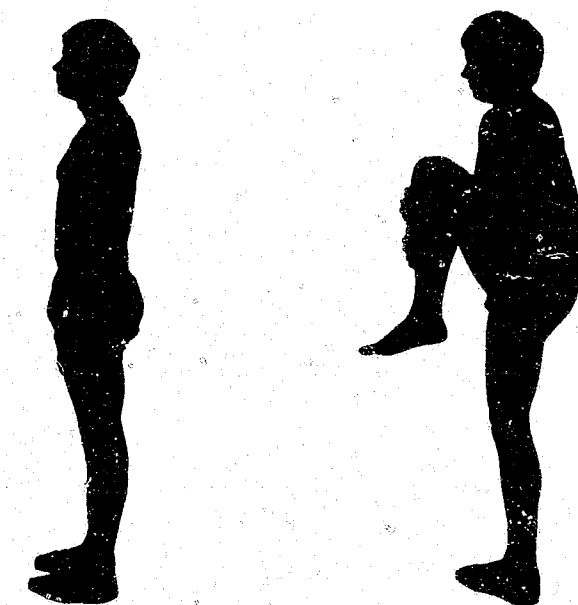
Neck Roll:

Stand with feet comfortably apart, with hands on the hips. Gently roll the head in a full circle first to one side, then forward, then to the other side, then backward. Repeat 5 times. Reverse the direction for an additional 5 times.



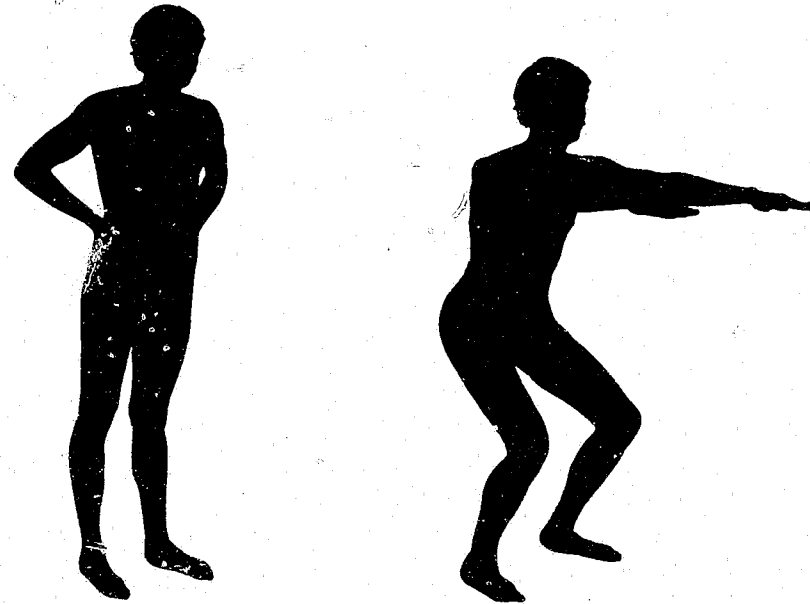
Knee Lifts:

Stand with feet comfortably apart, arms at the sides. Raise one knee to the chest, grasp and gently pull it to the chest, return and repeat with other leg. Keep the back straight. Repeat 5 times with each leg.



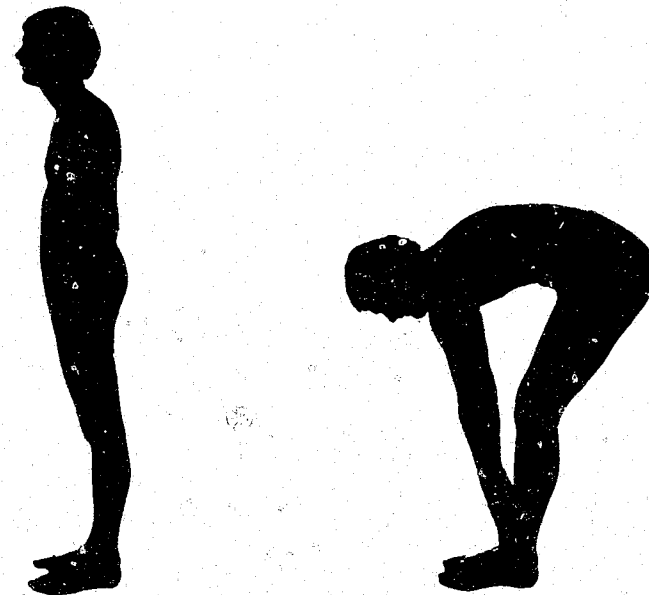
Half Knee Bend:

Stand with feet comfortably apart, hands on hips. Bend the legs to just short of a 90 degree angle (squat), extending the arms forward for balance as you go down, then return and repeat in a slow moderate pace. Repeat 10 times.



Toe Touches:

Stand with feet together, arms at sides. Keeping the knees slightly bent, lean forward and gently stretch hands toward the toes or floor. Return and repeat in a slow rhythm. (Caution: do not bob or jerk down to toes.) Repeat 10 times.



Sitting Stretcher:

Sit on floor, knees extended, your legs spread at approximately a 45 degree angle. Bend forward slowly at the waist. Reach out to the left and try to touch your head to your left knee until you feel stretching pain in the back of the leg. Hold this position for 2 or 3 seconds, then return to starting position. Reach out to the right side and do the same. Repeat 5 times to each side.



Slow Jog:

Stand in place with arms in a running position. Slowly jog in place or in a small circle for 60 counts or 60 seconds. Count each time the left foot strikes the floor. Begin slowly and pick up the pace gradually every 15 counts or 15 seconds. Speed can be increased as conditioning improves.



Deep Breathing:

Stand with feet comfortably apart. Slowly swing the arms forward and upward, raise up on the toes and inhale deeply until arms are in an overhead position. Swing the arms down, drop to the heels and exhale as the arms are returned to the starting position. Repeat 5 times.



B. WORKOUT

Daily Dozen Exercises

This workout uses a set of 12 exercises called the Daily Dozen set of exercises and is designed to advance the user through three levels of fitness. The Daily Dozen consists of a set of graduated exercises to be used after the warm-up exercises have prepared you physically and mentally for the workout. During the first week or two, you may be physically able to do only the warm-up exercises because of your present conditioning. When you feel ready for a complete workout, start with exercise one, Level I, of the Daily Dozen.

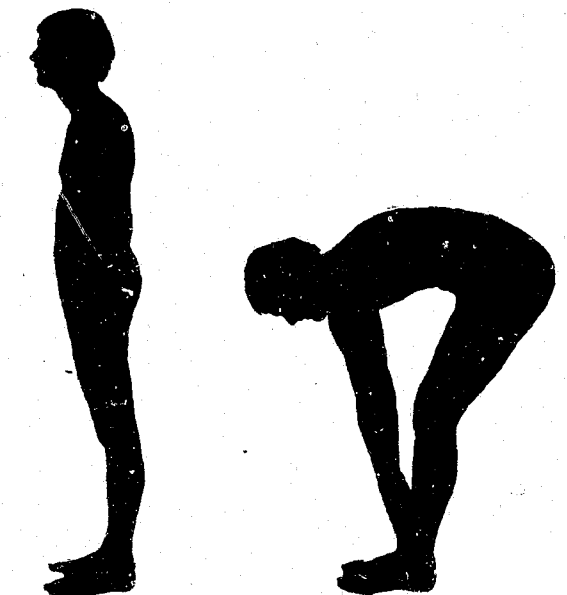
Workouts for this set of exercises include three levels of conditioning. The numbers in the columns to the right indicate how many times you should repeat the exercise for that level of fitness.

Work at Level I or the beginning level until your conditioning allows you to complete all of Level I without undue stress. Then progress to Level II, and finally to Level III.

Toe Touch Series:

There are four standing positions for this exercise, starting with the feet at shoulder width, then together, then crossing one foot over the other and finally reversing foot positions. Rhythmically and gently stretch and touch the toes in each of the four positions. Then return to the starting position.

LEVELS (Of Repetition)		
I	II	III
5	10	15



Squat Jumps:

Stand with feet comfortably apart with one foot slightly ahead of the other and put hands behind head with fingers interlocked. Drop down to a half squat position and keep back as straight as possible. Jump to upright position with body straight and feet leaving floor. Reverse position of feet before landing and return to half squat position.

LEVELS (Of Repetition)		
I	II	III
10	20	30



LEVELS (Of Repetition)		
I	II	III
10	20	30

Sprinters Drive:

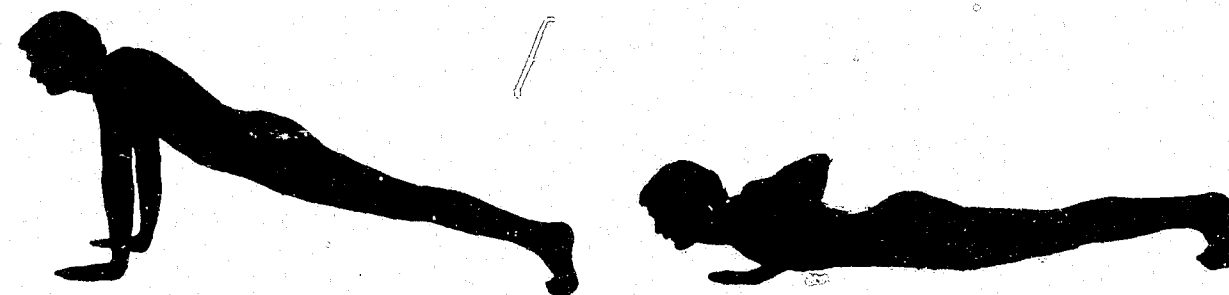
Place hands on the floor at shoulder width and lean forward with one leg well up under the chest and the other fully extended to the rear. Shift leg positions in a two count rhythm.



Push-ups:

10	15	20
----	----	----

(Men) Lie face down on floor with hands directly under the shoulder joints, fingers pointing straight ahead. Extend the arms and raise the body in a straight line from head to heels to a fully extended position supported by the arms and toes. Lower the body in a straight line by bending the arms until the chest just touches or comes within an inch of the floor. Repeat in moderate rhythm. (Women) Same, except keep the knees in contact with floor throughout the movement.



LEVELS (Of Repetition)		
I	II	III
5	10	15

Static Stretcher:

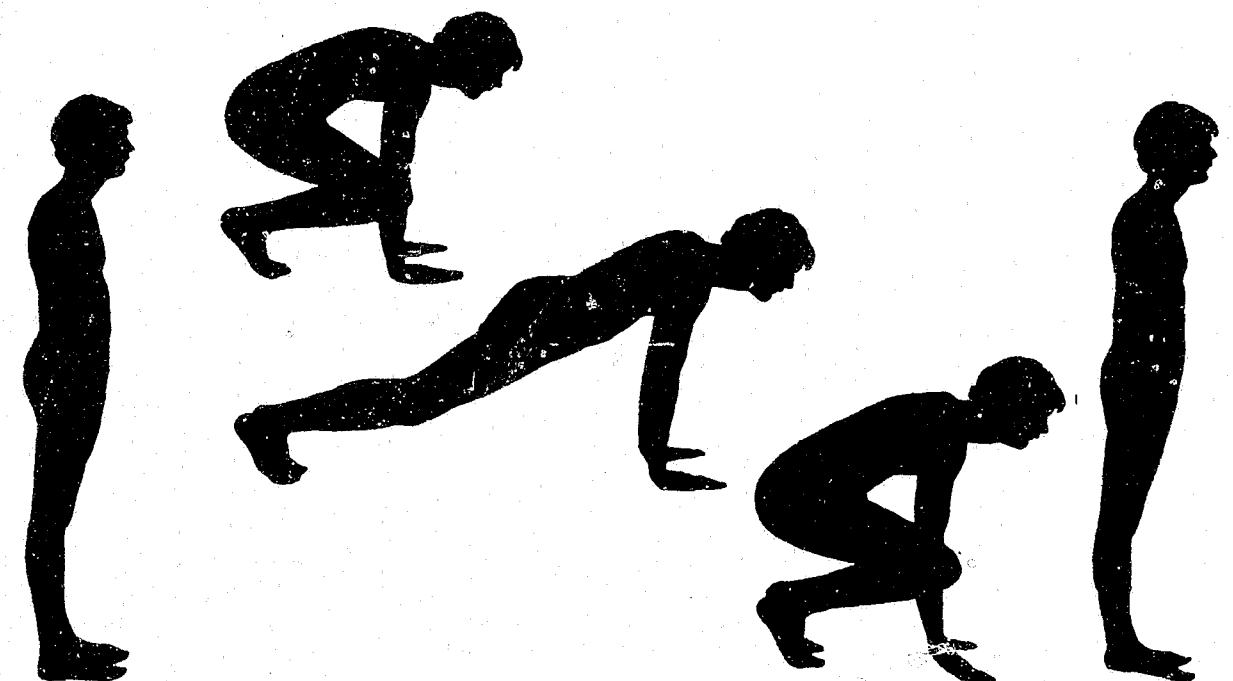
Sit on floor with feet together, hands at sides. Without bending legs, bend trunk forward, tuck head, reach forward as far as possible and grasp firmly around legs, ankles or feet according to the extent of your reach. Hold for six seconds, relax and return to starting position.



Squat Thrusts:

10	15	20
----	----	----

Four distinct motions are to be performed in rapid succession. Stand with your hands at your sides, then bend your knees and place your hands on the floor in front of your feet; thrust your legs back to a fully extended position; return to the squat position; then return to the erect position.



LEVELS (Of Repetition)		
I	II	III
10	20	30

Curl-ups:

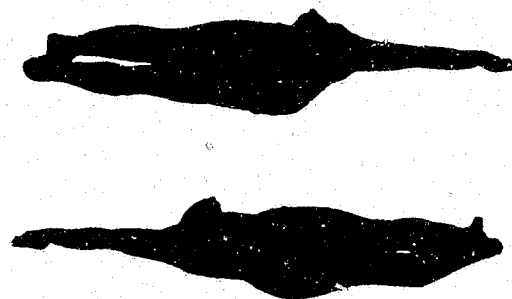
Lie flat on back, legs straight and together and with the arms extending overhead. In one motion, curl up, bring the knees up and wrap the arms around the knees. Return to the starting position. While raising up, roll the head, neck, shoulder, upper and lower back in order. Then unfold in reverse order coming down.



Leg-Overs:

10	15	20
----	----	----

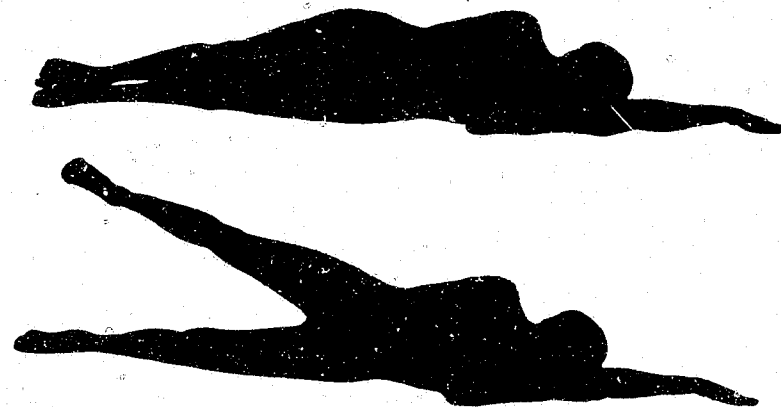
Lie on back, legs straight and together, arms stretched sideways at shoulder level, palms down. Lift both legs until they are perpendicular to floor, keeping them straight and together. Lower legs to the left and touch the floor. Lift to perpendicular and lower to the right side. Lift again perpendicular and return to starting position.



LEVELS (Of Repetition)		
I	II	III
10	15	20

Side Leg Lifts:

Lie on one side with legs together, head supported by the elbow and hand and the other hand on floor in front of body for balance. With the leg straight, lift it as far as possible and return to the starting position. Repeat on other side.



Double Leg Raiser:

10	15	20
----	----	----

Lie on back, hands under buttocks, palms down, with lower back touching floor. With knees straight, raise both legs to straight up or 90 degree position, then exhale. Lower legs slowly to floor and inhale.



LEVELS (Of Repetition)		
I	II	III
10	15	20

Low Back Stretcher:

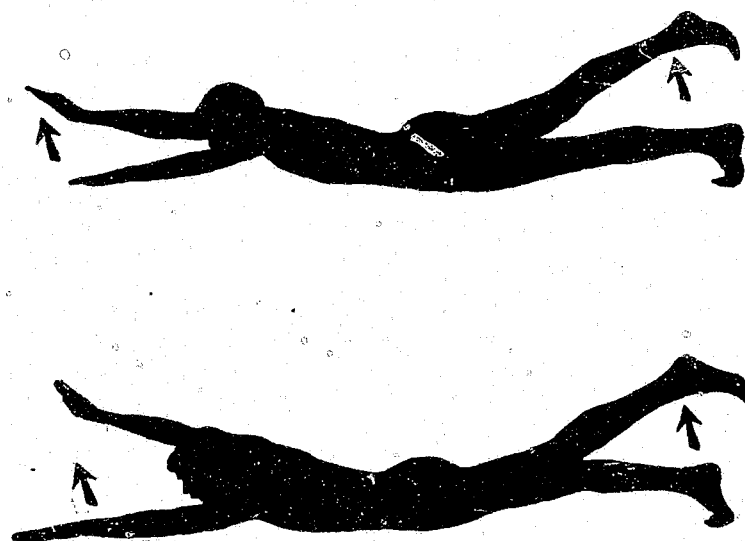
Lie on your back with knees straight. Pull one knee to your chest. As you do so, curl your shoulders and head toward the knee. Return to starting position and repeat exercise with other leg.



Prone Arch:

10	15	20
----	----	----

Lie face down with your arms extended over your head and your legs extended. Lift your right arm and left leg simultaneously and keep them extended for three to four seconds, then return to starting position. Now lift the left arm and right leg simultaneously for three to four seconds. Repeat. Do this exercise slowly; do not jerk your legs and arms.



Cardiorespiratory Exercises

LEVELS (In Minutes)		
I	II	III

Select one of the following endurance exercises.

* Jogging 1-2 4-6 8-10

Jog in place or in small circle.

* Jogging 1-2 4-6 8-10

Jog in place or in small circle using alternate slow, medium and fast speeds.

* Bench Stepping 2-4 6-8 10-12

Step up and down on a bench or chair (approximately 16-18" high) at the rate of 15 steps a minute (one every four seconds). If this pace is too easy for you, you may increase this stepping rate to one every three seconds and finally to one every two seconds. This should be only after you have gone through the three levels.

C. WARM-DOWN EXERCISES

The warm-down period is best accomplished by a continuation of activity at a lowered intensity. Keep moving for about three to five minutes. Walking, slow jogging or repeating the stretching exercises are excellent ways to return to your normal state. When heart rate and breathing return to near normal, you should finish the workout with a shower.

GLOSSARY

Cadence	A measure of rhythmical motion or a rhythmical flow of sounds.
Calisthenic Program	A series of exercises without use of equipment or with light equipment.
Cardiorespiratory	Joint functioning of the heart and lungs.
Distinct	Separate or different.
Hamstring Muscle Group	Two groups of tendons at the back of the knee.
Intensity	Physical stress on the body during exercise, determined by measuring heart or pulse rate after exercising.
Nutrients	Basic substances of the body which are provided by foods.
Perpendicular	Straight up from the floor or at a 90° angle to the floor.
Repetition	Being repeated.
Simultaneously	At the same time.
Tendon	An extension of muscle tissue which attaches to the bone.

APPENDIX A

NORMS TABLE

FITNESS CATEGORY	ONE-MINUTE SIT-UP TEST ^a (# of Sit-ups)	BEND AND REACH TEST ^b (# of Inches Reached)	THREE-MINUTE STEP TEST ^c (Heart Beats Per Minute)
Excellent	35 and above	22-23	84 and below
Good	30-34	20-21	85 to 94
Average	20-29	14-19	95 to 119
Below Average	15-19	12-13	120 to 129
Poor	14 and below	10-11	130 and above

a. Myers, Golding and Sinning sit-up test

b. Myers, Golding and Sinning bend and reach test

c. Kasch and Boyer step test

EXERCISE RECORD SHEET

Record Minutes Spent In Each Type of Exercise

Month: _____

Day	WORKOUT				Cardiorespiratory
	Warm-Up	Level I	Level II	Level III	
1					
2					
3					
4					
5					
6					
7					
8					
9					
10					
11					
12					
13					
14					
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