SOME PRACTICAL OBSERVATIONS REGARDING THE ELDERLY PRESENTED BY A BIOMECHANIST

J. M. Cooper
Indiana University, Bloomington, IN USA

The right to grow old is a privilege. Actually, one can grow old gracefully and skillfully. For example, Japanese are leading the world in longevity and they have a zest for living and are honored for it.

The elderly are the fastest growing segment in the United States. Now there are 25,000 centenarians. It is predicted there will be 2 million in 2080, and 81 million over 65 years of age sometime in the early next century; one-fourth of the population. Several medical experts say that we all could live to be 125 to 150 years old.

What are these older people like?

1. Not many are obese.
2. Drink very little alcoholic beverage, if any.
3. Have a genetic propensity toward a long life, at least one relative lived to be 90 or more.
4. Generally, they are physically active.
5. Tend not to be self-centered.
6. Generally are optimistic.
7. Have faith in something beyond themselves.
8. Want to be doing something. They enjoy life.
10. Could do without television and conveniences--might be satisfied if they didn't have them.*

Of the five senses, sight is affected first, hearing next, then smell, taste and touch, in that order. For heavy smokers, taste and smell are lost faster than by non-smokers. Hearing is the most untreated.

Caetilin Kelly, M. D., who practices internal medicine in Bloomington, IN., says, "The human body is an intricate marvel of self-maintenance." Yet, many people have a careless disregard for their wonderful body and how it functions. It has been reported that the average life of a professional football player is 52 years of age. Many factors enter into this happening including disregard for his health.
There are certain statements that might be made here regarding the elderly:

1. Balance is often lost during movement. Practicing balancing movements include making mechanical adjustments which help to alleviate this condition to a degree.
2. Muscular strength can be maintained by utilizing strength exercises including the use of light weights.
3. Some aerobic exercises need to be done. If not contra-indicated, if the heart muscles are to be kept in readiness. Thirty minute a day is prescribed by Dr. Marty of Indiana University Medical School.
4. Apparently reflexes such as the patellar reflex are not lost as rapidly as once thought.
5. Daily elevation of the legs helps reduce the pooling of the blood in the lower extremities.
6. Usually, the young may be slightly over-weight, the middle age hopefully normal, and the elderly slightly underweight. Yet, accumulation of fat per muscle unit is greater in the elderly.
7. The muscle groups most important to the elderly are the front thigh and back thigh, the glutei and the spine.
8. Daily flexing of the joints is necessary for normal action.
9. Physical fitness can't be banked in youth to be used later in life.
10. The brain, like the muscles, must be constantly exercised.

Some indications of aging are: (1) brittle fingernails, (2) comers of mouth dry and scaly, (3) wrinkles around eyes and on face, (4) dewlap, sagging skin around jaw, (5) difficulty in looking to rear to locate another car while driving, (6) difficulty in getting up from a seated position in a chair, (7) difficulty getting out of the rear seat of a car, (8) difficulty getting up from a prone or supine position from the floor, (9) loss of hearing, (10) arthritis in hands, back and lower limbs, (11) loss of balance and psycho-motor abilities, stumble a lot, (12) hands unsteady, (13) loss of tension of the skin, bruise frequently, easily and sometimes severely, (14) tendency to want to just sit, (15) unable to jump, especially backwards, (16) slower reaction time, (17) drool (saliva flow), slack jaw muscle, (18) have trouble adapting to change, (19) veins stand out, and (20) skin wrinkles.

Following are a few comments for the active elderly person:

Back injuries from lifting: Back injuries are often due to the use of improper lifting techniques. The use of a "4" and not a "7" lifting position is advocated.

Proper lifting involves: (a) sizing up the load, feel and move it, (b) feet spread apart with knees bent, (c) do not twist the lower back from side to side while holding weight.
(d) use the legs to lift weight from floor. It is important to keep the muscles of the back and abdomen strong through acceptable exercise. Sitting too long at a time or sitting improperly can be devastating to the lower back of a person overweight and out of shape.

Preventing falls causing injury to head, arms, face, back: (a) keep feet spread, (b) shift weight slowly, (c) maintain a near balanced position, (d) prevent bruises to feet and toes by avoiding objects in the way, (e) if starting to fall, don't fight it. Just sit down. (f) protect the head and face at all cost. (g) keep a balanced position whenever possible.

**My daily personal exercises, prescription** with demonstration:

1. Facial exercises - 40 reps
2. Lie on back - supine knee bent, raise hips, 20 reps, 3 bouts
3. From same supine position-knee bend, rising toward upright position - 20 reps. 3 bouts.
4. Elevate legs - pump them - 20 reps, 3 bouts, draws blood away from extremities.
5. Prone position - elevate trunk, strengthens lower back, 20 reps, 3 bouts.
6. Same position over a chair. elevate trunk, strengthens upper back.
7. Modified pushups - 20 reps, 3 bouts.
8. Upright position, raise and lower heels. 20 reps, 1 bout
9. Do several stretching exercises, including twisting to reach down and to look to rear.
10. Rapidly walk in place or over a given area.
11. Walk 2 or 3 miles every day.
12. Walk upstairs, don't use elevators. Always walk when playing golf.
13. Try to strengthen leg muscles, even use light weights.
14. Don't jog or run but try to move rapidly when walking or mowing the lawn.

In summary, the great increase in numbers of the elderly is staggering, politically, financially, medically, mechanically, etc. Studies of this segment of the population must continue to be conducted to determine what is best for them. This should include all disciplines, all professions. We know a little but not very much about these older people. We need many centers for the aging for advisement to this group recommending how they can still be productive.

**REFERENCES**


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