INCREASED NECK STRENGTH FOR THE PREVENTION

The cause and effect of injuries in sports is a very simple situation . . . when a force is imposed that exceeds the structural integrity of the anatomy, then an injury is produced. The problem can be solved in three ways . . . (1) avoid the sport and thus the forces that produce injuries . . . (2) by the use of protective padding that will distribute the forces over a wide area and effectively reduce the magnitude of force imposed upon a particular area . . . and (3) by increasing the mass and strength of the body itself.

In a practical sense, the first approach is obviously impossible for an athlete . . . the result being that more than 100,000 surgical procedures were performed last year alone as a direct result of football, several people were killed, some were permanently crippled, and a large but unknown number of players were forced to stop playing.

The second approach, protective padding, is already being employed . . . and while it is probable that improvements will be produced in this area in the future, it is almost certain that everything possible is being done within the framework of the present state of the art. Yet literally hundreds of thousands of injuries are still resulting from football alone every year.

The third approach, improving the structural integrity of the body by the use of exercise, is really the only area of potential improvement that remains to be exploited; this unfortunately being true primarily because it is an area of potential improvement that remains largely ignored.

No amount of exercise of any kind can guarantee a particular athlete that he will never be injured . . . but a very small amount of proper exercise will certainly change the odds in his favor. In the case of neck injuries, the difference may literally be a matter of life and death.

Until quite recently, no really practical source of good exercise for the vitally important area of the neck even existed . . . but that gap has now been filled, in a simple, practical and very effective manner. There is no longer any excuse to ignore the development of the critical muscular structures of the neck.

To the degree that larger and stronger necks can contribute to the prevention of injury in football, or any other sport . . . the problem can now be solved. Less than ten minutes of proper exercise devoted to the muscles of the neck twice weekly, will improve the neck strength in excess of 50% within a period of six weeks.

During the course of a large scale research program conducted during the months of April and May, 1975, eighteen subjects produced an average increase in neck strength of nearly 92% as a result of only twelve brief workouts performed over a period of six weeks. Since the actual length of time devoted to each workout was less than eight minutes, this means that a total of approximately ninety minutes of exercise spread over a period of six weeks nearly doubled the neck strength of the average subject.

Another group of sixteen test subjects utilized exactly the same equipment for the same period of time, six weeks . . . with two important differences; this group was given almost nothing in the way of supervision, and they trained three times weekly instead of

STRENGTH...
OF INJURY IN FOOTBALL

twice weekly, thus performing eighteen brief workouts within the same time frame. These subjects produced an average increase in neck strength of nearly 57% as a result of approximately two hours and fifteen minutes of unsupervised exercise.

By comparison, a third group of sixteen subjects produced an average increase of approximately 28% in neck strength as a result of exercise performed in conjunction with their participation in spring football practice. This group did not use the same equipment utilized by the first two groups; instead, their exercises were restricted to conventional neck exercises such as bridging, isometrics and normal weightlifting movements.

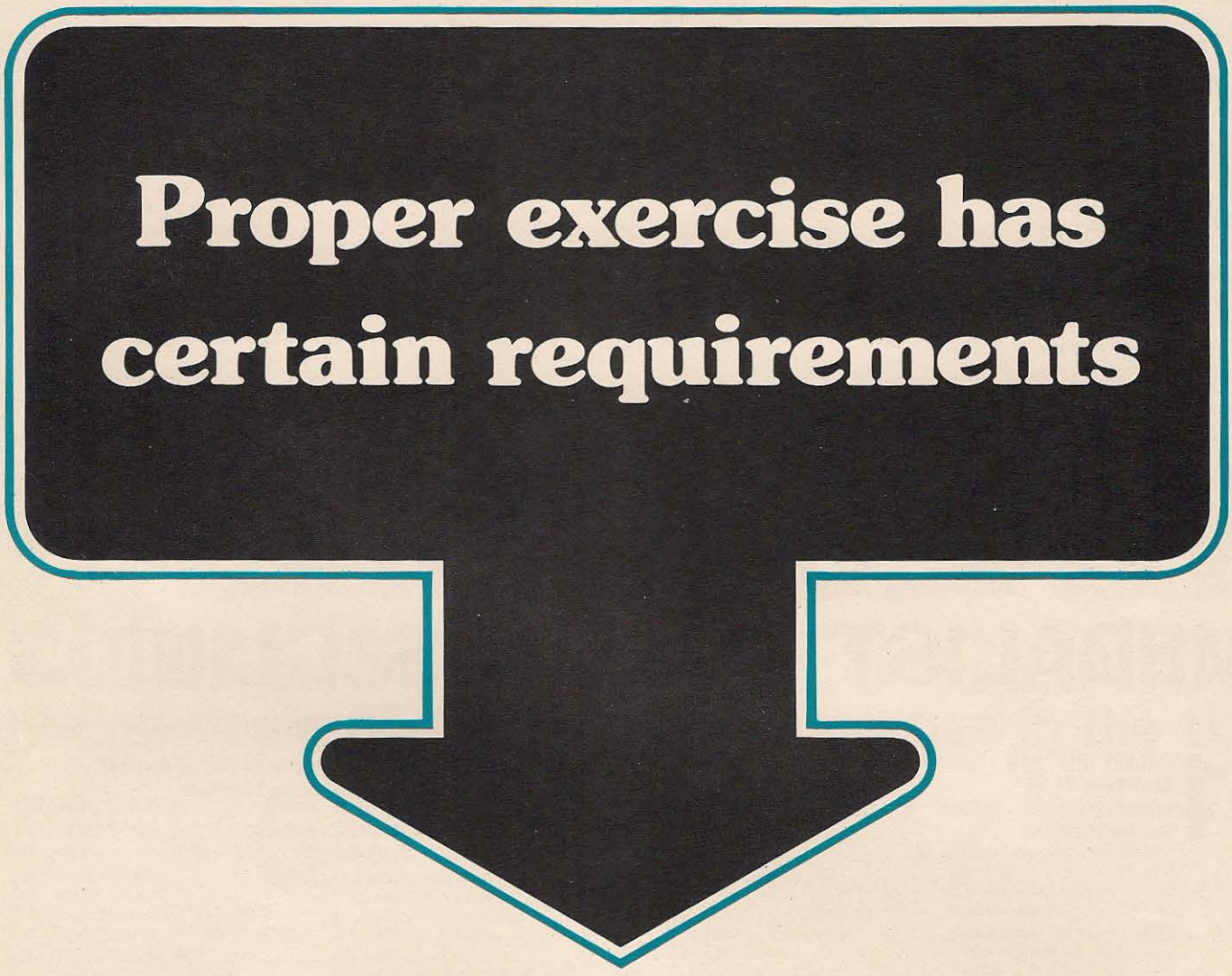
All three of the above groups were composed of varsity football players; a total of fifty subjects being involved in this particular aspect of the research program. Additionaly, twenty-four rugby players were utilized in another comparison conducted within the framework of the same program. In this instance, one group of subjects performed brief and unsupervised workouts on the new Nautilus neck machines three times weekly for a period of four weeks, a total of twelve workouts . . . while the other group trained only twice a week in the same manner, a total of eight workouts.

The first group produced an average increase in neck strength of nearly 40% as a result of twelve workouts performed over a period of only four weeks of unsupervised training.

But the second group did even better . . . producing an average increase in neck strength of nearly 42% as a result of only eight unsupervised workouts performed over a period of four weeks.

So, on the basis of the results produced by this study, it appears that better results may by produced by two weekly workouts instead of three. But in either case, it is obvious that large scale increases in neck strength can now be produced in a short period of time as a result of very brief workouts . . . it is neither necessary nor desirable to devote a large amount of time to the production of increased neck strength.

All of the above mentioned subjects that utilized the new Nautilus neck machines performed exactly the same brief workouts, the only differences being supervision or a lack of it and the number of workouts performed weekly or the total number of weeks of training involved . . . three basic machines were used, providing seven different exercises, one exercise for each of the seven functions of the neck muscles.



NAUTILUS provides ALL of them

The "heart" of every Nautilus machine is the exclusive Nautilus "cam" . . . the spiral-shaped pulley that automatically and instantly varies the resistance as movement occurs.

When you move, you become stronger — or weaker — depending upon the direction of movement. The Nautilus cam instantly compensates for the resulting change in strength — automatically increasing or reducing the resistance to match your changing strength.

With conventional exercises you are always limited by your strength in the weakest position, thus, you never have enough resistance in the stronger positions.

Nautilus provides correct resistance in every position; lower in your weak positions, higher in your strong positions, and maximum in your strongest positions.

Muscular contraction produces torque [rotary force around an axis] . . . and torque is a resultant of two factors: [1] the length of the moment arm [or lever], and [2] the amount of weight [or straight-line force].

If you double the length of the moment arm, then you double the torque, even though the weight remains constant.

In a Nautilus machine, the selected weight can be as much or as little as you require — and the weight remains constant during the exercise. But the Nautilus cam varies the moment arm as movement occurs, thus increasing or reducing the effective resistance — the torque.

Conventional exercises work only "part" of a muscle, but Nautilus works ALL of a muscle.

With conventional exercises you are limited by poorly designed tools. With Nautilus, you have tools that permit you to exercise to the limit of your own potential.

Why limit your results by using exercises that do not provide the requirements of the muscles themselves?

Why not build maximum strength in a minimum of time while greatly increasing the flexibility of your athletes and reducing the danger of injury?

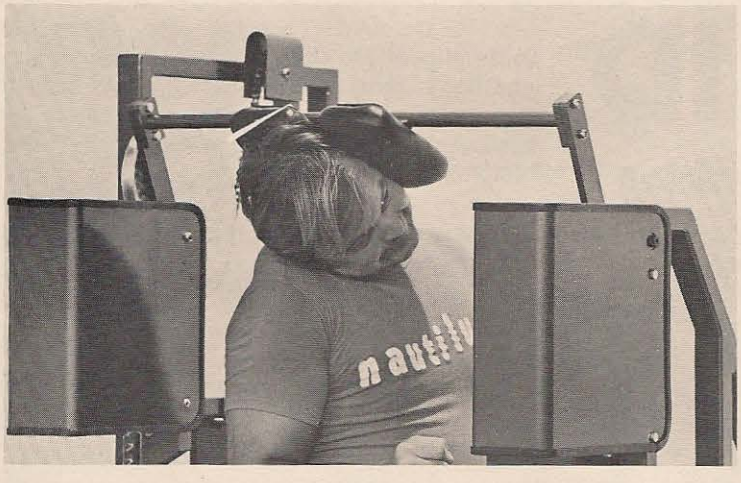
Quite simply, there is NO OTHER METHOD of providing this important requirement for full-range exercise . . . and the cam is exclusive with Nautilus.

The starting position in a Nautilus Super Pullover Torso Machine. Full-range exercise is provided for the major muscles of the upper torso.

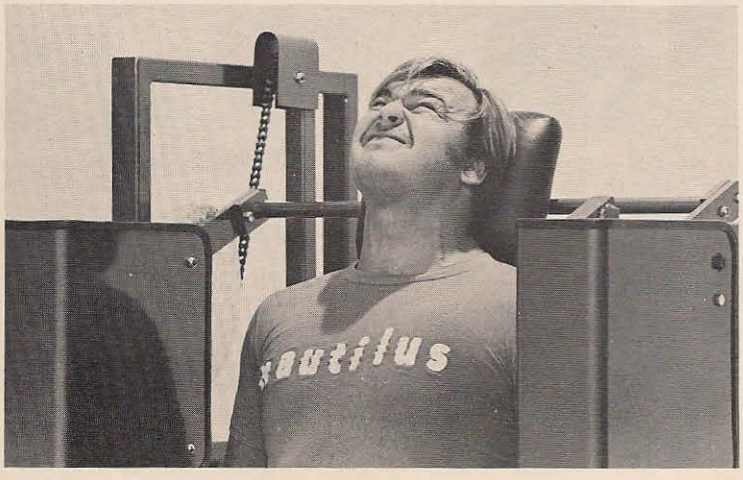
increased neck strength

AS AN AID IN THE PREVENTION OF SPORTS INJURIES

Eighteen experimental subjects training only twice a week for six weeks (12 workouts) increased their neck strength an average of more than 91%, **less than eight minutes per workout, a total training time of approximately ninety minutes.**

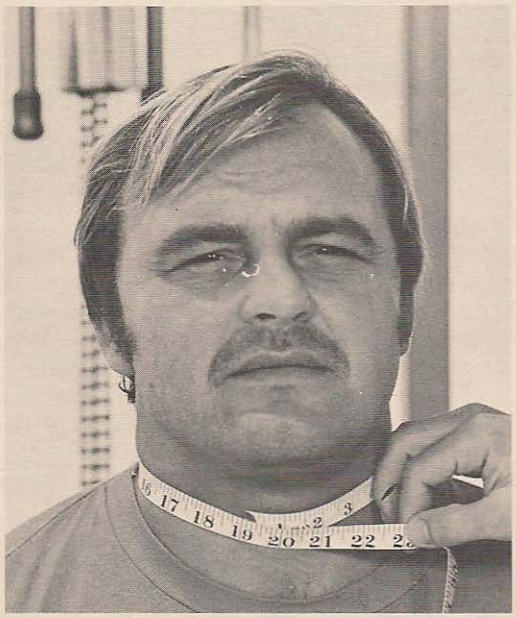


Dick Butkus demonstrates one of the two Flexion Movements of the Nautilus 4-Way Direct Neck Machine.

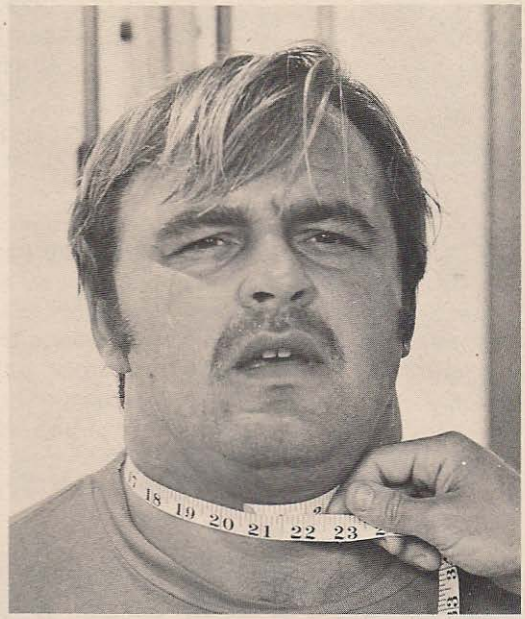


Dick demonstrates the Posterior Extension Movement of the Nautilus 4-Way Direct Neck Machine.

increased neck strength

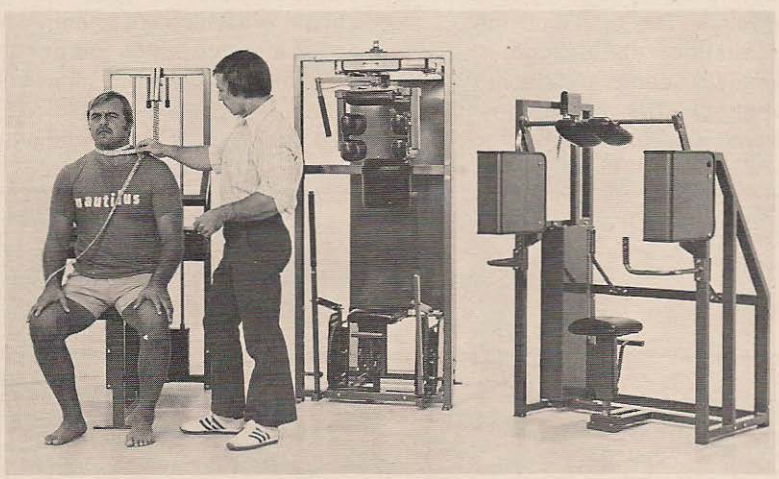


"Cold" measurement of Dick's neck immediately before a brief but hard workout on the Nautilus Neck Machines.

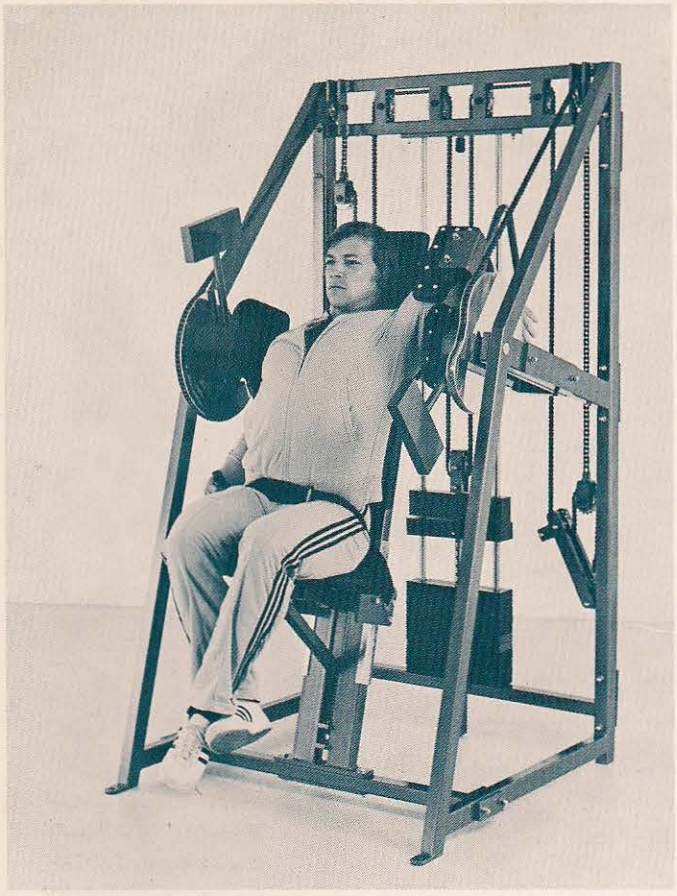


Less than eight minutes later, another measurement indicates an enormous increase in Dick's neck size! While temporary, such an increase clearly indicates the effectiveness of the exercises.

The enormous degree of muscular "pump" by such a brief workout clearly indicates the effectiveness of the new **Nautilus Neck Machines.**



The three Nautilus Neck Machines required for such dramatic results. Left to right: Neck and Shoulder Machine, Rotary Neck Machine, and the Nautilus 4-Way Direct Neck Machine.



Nautilus DUOsymmetric-POLYcontractile Pullover Machine

" Total Conditioning"

for Swimming

from

NAUTILUS

the most advanced system of training for

- ★ STRENGTH & MUSCULAR ENDURANCE
- ★ CARDIOVASCULAR ABILITY
- ★ FLEXIBILITY

The ten requirements for full-range exercise are:

1. ROTARY MOVEMENT
2. DIRECT RESISTANCE
3. AUTOMATICALLY—VARIABLE RESISTANCE
4. BALANCED RESISTANCE
5. POSITIVE WORK
6. NEGATIVE WORK
7. STRETCHING
8. PRE—STRETCHING
9. RESISTANCE in position of full MUSCULAR CONTRACTION
10. UNLIMITED SPEED of MOVEMENT

and ONLY NAUTILUS provides full-range exercise.

for additional information please contact:

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