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NEWS

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DALLAS--Isometric exercises, which pit muscle against muscle or against immovable or slowly-yielding devices, send blood pressure zooming to levels which could be dangerous for persons with heart trouble, warns a specialist at The University of Texas (Southwestern) Medical School.

"You don't help your cardiovascular system with isometric exercises," flatly states Dr. Charles B. Mullins, assistant professor of medicine and director of clinical cardiology at UTSMS.

"The heart is made to pump volume--not pressure. With isometrics, the heart doesn't pump much more volume, but has to work against higher pressure. With running, you pump a lot more blood with only a little more pressure," he adds.

In fact, Dr. Mullins, Dr. Gunnar Blomquist and other co-workers have been using a "grip tester" somewhat like those seen in penny arcades, to deliberately cause blood pressure stresses in patients so that early signs of heart trouble can be detected.

The UTSMS workers took a cue from some recent research by K.W. Donald and A.R. Lind at Edinburg, who uncovered a stress reflex resulting from isometric exercise.

A steady strain by muscles seems to trigger the reflex sending the blood pressure soaring whereas an intermittent strain, such as caused in jogging, doesn't as much.

With healthy persons there's no problem, says Dr. Mullins. (The astronauts have used isometrics on occasion.)

The Dallas medical school scientists studied around 50 persons, having them squeeze the gripping device as hard as possible, then hold 25 per cent and 50 per cent of that contraction for various periods.

Drs. Mullins and Blomquist, with Drs. Stephen J. Leshin, Donald S. Mierzwiak and Oscar Matthews will give two papers involving those studies of isometric exercise at the 43rd Scientific Sessions of the American Heart Association Nov. 12-15 in Atlantic City, N.J. Dr. Mullins is the recipient of a \$12,000 grant from the Dallas County Chapter, AHA, and of a five year teaching scholarship from the national association.

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first add isometrics

Many forms of isometric exercise will trigger the stress reflex, says Dr. Mullins.

"This is why there are deaths sometimes from changing a tire. And it's what everybody does sometimes when they carry a suitcase." he observed.

Other forms of exertion which could be considered isometric are pushing a stalled car, moving heavy furniture and opening a stuck window.

In fact, Sir Winston Churchill apparently had a minor heart episode once as a result of the latter effort, according to memoirs of his doctor, Lord Moran:

"Washington, December 27, 1941 . . .

'I am glad you have come,' the PM began.

"He was in bed and looked worried.

'It was hot last night and I got up to open the window. It was very stiff. I had to use considerable force and I noticed all at once that I was short of breath. I had a dull pain over my heart. It went down my left arm. It didn't last very long but it has never happened before,'" Lord Moran recalled Churchill saying. The doctor added the prime minister's symptoms were those of coronary insufficiency.

Doctors actually find a disproportionately greater high blood pressure response and often angina pectoris with arm work, as compared to leg work.

Of a group of persons with known heart trouble but with normal resting rhythms, Dr. Mullins found 44 per cent showed abnormal rhythms after isometric exercises.

He cites the record of one patient whose blood pressure went up 40 points (millimeters of mercury) in six heart beats at maximum hand grip effort.

People already with hypertension or high blood pressure have more of a blood pressure rise with isometrics, says Dr. Mullins. One group of five hypertensives recorded jumps of more than 50 mm.

In terms of exercise which might be considered most beneficial to the heart and blood system--that is, increase its efficiency in oxygen uptake--running or jogging is far better than isometrics, he said.

(One Swedish report actually cites cross-country skiing as the exercise which best raises cardiovascular efficiency.)

And while they may build muscles, "weightlifters are much poorer trained" in terms of cardiovascular efficiency than are athletes of many other sports, including running, Dr. Mullins added.