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EMBARGOED UNTIL AFTER DELIVERY

SPEECH BY DR TAN ENG LIANG, CHAIRMAN, SINGAPORE SPORTS COUNCIL,  
AT THE SCIENCE CLUB ANNUAL DINNER & DANCE AT THE SHANGRI-LA  
HOTEL ON 26 DECEMBER 1984 AT 7.30 PM.

The advances in scientific knowledge and the applications of such knowledge have resulted in the use of machines for work which used to depend on human power. Our bodies which were developed for life thousands of years ago are now having to cope with the modern lifestyle of almost no physical activity.

Where this will lead us to only time will tell. However, evidence available to date seems to tell us that the human body needs to have at least regular bouts of exercise as a stimulus if it is to stay healthy. Obesity, coronary heart disease, chronic low backache are some diseases associated with lack of regular physical activity. Such medical problems have been collectively termed "hypokinetic disease" by Kraus and Raab in 1961.

While we may blame science for the modern lifestyle, we cannot blame science for these "hypokinetic diseases". We have only ourselves to blame if we choose not to keep a physically active lifestyle. In fact, science has done so much for man for example in medicine and sport.

What has science done for us in sports? The medical and paramedical sciences (of anthropometry, biochemistry, biomechanics, biostatistics, physiology, psychology, traumatology and internal medicine) have all played a part in improving

sports performances over the years. A more scientific approach to coaching and training methods has resulted in performances which would have been considered near impossible a few years ago.

New developments such as synthetic running tracks, poles for vaulting, in running shoes and weight training equipment have played their part as well. The newer strength training equipment are computerised, mostly available only as prototypes, and being used in evaluation of progress of athletes, as well as providing a motivational tool for these athletes. Psychology is also being increasingly used as athletes aim for perfection - performing better as well as more consistently. Nutrition is also being looked at closely to seek methods of improving sports performances by manipulating the diet. However, because of possible dangers, some methods of attempting to enhance sports performances are frowned upon. These include the use of drugs such as anabolic steroids, and procedures such as "blood doping". But the use of the "supercompensation diet" or carbohydrate overload technique to improve the muscle glycogen stores and therefore enable endurance athletes to run faster longer without running out of "fuel" is allowed and being used regularly. Caffeine, bicarbonates have been used to try and boost sports performances. Methods of attempting to improve sports performances which are relatively unsafe are unacceptable, and has resulted in attempts to prevent such methods from being used in international competitions through dope control procedures. Drugs on the

banned list include narcotics, amphetamines and nikethamide, to name a few.

I would like to end by bringing up the topic of what we humans will become in the future. It will depend on what scientific advances will do to change our lives, and how the human body can adapt to such changes. As for the present, our bodies will continue to require that regular "shot" of physical activity to keep away from those hypokinetic diseases.