RUN FOR YOUR LIFE

BY

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It is an established fact - in the United States, at least - that man is a fadist. In almost all daily activity we can look around us and see this phenomena in operation. To name a few, there instantly comes to mind, the college pranks of bygone years, gold fish swallowing, phone booth filling, panty raids, and the passing fancies of the hula hoops and the not so passing skate boards. The fashions in dress, style in hair both cranial and facial, changing tastes in music from rock to country to boogie and dance from waltz to fox trot to jitterbug to twist to monkey to disco and styles in cars from medium to large to small to sport to shiney. All of these and many more attract the varying fancies of men and women. Most of these we can explain on the basis of the keeping up with the Jones syndrome or peep pressure, or the desire to be one of the crowd. Perhaps basically fadism can be best explained on the basic inborn herd instinct with which we are all afflicted.

I wish to look, this evening, at a phenomena which is now attracting some 30-35 million americans as well as many more in other countries, the present craze known as running.

A fad is defined in The American College Dictionary as a temporary, usually irrational, pursuit fashion etc. engaged in by numbers of people of some action that excites attention and has prestige. By this definition, then, is the running craze a fad? Is is temporary?

Is it irrational? Does it excite attention and gain prestige? Concerning the later part of the definition there is probably little disagreement. It is engaged in by large numbers of people. It does excite attention and in the minds of many it is pretigious. But whether it is temporary or irrational could easily be dispute. Those who are attracted to this endeavor would argue that running is here to stay and that it is not irrational but to the contrary it is an extremely beneficial activity. But whether it is a fad or a craze or a permanent fixture on the American scene it is an actuality today and it seems appropriate to look at some depth into this highly popular past time.

Historically, running is the most primitive form of athletic exercise considered as a sport. It has been popular from the earliest times and the simple foot race known in Greek as the Dromus was a straight run from a starting point to a goal approximately 200 yards away. This formed an event in the Greek pentathlon. There also was a long race known as the Dolichos which was about 2 1/2 miles. According to most accounts the Greek runners were naked except for a pair of light sandles and as we shall later see some present day runners have probably taken a page from the Greek notebook.

In the middle ages the best runners were enlisted by potentates and municipalities to function as couriers. Persian couriers of the Turkish sultans often ran from Constantnoble to Adrainople and back, a distance of about 220 miles, in two days. In India and Africa, until recent times, runners were employed to carry the mails.

In Great Britain track, road and cross country running had been popular forms of recreation for many, many centuries. Until recent

years Americans have primarily excelled in short races known as sprints while middle and long distance running records were held mostly by Europeans. The sprint is a short distance race characterized by a fluent, continuous burst of speed. The chief distances being 100, 220 and 440 yards with corresponding metric distances. The middle distance races comprise the 600 yard, the 800 yard and the mile. The mile is the classic distance for all British and U.S. runners and for years interest centered in the attempts of man to run this distance under four minutes, a feat finally achieved in May, 1954 by the English medical student Roger Bannister. Since then many have broken this barrier and the record continues to fall.

Long distance running includes all races beginning with the 2 mile or the 3000 meter, depending upon which system of measurement we are using. Long distance running also includes cross-country which in America consists of a field, roadway combination track of approximately 3.1 miles for high school and 5 miles for college racing.

Running, however, has not been confined entirely to recreational purposes. The Bible mentions running in several places. Perhaps the earliest reference is in the 19th chapter of Genesis where the angel appeared to Lot as he and his family were leaving Sodom and Gomorrah and after his wife had been turned into a pillar of salt where the angel said to Lot, according to King James Version, flee for your life, translated in some of the more modern versions into run for your life, an admonition that Lot promptly followed.

Throughout the world there are areas where running or walking is the only means of transportation. It is of particular interest that in several remote areas, one in Siberia and one in South America where

people live to very advanced ages that one of the common denominators in the longevity tribes is the pausity of conveyances other than ones natural lower extremities. In Mexico, high in the Sierra Madre Mountains, there is a tribe of Indians known as the Tara Hamaras whose feats of long distance running were described in the May, 1976 issue of National Geographic. These people run everywhere they go and have exhibited outstanding feats of endurance. Unlike their Greek counterparts they do wear clothes but no shoes. In addition to running in their everyday activities, and they do run not walk everywhere they go, they also play a game of kickball where they propel a wooden ball through wild mountain trails, some times covering as much as 200 miles in a days long race. There feat is even more impressive when it is noted that the village in which they live and where they do most of their running is in an elevation of 8,600 feet above sea level.

But even though running is ancient, both as a sport and as a means of locomotion, the present craze or fad, if you will, is of comparatively recent origin. Most observes believe that the increased interest in running dates to 1968 when a young physician, Dr. Kenneth H. Cooper, published his book Aerobics. Dr. Cooper, at that time, was working with The United States Air Force personnel and was devising a program designed primarily for men under the age of 30 to promote physical fitness. As Dr. Cooper says, much to his surprise however, when Aerobics became generally available it became a best seller and the majority of people who purchased it were over 40 and many of them were women. Since that time Dr. Cooper has published three additional books, Aerobics for Women, The Aerobics Way and The New Aerobics.

Before proceeding further in this discussion, it is necessary to define aerobics as it is used by Dr. Cooper. Scientifically speaking, we have become accustomed to using the term aerobic and anarobic as a biological term descriptive of whether or not organisms best grow and multiply with oxygen (aerobically) or without oxygen (anarobically). Dr. Cooper uses the term aerobics to identify activites which, as he says, exercise and effect beneficially those systems in the body which are concerned with the providing of oxygen to body tissues. That is exercises which enhance the activity of the cardio-vascular and the pulmonary systems. In general, exercises which do this are running, bicycle riding, swimming, tennis, handball, and racquetball. The ideal aerobic exercise, that is that which provides the best activity for the heart and lungs, is that which begins gradually increasing the heart rate and the respiratory rate gradually but up to a relatively high level of activity. Exercises which puts sudden and transient stress on the cardio-vascular, such as isometrics for instance, are not only undesirable aerobically speaking but in some cases may be actually dangerous.

Of those that have been mentioned above running, bicycle riding and swimming more fully fit the bill of progressively increasing activity without sudden bursts of isometric effect. By this definition then, such isometric exercises such as weight lifting and calisthenics while helping some with physical fitness and providing muscle development do little to improve the effectiveness of the heart and lungs. I mentioned parenthetically that many of our normal activities involve the isometric principle. Comment has been made in the medical literature about the dangers in heart patients, for instance, of suddenly committing an isometric maneuver such as lifting a heavy

suitcase. The sudden surge of energy required for this actually being dangerous to heart activity while running on a treadmill or riding a stationery bicycle may be a prescribed activity in that same patient. While Dr. Cooper is credited with initiating the running movement there have been other factors. In recent years, there has been an increased interest generally in physical fitness and particularly in recreational activities which provide exercise. Also there has been the increased awareness on the part of the medical profession of the values of exercise not only from the standpoint of physical fitness but actually from the standpoint of therapy in diseases of the cardio-vascular pulmonary system. A factor which we will discuss a little bit later.

Personally, I think that a tremendous influence in this area has been the worldwide coverage of recent olympic games by TV. The accomplishments of Frank Shorter and Dave Wottles and Steve Prefontaine in the 1972 Olympics and Llase Virene in 1976 certainly have had a tremendous impact on the movement. TV has also made its presence known by publicising such classics as the Boston Marathon and is almost certainly entirely responsible for the development of a professional track movement which is gaining a foothold in America.

Now although running has gained such a striking foothold and is attracting, as noted, many millions of people I should say here that running is not for everyone. It is hard work particularly in the early training phase. Not everyone even in the medical profession will agree that running is a healthful pursuit. Dr. Christian Barnard, for instance, the South African surgeon who performed the first heart transplant when asked what he thought of running said

he did not think very much of it. He said that runners, in his opinion, were underweight, half naked, perverts who could get just as much satisfaction out of going to a massage parlor. Articles have appeared recently, some of them I suspect with tongue-in-cheek, such as one that appeared in a running magazine entitled the Joys of Not Running. Two sports writers have recently published a book the title of which is The Non-Runners Book. They say they took their inspiration from Calvin Coolidge who was the first one to say I do not choose to run. They argue that it is OK not to have pain and be out of breath and ask the question not why run but why not - not run. This book is growing in popularity.

Nevertheless, with the millions of addicts who are now out here pounding our pavements running is fun, healthy and beneficial and many of them will argue long and loud to convert the unbelievers to their lifestyle.

I would to examine now the philosophy of running or simply why do people run. There are a number of reasons. Perhaps the one which is most often argued is that running makes one feel better physically. This, of course, can be said for many other sporting activities but running, as we shall discuss later, may, in fact, be the best. The American people have notoriously been physically unfit and recent studies have indicated that even American kids are out of shape. In one Massachusetts school, for instance, only 8 fifth graders out of a class of 52 were fit enough to earn a Presidential physical fitness award. In a class in Connecticut only 2 students out of 40 qualified. In a recent study at Massachusetts General Hospital it was shown that 15% that 1900 seventh graders had high cholesterol levels and 8% had high blood pressure.

What is the answer to producing physical fitness in the American people?

The government and President have tried it but it is not likely that they will be successful. The government, undeniably, takes an interest in our health to the tune of about a billion and quarter dollars a year but the fact is that it really does not do very much good. Some day, for instance, we may hopefully see a political leader who has enough gumption to blurt out the melancholy truth that each additional dollar spent on medical care by the federal government is producing a declining marginal benefit.

Can we look to the medical profession to provide guidance to get us in better shape? Hopefully, the time will soon be when we will but in the past the truth has been that most doctors themselves are in poor physical condition. Until recent years they smoked too much, they were overweight. They worked too hard and they did not exercise at all. To compound the situation there has been a lack of impetus in the medical schools and it has only been within the last 4-5 years, probably as an outgrowth of the running craze itself, that medical students have deveoted any serious study to the problem of physical fitness.

James Fix, in his book the Complete Book of Running, says then that if doctors and government can neither be expected to get us physically fit then who can. He says the answer is plain we must look to ourselves. This conclusion has been supported by Dr. John Knowles, President of The Rockefellow Foundation, formerly administrator of Massachusetts General Hospital, who argues that the next major breakthrough in medicine will come through changes in our lifestyle, not through anything that research or doctors or drugs or hospitals can do. He says that many Americans eat too much, drink too much, smoke too much and exercise too little and that these lead to patient oriented disease. Fix argues that

an easy way to effect a favorable change in the way of living is by running. Not only is it good but it is also simple. Workers in a Soviet factory, for instance, took up running. They reduced the number of days lost annually through sickness from 436 to 42. Other studies have also shown some practical benefits from the sport of running. At The University of Michigan physical fitness research lab doctors have demonstrated that even extremely overweight people can significantly improve their physical condition by running in as little as three weeks.

As we have previously mentioned the most important single indicator of overall health is cardio-vascular and pulmonary endurance which is what running develops. We have also referred to bicycling and swimming etc. But one factor about running that is important is that it is simple. It can be done anywhere. It requires practically no equipment and costs almost nothing or at least one can spend as little or as much as one would like. One doesn't need a bicycle, a swimming pool, a tennis court and does not even need a track because running can be done anywhere and most people do run everywhere.

Running is also an aid to a weight reduction program. As Dr. Bernard has said, most runners are scrawny. And most of them are hearty eaters. At the last Virginia Ten-Miler, for instance, two world class runners stayed at my house and the evening before the race the two of them consumed almost two 2-quart casseroles of lasagna and an entire pecan pie. After the race, at a party for the invited guest runners, at which about 20 world class runners were present they devoured untold quantities of roast beef, cheese, seafood and gallons and gallons of beer. It is interesting to note that in my experience with distance runners that almost none of them indulge in hard liquor but many of

them do drink beer and as a matter of fact Dr. Sheehan, who is an authority on running, recommends beer as an adjunct to fluid replacement because of its rapid absorption from the gastro-intestinal tract.

Now in spite of the large quantities of food which runners devour they are all thin, most of them being considerably under 15% bodyweight fat. Scientifically, it can be argued that in order to burn calories one does not have to run. And it is true that walking a mile consumes as many calories as running a mile. So for weight reduction alone, not considering the benefits on the cardio-vascular system, walking is beneficial if one has the time to walk the distance required to burn up a significant number of calories. I have found that the amateur runner, running for health only, can run a mile in about one-third the time that it takes to walk a mile and this may be a significant economic factor for many of us.

Another benefit of running from a physical standpoint which people don't talk about much but which is covered in the running literature is that getting in shape for running improves sexual activity for both men and women. The reason is not mysterious. Being in good physical condition involves not just muscles and heart and lungs but the senses as well. Runners are more aware of themselves than others and are able to participate more fully in all aspects of life including the sexual act.

A second major area is that many feel that running not only improves physical fitness but that it also improves the mind. Again quoting from James Fix, who did a considerable amount of research on this particularl subject. He said that practically every runner that he talked to told him that they had benefited psychologically from

this type of exercise. Some of the benefits which they described were sense of enhanced mental energy and concentration, a feeling of heightened mental acuity, the ability to apply mental effort more acutely when physically fatigued, the acceptance of pain which runners develop and which holds over into other areas of life.

There is a strange psychological effect that runners describe when they pass certain distances. The magic number apparently being above 5 miles per day. Dr. Sheehan, for instance, who was previously mentioned and is a 60 year old cardiologist who has been running now for about 15 years and who is the recognized authority on the medical aspects of running runs 10 miles every day and he states that I run the first 5 miles for my body and the second 5 miles for my soul. People have difficulty putting into words exactly what this psychological effect is but in general they say that once one reaches a certain distance that all tension leave them. Some have described the development of a sense of euphoria as if the world is bright. Some have described almost a drug like effect in which they feel to be floating and everything seems at peace. Perhaps this explains the fact that when one passes the 5 or 6 mile a day limit with many running becomes addicting. Those who run that distance, when by reason of weather, illness or other pressures they are unable to run, they physically and mentally feel let down until they get back into their program again.

The monthly periodical The Physician in Sports Medicine has recently had an intriguing article on the use by psychiatrist of jogging and running as a therapeutic measure and I have talked with some of our local psychiatrists and they indicate that the psychiatric literature is becoming increasingly productive in this area.

As I noted earlier running is not for everyone and running certainly does not affect everyone psychologically the same way. Some people find running boring for instance and certainly running at great distances can be a lonesome sport. One writer has said that if you try running and find it worse than a trip to the dentist then perhaps you are one of the people whom nature never intended to run but runners will argue that with almost all runners they don't begin to enjoy the sport until they have been running for several weeks or even several months. Why it is such a peculiar psychological experience is not fully understood. We can document pretty well the physiology of running but the psychological aspects have only been dimly glimpsed and perhaps as time goes on our psychiatric friends will give us some answer. The question which is frequently asked, not only by physicians who are now dealing with exercise following heart attacks, but also by runners themselves, is this. Does running prolong ones life? What is the longevity factor in running?

Dr. Paul Dudley White who was a great champion of running reported in The New England Journal of Medicine some years ago that strenuous physical efforts so far as he had been able to determine does not adversely affect the heart. He reported an autopsy on Clarence DeMar who died in 1958 of cancer at the age of 70. Mr. DeMar was one of the most unusual runners of all time. He had been running for almost a half-century beginning in 1909. He ran cross-country. He ran in 34 Boston Marathons, winning 7 times. At his autopsy his heart was found to be large but within a normal range. He had some athrosclerosis. His coronary arteries, however, were about three times the normal size and had little, if any, arteriosclerotic activity. Dr. White said "there is no way that DeMar could have died of a heart

attack. It had to be cancer or something else." In spite of the arguments of Dr. White, however, we are not prepared today to answer this question, does running prolong our life. Any more than the cardiologists can assure us that a post coronary exercise program prolongs our life. There is, however, no doubt that running makes us do other things which have effect on longevity or at least which have effect on coronary artery disease risk. No serious runner, for instance, smokes. As a matter of fact I doubt myself, having once been a smoker, that if one can combine the two activities of smoking and running. Second, as has already been mentioned, running is a factory in weight control which is a risk factor in coronary disease. And there is some evidence coming along today which indicates that exercise such as running not only has the effect on decreasing coronary disease but has some effect on the reduction of other degenerative diseases. So I think that there is just no way that we could say that runners will live longer although many suspect that this is the case but it is hard to argue with the point that many of them make that even if they don't live longer they enjoy living their time out a lot better.

There is one point that I would make here and that is that whether or not running does have an effect on longevity is not known. There is convincing evidence that the lack of exercise may have some effect in the other direction. Lack of exercise is listed in many medical texts as one of the risk factors in the development of degenerative cardio-vascular disease. There is also indication that people who have been active physically and who then become inactive may have a higher risk of heart attacks than while they were running or even if they had not exercised at all. Again, to quote Dr. White. A number of years before his death he conducted a

study and wrote a paper about the life histories of All-American football players. He found out that those All-American football players who continued in active physical pursuits such as in the coaching profession, for instance, or who continued regular programs of exercise had a longer life expectance than the average male of comparable age. He also found out, however, and this is quite striking that those All-American football players who went into sedentary occupations and stopped exercising actually had a worse track record for longevity than did the general population which means that once one starts an exercise program discontinuing it may put them at risk.

We have touched several times on other activities and other sports than running. And certainly there are many that are beneficial. But there are those who today can point to some scientific facts that may indicate that running is the best exercise. A direct measure of intensity of activity which can be documented is that of calorie cost per hour. That is what are the calorie requirements to perform one hour of a given activity. Just to list a few of the activities which have been studied. Tennis and handball and squash will require 400-500 calories per hour of sustained activity. Swimming will require 300-600 calories per hour. Bicycling will require 660 calories per hour. Running, however, tops the list requiring between 800-1000 calories per hour. So by this direct measurement there is some scientific evidence that in terms of calories expended running is far ahead of others.

In all fairness, I want to turn now to risks of running and to present some of the statements of those who have condemned the practice. Certainly there are dangers of injury. Road running

today is, in many places, done on crowded streets and there have been injuries from automobiles, although I have not heard of any pedestrian deaths in runners. The runner shares with the electric meter reader the risks of dog bite. There are the injuries peculiar to runners, shin splints, knee strains, achilles tendonitis, pulled muscles.

From time to time there appear articles which usually make national news headlines about some one who died running. A United States Congressman, just within the past year, dropped dead by running and this made a big splash in the media. It turned out that this particular man had known physical disabilities and had been told by his physician that running was a risk for him individually. A few years ago a young man died while running the Boston Marathon. This created tremendous controversy in the medical literature because an autopsy was performed and it was reported in The Annals of Internal Medicine, a very important medical publication, that this young man had suffered a coronary. This was disputed by specialists in sports medicine who studied the autopsy reports and findings and it was their conclusion that he died of a heat stroke which is a great risk for competetive runners as we will discuss a little bit later.

In 1976 a physician, Dr. J.E. Schmidt, who practices in Charlestown, Indiana wrote an article in Playboy Magazine entitled Jogging Can Kill You. Dr. Schmidt stated that the only advantage of running that he will acknowledge was that it can help your legs and heart and give you a tanned, outdoorsy look but beyond that, he stated, that jogging or running is one of the most wasteful and hazardous forms of exercise. He says that jogging takes more from the body than gives back. It exacts a price that no one can afford or should

be willing to pay for leg and thigh muscles that just looked tanned. He says that it can loosen the linkage between the sacrum and the hip bones, cause slipped disc, contribute to varicose veins, dislodge the uterus in the woman from its perch, whatever that is, produce droopy breasts and bring on inguinal hernias. He states that it can even harm the heart by causing it to tug on its blood vessels and shake crusted material loose inducing heart attack. In addition he says that jogging causes architectural maladies of these such as dropped stomach, loose spleen, floating kidneys and fallen arches.

When this article appeared in Playboy it created quite a consternation. Dr. Geo. Sheehan, who I previously mentioned took issue with this. He stated that he knew of no studies which would support Schmidt's views. He said that he felt that Schmidt made his statements on what we would call common sense but that when you use common sense where the body is concerned you are some times brought up short because the body does not always operate the way you think it does. Indictments of jogging, says Dr. Sheehan, are done on the basis of priori thinking but that is not the way to do it. I am always suspicious of people who say it stands to reason when he thinks the thing to do is to go out and find out for yourself whether something does or does not occur.

Dr. Sheehan, who also exercises a sense of humor along with his body building program, said that along with the article in Playboy there was a biographical sketch of Dr. Schmidt which mentioned that his hobby was gardening. Sheehan said that he could not help but write to Schmidt pointing out to him that working in a garden was a hazardous occupation because you might accidentally stick a pitch fork in your foot and die of lockjaw.

As we talk about the risks of running I think it is important to note here the medical aspects of beginning a running program, or for that matter any type of strenuous exercise. All of us today who practice adult medicine are being increasingly questioned by our patients about whether we should start running, and what to do before. Certainly any adult who has not had a continuous exercise program since high school and college days should consult their physician prior to beginning a jogging program. I personally feel that adults past the age of 35 who have been sedentary should have not only a resting EKG but a stress test prior to embarking upon a competetive running experience. One should also avail themselves of the experience of those who have been running for years about how to start a program. The books on the market today such as The Complete Book of Running by Fix, which I have referred to, Dr. Sheehan on Running and many of the running periodicals discuss a safe way to begin a program. For several years now I have been giving patients of mine who inquire about running a reprint from Runners World which is entitled How To Begin Jogging and describes the necessary medical work up that one should seek and also a beginning walking-jog-gradual build up program. I have advised my patients to read this article carefully before embarking upon training.

Regardless of how one feels about the benefits or dangers of running or whether it is desirable or undesirable or whether it prolongs life or whether it shortens it or whether it makes you feel better or makes you feel worse no one can deny that the running craze has had an important impact in many areas. The economic impact of the running craze has been enormous because running today is big business. In the publishing field alone books on running have been best sellers now for a number of years. In addition to Dr. Cooper's four books on

aerobics, there is The Complete Book of Running by James Fix which I have mentioned and which is probably considered the runner's Bible. Dr. Sheehan on Running is important from the medical aspects of running. The Complete Runner which is a compilation of articles from Runners World has been an enormous item.

Magazines themselves have appeared on the news stand. The premiere magazine is Runners World which is now in its 14th year and which uses as its slogan 'making tracks since 1966'. Runners World is published monthly, carries feature articles and runners news and runners calendars and results of various events. It is interesting to note that even though it has been published since 1966 as recently as four years ago it was impossible to find a Runners World on the news stands because the news dealers did not recognize it as a seller and the only way that one could get it was through mail subscription but now it is a hot item on the news stands. I have brought along one copy of Runners World from May of 1978 which has a picture of Penny DeMoss on the cover which I used to refute the argument that running is all boring.

A recent comer to the publication world is Running Times which is published now in Washington but had its original publication office in Alexandria, Virginia. Their number 1 issue, which I have here, you will note is all in black and white and not much more than a mimeograph reproduction. They number their issues consecutively rather than by years and the April, 1979 issue is number 27 and you will note that it has a nice colorful cover with some color prints and is a larger magazine. One publication of tremendous interest to me has been the Physician in Sports Medicine which is just now beginning its seventh year. This does not confine itself to running

but involves all sports and along with this there has developed in the field of medicine a sports medicine specialty with its own specialty society. These physicians have been doing very important work in safety particularly as it relates to high school injuries in contact sports.

I have mentioned earlier that running can be as inexpensive or as expensive as one would like it. The economic impact of the production of running gear has also been great particularly in the area of shoes. One can outfit himself with running shorts, tank shirts, wet weather gear, warm up suits of any expense that one would like but these are unnecessary but in my opinion shoes are most important. The shoe business is big business and is highly competetive. The October issue of Runners World each year is their shoe rating and if you will note the one I brought with me it is the largest publication of the year and the various companies, Nike, New Balance, Brooks, Adidas and many others compete with each other for the shoe market. Now, of course, one can run in tennis shoes or sneakers but hardly any one advises it. The name shoes are engineered specifically for running and for different purposes. There are running shoes for professional sprinters and there are shoes for distance runners, marathoners and shoes for roadway jogging. Along with my reprint from Runners World which I hand out to beginning joggers I strongly advise them to get a good pair of running shoes of the name variety which will cost an average of $30.00 per pair. Runners shoes, of course, wear out soles rapidly and so buying $30.00 shoes was an important consideration for many people who had to replace them quite often but in the past few years the major companies have provided a service that they will resole your shoes for something like $4.00 and there are also resoling and repair kits available for home

use (I have one and it works pretty good). The running shoe business has had an impact locally. A few years ago one could not buy running shoes in Lynchburg. Now we have several specialty shops as well as running gear now sold in all of our major department stores.

I do not want to overlook the economic impact of running on local communities. Here in Lynchburg the Virginia 10-Miler has been especially beneficial. The Fifth Annual race this past September attracted 2400 runners to the city and the runners, their families and friends who came for that weekend, I am certain, exerted a lot of economic influence in Lynchburg. But this race sponsored by First Colony Life Insurance Company and the Lynchburg Roadrunners is now known throughout the world and is considered by Runners World among the top 8 races in the nation and I should point out that if you look at the schedules of races in some of these magazines that literally thousands of road races are now run each year. So the Virginia 10-Miler has helped to put Lynchburg on the map. I have heard it said that the two most effective public relations organizations in the central Virginia area insofar as nationwide impact is concerned are the Virginia 10-Miler and the Old Time Gospel Hour. I don't know how Jerry Falwell and Rudy Straub would feel about that comparison but I think it is a fair assessment.

Of particular importance to me has been the impact that running has had on medicine. We have already talked about the fact that there are special types of injuries such as shin splints and achilles tendonitis and about the fact that it has helped in the development of a sports medicine specialty and a sports medicine journal. I think that one of the big factors that has come out of running, and this particularly implies to competetive distance running such as

the 10-Miler and the marathon is a better understanding of the physiology of heat regulation in the body. Every now and then one reads about a high school or a college football player who drops dead while in practice or during a game and as in the case of the Boston marathoner who died a few years ago the news articles frequently attribute their death to heart attack. Of course, it is understandable I think, that these deaths would be so attributed. A person who dies suddenly of a heart attack, an autopsy will not show any pathological change in the heart. A coronary occlusion must have been present for a number of hours prior to death before pathological changes take place and so these deaths in general of football players and perhaps also some of the deaths of young men in basic training obstacle courses that occurred some years ago were attributed to heart attacks on the basis of no pathology. It is also a fact, which many of you may remember, that up until recent years the one thing that was forbidden of people who were about to exercise was drinking a lot of water. Coaches banned drinking fountains and water buckets from the field on the theory that drinking fluids prior to or during strenuous exercise would upset the stomach and decrease efficiency. Well, as a result of our experience in running we now know differently and hope that we are getting this message across.

In the process of running muscle action generates heat and in the competetive distance runner this muscle action, particularly the muscles of the legs, the low back and the pumping arms can generate tremendous quantities of heat which the body must dispose of. The mechanism which dissipates the heat is sweating and as the runner sweats the water evaporating from the skin carries heat along with it. Runners can suffer from what we term heat exhaustion in which they lose, in addition to water, some of the body chemicals and

this is the type of injury we normally see in the Virginia 10-Miler in which the runner will get weak and collapse and he will have an elevated temperature. Blood pressure a little low but will be sweating profusely. These runners are in no danger and the use of ice packs and replacement of body fluids usually suffices to restore them to normal state of health within a few minutes or a few hours. There is, however, a more serious heat injury which is known as heat stroke and heat stroke occurs when sweating stops. And sweating stops when body supplies of fluid has been depleated beyond a certain point. A distance runner, in a Marathon for instance, can lose as much as 15-20 pounds body weight in a race which is fluid loss. And when one reaches this level of say 10 or 12% body weight loss of fluid he is in danger of heat stroke if that fluid is not replaced. We now know that the way to prevent heat stroke is adequate intake of fluids prior to and during the race. In the Virginia 10-Miler, for instance, the medical team recommends that each runner consume approximately a pint and half of fluid, either water or an electrolyte solution prior to the race and 10-12 ozs. of water at each watering station along the road which are placed at two mile intervals. Contrary to previous belief the intake of fluid does not decrease physical ability but actually enhances it. I have noted before that Dr. Sheehan stated that when he runs a marathon that he will have a can of beer at about every 5 or 6 miles and he feels that this is a good fluid replacement because it is electrolytically balanced but also because the alcohol content in beer is very rapidly absorbed from the stomach.

What we have learned from the distance races, insofar as heat regulation is concerned, has become quite important insofar as other sports. A study has shown that most of the heat injuries that

occur in football players occur during early practice. During August, for instance, when the heat and the humidity are so high and particularly when they suit up with heavy pads that cut down on the evaporation of perspiration from the skin. This problem is compounded by the coach who refuses supplies of water or other fluid for the players. The Lynchburg Academy of Medicine has a sports committee which conducts a seminar each summer inviting all the coaches in the area to talk about sports injuries and we place a tremendous emphasis on the absolute necessity of providing adequate fluids on the practice field. I think we have gotten our message across. I have gone out several times to E.C. Glass practice, for instance, where the football coaches now bring in large plastic garbage cans filled with ice water and allow the players free access to it and I think this ia very important impact.

The other impact, medically, relates particularly to our exercise program for post coronary patients. I don't know whether running has had an influence on the cardiac rehabilitation program or whether it is vice versa but the two programs certainly compliment each other. Contrary to beliefs a few years ago when patients who had heart attacks were almost made invalids we now put them into very active exercise programs on treadmills and on bicycles. And again with this program I think we can say that there may not yet be hard evidence that the rehab program prolongs life or reduces the chances of later coronaries but it certainly, as we have already pointed out, encourages patients to do things that are helpful that they might not otherwise do.

In one area, at least, the post coronary exercise program has been carried to very great lengths. Honolulu is now known as

the runners capitol of The United States. Every Sunday morning there is a marathon run and it is under the direction of a physician who is a cardiologist in Honolulu. He is himself a runner, he has promoted it and on some Sundays there are as many as 5,000 people who run the weekly Honolulu Marathon. And many of them are heart patients. This particular cardiologist goes somewhat further than we do here in Lynchburg and encourages his heart patients to become distance runners, not just treadmill and bicycle riders.

There may be in some places some legal impacts as far as the running craze is concerned. Some cities have objected to runners on the streets and at least in one California city an attempt was made to pass an ordinance prohibiting runners. I don't know that any court ruling has been made on the constitutionality of such a law but those who argued against such an ordinance pointed out that we had feet before we had riding conveyances. Or as one runner argued before the city council in that city, man invented the wheel but God gave us our feet.

In summary then, America and the world is in the midst of an explosive running craze. Is it a temporary, non-sensical, fad? Or will it become a permanent way of life? Is is healthful or harmful? These are questions that only time will answer. But whatever the answers may be, running has had an impact which no one can deny.