Fitness and Diving

Fitness and diving; fitness for diving; fitness in diving; fitness to dive. As divers we've heard these expressions in our training classes, in dive publications and in discussion among our fellow divers. Although stated in a slightly different fashion in each case, we are essentially linking the ideas that physical conditioning and scuba diving, like good dive buddies, work better when they're paired up. Good physical conditioning is invaluable to us as scuba divers – and, quite simply, as human beings. The truth is, when we feel good, we perform well, no matter what we're doing. And the way we feel – both physically and mentally – may directly affect us when we dive.

Not all diving requires great measures of strength or endurance. Unlike commercial divers, recreational divers may select the time and place for their dives to match them to their own strengths and skills. We all agree, however, that no matter how simple and easy the dive, physical fitness actually adds to the pleasure and safety of the event. Every dive requires some degree of work and exercise, which is often greater than the everyday demands on a body. This intensified muscular activity in turn increases the work of the heart in delivering oxygen and fuel to the exercising muscles. The heart and blood vessels respond to this increased load by adjusting blood flow and increasing its output via the heart.

Activities associated with diving – carrying heavy gear, climbing ladders and swimming – all require increased oxygen consumption. The normal heart has considerable reserve to help meet these demands, but to maintain this reserve at high levels you must keep up a program of "physical fitness." Near the age of 30, both physical strength and exercise capacity begin a decline which continues throughout the remaining lifespan. The body's ability to achieve maximum use of oxygen in energy production reaches a peak in the late 20s and then begins a decline. This deconditioning is the result of many causes. Some are fundamental changes in physiology that come with aging. Fortunately, regular exercise programs can improve your reserve and delay and/or reduce the rate of decline in physical performance.

You can measure your cardiovascular reserve with an exercise stress test. This usually involves exercise on a treadmill or a stationary bicycle while response to the exercise is monitored with an electrocardiogram. Sometimes oxygen consumption is also measured. This test is often used to detect coronary artery disease, but it is quite useful to assess overall exercise capacity and to determine the response of the heart to increasing work load. Although the exercise associated with diving may use different muscle groups than those used in walking or bicycling, the cardiovascular load is similar for each activity.

ARE YOU IN SHAPE?

The question may be easy to answer – or it could be difficult. Begin by asking yourself about those risk factors which are well recognized to be associated with heart disease:

- Does anyone in your immediate family have a cardiovascular disease? Try to remember if a close relative has died prematurely of heart attack or stroke.
- Are you a male? Cardiovascular disease appears earlier in men than in women, but as both sexes become older the incidence tends to even out.
- How do you react to stress? Stress and stress-producing personality behavior patterns may place a strain on the heart. The body's hormonal systems behave today just as they have done since the Stone Age: When faced with a challenge, they speed up the heart rate and increase blood pressure to get you ready for "fight or flight." If you don't fight or flee, these hormones remain in the bloodstream for a time and keep the heart and blood vessels under a constant,

low-grade pressure.
- Are you an active person? Inactivity is clearly associated with heart disease, according to many research studies. Active people have better hearts than do sedentary people.

Other equally important factors are high blood pressure, an abnormal resting electrocardiogram, obesity, elevated cholesterol and diabetes. Cigarette smoking is a vital factor in determining overall fitness. If you want to achieve maximum fitness levels, avoid tobacco.

HOW ABOUT SOME EXERCISE FOR DESSERT?

Now, since you've made it this far, it's time to ask yourself, "Am I ready to start an exercise program?" If you have identified your risk factors and developed a plan to deal with those which can be changed, you have one more thing you should do before beginning an aerobic exercise program: a physical exam. Here are some guidelines:

- If your age is less than 30 you are still not immune to heart disease although your risk is lower than for older persons. You should have had a complete medical history and physical examination sometime in the 12 months before you begin your exercise program.
- If your age is between 30 and 35 you should have had a complete history and physical examination including a resting electrocardiogram sometime within six months before you kick off your program.
- If you are over 35 the examination should have been done within three months before beginning your new protocol. The examination should include an exercise test with monitoring by electrocardiogram, or a stress ECG.

To determine if your heart has problem areas, it is essential to see how it performs when challenged by exercise. Although there may be some difficulties which don't show up when the heart is functioning at a high rate of speed under a load, the test will give a good assessment of overall exercise capacity and will likely indicate most problems.

The principle is the same as taking your car up to highway speeds to determine how well it performs. Exercise stress tests are available nearly everywhere; your personal physician can arrange one for you and then interpret the results for you.

BEGINNING AN EXERCISE PROGRAM

You've identified your risks. Now you can begin your exercise program. How do you start?

You may be fortunate enough to have a physician interested in aerobic training – one who can give you an "exercise prescription." This prescription outlines a training program in detail for you. Other resources are available at sports medicine clinics, which usually have someone qualified to direct an exercise program. If these resources are not available to you, then you may "do it yourself." Start by obtaining one of the books on aerobic conditioning found in most bookstores. Kenneth H. Cooper, M.D., has written a series of these books which are now offered in inexpensive paperback editions. These books provide detailed instructions on starting an exercise program safely while avoiding injury. Remember, though, that you still require a medical evaluation before you start an exercise program unless you are already conditioned. There are many choices for exercise, so you can pick an activity you enjoy. Swimming is a popular choice for divers, but running, tennis, squash, stair-climbing and many others are also options. Keep in mind that some recreational activities are enjoyable but have little or no benefit for your cardiovascular system. The weekend round of golf, the after-dinner stroll, bowling, stationary weightlifting, horseback riding (it's the horse who gets the exercise, not you) and other nonaerobic exercises don't count in cardiovascular and pulmonary conditioning.

MAINTAIN YOUR PROGRAM

It's very important not to get ahead of your exercise charts. Your program is designed to gradually increase the energy requirement as you increase your fitness. If you skip stages you may wind up exhausted, injured or discouraged and quit your program. On the other hand, if you approach your program on a gradual, step-by-step basis, you'll be surprised to find that you'll look forward to your exercise time as you improve. The positive feelings you will obtain from exercise after you have achieved fitness will motivate you to continue. It appears that exercise and cardiovascular fitness also affect your mental health. Numerous studies have confirmed a link between physical health and psychological well-being. Fitness is our natural state. Watch young children at play: nearly everything they do is aerobic. Only later do they learn to spend hours in front of the television screen and begin the sedentary lifestyle which can follow them into adult life. If you're out of shape, you're out of sorts with yourself. Take better care of yourself, get fit and enjoy this great sport of ours.