

APPENDIX G

Personal Assessment of Cardiovascular Risk for Diving

Alfred A. Bove, M.D., Ph.D.

Emeritus Professor of Medicine

Cardiology Section

Temple University School of Medicine

Philadelphia, Pa. USA

Heart attack risk is affected by a number of factors that may go undetected for many years until the attack occurs. These factors in general do not cause symptoms, are cumulative over time and ultimately result in blood vessel disease that leads to a heart attack that may occur while diving.

Known factors that increase risk for heart attack include:

1. Elevated blood pressure
2. Elevated cholesterol
3. Cigarette smoking
4. Diabetes

In addition, males are at higher risk than females until about age 60 when heart attack risk for females increases, and heart attack risk is increased with age due to the cumulative nature of the blood vessel damage that occurs over time. Therefore two other factors that need to be considered are:

5. Age
6. Male gender

Research has shown that these six factors when combined into a risk score can be used to estimate heart attack risk and guide efforts to lower the risk. The score is called the Framingham risk score, and calculators can be found at numerous locations on the Internet. To determine your risk score you need your blood pressure, cholesterol level, including total, LDL and HDL cholesterol. You will also be asked for your age and gender and whether you are diabetic.

The calculation provides the 10-year risk for heart attack presented as a percent. If your risk score is less than 10 percent (or 1 percent/year — that is less than one in a hundred chance of having a heart attack in a year), you are considered a low risk. Intermediate risk is 10 percent or greater and less than 20 percent, and high risk is more than 20 percent (or 2 percent/year). If your Framingham risk score is more than 10 percent, you should be evaluated medically to be sure you are safe for diving.

You should periodically check your heart attack risk. This means you should have a blood pressure check and tests for cholesterol and diabetes. Other factors that are not included in the Framingham risk score but are thought to increase your heart attack risk include history of a heart attack before age 50 in a close family member, poor physical conditioning, lack of exercise, and obesity.

For safe diving, you should avoid obesity, exercise enough to maintain good physical condition, keep your blood pressure and cholesterol normal, and get a check for diabetes. All of these factors can be modified by attention to your lifestyle and will keep your heart attack risk low even if your family history is not favorable.