



Figure 2. Classification of sports. This classification is based on peak static and dynamic components achieved during competition. It should be noted, however, that higher values may be reached during training. The increasing dynamic component is defined in terms of the estimated percent of maximal oxygen uptake (MaxO₂) achieved and results in an increasing cardiac output. The increasing static component is related to the estimated percent of maximal voluntary contraction (MVC) reached and results in an increasing blood pressure load. The lowest total cardiovascular demands (cardiac output and blood pressure) are shown in green and the highest in red. Blue, yellow, and orange depict low moderate, moderate, and high moderate total cardiovascular demands. *Danger of bodily collision. †Increased risk if syncope occurs.

ized by the level of intensity (low, medium, high) of dynamic or static exercise generally required to perform that sport during competition. It also recognizes those sports that pose significant risk due to bodily collision, either because of the probability of hard impact between competitors or between a competitor and an object, projectile, or the ground; as well as the degree of risk to the athlete or others if a sudden syncopal event occurs. Thus, in terms of their dynamic and static demands, sports can be classified (Fig. 2) as IIIC (high static, high dynamic), IIB (moderate static, moderate dynamic), IA (low static, low dynamic), and so forth. For example, an athlete with a cardiovascular abnormality that contraindicates a sport that produces a high pressure load on the LV may be advised to avoid sports classified as IIIA, IIIB, and IIIC. It should be emphasized that in terms of the classification of sports matrix presented in Figure 2, cardiovascular abnormalities designated as compatible with a high level of intensity in any particular category also (by definition) permit participation in levels of lesser intensity. For example, if class IC sports are appro-

priate (low static/high dynamic), then so are classes IA and IB (low static/low and moderate dynamic).

The sports matrix in Figure 2 should not be regarded as a rigid classification, but rather a spectrum in which some athletes in the same sport could possibly deserve placement in different categories. Furthermore, some sports involve heterogeneity with respect to static and dynamic cardiovascular demands in either different athletic disciplines—such as parallel bars and floor exercises in gymnastics or positions such as lineman and running back in football, or goalkeeper and mid-fielder in soccer. We have not formulated such distinctions in the matrix, but these should be taken into consideration when making clinical decisions regarding the eligibility and disqualification for competitive sports.

LIMITATIONS OF CLASSIFICATION

There are important limitations to the present classification of sports according to the type and intensity of exercise performed, as presented in Figure 2. For example, it does not consider the emotional stress that an athlete experiences