

# Exercising: the more, the better?

## EXERCÍCIO: QUANTO MAIS, MELHOR?

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<http://dx.doi.org/10.1590/1806-9282.61.02.097>

We live today in a society increasingly concerned with the “fitness of the body”, which, despite being a very positive point, can hide some dangers for certain individuals. Wide access to information is one of the factors leading to the phenomenon, because the evils arising from habits, such as sedentary lifestyle and improper diet, became common knowledge. More and more, scientific findings reach the public, which interacts with these data, asks questions to doctors, and incorporates the novelties into their lifestyles.

A consequence of the above is the growing global popularity of road running, both short-distance and long-distance high-intensity race events, such as marathons and ultramarathons,<sup>1-2</sup> coupled with an increased presence of senior runners (i.e., older than 35 years),<sup>3</sup> which leads exactly to the specific concern of interaction between risk factors and high-intensity sports activities. In the United States, for example, the number of marathon participants increased from 120,000 in the early 1980s to 507,000 in 2005,<sup>4</sup> confirming the above. It is very well known that the regular practice of mild- to moderate-intensity physical exercise is beneficial, as it reduces both cardiovascular morbidity and mortality,<sup>5-6</sup> making it advisable and effective for healthy individuals, as well as patients with cardiovascular disease. However, high-intensity exercise has its long-term cardiovascular mechanisms poorly understood. Thus, it is extremely dangerous to extend the known beneficial cardiovascular results of moderate non-competitive physical exercise to the practice of intense competitive physical activity by non-athletes. Evidence has shown that this kind of sport can actually have different consequences.

Some recent reports have described a greater prevalence of coronary artery disease in marathon runners,<sup>7,8</sup> which is very significant because people who consider themselves healthy, and have no cardiovascular symptoms, may have a silent coronary disease, not yet detected. Among these studies, the one by Mohlenkamp et al.<sup>10</sup> stands out, showing that marathon runners have coronary calcium scores similar to sedentary individuals matched for age, the latter presenting higher Framingham scores. When matched for risk factors, that is, the

Framingham score, marathon runners presented higher calcium levels, leading to the hypothesis that high-performance and high-intensity sports may be correlated to accelerated atherosclerosis. Further evidence suggests that the process can be diffuse, as in the study of Kroeger et al.<sup>9</sup> One hundred marathon runners without history of cardiovascular disease were assessed; increased calcification of the carotid, aorta and arteries of the lower limbs was observed, with a correlation trend with coronary calcification. On the other hand, it is important to note that, despite the observed increased prevalence of atherosclerosis in some groups of athletes, especially marathon runners, there is no proof of increased mortality from coronary artery disease involving athletes. There are numerous studies discussing the occurrence of sudden death in these individuals, especially among the young, but these events do not directly involve coronary calcification processes.

Thus, we should never represent sports activities as a villain. Perhaps, same as any treatment, it does have a beneficial dose. The well-established knowledge regarding moderate doses of physical activity and all the benefits arising from it must not, therefore, be transferred to intense practices, such as marathons. In this case, the recommendation is for athletes to be closely followed clinically, especially in case risk factors are present or if atherosclerotic disease is already installed. This knowledge must be shared with patients so that they know the possible risks, still poorly understood, and can make their own decisions.

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