

## **Release of Medical Certificate for the Practice of Physical Activity in Gyms and Civil Liability**

**Luis Domingos Fornitano<sup>1</sup>, Homaile Mascarin do Vale<sup>2</sup>**

<sup>1</sup>PhD - Adjunct Professor of Cardiology - Medical School of São José do Rio Preto - SP – Brazil - Avenue Brigadeiro Faria Lima, 5544, São José do Rio Preto - SP - Brazil

<sup>2</sup>Doctoral student - Postgraduate Coordinator - Medical Law - Medical School of São José do Rio Preto - SP – Brazil - Street Dr. Raul Silva, 347, Redentora, São José do Rio Preto - SP – Brazil

Corresponding Author: **Homaile Mascarin do Vale**

Doctoral student - Postgraduate Coordinator - Medical Law - Medical School of São José do Rio Preto - SP – Brazil - Street Dr. Raul Silva, 347, Redentora, São José do Rio Preto - SP – Brazil

---

**Abstract:** There is a growing demand in the world for the ideal body and physical activity, specifically in gyms, has achieved a large increase in fans. For the practice, it is necessary medical care that reflects the health (or not) of the practitioner, whether professional or amateur. It so happens that in the State of São Paulo, where more than 45 million people are concentrated, a law was enacted that frees medical care and places the responsibility on the practitioner to define himself as fit for the practice and from such a cause serious consequence can arise.

**Keywords** - risk of sudden death, civil liability, medical assessment.

---

### **I. INTRODUCTION**

Any body movement produced by skeletal muscles that results in energy expenditure is called physical activity. Physical exercise, on the other hand, can be conceptualized as a special type of physical activity that is planned, structured and repetitive, with the ultimate or intermediate goals of maintaining and improving health, fitness, body aesthetics or performance in competitions [1].

Those who exercise regularly and who even compete eventually, such as participating in marathons and other mass sporting events, should be called exercise practitioners (sportsmen) [2].

The practice of sport or sport, often associated with leisure, can also be the main activity of the person or, even be characterized as professional, when it means the livelihood or an important source of remuneration for the individual.

A survey carried out by the Brazilian Micro and Small Business Support Service (SEBRAE), between 2007 and 2012, estimates that the number of gyms in Brazil grew 133%. The main factors for this increase were the search for a better quality of life and an increase in the population's income. [3]

According to the 2018 survey by IHRSA (International Health, Racquet & Sportsclub Association), an international association that promotes the universe of health and exercise, there are more than 34,500 gyms in Brazil, making us the second country in the world with the highest concentration of such establishments. Together, these spaces total 9.6 million customers. [4]

Unfortunately, the increase in the number of these establishments was accompanied by an increase in cases of sudden death related to exercise. Thus, it becomes necessary to standardize the screening of gym practitioners in order to minimize the risk of sudden death and other morbidities associated with physical exercise [5]

Sudden death related to exercise and sport (MSEE) can be defined as death that occurs unexpectedly, instantly or not. Another definition used would be that of death that occurs from 6 to 24 hours after practicing a physical-sports activity. [6,7] Its occurrence tends to generate great repercussion in the various forms of media, especially when it occurs in professional athletes who are considered true models of health.

Wever estimates that about 90% of MS victims have known or undiagnosed heart disease. Thus, in most cases, MSEE occurs for causes that can be detectable through a clinical exam and complementary exams and, consequently, it is often an event that can be avoided. The fundamental strategy for its prevention is to carry out a medical evaluation prior to specific participation for individuals involved in the systematic practice of exercises and, whenever possible, a good infrastructure from the medical point

## **Release of Medical Certificate for the Practice of Physical Activity in Gyms and Civil Liability**

of view in the training and competition places for an emergency room. in emergency situations, including cardiorespiratory arrest. [8]

### **II. METHOD AND ANALYSIS**

This is a study with data obtained through primary and secondary sources, bibliographic survey via qualitative, explanatory and basic research.

Bibliographic research, in this study, was fundamental to form a theoretical framework due to the problem of the proposed theme. The compilation of electronic documents and theses democratizes access to scientific information. Books and theses were also used. The general purpose of the literature review involves locating, analysing, synthesizing and interpreting previous research (scientific journals, books, conference proceedings, abstracts, etc.) related to the area of study; it is, then, a detailed bibliographic analysis, referring to the works already published on the theme [34].

Permeating medicine and law the study carries in its core transdisciplinary essential for the understanding of the hypothesis.

### **III. RESULTS AND LITERATURE**

#### **A - Evaluation prior to participation**

##### **- Anamnesis and clinical examination**

It is recommended that every individual aspiring to practice exercises or sports at a moderate / high intensity level, must undergo, necessarily, a medical examination that allows the detection of risk factors, signs and symptoms suggestive of cardiovascular, pulmonary, metabolic diseases or the locomotor apparatus. [9-11]

Due to the differences related to physiology, epidemiology and clinical aspects, the Guideline on Sport and Exercise Cardiology of the Brazilian Society of Cardiology and the Brazilian Society of Sports Medicine didactically recommends to divide the individuals to be evaluated into three groups: one formed by athletes, another one by professional athletes and a third one contemplating children and teenagers and also para-athletes or athletes with special needs. However, a zone of intersection between them will always exist when considering various aspects of the exercise, such as intensity, frequency, in addition to training volume. The good sense of medical practice and the individual experience of the evaluating physician will be fundamental in choosing the path to follow in order to perform the PPA in these cases. [12].

In this sense, according to the document, the pre-participation clinical evaluation (APP) for physical-sports activities should be understood as a systematic, uniform medical evaluation, capable of covering the wide population of athletes and athletes before being released for physical training. Its proposal is to identify, or at least increase, the suspicion of cardiovascular diseases that are incompatible with physical activities aimed at performance. The main objective of this assessment, carried out prior to the beginning of physical activity and periodically with its maintenance, is to prevent the development of diseases of the cardiovascular system (CVD) and sudden death through the temporary or permanent prohibition of physical activity or exercise. treatment of conditions that can be potentially fatal and triggered by physical exercise. [13].

In the APP, it must be considered that cardiac adaptations to physical exercise are dependent on their frequency, intensity and duration, varying in different sports, in different training systems and also according to individual responses. [14]. This last aspect makes it possible to have different changes in individuals undergoing similar physical activities.

It must include a precise anamnesis, valuing the previous pathological history, family history of heart disease and / or sudden premature death, social history and life habits.

Special care is suggested in obtaining information that may lead to the clarification of the use of legal or illegal drugs that can be considered as doping, even if involuntarily, or that are harmful to health or may cause sudden death. [15,16]

The physical examination must be thorough and, with respect to the question of MSEE, with emphasis on the cardiovascular system.

The cost-benefit ratio of an investigation with complex complementary exams has been questioned; however, a thorough anamnesis and a thorough physical examination with an emphasis on the cardiovascular system, in a pre-participation assessment, are mandatory, regardless of the age group. [17]

Both the American Heart Association (AHA) [18] and the European Society of Cardiology [19]. and the Brazilian Society of Sports Medicine [12] are in agreement to recommend the APP for all professional athletes. It also finds an indication for the correct prescription of exercises in non-professional sportsmen, but who perform high intensity activities.

A study by Corrado [20] et al showed the importance of APP in preventing MS. During a 26-year period (1979-2004), when APP was introduced as federal law in Italy, the incidence of cardiac DM in athletes decreased by almost 90% - from 3.6 per 100,000 person-years in the pre-assessment period, to 0.4 per 100,000 person-years in the screening period.

#### **B - Resting ECG**

Currently, the main discussion in the application of the APP is the costs involved in this assessment. Due to the low prevalence of conditions capable of triggering sudden death during sports activities and the large population of practitioners existing in the

## Release of Medical Certificate for the Practice of Physical Activity in Gyms and Civil Liability

country, much has been debated about which would be the most cost-effective evaluation model. While some societies such as the American Heart Association advocate the simple application of a questionnaire and physical examination, believing that the financial and psychological cost linked to false positive results in the performance of complementary tests would not justify the benefits that could be found, others, such as the Society European Cardiology Association, in addition to numerous sports associations (eg, International Football Federation - FIFA, National Basketball Association - NBA), reinforce the use of the resting ECG, as its performance has the capacity to modify the incidence of sudden death in the athlete population. [21-27]

In São Paulo, SP, Brazil, there is a scarcity of rules that define and ensure the physical integrity of these individuals. Among the guidelines in force in the State, Law 15.681 / 13 proposes the use of the Physical Activity Readiness Questionnaire (PAR-Q) for amateur practitioners, between 15 and 65 years old. If the answer is affirmative to any of the PAR-Q questions, or age range outside the proposed range, a medical certificate with annual renewal [28-30] is required.

This questionnaire was created in 1978 by researchers from the Canadian Society of Exercise Physiology as a screening method for individuals between 15 and 69 years of age, who wanted to start a physical activity program. Its purpose is to detect risk factors for cardiovascular diseases that can lead to sudden death, but it has limitations regarding the detection of other clinical morbidities. [31].

### ***Physical Activity Readiness Questionnaire - PAR-Q.:***

1) Has any doctor ever said that you have a heart problem and that you should only perform physical activity supervised by health professionals?

Yes  No

2) Do you feel chest pain when practicing physical activity?

Yes  No

3) In the last month, did you experience chest pain when you practice physical activity?

Yes  No

4) Do you have imbalance due to dizziness and / or loss of consciousness?

Yes  No

5) Do you have any bone or joint problem that could be worsened by physical activity?

Yes  No

6) Do you currently take any medication for blood pressure and / or heart problem?

Yes  No

7) Do you know of any other reason why you should not practice physical activity?

Yes  No

Date, full name and signature: \_\_\_\_\_

### ***Clinical Conditions.:***

Some clinical conditions like anemia; postural changes; infectious foci (dental, for example); serious systemic or infectious diseases; bronchial asthma, obesity, diabetes mellitus; systemic arterial hypertension; changes in pulmonary and cardiovascular auscultation should be evaluated, as well as the search for characteristic signs related to the possibility of cardiovascular disease.

Many of the abnormalities described are not diagnosed just by applying the PAR-Q questionnaire, assuming the need for a medical professional, especially in the context of pulmonary and cardiovascular auscultation.

In a recent study, Siebra FBA et al [32], compared the Physical Activity Readiness Questionnaire, PAR-Q) with the physical pre-participation physical examination in detecting health risk in gym practitioners. Fifty individuals, of both sexes, between 18 and 35 years old, who started physical activities were evaluated. Through anamnesis, it was possible to detect individuals with asthma, hypothyroidism, smoking and dyslipidaemia. The special physical examination was able to identify four individuals with cardiac and abdominal changes and who responded negatively to PAR-Q.

These patients would have an increased risk of sudden death, especially in cases of alterations in heart rhythm, identifiable and prevented by performing a 12-lead ECG, as well as the risk of complications and possible need for urgent surgical treatment in the emergency room. case of the individual with the umbilical hernia.

The authors concluded that PAR-Q was partially effective in identifying health risks in gym practitioners [5].

In another study designed by Luz et al [33] with the aim of verifying the validity, sensitivity, specificity, positive predictive value and negative predictive value of PAR-Q in individuals aged 61 to 89 years, involved in supervised practice physical activity, the results suggested that PAR-Q, despite being frequently indicated as pre-participation screening in physical activity programs, may not be suitable for elderly individuals. This finding was due to the fact that the questionnaire was not very specific to assess negative responses, that is, a significant number of people who did not indicate health compromises in their responses presented, in the clinical evaluation, clinical changes that would contraindicate the practice of Exercises. According to the authors, the use of PAR-Q in this population, dispensing with face-to-face clinical examinations before the beginning of physical exercise programs, would represent a risky conduct.

## Release of Medical Certificate for the Practice of Physical Activity in Gyms and Civil Liability

### *Brazilian legislation - São Paulo.:*

As previously described, about 9.6 million Brazilians work out in gyms in Brazil.

Due to the economic and public health importance, some laws were created in order to regulate the services provided by the establishments. In the State of São Paulo, the 2001 law that obliged academies to require medical certificates from all beginning students was revoked on 05/23/2018.

Instead of the medical certificate, the new State Law No. 16,724 / 2018 of the State of São Paulo - Brazil proposes that individuals aged 15 to 69 years old - the vast majority of practitioners - must answer the Physical Activity Readiness Questionnaire (PAR-Q) and presents a single paragraph with the following words: "Interested persons aged between 15 and 69 years who answer POSITIVELY to any of the PAR-Q questions, will be required to sign the 'Term of Responsibility for the Practice of Physical Activity'.

The actual incidence of MSEE is unknown. Studies have found very different values, varying according to age, sex and the type of sport practiced by the athlete. However, although episodes are rare and can still occur regardless of exercise, the loss of a single life cannot be accepted especially when it could be prevented.

## CONCLUSIONS

In practice, State Law No. 16.724/2018 of the State of São Paulo - Brazil imposes on the practitioner the obligation to fill out a questionnaire that certainly limits the ability to detect comorbidities of potential adverse effects, thus raising the issue of liability in the case of MSEE or any other damage caused to the consumer practicing physical activity.

In Brazil, civil liability goes through a revolution, altering in this sense the very function of the institute, which, according to Tepedino et al (2020) [35], definitively ceases to be the moralization or punishment of conduct, and becomes the protection of the victim, according to the maxim according to which, in the event of unjust damage, the victim must be compensated. Civil liability in Brazil, and in this sense, focuses on the consequences of the damage and not on its causes.

The practitioner, riddled with ignorance and with a false perception of reality in the case of MSEE or any other adverse event, can be held responsible for having answered a questionnaire without any doctor having knowledge or indication of factors that favor or disadvantage physical activity. The academies being exempt from liability due to a legal system that does not envisage the security of society but the protection of the business community and mainly of the Brazilian State.

## IV. REFERENCES

- 1) Caspersen CJ, Powell KE, Christenson GM. Physical activity, exercise, and physical fitness: definitions and distinctions for health-related research. *Public Health Rep.* 1985;100(2):126-31.
- 2) Araujo CG, Scharhag J. Athlete: a working definition for medical and health sciences research. *Scand J Med Sci Sports.* 2016;26(1):4-7.
- 3) Serviço Brasileiro de Apoio às Micro e Pequenas Empresas (SEBRAE). Mercado de academias ganha mais musculatura. Disponível em: [www.sebraesp.com.br](http://www.sebraesp.com.br). [Acesso em: maio 2020].
- 4) GIBSON, Ann L.; Wagner, Dale; HEYWARD, Vivian. **Avaliação Avançada de Aptidão e Prescrição de Exercícios, 8E**. Cinética humana, 2018.
- 5) MORAES, Mara Regina; DA SILVA MARTINS, Maicon; LONGEN, Willians Cassiano. LESÕES MÚSCULO ESQUELÉTICAS EM ATLETAS PROFISSIONAIS DE FUTSAL FEMININO: UM SEGUIMENTO LONGITUDINAL DE DUAS TEMPORADAS. *Revista Inspirar Movimento & Saude*, v. 10, n. 3, 2016..
- 6) Amsterdam EA. Sudden death during exercise. *Cardiology* 1990;77:411-7
- 7) Burke AP, Farb A, Virmani R, Goodin J, SAMialek JE. Sports related and non-related sudden cardiac in young adults. *Am Heart J* 1991;121(2)Pt1:568- 75.
- 8) INSTITUCIONAIS, Apoios; BRASILEIRO, Comitê Olímpico. Morte Súbita no Exercício e no Esporte. Wever EFD, et al. *JACC Vol. 43, No. 7, April 7, 2004:1137-44.*
- 9) Riebe D, Franklin BA, Thompson PD, Garber CE, Whitfield GP, Magal M, et al. Updating ACSM's recommendations for exercise preparticipation health screening. *Med Sci Sports Exerc.* 2015;47(11):2473-9. Erratum in: *Med Sci Sports Exerc.* 2016;48(3):579.
- 10) Whitfield GP, Riebe D, Magal M, Liguori G. Applying the ACSM preparticipation screening algorithm to U.S. adults: National Health and Nutrition Examination Survey 2001-2004. *Med Sci Sports Exerc.* 2017;49 (10):2056-63 .
- 11) Mirabelli MH, Devine MJ, Singh J, Mendoza M. The preparticipation sports evaluation. *Am Fam Physician.* 2015;92(5):371-6
- 12) Ghorayeb N., Costa R.V.C., Castro I., Daher D.J., Oliveira Filho J.A., Oliveira M.A.B. et al. Diretriz em Cardiologia do Esporte e do Exercício da Sociedade Brasileira de Cardiologia e da Sociedade Brasileira de Medicina do Esporte. *Arq Bras Cardiol.* 2013;100(1Supl.2):1-41 Erratum in: *Arq Bras Cardiol.* 2013;100(5):488

## Release of Medical Certificate for the Practice of Physical Activity in Gyms and Civil Liability

- 13) Ghorayeb N, Stein R, Daher DJ, Silveira AD, Ritt LEF, Santos DFP et al. Atualização da Diretriz em Cardiologia do Esporte e do Exercício da Sociedade Brasileira de Cardiologia e da Sociedade Brasileira de Medicina do Esporte - 2019. *Arq Bras Cardiol.* 2019; 112(3):326-368
- 14) Corrà U, Giannuzzi P. Role of cardiopulmonary exercise testing in today's cardiovascular prevention and rehabilitation. *Eur J Cardiovasc Prev Rehabil.* 2006;13(4):473-4
- 15) Halabchi F, Seif-Barghi T, Mazaheri R. Sudden cardiac death in young athletes; a literature review and special considerations in asia. *Asian J Sports Med.* 2011;2(1):1-15
- 16) Carbone A, D'Andrea A, Riegler L, Scarafilo R, Pezzullo E, Martone F, et al. Cardiac damage in athlete's heart: When the "supernormal" heart fails! *World J Cardiol.* 2017;9(6):470-80
- 17) *Rev Bras Med Esporte - Vol. 11, Supl 1 – Agosto, 2005*
- 18) Maron BJ, Levine BD, Washington RL, Baggish AL, Kovacs RJ, Maron MS; American Heart Association Electrocardiography and Arrhythmias Committee of Council on Clinical Cardiology, Council on Cardiovascular Disease in Young, Council on Cardiovascular and Stroke Nursing, Council on Functional Genomics and Translational Biology, and American College of Cardiology. Eligibility and Disqualification Recommendations for Competitive Athletes With Cardiovascular Abnormalities: Task Force 2: Preparticipation Screening for Cardiovascular Disease in Competitive Athletes: A Scientific Statement From the American Heart Association and American College of Cardiology. *Circulation.* 2015;132(22):e267-72
- 19) Mosterd A. Pre-participation screening of asymptomatic athletes: "don't do stupid stuff". *Neth Heart J.* 2018;26(3):123-6
- 20) Corrado D, Basso C, Pavei A, Michieli P, Schiavon M, Thiene G. Trends in sudden cardiovascular death in young competitive athletes after implementation of a preparticipation screening program. *JAMA.* 2006;296(13):1593-601
- 21) Corrado D, Zorzi A. Sudden death in athletes. *Int J Cardiol.* 2017 Jun 15;237:67-70; Schmier C, Borjesson M. Sudden cardiac death in athletes. *J Intern Med.* 2014;275(2):93-103
- 22) Oliveira MAB, Leitão MB. Diretriz da Sociedade Brasileira de Medicina do Esporte: morte súbita no exercício e no esporte. *Rev Bras Med Esporte.* 2005;11(1):s1-8
- 23) ; Corrado D, Basso C, Pavei A, Michieli P, Schiavon M, Thiene G. Trends in sudden cardiovascular death in young competitive athletes after implementation of a preparticipation screening program. *JAMA.* 2006;296(13):1593-601
- 24) Corrado D, Basso C, Schiavon M, Thiene G. Screening for hypertrophic cardiomyopathy in young athletes. *N Engl J Med.* 1998;339(6):364-9
- 25) Marcus FI. Electrocardiographic features of inherited diseases that predispose to the development of cardiac arrhythmias, long QT syndrome, arrhythmogenic right ventricular cardiomyopathy/dysplasia, and Brugada syndrome. *J Electrocardiol.* 2000;33 Suppl:1-10
- 26) Maron BJ, Gardin JM, Flack JM, Gidding SS, Kurosaki TT, Bild DE. Prevalence of hypertrophic cardiomyopathy in a general population of young adults. Echocardiographic analysis of 4111 subjects in the CARDIA Study
- 27) Coronary Artery Risk Development in (Young) Adults. *Circulation.* 1995;92(4):785-9
- 28) Whaley MH, Otto RM. *ACSM's Guidelines for exercise testing and prescription.* 7th ed. Philadelphia: Lippincott Williams & Wilkins; 2006
- 29) Conselho Regional de Educação Física da 4ª Região (CREF4/SP) Código de Ética. Disponível em: <http://www.crefsp.gov.br>. [Acesso em: maio de 2014]
- 30) Conselho Federal de Educação Física. Código de Ética e Legislação. Disponível em: <http://www.confef.org.br/extra/juris/>. [Acesso em: maio de 2014]
- 31) Adams R. Revised Physical Activity Readiness Questionnaire. *Can Fam Physician.* 1999;45:992-5
- 32) SIEBRA, Felipe Bezerra Alves; FEITOSA-FILHO, Gilson Soares. Morte Súbita em atletas: Fatores predisponentes e preventivos. **Rev Bras Clin Med**, v. 6, n. 1, p. 184-90, 2008
- 33) Luz et al. *Rev. Bras. Cineantropom. Desempenho Hum.* 2007;9(4):366-371
- 34) Bento A. Como fazer uma revisão da literatura: Considerações teóricas e práticas. *Revista JA (Associação Académica da Universidade da Madeira).* 2012;7(65):42-4
- 35) Responsabilidade Civil / Aline Miranda Valverde Terra, Gisela Sampaio da Cruz Guedes; organização Gutavo Tepedino, Rio de Janeiro: Ed. Forense, 2020, p. 8.