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## THE INTERPLAY BETWEEN PHYSIOTHERAPIST AND EXERCISE PHYSIOLOGIST IN THE EXERCISE ONCOLOGY PROGRAM

### A INTERAÇÃO ENTRE FISIOTERAPEUTA E O PROFISSIONAL DE EDUCAÇÃO FÍSICA NO PROGRAMA DE EXERCÍCIO ONCOLÓGICO

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#### RESUMO

Exercício físico é uma ferramenta fundamental no programa de reabilitação oncológica. Seu foco está em restaurar parâmetros físico-funcionais, melhorar a qualidade de vida e prevenir mortalidade precoce, especialmente em pacientes oncológicos mais fragilizados. Profissionais de educação física e fisioterapeutas com capacitação em oncologia são elegíveis em prescrever e supervisionar exercícios a esse público, seguindo um criterioso modelo de avaliação contínua e estratificação de risco. Contudo, o fluxo de direcionamento do paciente oncológico a esses profissionais não está estabelecido e poucos pacientes são beneficiados por um programa de exercícios personalizados no Brasil. Este artigo tem o objetivo de engajar e estimular a capacitação de profissionais de educação física e fisioterapeutas no programa de exercício oncológico e propor um modelo colaborativo de avaliação e supervisão de exercícios alinhado a um crescente cenário multidisciplinar do câncer.

**Palavras-chave:** Neoplasia. Exercício. Fisioterapia. Educação Física. Fatores de Risco

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#### ABSTRACT

Exercise is a relevant tool in the oncology rehabilitation program due to restoring functional capacity, improving quality of life, and preventing early cancer mortality, mainly in unfit cancer patients. According to a systematic physical evaluation and risk stratification model, exercise physiologists (or equivalent) and physiotherapists with additional cancer exercise training are candidates to provide and supervise exercise to cancer survivors. However, the referral pathways are unclear, and a few cancer survivors are educated about personalized exercise oncology programs. This article aims to engage and stimulate additional training of Exercise physiologists and Physiotherapists in a collaborative exercise oncology program and **proposes** a dynamic and supervised model to attend to the emerging multidisciplinary scenario of cancer.

**Keywords:** Neoplasm. exercise. physical therapy. physical education. risk factors.

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#### Introduction

The number of cancer survivors tends to rise due to higher life expectancy and advances in the cancer treatment protocol. Plus, 1.5 million cancer survivors have lived in the last five years in Brazil <sup>1</sup>. However, around 2/3 of those are higher than 65 years old, present at least one comorbidity, and lower functional capacity at diagnosis <sup>2</sup>. The muscle mass and strength loss potentialize functional deconditioning. Lower functional capacity is associated with a longer hospital stay, low quality of life, and higher mortality in people with or without cancer. Multimodal cancer treatments (chemo + radiation + surgery) may aggravate the lower functional condition. In parallel, research focusing on rehabilitation oncology to preserve or improve functional capacity has risen. Oncology rehabilitation is a broad term that aims to restore or facilitate functional independence, reduce adverse symptoms, and improve quality of life <sup>3</sup>. Exercise is one of the main components and has goals: 1) reducing cancer-related fatigue; improving functionality, cardiorespiratory capacity, and quality of life <sup>4</sup>. 2) lowering cancer recurrence and mortality <sup>5</sup>. These features stimulate the scientific community to defend the inclusion of exercise cancer programs as an integrative part of cancer care <sup>6</sup>.

However, including exercise programs for cancer survivors (people living after diagnosis, regardless of treatment stage) is complex, and a few cancer centers in Brazil can provide them. Does the debate start with whose are the professionals indicated? Exercise physiologists (EP, or equivalents) and physiotherapists (PT) are candidates. But who came first? Are they trained to work with cancer survivors? The answers are not simple. The literature shows pragmatic models of risk stratification and personalized exercise<sup>7</sup>; however, the role of each professional is particular in each country, and the same is true in Brazil. This commentary aims to stimulate the engagement of exercise professionals in cancer care, facilitate the decision framework based on risk stratification, and promote integrative participation.

### **What is the role of Exercise Physiologists and Physiotherapists in the exercise oncology program?**

In a paper published in 2018, Morris<sup>8</sup> proposed a dynamic model based on physical presentation, comorbidities, and patient complications throughout cancer treatment. The model is likely to suit the individual's needs and engages both PT and EP. Further authors proposed a similar framework for exercise oncology clinic workflow<sup>9</sup>.

Physical education professionals earned relevance during the 60 and 70ths after popularizing cardiovascular rehabilitation programs. Since then, they have expanded their field towards many other chronic diseases, such as diabetes, hypertension, obesity, and cancer<sup>10</sup>. EP is enabled to evaluate and prescribe exercise programs for people living with chronic conditions to improve or maintain cardiovascular function, muscle strength, power, and endurance, among others.

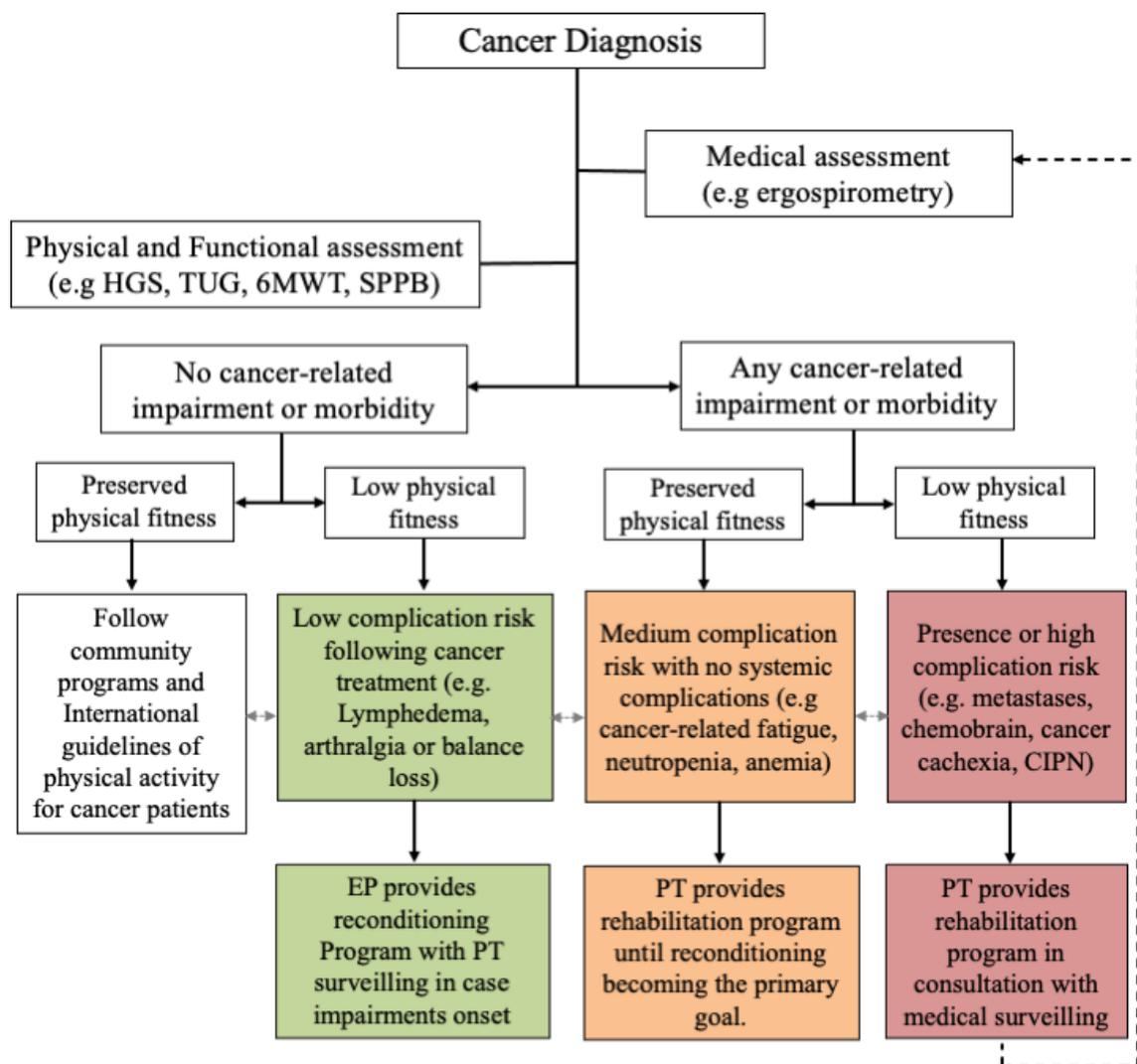
PT is engaged with rehabilitation medicine and pre-habilitation. Their competency is grounded in human movement sciences to improve physical function. They can evaluate and treat dysfunctionality, tissue injuries, muscle loss, mobility, and balance. Cancer patients may develop physical and functional symptoms in response to cancer development or/and cancer treatment. Pain, fatigue, neuropathies, myopathies, osteopenia, arthralgias, lymphedema, and low functional capacity are the most common side effects<sup>11</sup>. Although no validated model exist to predict clinical complications in cancer care, it is well accepted that the patient's functional status varies throughout cancer treatment being a critical clinical marker of patient response<sup>12</sup>.

Thus, providing an exercise program at one moment may not be suitable at a different point. The continuum clinical assessment of functional status enables exercise specialists and clinicians to improve risk stratification, personalized patient needs, and referred patients to the optimal setting for exercise promotion.

### **A model of clinical decision**

Considering a female patient, 55 years old, diagnosed with unilateral breast cancer, positive estrogen receptor, stage IIA. According to her molecular tumor phenotype, their treatment is based on surgery (mastectomy following reconstruction), radiotherapy, and hormonotherapy. The surgery went without complications, with no lymphedema after the first month and a movement restriction only. The physiotherapist evaluation demonstrated moderate strength levels, balance, mobility, and aerobic capacity matched to her age and gender. The patient also reported no comorbidity (hypertension or diabetes). In this case (low risk), an EP is in charge of prescribing and conducting an exercise program followed by a PT surveillance, both with advanced training in cancer rehabilitation.

However, the same patient initiates a shoulder complex pain, increased cancer-related fatigue score assessed using the **Functional Assessment of Chronic Illness Therapy Fatigue Scale (FACIT-F)**, and muscle strength loss three months after chemotherapy. In this scenario (medium risk), the PT assumes the leadership of the exercise program, followed by EP surveillance. In another scenario (high risk), the same patient starts to present neuropathy symptoms, cardiotoxicity, and severe body weight loss nonintentional (suggestive of cancer-induced cachexia). In this case, the oncologist's role is critical to adjust medications according to the patient's features, followed by a PT intervention. Figure 1 illustrates how the continuum evaluation/treatment model is dynamic in the oncology scenario. The green box indicates low risk; the yellow box indicates medium risk, and the red box indicates high risk. It is important to note that the multidisciplinary interaction must flow from the earliest stage of treatment.



**Figure 1.** Algorithm flow for risk stratification and patient referral

**Note:** Legend: This model emphasizes the physical functional evaluation from the beginning of treatment. The lower risk individuals (white box) to the higher risk (red box) require rising level of supervision. Dotted double head gray arrow means that patient functionality is reversible. HGS, gant-grip strength. TUG, timed-up and Go. 6MWT, six-minute walk test. SPPB, short physical performance battery

**Source:** authors

This hypothetical scenario illustrates the dynamism and complexity of an exercise oncology program. In Brazil, the COFFITO (Conselho Federal de Fisioterapia e Terapia Ocupacional) recognizes the specialization in cancer rehabilitation since 2009 by resolutions 364/2009 and 390/2011. The CONFEF (Conselho Federal de Educação Física) there is no specific regulation regarding EP and cancer survivors. However, a recent regulation in Aug 2020 by CONFEF certifies EP's competency and attributions to evaluate and prescribe an exercise program to patients in the hospital<sup>13</sup>. The lack of specific laws is a barrier to EP assessed cancer patients in hospital scenarios. Another barrier to implementing exercise in cancer care in Brazil is the absence of formal training courses (lato and strictu sensu) to provide the knowledge and skills required to apply evidence-based practice to cancer patients. The professional qualification is underscored in the most recent exercise oncology guidelines<sup>6, 11, 14, 15</sup>. The exercise professional in cancer care must recognize patients' risks and re-organize training protocol according to patients' needs and functional status.

An example is a cancer patient with bone metastases. Recent consensus and systematic review advocate that exercise programs can be safe and possible for patients with bone metastases<sup>16</sup>. Still, a qualified exercise professional must establish a bidirectional contact with the medical team, identify risk level, and exclude or adapt exercise intervention according to metastases site or presentation of bone lesions.

The appeal for a professional qualification in exercise oncology is rising. A robust literature, agency guidelines, and around 21 thousand papers have been published in the last three decades attempting to improve the safety, efficacy, and effectiveness of the exercise oncology program<sup>11</sup>. Thus, it is urgently needed that EP and PT engage in qualification courses. Further, it is essential to note the growing co-location of the fitness center in the hospital context will change the cancer rehabilitation setting<sup>17</sup>. From a patient perspective, it may facilitate transportation and adherence to treatment. From a professional exercise perspective, cotreatment would be optimal with EP providing reconditioning program and PT attempt to functional impairments of cancer-related complications.

## Conclusion

Back to our initial provocation. Who is the best exercise professional to deliver exercise in cancer care? It depends. Depends on fitness level, presence or not of any cancer-related impairment, or patient's comorbidity.

This commentary provided a clinical framework based on risk stratification and functional capacity to manage patients need's, as shown in figure 1. We also noted a shortage of formal qualification courses in Brazil to qualify exercise professionals in cancer care. We stimulate PT and EP schools to include or amplify the debate on cancer within their primary formation. The cancer debate may encourage new professionals in the area to look for additional qualifications. Finally, the discussion on competency and regulation should not be distorted by economic or social interests. It should focus on how to deliver a high-quality exercise oncology program to those who most need it, the cancer survival.

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