

# Professional attributions regarding health-related exercise from the Spanish Sports Medicine Society

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## Summary

The regular practice of physical exercise is extraordinarily effective in the management of a growing number of chronic diseases, some of them with a prevalence of pandemic magnitude, for which the society must assume the incorporation of physical activity as a health strategy to prevent and to serve as a complementary treatment of the disease.

Not only medicine and physiotherapy play a fundamental role in the management of exercise for health but also, outside of health, Sports science and physical education degree is crucial in this field of work.

From a health point of view, medicine and physiotherapy have a primary role in the management of exercise for health and also, outside of health, sports science and physical education degree occupy a very prominent role in the promotion and implementation of strategies for the promotion of health.

These professions have been occupying a position in addressing this problem that, on some occasions, has led to points of friction with respect to their role, responsibilities and function. On the other hand, there is a need to resolve the question of the professions' areas of competence while maintaining the will to simultaneously recognize the growing areas of competence shared interprofessionally and the highly relevant areas specific to each profession.

This document is based on the need to address the incorporation of exercise in the prevention and management of disease in a solid and consistent way, considering the contribution of the professions involved from the perspective of multidisciplinary work and with a non-conflictual but cooperative, transparent and respectful collaboration. In addition, this collaboration should always aim at serving society in the most effective way possible, clearly defining the professional attributions of medicine, physiotherapy and physical activity and sport sciences in everything related to the use of exercise as a tool for health.

## Key words:

Professional attribution. Exercise.  
Health. Chronic disease.

## Atribuciones profesionales en el ejercicio para la salud de la Sociedad Española de Medicina del Deporte

### Resumen

La práctica regular de ejercicio físico es extraordinariamente efectiva en el manejo de un número creciente de patologías crónicas algunas de ellas con una prevalencia de magnitud pandémica, por lo que la sociedad debe asumir la incorporación de la actividad física como estrategia de salud para prevenir y para servir como tratamiento complementario de la enfermedad. La medicina y la fisioterapia tienen un papel primordial en el manejo del ejercicio para la salud y también, fuera de la sanidad, las titulaciones de ciencias de la actividad física y el deporte ocupan un papel muy destacado en este ámbito de trabajo.

Desde la sanidad, la medicina y la fisioterapia tienen un papel primordial en el manejo del ejercicio para la salud y también, fuera de la sanidad, las titulaciones de ciencias de la actividad física y el deporte ocupan un papel muy destacado en la promoción y ejecución de estrategias para el fomento de la salud.

Estas profesiones han venido ocupando una posición en el abordaje de este problema que, en algunas ocasiones, ha supuesto puntos de fricción respecto a su papel, responsabilidades y función. Por otra parte, existe la necesidad de resolver la cuestión de los ámbitos competenciales de las profesiones manteniendo la voluntad de reconocer simultáneamente los crecientes espacios competenciales compartidos interprofesionalmente y los muy relevantes espacios específicos de cada profesión.

Este documento parte de la necesidad de abordar la incorporación del ejercicio en la prevención y manejo de la enfermedad de una forma sólida y consistente, considerando la aportación de las profesiones implicadas desde la óptica del trabajo multidisciplinar y con una colaboración no conflictiva sino cooperativa, transparente y respetuosa y, siempre, con el objetivo de servir a la sociedad de la forma más efectiva posible, definiendo de una forma clara cuáles con las atribuciones profesionales de la medicina, de la fisioterapia y de las ciencias de la actividad física y el deporte en todo lo relacionado con la utilización del ejercicio como herramienta de salud.

## Palabras clave:

Atribución profesional.  
Ejercicio. Salud.  
Enfermedad crónica.

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## Introduction

Developed Western society has seen major transformations including discarding more physical jobs which, along with wide availability of often extremely calorific food, has led to a real sedentary lifestyle and obesity epidemic.

Spain's life expectancy is only surpassed by Japan, which increases the number of elderly and very elderly population significantly. One consequence of this state of affairs is a large increase in elderly pluripathology patients.

Medicine moves forwards by providing effective treatment for many pathologies that can be accessed by most of the population, but scientific progress doubtlessly also demonstrates that regular physical exercise, even at low intensity, is extraordinarily effective both to prevent and as a contributory factor to treat a growing number of chronic pathologies,<sup>1</sup> some of which have a pandemic-sized prevalence. This problem is so large that the Council of the European Union advised "working on effective policies across sectors such as sport, health, education, the environment and transport"<sup>2</sup>

In Spain, promoted by the Sports Council, a *Comprehensive Plan for Physical Activity and Sport*<sup>3</sup> is in force during the 2010-2020 period. There is no doubt that society as a whole must incorporate physical exercise as a health strategy to prevent and to act as a complementary treatment to illness.

From the health sector, medicine and physiotherapy take a primordial role in handling health-related exercise and also outside the health sector, sports scientists play an outstanding role in promoting and performing forms of active living as health-enhancing strategies.

These professions have been addressing this problem in a way that might occasionally cause friction regarding their role, responsibilities and function.

On the other hand, the question of each profession's competence fields should be resolved, in an attempt to simultaneously recognise growing competence areas shared between professions and the highly relevant specific areas for each profession<sup>4</sup>.

This document works from the need to address incorporating exercise into prevention and handling of the disease both solidly and consistently, considering the contribution made by the professions involved from the perspective of multidisciplinary work and with cooperative, transparent and respectful, rather than conflictive, collaboration in an attempt to be used as effectively as possible by society, clearly defining the professional attributions of medicine, physiotherapy and sports sciences in terms of using exercise as a health tool.

## Definitions

Addressing any subject requires accurately determining all concepts within it as it affects the entire development of the topic. In the case of health-enhancing exercise, it is essential to define all concepts accurately

to avoid incorrect interpretations, inappropriate presumptions and to be able to talk about all the aspects clearly, avoiding misunderstandings, conflicts and disagreements.

The concepts of interest are described below in the context of performing physical exercise for health purposes.

### Definitions related to physical activity/exercise

- Physical activity. Any form of bodily movement caused by contracting muscles that causes a substantial increase in energy use over a resting situation<sup>5</sup>.
- Aptitude, condition or physical form. Set of physical qualities that allow physical activity to be performed, related to physical performance and to health, and that can be measured by specific tests.<sup>5</sup> Physical aptitude components include stamina, strength, speed, flexibility, balance, coordination and agility.
- Physical exercise. Type of physical exercise that consists of carrying out planned, structured and repetitive bodily movements, done to improve or maintain one or more components of the aptitude or physical condition<sup>5</sup>.
- Therapeutic exercise. Conceptually, this is a physical activity intended to promote, prevent or treat various diseases, disorders or syndromes. In a wider sense, therapeutic exercise is understood to be the systematic, planned performance of bodily movements, postures and physical activities so that the subject has the means to correct or prevent disturbances, to improve, re-establish or strengthen physical functioning, to prevent or reduce health risk factors or to optimise the general state of health, physical conditioning or the feeling of well-being<sup>6</sup>.
- Sport. "Sport" is understood to be all types of physical activities that, by means of participation, organised or otherwise, have the purpose of expressing or improving physical and mental condition, developing social relations or achieving results in competitions at all levels. (European Sports Charter; Rodas 1997. Reviewed in 2001). Within the many types of sports (competitive, leisure, school, university, by age, etc.), there is what is known as health-enhancing sport, performed with the fundamental aim of maintaining or improving health.

### Definitions related to health/healthcare

- *Patient*. Person who is sick or in treatment<sup>7</sup>.
- *Healthy*. In good health. Not sick<sup>7</sup>.
- *Diagnosis*. Area of medicine that aims to identify a disease based on its symptoms<sup>7</sup>.
- *Physiotherapy assessment or evaluation*. This is the result of a clinical reasoning process that leads to identifying existing or potential impediments, limitations in activities and restrictions in participation and factors that influence bodily functions positively or negatively. The physiotherapy assessment or evaluation addresses the signs and symptoms commonly associated with a disorder, syndrome or

category of deficiencies in the structures and functions of the body, limitations of the activity or restrictions in participation.

- *Prescription or Formula.* A note that the doctor writes indicating how to prepare and administer a remedy. It comprises three parts: inscription, that contains the names and doses of the ingredients; subscription or method of *preparation*, and *instruction*, which tells the patient how to use it. A Spanish prescription usually begins with the letter R (Receta in Spanish) and is signed by the doctor<sup>7</sup>.
- *Functional assessment.* The functional assessment consists of measuring and objectively evaluating the functional capacities of a subject to carry out a sport-related or motor task. It requires registering and measuring (quantification) one or more physiological or physical variables (indicators) when the subject carries out one or more particular motor tasks (functional tests) and issuing an objective value judgement for a functional capacity<sup>8</sup>.
- *Treatment.* Set of all types of hygienic, pharmacological and surgical resources that are implemented to heal or relieve diseases<sup>7</sup>.
- *Healthcare activity.* Set of actions to promote, prevent, diagnose, treat or rehabilitate, aiming to encourage, restore or improve the health of people, carried out by healthcare professionals<sup>9</sup>.
- *Healthcare authorisation.* Administrative ruling that, according to the set requirements, authorises a centre, service or healthcare establishment to set up, operate or modify its healthcare activities or, when appropriate, close them<sup>8</sup>.
- *Health centre.* Organised set of technical resources and installations where skilled professionals, thanks to their official qualification or professional entitlement, basically carry out healthcare activities for the purposes of improving people's health. Health centres can be made up of one or several health services, that constitute its care offer<sup>9</sup>.

## Exercise

Understanding exercise conceptually as the type of physical exercise that is planned, structured and repetitive and that aims to improve or maintain physical form, it seems clear that some forms of exercise have considerable influence over the health of the human organism.

Exercise carried out for leisure, entertainment, domestic, transport, educational, sporting purposes and even some forms of work-related exercise have beneficial effects on a person's health. However, exercise is also specifically used as a form of treating various diseases, disorders and pathologies.

In this health context, we can talk about exercise carried out for preventive purposes and exercise carried out as treatment, also known as therapeutic exercise.

Therapeutic exercise is understood as defined above, and preventive exercise is exercise that has a positive effect on health but that is not performed as therapy.

Therapeutic exercise is performed exclusively by healthcare professionals in a healthcare context, as determined by the standard in force.<sup>9</sup>

It cannot be called therapeutic exercise if the following defining elements are not met:

- *Diagnosis.* Unavoidable first step to consider and initiate a therapeutic exercise programme.
- *Functional assessment.* Before starting the therapeutic exercise programme, an evaluation should be run on the function or functions that are going to be treated, using the procedures set by the doctor in order to find out about the patient's functional situation and so that it can be used as an evaluation criterion for how treatment is evolving.
- *Prescription.* This is the formula for the exercise, just as given for medicines, and it should contain all the necessary elements to perform the exercise programme: type of exercise, intensity, duration, number of repetitions and series, frequency, rest periods, progression criteria, evolution, etc.

The prescription should be made after considering any contraindications and precautions for the therapeutic exercise, adapted to each patient. It must obey an indication devised according to the scientific and clinical evidence and must form part of the patient's overall treatment.

The therapeutic exercise programme, intended to improve one or some of the physical aptitude components, must be prescribed considering the pathology, the medical treatment and other treatments, functional situation, socio-economic aspects and patient preference so that the programme can be kept up without dropping out because the right exercise programme will lead to regular participation, enjoyment and safety for the programme participants<sup>10</sup>.

The periodic evaluation of the response to the therapeutic exercise programme is an essential part of the prescription and the actual programme, so the professional in charge of the subject must consult the doctor in the following circumstances:

- Goals set at the start have not been achieved.
- Symptoms or signs of excessive effort appear.
- Inappropriate responses to physical exercise appear.
- The person rejects the programme.

## Spanish legal framework

It is not necessary to consult any legal texts to know that it is the role of Medicine, Physiotherapy and other healthcare professions and, more indirectly, other professions, to preserve others' health, both people who are suffering from some type of pathology and people who are not, which corresponds to treatment and prevention of disease.

The Spanish Constitution recognises the right to health protection in article 43.1 and from this point, several Spanish laws develop various health protection strategies, defining health protection as "the set of actions, provisions and services intended to prevent adverse effects that products, elements and processes from the environment, physical, chemical and biological agents, might have on the health and well-being of the population"<sup>12</sup>.

In general, all the laws consider a sedentary lifestyle to be a factor to fight by promoting physical activity<sup>12</sup> both from the actual public administration and from social organisations<sup>12</sup>.

Provision of any health service is subject to strict regulation to ensure required safety and quality guarantees that society must be offered, therefore, prior administrative authorisation is required to set it up and operate it, as well as to make any modifications determined by its structure and initial regime<sup>9</sup>.

The health centre, where healthcare events take place, including therapeutic exercise, must meet minimum operating requirements that must guarantee that the health centre, service or institute has the minimum technical resources, facilities and professionals required to develop its intended activities, clearly displaying an emblem that allows users to know what type of centre or institute this is and its authorisation, with its care offer. Only authorised healthcare centres, services and establishments will be able to use terms in their publicity, without being misleading, that suggest that any type of healthcare activity is carried out, limited to services and activities that it is authorised to provide<sup>9</sup>.

On the other hand, patient rights are enormously important as a basic axis for clinical-care relations, so these rights should be mentioned whenever referring to the use of physical exercise for health purposes and as determined by the legislation in force<sup>13</sup>.

## Professional attributions of the doctor, physiotherapist and accredited sports scientist when performing health-enhancing exercise

The law governing healthcare professionals<sup>4</sup> determines the functions of the different healthcare professions.

### Doctors

"Medicine graduates are given the indication and performance activities intended to promote and maintain health, prevention of diseases and the diagnosis, treatment, therapy and rehabilitation of patients, as well as the judgement and prognosis of the processes being considered."

Regarding exercise for health purposes, the specialist doctor (Medicine of Physical Education and Sport, Cardiology, Pulmonology, etc.) is trained to prescribe exercise for sedentary patients without need for referral. However, it is advisable that the doctor should identify collaborating professionals (physiotherapists and accredited sports scientists) to create work groups on health-enhancing exercise<sup>14</sup>.

### Physiotherapists

"People with a university diploma in Physiotherapy provide their discipline-related care, through treatments featuring resources and physical agents, focused on recovery and rehabilitation of persons with somatic dysfunctions or disabilities, and prevention of the above."

## Graduates in Sports and Physical Activity Sciences

Although the professional work by graduates in Sports and Physical Activity Sciences and the future Sports Science degree is not regulated by any specific standard<sup>15</sup>, these are professionals with the ability to "plan, run and assess processes and programmes of high quality physical activity-sport and sports training, in a wide range of contexts and situations, and for different population groups in a framework that allows their personal and social development and positively affects their health and quality of life, as well as their free time and leisure"<sup>16</sup>.

### Role of the professions involved

When describing the professional attributions related to exercising for health, it is advisable to remember some extremely important aspects from the Spanish healthcare professionals law<sup>4</sup> that are mentioned below.

All healthcare professionals must take active part in projects that can benefit health and well-being of persons in health and illness situations, particularly in the field of preventing diseases and exchanging information with other professionals and with the health authorities, to better guarantee these purposes.

Professionals will be guided in their work by service to society, the interest and health of the citizens to whom the service is provided, rigorously meeting ethical obligations, determined by the actual professions in compliance with the legislation in force, and the normal-praxis criteria or, when appropriate, general uses corresponding to their profession.

Professionals and healthcare centre managers will make it easier for their patients to exercise their right to know the name, qualifications and speciality of the healthcare professionals who are caring for them, plus their category and function.

Comprehensive healthcare involves multidisciplinary cooperation, integrating processes and continuity of care, and it avoids having off or simply superimposing care processes covered by various certified persons or specialists.

A specialist qualification is official and valid throughout Spain and a specialist qualification is required to explicitly describe yourself as a specialist, to carry out the profession as such and to take specialised positions in public and private centres and institutes.

The concept and procedures for sports readaptation have not been sufficiently developed in the scientific literature. Injury readaptation has been defined as "the set of medical-therapeutic and physical-sporting measures intended to prevent risks of injury, recover and develop sporting health and improve or optimise the athlete's performance to give them a greater life in sport,"<sup>17</sup> with two functional fields for professional work.

Functional recovery, with a clinical action field.

Sports and physical readaptation, that belongs to a non-clinical area of action, whose main means of intervention involves re-training the physical effort once the pathological process has been overcome.

However, this definition has a conceptual contradiction, given that the prefix "re" implies that there was a phase prior to applying the readaptation programme and this should be understood as a process that

emerges as a consequence of a situation (injury or similar) appearing that requires work from the time of the injury and not before. To do this, it seems more correct to define it as “the set of medical-therapeutic measures intended to re-establish and develop sports-health and physical-sports measures intended to improve or optimise the athlete’s performance to give them a greater sports life.”

### Field of influence for the document

In terms of performing exercise to maintain and improve health, various situations are presented below that might occur and the attributions of the professions involved are described, presenting a diagram of how the injury/pathology evolves in relation to physical exercise.

The graph schematically shows the most important points, where a pathological process requires actions to be taken, that imply exercise related to health (Figure 1).

It is clear that, once the diagnosis and the prescription have been made, the physiotherapist will begin the treatment (including therapeutic exercise) and this will extend to the point when the medical release form is signed. It is a well-known fact that medical discharge does not allow the person to go back to their usual physical activity and requires a period of adaptation. It is the physiotherapist’s attribution to carry out the readaptation after medical discharge in the event that signs or symptoms of the pathology remain and this phase is called functional readaptation. If there are no clinical signs or symptoms after medical discharge, the sports readaptation period will begin, and this is attributed to the accredited sports scientist.

After sports discharge, the patient re-joins the activity/competition.

### Situations of using exercise for health purposes

The usual situations are considered where physical exercise is carried out for health purposes, as summarised in Table 1.

### Pathology of injury and locomotive system until medical discharge

In the cases considered in this section, there is the diagnosis and functional assessment and the recommendation for treatment (attribution and responsibility of the doctor) and performing the treatment that might include therapeutic exercise (corresponding to the physiotherapist). The accredited sports scientist plays no part.

### Pathology of injury and locomotive system after medical discharge

Once the doctor gives the medical discharge, the doctor must check over the patient again in the case of relapse or that their condition deteriorates. At this point, two situations may occur. Firstly, that the patient still shows clinical symptoms or signs of their pathology, such as pain, swelling, rigidity, disturbed balance or coordination, clear muscular atrophy, etc. Or they have no clinical signs or symptoms. In the former case, the physiotherapist will continue the prescribed treatment and therapeutic exercise for functional readaptation purposes. In the latter case, the accredited sports scientist will perform readaptation on the sport-related movement.

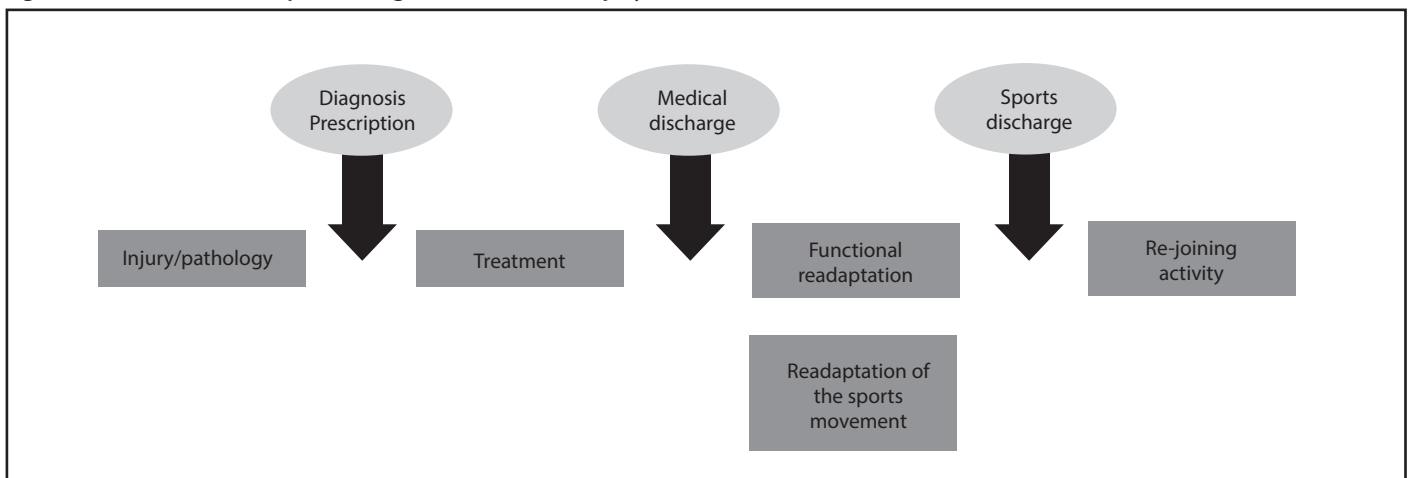
### Non-determined chronic medical pathology

The doctor makes the diagnosis and functional assessment and prescribes the treatment. The physiotherapist carries out the prescribed treatment that might include therapeutic exercise and the accredited sports scientist plays no part.

### Determined chronic medical pathology

The doctor checks over the patient again in the case of relapse or deterioration of their condition. The physiotherapist carries out the

Figure 1. Actions related to performing exercise after an injury.



**Table 1. Professional attributions in all suppositions.**

Type of situation	Attribution of the Doctor	Attribution of the Physiotherapist	Attribution of the Accredited Sports Scientist
Pathology of injury and locomotive system until medical discharge	– Diagnosis – Functional assessment – Treatment	– Prescribed treatment – Therapeutic exercise	– No functions
Pathology of injury and locomotive system after medical discharge	– Check-up if relapse or poor evolution	– Prescribed treatment – Therapeutic exercise – Functional readaptation (with symptoms/signs)	– Readaptation of the sport-related movement (no signs/symptoms)
Non-determined chronic medical pathology	– Diagnosis – Functional assessment – Treatment	– Prescribed treatment – Therapeutic exercise	– No functions
Determined chronic medical pathology	– Check-up if relapse or poor evolution	– Prescribed treatment – Therapeutic exercise	– Exercise for maintenance and prevention
Healthy	– Diagnosis – Functional assessment (prevention)	– Exercise for prevention	– Exercise for maintenance and prevention
Pregnancy, puerperium and the elderly (healthy)	– Diagnosis – Functional assessment (prevention)	– Exercise for prevention	– Exercise for maintenance and prevention
Disability	– Diagnosis – Functional assessment (prevention)	– Exercise for prevention	– Exercise for maintenance and prevention

prescribed treatment and the therapeutic exercise if it exists. The accredited sports scientist runs the exercise programme for maintenance and prevention.

### Healthy persons

The doctor makes the diagnosis and functional assessment for preventive purposes. The physiotherapist can carry out preventive exercise and the accredited sports scientist can run the exercise programme for maintenance and prevention.

### Pregnancy, puerperium and the elderly (healthy)

The doctor makes the diagnosis and functional assessment for preventive purposes. The physiotherapist can carry out preventive exercise and the accredited sports scientist can run the exercise programme for maintenance and prevention.

### People with disabilities

The doctor makes the diagnosis and functional assessment for preventive purposes. The physiotherapist can carry out preventive exercise and the accredited sports scientist can run the exercise programme for maintenance and prevention.

### Conflict of interests

The authors do not declare any conflict of interests.

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