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Benefit-risk assessment for sports and recreational facilities, activities and equipment

bsi.

National foreword

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A list of organizations represented on this committee can be obtained on request to its committee manager.

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Foreword

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The procedures used to develop this document and those intended for its further maintenance are described in the ISO/IEC Directives, Part 1. In particular, the different approval criteria needed for the different types of ISO documents should be noted. This document was drafted in accordance with the editorial rules of the ISO/IEC Directives, Part 2 (see www.iso.org/directives).

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For an explanation of the voluntary nature of standards, the meaning of ISO specific terms and expressions related to conformity assessment, as well as information about ISO's adherence to the World Trade Organization (WTO) principles in the Technical Barriers to Trade (TBT), see www.iso.org/iso/foreword.html.

This document was prepared by Technical Committee ISO/TC 83, *Sports and other recreational facilities and equipment.*

Any feedback or questions on this document should be directed to the user's national standards body. A complete listing of these bodies can be found at www.iso.org/members.html.

Introduction

A system is needed for identifying benefits and hazards and assessing risks related to sport and recreation for all ages and abilities. In many jurisdictions, there is a requirement for the designers, builders, owners/operators, including inspectors and maintainers of a sport and other recreational facilities and equipment, to carry out a risk assessment and, in some cases, to record it.

International Standards have been published on risk assessment and general risk management including ISO 31000[1], IEC 31010[2] and ISO 45001[3] on occupational health and safety These International Standards were written with the intention of providing methods for managing risk and preventing work-related injury and ill-health via the elimination of hazards and the minimization of occupational health and safety (OH&S) risks by taking effective preventive and protective measures. As the sport and recreation sectors have specific characteristics and face different challenges, there is a need for an additional International Standard. There is an expectation in sport and recreational activities that the user is making an implicit trade-off between the benefits and the inherent risks of the activity, including of the potential for harm.

Risks and benefits only have meaning in relation to the objectives pursued within the context of a project (i.e. the project scope). Regarding measuring the risks and benefits, any risk analysis should include at least the following objectives:

— injury and lethality (risk);

— improvement of health and wellbeing in a broad sense (benefit);

— compliance with legal requirements.

It is up to the user to determine the degree of acceptable risks and the minimum benefits to be achieved regarding the set objectives.

The terms “sports” and “recreation” describe diverse activities and the necessary equipment for all ages and abilities. For example, camping, hockey, high ropes and challenge course equipment, martial arts, games with rules such as football (soccer), kiteboarding, summer tobogganing, play spaces, etcetera all fall within “sports” and “recreation.”

It is recognized that sports and recreation involve numerous stakeholders including, but not limited to, designers, manufacturers, installers, owner/operators, maintainers, inspectors of sports and recreation equipment and facilities, and any park rangers, playworkers or activity leaders who may be present at these venues.

Due to the varied interests of the different stakeholders, a single system of hazard identification and risk assessment for the sport and recreation sector is not feasible. What can be achieved, however, is to identify principles and provide guidance on selecting appropriate techniques.

A key issue identified is the differentiation of sports and recreational activities from a work activity. Sports and recreational activities are designed for the public good; therefore public interests are paramount. The public good can include the social, physical, psychological health and welfare of the participant and society. Participation in sport and recreation involves exposure to risk which is not necessarily a bad thing and can be of benefit to the public good. Exposure to risk in daily life can reduce fear and improves the development of human competency.[4],[5],[6] This is to be balanced with the exclusion of unforeseen or unrecognizable sources of harm. For example, in adventure sports, exposure to risk is what provides part of the enjoyment. Even in the case of children's play provision, it is now widely recognized that children seek risky situations. Graduated challenge provides opportunities for children to develop internal hazard references. Therefore, the age of participants should be a consideration when assessing benefits and risks.

It is common to conduct a benefit-risk analysis that explicitly brings together the consideration of benefits as well as the risks of sport and recreation to a single evaluation. This immediately separates sport and recreation from the world of occupational health and safety where the goal, as noted above, is generally seen as one of eliminating or minimizing risk.

Within sport and recreation, there are many different goals of which prevention of injury is but one. Using a benefit-risk approach recognizes the need for making trade-offs in achieving a balance that maximizes the overall social utility and public good. These are not the only considerations, though they are important ones. Whether provided on a commercial, not-for-profit, or charitable basis, sport and recreational activities involve an accepted, inherent element of risk and challenge. Taking risks brings rewards but also dangers.

The range of stakeholders involved in sport and recreation is so diverse, different types of benefit-risk assessment is needed. Generally, there are three types of assessments that can be used: the generic risk assessment, the site-specific risk assessment, and the dynamic risk assessment. This document helps providers of products, activities, and operators of facilities to better understand the risks associated with their products, activities, and facilities, and to evaluate, implement, and document a suitable benefit-risk analysis. For example, a generic risk assessment technique can be used to analyse the risks related to skis, while a site-specific risk assessment can be used by the owner/operator to evaluate the ski hill; and the skier and the ski instructor are dynamically assessing the risk during the skiing activity.

Those responsible for reviewing proposed research must ultimately weigh the risks and benefits to determine whether the relationship between them is acceptable. This process is complicated by the fact that risks and benefits often cannot be measured on a uniform scale. First, 'risks and benefits for subjects may affect different domains of health status', as when a risk of physical injury is incurred in an effort to achieve a potential psychological benefit. Second, 'risks and benefits may affect different people'; risks are typically borne by the participants in the research, but most of the benefits will be experienced by patients in the future[Z].

INTERNATIONAL STANDARD **ISO 4980:2023**

Benefit-risk assessment for sports and recreational facilities, activities and equipment

1 Scope

This document specifies methods for a benefit and risk assessment for sports, for recreational and sports facilities including equipment. This document also provides guidance and requirements on benefit and risk assessment within this field. It includes examples for injury thresholds.

2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

ISO 3864 (all parts), *Graphical symbols — Safety colours and safety signs*

3 Terms and definitions

For the purposes of this document, the following terms and definitions apply.

ISO and IEC maintain terminology databases for use in standardization at the following addresses:

— ISO Online browsing platform: available at https://www.iso.org/obp

— IEC Electropedia: available at https://www.electropedia.org/

3.1
activity
play, recreation or service that engages a *user* (3.23) and provides *benefit* (3.2) which can have an associated *risk* (3.11)

3.2
benefit
helpful or good effect, or something intended to help

3.3
benefit-risk
concept which acknowledges that in sports and recreation there is an inevitable and inherent trade-off between the *benefits* (3.2) of a sport or recreational *activity* (3.1) and some of the *risks* (3.11) which it can pose

Note 1 to entry: In some circumstances exposure to risk may in itself be considered to be a benefit, e.g. the benefits of risky play in childhood development.

3.4
benefit-risk assessment
BRA
form of risk assessment that considers both *risks* (3.11) and *benefits* (3.2) in parallel when making decisions

Note 1 to entry: Benefit-risk assessment is a balanced approach that involves judgment and is based on clear values and understandings. Where appropriate it takes account of local circumstances.