

2021 Annual Report

Swiss Federal Institute of Sport Magglingen SFISM



SFISM

Swiss Federal
Institute
of Sport
Magglingen



Bern University
of Applied Sciences



Schweizerische Eidgenossenschaft
Confédération suisse
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Federal Office of Sport FOSPO

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Foreword

Despite the Covid-19 pandemic, the Swiss Federal Institute of Sport Magglingen (SFISM) achieved almost all of its goals in the year under review. It demonstrated its ability to adapt swiftly to changing circumstances and restrictions. One of the goals achieved was the drafting of the self-evaluation report, which we compiled as part of the desired institutional accreditation. The report is one of the requirements for an on-site visit by an expert panel which will assess the SFISM on the basis of several standards.

It is not uncommon for the accreditation process and work associated with it to be frowned upon as an administrative exercise. The fact is, however, that over the past few years no-one has taken the time to analyse the current development status of the institution and think about it in more depth. In general, we use our resources largely in our day-to-day business. Students are waiting in lecture theatres, customers are waiting at the entrance, partner institutions are waiting for a reply, scientific studies are waiting to be written up and SAP is waiting for us to enter our working hours. To draw up the report, we had to create the necessary resources for analysing the current status of the SFISM for all those involved. Many of them became even more familiar with the SFISM during this project and greatly appreciated this opportunity to reflect.

The self-evaluation report, which is now available, gives a holistic view of the university. It helps us to aim for accreditation on the one hand, and systematically develop the SFISM on the other. The quality assurance that has been improved through our preparation for accreditation will regularly remind us in future of the need to take enough time to assess and continuously improve ourselves. We are looking forward to that.

Yours sincerely



Dr Urs Mäder
Rector of SFISM



Dr Thomas Wyss
Deputy Rector of SFISM



Rectors Dr Urs Mäder and Dr Thomas Wyss studying the building plan

Reflection and active involvement as key premises of further development

The year under review was characterised by the self-evaluation of the SFISM as part of its institutional accreditation. The self-evaluation led to an action plan for the further development of the SFISM.

The two new buildings “Hochschule Lärchenplatz” and “Training Hall” are taking shape. The modern buildings are based on ecological construction methods and are making the infrastructure in Magglingen fit for the future.

Sports science support from the Performance Sport department contributed to the great achievements by Swiss athletes at the Summer Olympic Games in Tokyo. The whole of the SFISM cheered them on.

Ethical values in sport achieved strong resonance in 2021. The SFISM contributed important impetus to the discussion by holding two ethics symposia.

The SFISM is currently undergoing a process of change and development affecting three areas: staffing, partnerships and structures. As regards staffing, new appointments have been made to key posts at the SFISM, such as the Vice Rectorates, bringing in new management styles, ideas and skills. In terms of partnerships, the long-standing, strategic cooperation with Bern University of Applied Sciences (BFH) has been redefined to meet future needs better. An association agreement serves as a basis for exploiting synergies in the areas of teaching, research and services. At the structural level, adjustments were made to the legal framework that have yet to become established.

Significant adjustments to the legal framework with an impact on the SFISM

The partially revised Sport Promotion Ordinance, the new SFISM Ordinance and the SFISM's organisational regulations came into effect on 1 October 2021. These introduce significant changes:

- Separation of the strategic and operational responsibility for the university tasks between the Director of FOSPO and the Rector of SFISM;
- Legal anchoring of the SFISM Advisory Board as a strategic advisory panel chaired by the Director of FOSPO;
- Creation of Vice Rectorates in teaching, research/development and services, who support quality assurance across the management structure;
- New rules on the strategic participation of university staff, which now include participation of employees along with participation of students;
- Transfer of responsibility for course content from the Federal Department of Defence, Civil Protection and Sports (DDPS) to the SFISM in terms of freedom of teaching;
- Reduction in regulatory density at the DDPS level for practical sports aptitude assessments for the Bachelor of Science EHSM in Sports, and at the same time, creation of the option to supplement the practical sports assessment with a cognitive test.

The SFISM is required to make the changes to the operation of the SFISM step by step, to communicate their impact and thus consciously further develop the SFISM.



Full-time equivalents **100**

Employees **125**



SFISM Social Media



R+D projects published 40

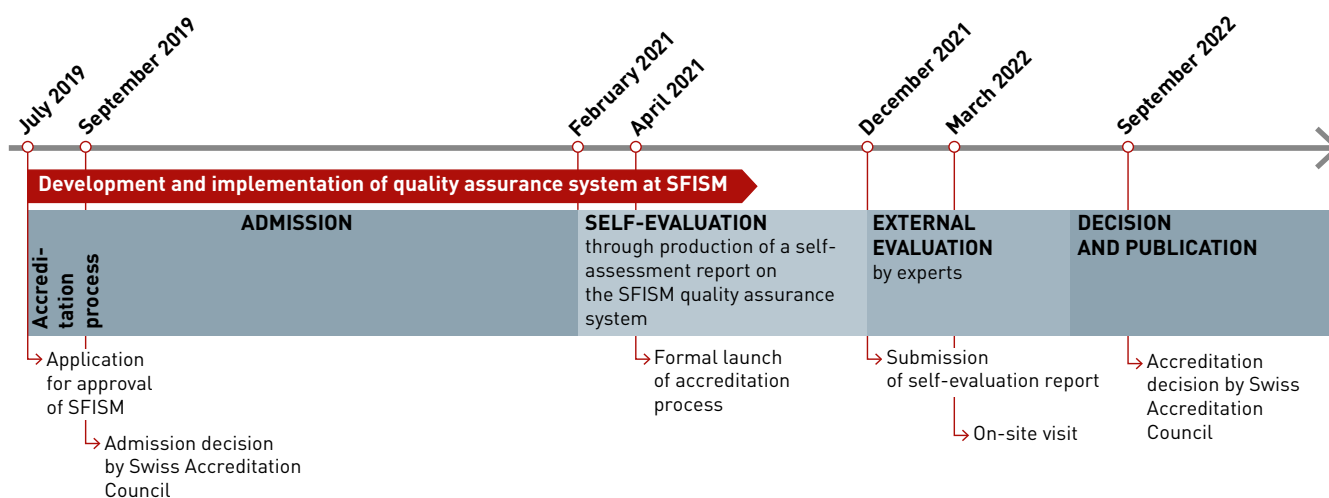


Cooperation with sports associations

- Swiss Olympic
- Swiss Ski
- Swiss Ice Hockey Federation
- Swiss Athletics
- Swiss Cycling
- Swiss Aquatics
- Swiss Triathlon
- Swiss Shooting
- Swiss Football Association
- Swiss Handball Association

Drafting the self-evaluation report as part of the accreditation process

The whole of the past year was characterised by self-evaluation at the SFISM. It is an important step in the multilevel process of institutional accreditation in accordance with the Higher Education Act. A self-evaluation report was written as part of a participatory and multilevel process. This began on 21 January with the joint kick-off and concluded on 8 December with the submission of the report. All in all, 48 authors evaluated the SFISM in the areas of "quality assurance", "governance", "teaching, research and services", "resources" and "internal and external communication". Four students and a number of employees from other FOSPO departments took part, in addition to SFISM employees, including staff representatives. The Rector and the Central Administration led the process.





Nathalie Barbezat and Ellen Leister, Central Administration, observing the mobility of students and employees



Training hall

- Longest beam in facade: 29 m × 2.50 m
- Wrestling hall: 210 m³ of sawdust
- 2 acoustically insulated partition walls of 15 tonnes each
- 2,100 m³ of concrete > 5250 tonnes > 260 truck trips
- 35 km of electric and 12 km of IT cable

Hochschule Lärchenplatz

- Longest beam in roof: 20 m × 1.30 m
- Indoor sprint tunnel: 90 m
- 356 wooden facade slats, 10.65 long
- 5900 m³ of concrete > 14 750 tonnes > 730 truck trips
- 600 tonnes of steel



Maggingen 875 m above sea level

High School main building 880 m above sea level

Lärchenplatz 933 m above sea level

End der Welt Hall 961 m above sea level

New buildings for the promotion of sport

The new training hall, which is currently under construction, creates an ideal environment for the training courses in Maggingen. It factors in ecological building materials and meets the needs of digitalisation in practical sports studies. It can be used in its entirety or divided into three individual halls. Theory rooms and classrooms round out the offering.

With the new building for Hochschule Lärchenplatz, the SFISM is facilitating exchange between the departments, exploiting synergies and optimising support for national youth and elite sport. The sports physiotherapy and sports medicine departments, performance diagnostics with measurement lab, and offices occupy one floor each of the three-storey building. The three floors and the outdoor sports facilities are connected by a staircase in the courtyard.

Research support for the Summer Olympic Games in Tokyo

The SFISM cooperates with national governing bodies. As part of this cooperation, it also provided research and advice in sports science for athletes who successfully took part in the Olympic Games in Tokyo. While preparing to compete, the athletes were able to rely on specific acclimatisation training sessions developed by the SFISM, as well as aerodynamic optimisations and intensive consultations.

Contribution to the discussion on ethical values in sport

In the year under review, public interest became strongly focused on ethical values in sport. The media published reports about ethical violations in Swiss performance sport and, in particular, from former female rhythmic gymnastics and artistic gymnastics squad athletes. On behalf of the Confederation, this led to a thorough investigation into the violations and a package of measures was derived to better protect athletes. The SFISM raised awareness of the subject with two ethics symposia. Experts shed light on psychological abuse and sexual harassment in sport, explored the causes and challenges in depth, and presented possible solutions. Ethics in sport is also being addressed in various SFISM teaching events.

Mobility activities despite coronavirus

Despite the challenges presented by the pandemic, it was possible to hold numerous student exchange activities with European universities: six Bachelor's students spent their immersion semester at partner institutions, and one MSc Elite Sports student completed her internship at the Norwegian School of Sport in Oslo. One student from this partner university completed her spring semester at the SFISM. Unfortunately, the International Summer School planned for summer had to be postponed to 2022. As part of the cooperation with the Deggendorf Institute of Technology, three students completed their internships and 14 students completed a block week on the subject of "Performance diagnostics and stress monitoring" at the SFISM.

An eventful university sports year

Even though the Universiade – a highlight of the university sporting calendar – had to be cancelled, university sport within the SFISM and BFH was still eventful: the joint university sports day "the games" took place with 40 teams comprising five students each, the men's teams won first place in football and third place in 5-a-side at the Swiss university championships, and the Swiss Universities Championship in Golf was organised successfully. With a return to face-to-face teaching in the autumn semester, there was an increase in demand for training sessions held with an instructor, too. The offering at various BFH sites has been expanded.

Further development and pandemic operations for the media library

Following the successful migration to the Swiss Library Platform SLSP at the beginning of 2021, the construction of a separate home page on the SLSP was on the agenda over the course of the year. This will significantly improve access to electronic media for customers of the media library.

As in 2020, the media library adjusted its opening hours in line with the changed needs during the pandemic, and guaranteed the delivery of ordered books to the homes of students and employees of the SFISM.



Student mobility

Outgoing students: 5
(as part of the immersion semester)

Incoming students: 1

Outgoing interns: 2

Incoming interns: 3

Employee mobility

Outgoing: 1

Incoming: 2



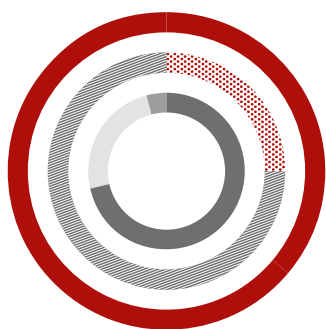
Partner universities

International mobility

- 23 in Europe
- 1 worldwide
- 5 with BFH umbrella contracts

Education and training

Against all odds, teaching at SFISM was offered and conducted in full. Everyone involved put in a remarkable amount of extra effort to maintain the usual quality, whether this meant holding courses twice with smaller groups, catching up on things missed in 2020 or preparing teaching content digitally in addition. The experiences gained in the process have identified opportunities and limitations for making the courses more customised and flexible in the future. The extra effort thus paid off in its own way.



■ Bachelor of Science	■ Women	33
127 students	■ Men	94
	■ German-speaking	90
	■ French-speaking	33
	■ Italian-speaking	4

Bachelor of Science in Sports

2021 continued to be influenced by the Covid-19 pandemic. Protection concepts, emergency ordinances, positive cases, digitalisation, certificate requirements, changes to examination methods and efforts to adjust the infrastructure to the situation were additional challenges to be overcome.

The aptitude assessment was held as planned. 89 candidates – 23 women and 66 men – attended the sports motricity entrance examination on one of the three defined days. In September, 39 new students began their studies, including 2 female and 6 male elite athletes.

Thanks to the functional protection concept, it was possible to start the autumn semester on site with theory and practical sports events. This almost normal start to the course was highly appreciated by the new students in particular.

The graduation ceremony was held in October. 35 Bachelor's and 11 Master's students of the SFISM celebrated the completion of their studies and were presented with their degree certificates in the presence of their relatives. Sandra Felix, Deputy Director of FOSPO, gave the graduation address.

The information event on the Bachelor's degree course in November was once again offered in digital format. Pre-recorded contributions, statements and moderated live inputs from students contributed to a varied, informative and modern event format.



Lecturer Romano Carrara plays with students Andrea Wildermuth and Mike Abassi



■ **Master of Science
in Elite Sports**
64 students

■ Women	23
■ Men	41
■ German-speaking	49
■ French-speaking	14
■ Italian-speaking	1



■ **Master of Science
in Sports Sciences**
113 students

■ Women	30
■ Men	83
■ German-speaking	64
■ French-speaking	49
■ Italian-speaking	0

Master of Science in Sports with Specialisation in Elite Sports

The spring semester was conducted entirely via remote learning. The lecturers benefited from the digital teaching experiences gained from the past autumn semester and enabled the Master's students to take part in informative, varied and exciting teaching events in both specialisations (sports management and coaching science). It was possible to hold all three examination sessions on site thanks to the smoothly functioning protection concept. The students showed their thanks by achieving excellent results.

In the autumn semester, the students distinguished themselves in individually selected three-month internships. They found attractive internships in national sports governing bodies, sports clubs and event organisations. Now the only thing missing to complete the Master's programme in elite sports was the Master's thesis. Many students chose a Master's thesis topic in their area of specialisation.

11 Master's students graduated in autumn. It is gratifying to see that all graduates are already working, many of them in the field of recreational and elite sport.

Master of Science in Sports Sciences

The number of students on the Master's course conducted jointly with the University of Fribourg rose slightly compared with the last academic year. In the autumn semester, 37 students began their Master's degree, 19 of whom were SFISM graduates. This study programme is very attractive for them: it not only allows them to teach at secondary level II (baccalaureate schools and vocational schools), it also provides access to a PhD. The Master's programme is at the crossroads between the systematic consolidation of sports scientific knowledge following on from a Bachelor's degree and the methodical and didactic expectations of the majority of students who intend to work as sports teachers. The Master's degree enables students to complete their sports teacher studies at various teacher training institutions to obtain the qualification required to teach sport in baccalaureate schools and vocational schools.

The "Teaching" option is traditionally very well attended, while there is little demand for the "Health and Research" option. One single student registered for it last autumn. The Health and Research option offers a very good opportunity to start an academic career for students and potential academic talent for both universities.

Students from other universities attending SFISM modules

The 2021 season of the Magglingen university weeks (MHW) was a major challenge for everyone. The uncertain development of the Covid-19 pandemic required great flexibility from all involved, in terms of both planning and execution. Added to this was the flooding situation of Lake Biel, which was overcome with creative solutions.

In these special circumstances, students from all over Switzerland were able to practice sport on site in Magglingen and on Lake Biel. A total of 622 students and 95 course instructors took part in the Y+S school sports, water sports and Swiss Mobile courses. The season went ahead without any accidents or coronavirus outbreaks. The protective measures at FOSPO and complex hybrid concept with single-occupancy rooms proved their worth. The course leaders' intention to convey the enjoyment of sport and positive experiences was rewarded with a high level of commitment from the participants.

Further education courses

Further education courses have grown in significance at the SFISM. Structures, processes and responsibilities were discussed and clarified. The implementation of quality assurance and the supervision of existing and new further education courses was launched. The cooperation with the BFH is being continuously developed.

The Sports Economics department, which is a partner of the "Swiss Sport Management Center" (SSMC), is responsible for three SFISM further education courses: The traditional **CAS SFISM Sports Facilities** was held for the seventh time. It teaches the fundamentals and specialist knowledge required for planning and constructing sports facilities. Participants acquired knowledge of facility planning and construction for sports halls, outdoor facilities, swimming pools and ice rinks as well as sports centres, trend and leisure facilities to enable them to provide expert support in their construction and operation. To promote linguistic diversity, the CAS 2021 was conducted in two languages for the first time. The course took place in several thematically differentiated three or five-day modules. The CAS started online at the beginning of the year with 30 participants. From mid-year, the course once again took place on site.

In addition, the new **CAS SFISM in Strategy, Leadership and Governance in Sports Organisations (SLGOV)** got off to a successful start. Together with 15 experts from academia and practice, this CAS teaches the skills required for the strategic, ethical and data-backed management of sports organisations. Participants acquire specific knowledge of organisation theory, change management and management styles, as well as good governance and ethics in sport.

In addition, the **CAS SFISM in Strategic and Sustainable Sports Development (SNS)** was advertised for the first time at the end of 2021. It consists of six modules. In the dynamic competitive environment, participants should further develop the sport-specific funding system in a sustainable and strategic way to achieve sporting and economic goals. The two new CAS form part of the EMBA Excellence in Sports Management of the BFH and the SFISM.

In collaboration with the BFH Department of Health, **CAS Sports Nutrition** modules once again took place in Magglingen.



561 external students	Women	251
61 SFISM students	Men	371
622 students	German-speaking	489
	French-speaking	133
	Italian-speaking	0



Further education courses

- CAS SFISM Sports Facilities
- CAS SFISM Strategy,
- Leadership and Governance
- in Sports Organisations

Abstracts from the award-winning Bachelor's dissertations

Jonas Neuenschwander: «Améliorer l'attractivité de la Raiffeisen Super League en Suisse: quelle stratégie adopter pour répondre à cet enjeu?»

Referentin: Florence Pillet

Introduction: Les événements sportifs sont de plus en plus nombreux, la concurrence augmente. Les dirigeants et organisateurs font face à un monde de plus en plus variable, qui change. Ils doivent faire preuve de flexibilité et se réinventer sans cesse. L'attractivité du football suisse est une thématique actuelle, les images de stades suisses à moitié remplis sont habituelles et la période pandémique n'arrange rien. Pour différentes raisons, l'attractivité de la Raiffeisen Super League paraît inférieure à celle de nos voisins européens. Il est donc légitime de se poser des questions sur l'attractivité du championnat suisse de football. L'objectif de ce travail est de formuler des recommandations concrètes, inspirées d'entretiens et de la littérature, pour la Raiffeisen Super League et les clubs dans le but d'augmenter le caractère attrayant du championnat suisse de football.

Méthode: Trois questions de recherche ont servi de fil conducteur pour ce travail et pour déboucher sur les recommandations. Sur cette base, la méthode qui a été sélectionnée est celle du study design mix (méthode mixte), composée d'une recherche de littérature suivie d'interviews d'experts. Différents outils ont été utilisés pour analyser ces données.

Résultats: Pour répondre aux questions de recherche, il s'est avéré que l'histoire et le développement du football suisse a eu et a une influence sur son attractivité actuelle dans le pays. Les raisons qui ont été évoquées sont la concurrence d'autres sports, la diversité de l'offre, le contexte historique et finalement la taille du pays, en comparaison avec l'Angleterre et l'Allemagne. Les facteurs identifiés, par ordre d'importance, qui assurent l'attractivité d'une ligue de football étaient l'aspect sportif/équilibre compétitif, l'aspect marketing (sponsoring/communication/droits TV), les infrastructures, l'aspect financier, le format de compétition, la relation avec les fans et le rayonnement au niveau international.

Discussion et conclusion: Pour améliorer l'attractivité du championnat en Suisse, les experts ont donné différents points d'amélioration et des mesures. La mesure la plus mise en avant était le fait de modifier le format de compétition. Ensuite, différentes mesures ont été évoquées sur plusieurs points, comme la répartition financière, les infrastructures ou encore la formation. Finalement, différentes recommandations sont formulées, à deux niveaux différents: pour la Swiss Football League et les clubs. Elles visent à répondre à la problématique et donc à augmenter le caractère attrayant de la Raiffeisen Super League en Suisse.

Stefan Ulrich: «Herzfrequenzerholung nach Maximaltests im Skilanglauf und Biathlon: Reliabilität, Saisonvariation und Interaktion mit der Testleistung»

Referent: Elias Bucher

Einleitung: In der Sportwelt wird laufend versucht, möglichst viele Daten und Variablen für das Trainingsmonitoring der Athletinnen und Athleten zu erfassen. Die Herzfrequenz gilt dabei als ein Parameter, welcher im Training und Wettkampf einfach zu erfassen ist. Neben der Herzfrequenzerholung (HRR) werden die Ruheherzfrequenz und die Herzfrequenzvariabilität als Messinstrument eingesetzt, um die Beanspruchung im Training sowie den Erholungszustand der Athletinnen und Athleten zu beurteilen. Eine schnelle Abnahme der Herzfrequenz nach Beendigung einer Belastung wird mit einem guten Fitnessstand in Verbindung gebracht, was sich sowohl bei Ausdauer- wie bei Kraftsportlern (die Studie wurde nur mit männlichen Probanden durchgeführt) abhängig vom Trainingsstand zeigt (Otsuki et al., 2007; Pluim, Zwinderman, van der Laarse, & van der Wall, 2000). Der Nutzen der HRR hinsichtlich der Differenzierung der Leistungsfähigkeit bei Leistungssportlerinnen und Leistungssportlern scheint nicht abschliessend geklärt. Das Ziel dieser Untersuchung ist es, den Zusammenhang zwischen der HRR und der Laktatstofftestleistung im Skilanglauf und Biathlon zu bestimmen. Gleichzeitig sollen potenzielle disziplinspezifische (Skilanglauf versus Biathlon) und saisonale (Frühling 2020 versus Herbst 2020) Differenzen identifiziert werden. Daraus wurden drei konkrete Fragestellungen betreffend Reliabilität aufgestellt. 1) Wie reliabel ist die 60-s post-Test Herzfrequenzerholung (HRR_{60s}) und die maximale Herzfrequenz (HR_{peak}) bei einem maximalen Laktatstofftest (LST) bei trainierten Skilanglauf- und Biathlon-Athletinnen und - Athleten? 2) Wie verhält sich die HRR_{60s} des LST saisonal (Frühling 2020 versus Herbst 2020) und sportartspezifisch (Skilanglauf versus Biathlon) bedingt? 3) Welcher Zusammenhang besteht zwischen der HRR_{60s} und der Abbruchstufe beim LST?

Methode: Um diesen Fragestellungen nachzugehen, teilte ich die Probandinnen und Probanden in folgende drei Untersuchungsgruppen ein:

1. Untersuchungsgruppe Reliabilität (n = 26)
2. Untersuchungsgruppe Saisonvariation (n = 38)
3. Untersuchungsgruppe Zusammenhang (n = 81)

Alle Probandinnen und Probanden absolvierten einen Laktatstofftest mit Rollskis auf einem Laufband, mit kontinuierlicher Aufzeichnung der Herzfrequenz. Die HRR_{60s} wurde dabei definiert als absolute Differenz zwischen der durchschnittlichen Herzfrequenz, die während den letzten fünf Sekunden auf der Abbruchstufe des LST aufgezeichnet wurden (HR_{peak}) (Mourot et al., 2015), und der durchschnittlichen Herzfrequenz, die während den letzten 15 Sekunden der darauffolgenden 60 Sekunden Erholungsphase ermittelt wurden (Lamberts & Lambert, 2009; Lamberts, Lemmink, Durandt, & Lambert, 2004; Lamberts, Swart, Noakes, & Lambert, 2009). Für die Reliabilität wurden Variationskoeffizienten gerechnet. Die saisonalen Differenzen wurden mittels gepaarten und die disziplinspezifischen Differenzen mittels ungepaarten T-Tests analysiert.

Resultate: Die HR_{peak} zeigte im Vergleich zur HRR_{60s} eine höhere Reproduzierbarkeit (CV =, 1.2% und 17.8%). Es konnte kein signifikanter saisonal bedingter Unterschied festgestellt werden ($p = 0.672$). Auch bei dem gemachten Vergleich der Sportarten Biathlon und Skilanglauf zeigten die Resultate keinen signifikanten Unterschied ($p = 0.294$). Weiter konnte kein Zusammenhang zwischen der Abbruchstufe beim Laktatstufentest und den HRR_{60s} -Werten beobachtet werden ($r = -0.025$). Die HR_{peak} -Werte sind im Vergleich zu den HRR_{60s} -Werten reliabler und eignen sich daher besser als physiologischer Kennwert zur Beurteilung der Beanspruchung.

Diskussion und Konklusion: Allgemein konnte in dieser Arbeit gezeigt werden, dass HRR_{60s} nach einem LST eine schlechte Reproduzierbarkeit aufweist und entsprechend im Belastungsmonitoring etablierte, objektive und subjektive Parameter nicht ersetzen kann. Der Protokollablauf nach Testabbruch muss standardisiert werden, um die Messvarianz von der HRR_{60s} zu verringern und potenzielle Einsatzgebiete im Belastungsmonitoring und der Leistungsdiagnostik zu erkunden.

Rebecca Strebel: «Beeinträchtigung und Rollenwechsel im Vereinssport. Vom Teilnehmenden zum Leitenden»

Referentin: Florence Brunner, Ko-Referent: Matthias Grabherr

Einleitung: Menschen mit Beeinträchtigung sind im organisierten Sport deutlich unterrepräsentiert (Verdonschot, de Witte, Reichrath, Buntinx & Curfs, 2009). Um der UN-Behindertenrechtskonvention gerecht zu werden, ist es das Ziel, eine gleichberechtigte Teilnahme der betroffenen Menschen an Sportaktivitäten auf allen Ebenen zu erreichen (Eidgenössisches Departement des Innern, 2014), das heisst auch bei der Weiterbildung zum Leitenden.

Ziel und konkrete Fragestellung: Das Ziel dieser Arbeit ist es aufzuzeigen, wie erreicht werden kann, dass Personen mit Beeinträchtigung sich im Sport weiterbilden. Es wird ein Fall analysiert, bei dem ein Teilnehmer mit Beeinträchtigung eine Ausbildung zum Hilfsleiter absolvierte. Dazu wird die folgende Forschungsfrage gestellt: Welche Voraussetzungen braucht es für eine Person mit Beeinträchtigung, um im Vereinssport vom konsumierenden Teilnehmenden zum gestaltenden Hilfsleitenden oder Leitenden zu wechseln?

Methode: Der Proband wurde durch die Auswahlkriterien Behinderungsbild, Mitgliedschaft in einem Sportverein und Leiter- oder Hilfsleiterausbildung ausgesucht. Der Proband ist ein 17-jähriger Jugendlicher, welcher eine schwergradige Sehbehinderung hat. Er ist Mitglied in einem Bergsportverein und hat die Ausbildung zum Hilfsleiter abgeschlossen. Es wurde der Weg des Probanden vom Teilnehmer zum Leiter aus der Perspektive des Probanden, seiner Eltern und einer Person aus dem Verein betrachtet. Für die Gespräche wurden teilstandardisierte Interview-Leitfäden ausgearbeitet. Die Interviews wurden codiert.

Resultate: Obwohl der Proband im Alltag nur auf wenig Hilfe angewiesen sei, brauche er im Sport vermehrt Unterstützung von seinem Umfeld. Über den Verein wurde gesagt, es sei seine Kultur, dass auch Menschen teilnehmen könnten, die ein wenig 'anders' seien. In Bezug auf den Zugang zum Ver-

ein wurde erwähnt, dass der Verantwortliche des Vereins den Probanden angesprochen habe. Bei der Trainingsgestaltung müsse nichts spezifisch für den Probanden angepasst werden. Die Eltern und der Proband erwähnten, dass es im Verein eine Bezugsperson gäbe, welche den Probanden motiviere, an Aktivitäten teilzunehmen. Die Idee zur 1418-Ausbildung war vom Probanden gekommen, der von der Ausbildung durch seine Freunde im Verein erfahren hatte. Es wurde von allen angesprochen, dass bei den Eltern und dem Probanden diesbezüglich Unsicherheiten bestanden.

Diskussion: Die Unterstützung des Umfelds spielte eine grosse Rolle. Die Stimmung im Verein stellte einen weiteren Punkt dar; es wurden alle Teilnehmenden, auch diejenigen mit Beeinträchtigung, als 'normal' betrachtet. Ausserdem wurde im Verein die Teilnahme an Weiterbildungen allgemein sehr gefördert. Am häufigsten erwähnt wurde in den drei Interviews die Wichtigkeit der Bezugsperson. Diese wirkte Unsicherheiten oft mit Optimismus entgegen und schuf dadurch viele Möglichkeiten für den Probanden.

Konklusion: Das Umfeld unterstützte den Probanden bei sportlichen Aktivitäten und schaffte dem Probanden dadurch viele Möglichkeiten des Sporttreibens. Auch im Verein traf der Proband auf eine sehr förderliche Umgebung. Der Verein lebt eine Kultur der Offenheit. Dadurch, dass der Trainer den Probanden aktiv angesprochen hatte und bei den Vereinsaktivitäten meist präsent war, erhielt der Proband eine Bezugsperson. Diese animierte den Probanden, an verschiedenen Aktivitäten teilzunehmen. Die Dynamik, welche im Verein bezüglich Weiterbildung herrscht, brachte den Probanden dazu, sich über eine Teilnahme zu informieren. Er wie auch die Eltern vertrauten unter anderem dabei auf die Einschätzung der Bezugsperson. Diese zeigte sich bei Unsicherheiten optimistisch.

Das Zusammenspiel all dieser Punkte führte im Fall des Probanden zu einer Weiterbildung und auch zu einer gleichberechtigten und gleichwertigen Teilhabe im Verein. Die daraus gewonnenen Erkenntnisse wurden auf einem Merkblatt für Vereine zusammengefasst und enthalten die folgenden hilfreichen Voraussetzungen:

- Hemmschwellen beseitigen -> Informieren
- Stimmung / Einstellung im Verein -> Offenheit leben
- Weiterbildung fördern -> Dynamik erschaffen
- Bezugsperson -> Eine Gotte / ein Götti
- Umgang mit Unsicherheiten -> Optimistisch sein

Teaching and sports education

In its second year, the department dealt intensively with a thematic focus – while maintaining a high level of disciplinary and methodological diversity. The focus was on societal relevance, sustainability and available expertise as the major decision-making criteria for defining the subjects of “Sport in the armed forces”, “Professional skills in teaching sport” and “Ethics and diversity in sport”. The Teaching and Sports Education department is making a major contribution to the organisation and management of the SFISM’s education and training courses in addition to teaching, research and services with the sports studies organisation, the further training coordinating office and the management of the Vice Rectorate for teaching.

Monitoring

The focus in research and services was on two projects: “Fit on Duty”, and the impact evaluation of the training app “ready”.

The multi-year “Fit on Duty” project was launched in cooperation with the Swiss Armed Forces. Here, employees in the SIG are working on the development of an early warning system, which is intended to help prevent serious physiological and psychological incidents (e.g. heat stroke) in the special units. This is being conducted using wearable sensors which measure acceleration, heart rate and core body temperature, among other things.

The study on the effect of the “ready” app on soldiers’ fitness and risk of injury was resumed following delays caused by the Covid-19 pandemic. A survey of user behaviour among the app target group provided important insights for its development and improvement and is currently in the final phase. Findings from the research areas mentioned were published in several peer-reviewed journals.

In the area of teaching, staff taught the subject “Quantitative Research I” and supervised Bachelor’s and Master’s theses for the SFISM and other Swiss universities. The Monitoring SIG is also represented in the research and development working group of the SFISM, in the co-management team of the BFH Centre for Health Technologies, and is a member of a NATO panel in the field of “Human Factors and Medicine”, thus maintaining a large (inter)national network.

Evaluation

In 2021, the Evaluation SIG conducted the degree programme evaluation EVAS in accordance with the system developed by the SIG with the participation of the entire department and staff from other departments. The activities for EVAS included finalising the concept, conducting and evaluating surveys and focus group discussions, as well as structuring part of a closed SFISM meeting where the most significant results were presented and discussed. The results were made accessible on an online platform in an attractive and transparent format.



Sports promotion projects such as the Kids Tennis programme were evaluated via online surveys, and fitness tests in primary schools examined with regard to their potential for adaptation.

Quality assurance and consultancy for the Armed Forces included visiting military fitness tests (FTA), evaluating FTA results and providing support for adjustments to evaluations for recruitment. The SIG also supported evaluation projects from other FOSPO areas. In addition, staff were involved in various teaching events and supervised Bachelor's dissertations in the fields indicated. A dissertation project in the area of fitness testing was successfully designed.

Sports education

Two important data surveys in the field were initiated in the unit. Around 600 coaches were surveyed online about their coaching science and didactic know-how in the "Professional skills of volleyball coaches" dissertation project. The results will be used to validate the comprehensive test instrument N=143 Items. In the SNSF project entitled "Professional skills required of physical education teachers and their impact on teaching and student performance" too, initial surveys of the practical and theoretical performances of students in basketball and handball were tested in two test periods. Owing to the difficult survey conditions in schools due to the pandemic, a follow-up survey is planned for the coming year.

In a new development project, learning exercises are being drawn up for physical education in preschool and primary school together with experts from the teacher-training colleges in Zurich and Schwyz. A publication is already available for this leading model in development. In the "Swiss Digital Skills Academy" collaborative project funded by swissuniversities, initial *open educational resources* were developed for the use of digital media in sports teaching together with students from the "Teaching" Master's programme.

Integration and prevention

The unit was involved in a two-year project in cooperation with the [Laureus Foundation Switzerland](#) on the topic of encouraging girls and young women to participate in sport. After the background report last year, recommendations for actions for the attention of the Foundation followed in the year under review. These show the areas and ways in which girls can be actively supported and encouraged, and list the projects and programmes that already exist in Switzerland to encourage girls and young women.

In addition, the unit was involved in the release of a publication on the subject of "Exercise, games and sport at nursery and kindergarten age".

A major focus was on the Y+S professional development modules in the areas of integration and prevention. Together with experts, the content of the modules was extended to one-day courses, with plenty of lively discussion, networking and (further) development. The topic of "Dealing with digital media in sport" was introduced to the continuing training modules as a new focus. In the course of further development, a few new documents/course materials have been created.

With regard to sports policy, greater emphasis was placed on the subjects of integration and prevention. The unit's high level of commitment ensured that the subjects could be discussed and dealt with using the most up-to-date knowledge. The exchange between the FOSPO and organisations for disabled sport was also institutionalised.

Rahel Gilgen-Ammann, Lilian Roos, Thomas Wyss, Bertil J Veenstra, Simon K Delves, Nadja Beeler, Mark J Buller and Karl E Friedl

Validation of ambulatory monitoring devices to measure energy expenditure and heart rate in a military setting

Physiological Measurement 42(8); <https://doi.org/10.1088/1361-6579/ac19f9>

Objectives: To investigate the validity of different devices and algorithms used in military organizations worldwide to assess physical activity energy expenditure (PAEE) and heart rate (HR) among soldiers.

Design: Device validation study.

Methods: Twenty-three male participants serving their mandatory military service accomplished, firstly, nine different military specific activities indoors, and secondly, a normal military routine outdoors. Participants wore simultaneously an ActiHeart, Everion, MetaMax 3B, Garmin Fenix 3, Hidalgo EQ02, and PADIS 2.0 system. The PAEE and HR data of each system were compared to the criterion measures MetaMax 3B and Hidalgo EQ02, respectively.

Results: Overall, the recorded systematic errors in PAEE estimation ranged from 0.1 (± 1.8) kcal.min⁻¹ to -1.7 (± 1.8) kcal.min⁻¹ for the systems PADIS 2.0 and Hidalgo EQ02 running the Royal Dutch Army algorithm, respectively, and in the HR assessment ranged from -0.1 (± 2.1) b.min⁻¹ to 0.8 (± 3.0) b.min⁻¹ for the PADIS 2.0 and ActiHeart systems, respectively. The mean absolute percentage error (MAPE) in PAEE estimation ranged from 29.9% to 75.1%, with only the Everion system showing an overall MAPE <30%, but all investigated devices reported overall MAPE <1.4% in the HR assessment.

Conclusions: The present study demonstrated poor to moderate validity in terms of PAEE estimation, but excellent validity in all investigated devices in terms of HR assessment. Overall, the Everion performed among the best in both parameters and with a device placement on the upper arm, the Everion system is particularly useful during military service, as it does not interfere with other relevant equipment.

Theresa Schweizer, Thomas Wyss, Rahel Gilgen-Ammann
Detecting Soldiers' Fatigue Using Eye-Tracking Glasses: Practical Field Applications and Research Opportunities

Military Medicine, December 2021; <https://doi.org/10.1093/milmed/usab509>

Introduction: Objectively determining soldiers' fatigue levels could help prevent injuries or accidents resulting from inattention or decreased alertness. Eye-tracking technologies, such as optical eye tracking (OET) and electrooculography (EOG), are often used to monitor fatigue. Eyeblinks—especially blink frequency and blink duration—are known as easily observable and valid biomarkers of fatigue. Currently, various eye trackers (i.e., eye-tracking glasses) are available on the market using either OET or EOG technologies. These wearable eye trackers offer several advantages, including unobtrusive functionality, practicality, and low costs. However, several challenges and limitations must be considered when implementing these technologies in the field to monitor fatigue levels. This review investigates the feasibility of eye tracking in the field focusing on the practical applications in military operational environments.

Materials and Method: This paper summarizes the existing literature about eyeblink dynamics and available wearable eye-tracking technologies, exposing challenges and limitations, as well as discussing practical recommendations on how to improve the feasibility of eye tracking in the field.

Results: So far, no eye-tracking glasses can be recommended for use in a demanding work environment. First, eyeblink dynamics are influenced by multiple factors; therefore, environments, situations, and individual behavior must be taken into account. Second, the glasses' placement, sunlight, facial or body movements, vibrations, and sweat can drastically decrease measurement accuracy. The placement of the eye cameras for the OET and the placement of the electrodes for the EOG must be chosen consciously, the sampling rate must be minimal 200 Hz, and software and hardware must be robust to resist any factors influencing eye tracking.

Conclusion: Monitoring physiological and psychological readiness of soldiers, as well as other civil professionals that face higher risks when their attention is impaired or reduced, is necessary. However, improvements to eye-tracking devices' hardware, calibration method, sampling rate, and algorithm are needed in order to accurately monitor fatigue levels in the field.

Performance sport

The achievements of the athletes and governing bodies supported by department staff at the Summer Olympic Games in Tokyo were a source of great joy. In general, the services team enjoyed a record year despite the coronavirus pandemic. The topic of “Ethics in elite sport” also occupied the department at various levels: how can athletes receive individual advice and protection? The form of interdisciplinary cooperation – not only within the department but also with the various stakeholders in the governing bodies and Swiss Olympic – plays an important role here.

The topic of “Women and elite sports” is becoming increasingly important in the department: among other things, this was made clear by the fact that half of the Master’s theses in the department were dedicated to this subject. In addition, performance sport is becoming more and more digital. Training sessions are increasingly being recorded using wearables. The department is working on merging data to create added value for performance and health in sport.



Medical consultations: 974

Sports medicine

In 2021, sports medicine supported elite and young athletes with acute or overuse injuries on a daily basis and intensified prevention. More than 140 sports medical examinations of athletes from 19 sporting disciplines were conducted. In addition, several research projects with Master’s and medical students were initiated.

The ongoing Covid-19 pandemic continued to present sports medicine with new questions and intensive tasks related to elite sport and general sports in courses and teaching as well as the Elite Sport Training School. The team ensured the provision of medical support for FOSPO’s operations in Magglingen. A testing and vaccination centre was set up on site, and is still being used. These measures contributed to the successful implementation of the ever-changing protection concepts.

Sports psychology

Despite the pandemic, the Swiss sport and competition system returned to a limited level of normality under extended protection measures in 2021. This was also noticeable in the services of sports psychology, with the quantity consolidating once again. A large number of consultations took place in the context of the Olympic Games in Tokyo and Beijing. Many Swiss athletes were under increased pressure to succeed – probably because of the pandemic – which for some resulted in increased emotional distress. However, the survey of all Swiss Olympic competitors, which the unit conducted on behalf of Swiss Olympic, did not confirm this general impression.



Luzia Kalberer, Performance Sport department, performing physiotherapy on intern Mario Liniger-Hollenstein



Number of athletes: 410

Number of tests: 757



Number of athletes: 386

Number of tests: 1259

The “Self-compassion in coaches and athletes” project – funded by the Swiss National Science Foundation (SNSF) – was continued in 2021 and is close to being concluded. At the same time, preparations were made on the research project entitled “Understanding and promoting mental health of competitive athletes – six empirical studies”, which is also financed by the SNSF and due to start in 2022. The unit will work on this for the next three years. The sports psychology team was also busy with two four-day training sessions at the talent meet in Tenero (3T), and organised two ethics symposia. In teaching, modules were conducted in the Bachelor’s and Master’s degree courses of the SFISM, as well as in the coach education course. Externally, staff were involved in teaching at the University of Applied Sciences and Arts Northwestern Switzerland and in further training courses at the University of Bern and Zurich University of Applied Sciences. Alongside all of these activities, several (peer-reviewed) articles were published.

Sports physiology (strength)

For the sports physiology (strength) team, the year under review once again represented a record in performance diagnostics, despite the implementation of the protective concept owing to the Covid-19 pandemic. The services team supervised athletes from 16 different sporting disciplines (one more than in the previous year, excluding national teams). In the case of the most complex of the tests carried out – the muscular performance diagnostic test – 40% of Swiss Olympians competing in Tokyo were tested and advised. Preparations for the Winter Olympics in Beijing with performance diagnostics and training supervision by strength training experts were also in full swing. The team was also deployed twice to support youth athletes at the Swiss Olympic talent meet in Tenero (3T).

The team published four original articles and two posters which reached the final round of the Swiss Olympic Science Award (including 1st place).

Sports physiology (strength) staff organised teaching events equivalent to 28 ECTS credits and were actively involved in various coach education courses offered by Y+S and sports governing bodies. They also supervised various doctoral theses.

Sports physiology (endurance)

In 2021, the sports physiology (endurance) team provided support to the national teams of the governing bodies Swiss Ski (cross-country skiing, biathlon), Swiss Cycling (mountain biking, track cycling, road cycling), Swiss Triathlon and Swiss Athletics (middle-distance and marathon) with sports scientific services and applied research projects. The highlight of the year for summer sports was the very successful performance of the Swiss athletes (including historic successes by Swiss Cycling athletes) at the Olympic Games in Tokyo. The multi-year “Beat the Tokyo Heat” project carried out in collaboration with Swiss Olympic was also successfully concluded. Various projects were also implemented for winter sports in preparation for the 2022 Winter Olympic Games in Beijing. Teaching activities for the various Bachelor’s and Master’s degree courses as well as other subjects went ahead as planned.

Sports physiology (game sports)

For the services team, the easing of the general pandemic situation in spring came just in time, as players from the various national teams of the Swiss Ice Hockey Association were able to complete the performance diagnostic tests. From the findings of the "Power to Win" project, new level-specific minimum requirements in the key neuromuscular performance parameters were defined – these are taken into account in the subsequent selection. This is intended to help more Swiss talents achieve the physical requirements to be able to compete at an international level.

With the same considerations, performance diagnostics were also redesigned in football and successfully implemented for the first time in 2021. In addition, injury prevention became even more important. This was also reflected with the launch of a three-year interdisciplinary research project focusing on injury prevention in women's youth football. The "Stress analysis in ice hockey" research project was successfully concluded with promising findings for the application of position measurement systems in practice. In teaching, the focus was on digitalisation and the coordination of content between the different courses as part of the "Power to Win" project.

Coaching science

The coaching science specialist group had two principal remits: to identify, scout and promote talent, and to provide scientific support to the governing bodies.

A great deal of headway was made in 2021, including providing the governing bodies and Swiss Olympic with scientifically validated practical tools to enable an improved, more reliable selection of emerging talents. Furthermore, five employees are working within the governing bodies to implement applied research projects and provide scientific support to coaches in performance sport. In addition, two innovative, pioneering projects were launched in collaboration with the Swiss Football Association and the technique and tactics group. The specialist group started the "Bio-banding" project, which investigates the effects of categorising young 13 and 14-year-old players according to biological rather than chronological age.

In parallel to this, the "Transitions" project is analysing the crossovers into football. Potential measures range from breaking down obstacles when entering the sport and better support for children's football through to improvements in selection and talent development. The aim is to offer all children equal access to support opportunities, use the existing resources efficiently and structure talent development in a successful and sustainable way.

In addition, at the beginning of 2020, another project in the area of youth sport was launched in collaboration with Swiss Olympic: "Smart Competitions". The aim is to exploit the potential of the competition systems in certain phases of FTEM Switzerland (a framework concept developed by the Federal Office of Sport (FOSPO) and Swiss Olympic for developing sport and athletes in Switzerland) with a view to the long-term development of athletes.

The experience and findings gained will be passed onto Bachelor's and Master's students, as well as coaching course participants.



Number of athletes: 858

Number of tests: 5552

Technique and tactics

In the technique and tactics unit, activities in 2021 centred around the development of technical and tactical skills in youth elite sport. The services team was able to process the increasing number of enquiries from sports governing bodies on this topic, mostly in the form of consultations and workshops. A working group on the subject of game intelligence was established with the Swiss Football Association, experts and representatives from governing bodies. Furthermore, series of tests in the field and laboratory were scientifically supported by innovative technologies and diagnostic tools to record technical and tactical skills.

In another innovative project, the technique and tactics team also assisted Swiss Unihockey in optimising talent selection and, in particular, designing perceptual-cognitive test procedures.

Moreover, various service projects for Swiss Olympic continued successfully, including one in cooperation with the coaching science team in the area of talent development and identification. The technique and tactics unit also assisted Youth+Sport in drawing up new training documents, in particular to develop technical and tactical skills at early stages of development and in recreational sport.

The allocation of a doctoral position in research and development marked a major achievement. The PhD deals with the development of technical and tactical skills among female youth footballers and thus perfectly complements the ongoing service projects on this subject. Among other things, initial pilot tests to record the cognitive skills of female youth footballers were conducted in a 360° environment controlled by video projectors.

The technique and tactics unit is responsible for numerous teaching events at all educational levels of the SFISM and was able to advance the digitalisation of teaching materials and further development of teaching processes in particular. By supervising various scientific works, important findings were gained in the area of analysing technical and tactical performance parameters in training and competition in game sports.

Sports physiotherapy and sports massage

In sports physiotherapy, the volume of work for the services team increased considerably. In particular, treating and counselling athletes in prevention proved challenging. The digitalisation of the functional examination of the musculoskeletal system marked an important step. Automated evaluation of an exercise programme saves a lot of time, which can then be invested into practical training.

A greater number of physiotherapy consultations and rehabilitation activities were provided for the Armed Forces. Athletes increasingly used their military service days for their physiotherapeutic support in Magglingen. It was not possible to accept all requests for resource reasons.

A block week was held for Master's students in physiotherapy specialising in the musculoskeletal system at the Bern University of Applied Sciences. This input at the Master's level exemplifies the high level of specialist recognition enjoyed by sports physiotherapy in Magglingen.



Physiotherapy treatments: 2143

Massages: 826

Röthlin, P., Wyler, M., Zenger, N., Kellenberger, K., Wehrlin, J.P., Lorenzetti, S., & Trösch, S.

Body and Mind? Exploring Physiological and Psychological Factors to Explain Endurance Performance in Cycling.

<https://doi.org/10.1080/17461391.2021.2018049>

Abstract

Endurance athletes attribute performance not only to physiological factors, but also refer to psychological factors such as motivation. The goal of this study was to quantify the proportion of the variance in endurance performance that is explained by psychological factors in addition to the physiological factor VO2max. Twenty-five athletes of the U17 Swiss Cycling national team (7f, 18m, 15.3 ± 0.5 years) were examined in a cross-sectional study with psychological factors and VO2max as independent variables and endurance performance in road cycling as dependent variable. Questionnaires were used to assess psychological factors (i.e., use of mental techniques, self-compassion, mental toughness, achievement motivation, and action vs. state orientation). VO2max was measured by a step incremental cycle ergometer test of exhaustion. Endurance performance was measured in a cycling mountain time trial (1,320 m long, incline of 546 meters). A multiple regression model was created by using forward selection of regression model predictors. Results showed that higher VO2max values ($\beta = .48$), being male ($\beta = .26$), and higher achievement motivation (i.e., perseverance, $\beta = .11$) were associated with a better endurance performance. A more frequent use of one particular mental technique (i.e., relaxation techniques, $\beta = .03$) was associated with a worse endurance performance. Our study shows that a physiological factor like VO2max explains endurance performance to a large extent but psychological factors account for additional variance. In particular, one aspect of achievement motivation, namely perseverance, was associated with a better endurance performance.

Wehrlin Jon Peter, Steiner Thomas.

Is haemoglobin mass at age 16 a predictor for national team membership at age 25 in cross-country skiers and triathletes? Front Sports Act Living, 2021, Mar 15;3:580486.

<https://doi.org/10.3389/fspor.2021.580486>. eCollection 2021

Abstract

We recently measured the development of hemoglobin mass (Hbmass) in 10 Swiss national team endurance athletes between ages 16 – 19. Level of Hbmass at age 16 was an important predictor for Hbmass and endurance performance at age 19. The aim was to determine how many of these young athletes were still members of Swiss national teams (NT) at age 25, how many already terminated their career (TC), and whether Hbmass at ages 16 and 19 was different between the NT and TC group. We measured Hbmass using the optimized carbon monoxide re-breathing technique in 10 high-performing endurance athletes every 0.5 years beginning at age 16 and ending at age 19. At age 25, two athletes were in the NT group and eight athletes in the TC group. Mean absolute, body weight-, and lean body mass (LBM) related Hbmass at age 16 was 833 ± 61 g, 13.7 ± 0.2 g/kg and 14.2 ± 0.2 g/kg LBM in the NT group and 742 ± 83 g, 12.2 ± 0.7 g/kg and 12.8 ± 0.8 g/kg LBM in the TC group. At age 19, Hbmass was 1042 ± 89 g, 14.6 ± 0.2 g/kg and 15.4 ± 0.2 g/kg LBM in the NT group and 863 ± 109 g, 12.7 ± 1.1 g/kg and 13.5 ± 1.1 g/kg LBM in the TC group. Body weight- and LBM related Hbmass were higher in the NT group than in the TC group at ages 16 and 19 ($p < 0.05$). These results indicate, that Hbmass at ages 16 and 19 possibly could be an important predictor for later national team membership in endurance disciplines.

Sports economics

2021 was a particularly intensive year for the Sports Economics department. At the structural level, two new organisational units were created in addition to the existing Sports Facilities unit: Organisational Development and Sports Systems. The department successfully implemented various projects, including publishing the study entitled “Performance sport in Switzerland – a snapshot SPLISS-CH 2019”, holding the 7th edition of the CAS SFISM Sports Facilities, and the start of the new CAS in Strategy, Leadership and Governance in Sports Organisations (CAS SLGOV).

Research and development

The complexity of the Swiss sports system at the national and international level is based on the numerous interactions between different stakeholders who pursue differentiated objectives. The department set itself the goal of better understanding the logic and challenges of these stakeholders and developing solutions for their long-term development, among other things. After three years of research activities and constructive collaboration with numerous partners such as Swiss Olympic, the Youth and Adult Sport programme, the Swiss Armed Forces, the Swiss Foundation for Sports Assistance and Sports Coach Education, the “*Performance sport in Switzerland – a snapshot SPLISS-CH 2019*” study was presented at a press conference of the Confederation in June. The publication of the study was accompanied throughout the year by various newsletters and webinars on the subject.

In the second half of the year, the results of the “Skills in the professional field of sports management in Switzerland” study were published and discussed at the first conference on the topic of sports management. More than 30 experts from different areas of Swiss sport and over 200 people online and on site took part in the conference. It was organised with the support of several partners, including Swiss Sport Managers, the University of Lausanne’s Institute of Sports Science (IS-SUL) and Chur University of Applied Sciences. The focus was on the challenges and opportunities for a successful career in sports management. In addition, participants in the Magglingen *Thinkathlon 2021* (format for the development of innovative solutions) were able to present their thoughts on the development of club sports together with Swiss Olympic.

Departmental staff also went into more detail in several research topics such as leadership and good governance in sport. The results were disclosed in two publications in international standard works.



Ariane Weber and Dr Andreas C. Weber, Sports Economics department, discuss lesson content

Teaching

2021 saw the 7th edition of the CAS SFISM Sports Facilities with around 30 participants in the various thematic modules. The entire CAS training course was simultaneously interpreted into German and French for the first time. Despite the circumstances surrounding the coronavirus pandemic, the department introduced a second further education course in the field of sports management, the CAS in Strategy, Leadership and Governance in Sports Organisations (CAS SLGOV), which counts as a module in the EMBA “Excellence in Sports Management” offered together with the Bern University of Applied Sciences (BFH).

Based on this cooperation, the fourth edition of the “Minor in Sports and Event Management” was held for students of economics at BFH. As part of the SFISM’s “Bachelor of Science in Sports”, staff held numerous courses in sports management on the subjects of marketing, project or event management and the construction and operation of sports facilities.

Services

The Sports Economics department handled several assessment mandates, in which it was able to advise and support several Swiss and international sports players in achieving their goals. The mandates comprised in particular the areas of developing competitions and sporting disciplines, planning and strategic positioning, constructing high-quality sports facilities and developing innovative performance centres. The numerous enquiries to the Sports Facilities unit show that the specific project advisory services are very much in demand.

One particular achievement of the department in this area is the “Swiss Olympia Centre” project. The Swiss Olympic project report was presented following two years of intensive work and reflection. The Swiss Olympic Executive Council ultimately followed the recommendation of the project group to examine one of the options presented in more detail. In addition, it gave the green light for the next stage of the project.

Despite the pandemic, the annual sports infrastructure professional conference was held in Magglingen. Almost 100 participants had the opportunity to deepen their knowledge and exchange ideas on the development and implementation of sports facility concepts.

The document “401 – Ice Rinks – Planning Guidelines” published by the Sports Facilities unit is a planning aid for ice rinks covering the phases of initialisation, goal definition and preliminary studies. It raises awareness among stakeholders (e.g. authorities, initiators, planners) of fundamental questions regarding successful ice rink design. The document presents various concepts, examines specific features and questions and serves as a basis for discussion for the project and/or the quotation before the actual project phase.

2021 was also characterised by closer cooperation with elite sport in the Armed Forces in the area of career management. The new “Career Management” programme, which is offered at the two annual recruit schools with over 100 candidates, is designed to convey skills and knowledge about the numerous stakeholders in the Swiss sports system as well as soft skills and sponsorship.



Publication series relating to the planning, construction and operation of sports facilities

- 25 (German/French)
- 3 (German/French/Italian)

Total: 28

The documents can be ordered as a printed version or downloaded as a free PDF from www.basposhop.ch.

Michaël Mrkonjic

“Good” governance in sport strategies. Reforming organisations by adapting management competencies to governance functions.

This contribution puts the organisation at the centre of attention and goes beyond board-focused sport governance investigations. It calls for a rethinking of the sport organisation by investigating the types of governance structures and functions and questioning the management competencies needed to reform a sport organisation to meet a good governance strategy. The first section presents empirical evidence on the encompassing value and process-oriented quality of good governance recommendations. The second section offers a new approach to analysing current practice based on sport management competencies. The third section reviews a series of examples that emphasises the importance of this approach for good governance strategies. The conclusion proposes concrete recommendations for practice and follow-up research.

Andreas Ch. Weber & C. Zurmühle

Multilevel leadership within the Swiss elite sports system: The involvement of alpine skiing elite athletes in national-level policy-making

This book focusses on the embedded multi-level nature of leadership. The chapters show how mechanisms of leadership on different levels interact. The nature and mix of leadership mechanisms reflect values and expectations related to specific political, normative and commercial sport contexts. Seven empirical cases illustrate how national contexts facilitate and constrain leadership practices. The purpose of the chapter on Switzerland is to examine the participation of alpine ski athletes in decision-making at different levels of interaction within the elite sports system. Given the particularities of the normative, political and commercial context of Switzerland, this study provides evidence that the limited organisational involvement of athletes seems to be compensated for by the leadership style of their coaches. The coaches' personal success as well as the organizational success of Swiss Ski is measured mainly by the sporting success of their athletes. It is reasonable to assume that this common goal and described leadership style results in the limited need for athletes to get involved at a higher level of sports politics. This differentiates Swiss elite sports system from the political and the economic system of Switzerland.

Sports Coach Education Switzerland

Owing to the challenges presented by the Covid-19 pandemic, the Sports Coach Education department structured its teaching and learning programmes in a more flexible and location-independent way. This was made possible thanks to developments in digitalisation. Face-to-face teaching will remain a focus in future – reinforced by useful digital tools. In the year under review, Sports Coach Education Switzerland also set the course for four strategic areas of development.



■ Professional coach training
74 students

■ Women 9
■ Men 65
■ German-speaking 74
■ French-speaking 0
■ Italian-speaking 0

Advancement of digital teaching and learning formats

The Sports Coach Education department was again heavily involved in the topic of “Digitalisation in teaching” in 2021. It views the integration of new technologies and the principle of time and location-independent learning as an opportunity – though the focus should remain on the learning process and on discussion in face-to-face teaching. With help from a customer survey and various workshops, the current needs were analysed to make important strategic decisions for the future. This process took place in close collaboration with internal and external partners. The results of the realignment should become visible in Training Concept 2.0 as of 2023.

Return to on-site Magglingen Coaching Conference

The Sports Coach Education department organised mid-October’s Magglingen Coaching Conference on the subject of “Is reduction the new maximisation?”. Following the switch to a digital TBS week the year before owing to the pandemic, the Magglingen Coaching Conference took place in its usual, physical format again this year. The joy at being reunited and able to hold discussions in person again was clear to see in the faces of guests and organisers alike.

The sports world is constantly becoming more complex, and at the same time the desire for simple and pragmatic solutions is growing. How can coaches maintain an overview while navigating the jungle of new technologies and floods of data and information? How can we separate the essential from the non-essential, and how can we reduce complexity? These subjects were tackled by around 250 guests at the Magglingen Coaching Conference in input presentations, workshops, learning communities and personal discussions.



Athlete Ditaji Kambundji and Adrian Rothenbühler, Sports Coach Education Switzerland, in front of special hurdles



Coach in Competitive Sports, Federal Diploma of Higher Education

Participants: 77 passed: 50



Coaches counseling

- 24 without case supervision
- 234 with case supervision

Coach Developer

Participants: 14

Training courses

Participants: 590

Launch of advanced diploma coaching course in French

In total, Sports Coach Education Switzerland generated more than 2,800 course participant days in 2021 in the fields of sports psychology, athletics, kinesiology, sports coaching, sports medicine and leadership. 90 assessment days, three professional coach courses with 71 coaches overall and, for the first time since 2016, one advanced diploma coaching course conducted in French with nine participants took place. In May and November, 99 graduates took the examinations (Federal PET Diploma: 77, Advanced Federal PET Diploma: 6, Specialisations: 16).

A focus on further developing the department

In 2021, Sports Coach Education Switzerland launched several important projects with a view to further developing the Sports Coach Education department: expanding cooperation with partners and institutions, analysing internal resource management, creating a map in the area of project management, reorganising the Magglingen Coaches Conference, launching a cooperation process with Youth+Sport and Swiss Olympic on the topic of "Introducing foreign coaches into the Swiss sports system" and defining the further development in terms of organisation and content of the federal examinations with the awarding organisation and putting specific implementation measures into action.

Internally, the Sports Coach Education department implemented two development measures, "Feed Forward" and "Change Perspective", to promote personal development and mutual exchange between its staff.

Finally, Sports Coach Education Switzerland defined four strategic topics for 2022: developing Training Concept 2.0, improving its partner management, further developing the area of "Coach Developer" and expanding the Master Coach Programme.

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