

**Sport and Health**  
**- Review of German-speaking publications in 2004 and 2005 -**

The review comprises German monographs and anthologies as well as articles published in professional journals between 2004 and 2005. This review ties in with the reviews published in the 'International Journal of Physical Education' issue 2/2000, issue 2/2002 and issue 2/2004 about sport and health<sup>1</sup>.

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## **1 Introduction**

Sport Scientific congresses and conventions have been attending to the topic "sport and health" for years. The annual conventions of the dvs-commission "Health" are to be mentioned in the first place. Within this review's reporting period the annual conference 2004 was held on "Assessment procedures in health sport and movement therapy", while the 'Annual Conference 2005' focused on "Exercise in everyday life – Health Enhancing Physical Activity" and "Sport scientific BA/MA study paths for the field of action – Health Key Qualifications and vocational orientation"<sup>2</sup>. The meanwhile published conference transcript by Woll, Brehm & Pfeifer (2004) gives an overview of the results of the annual conferences in 2000 about "quality assurance in health sport" and in 2002 of "Interventions in health sport and sport therapy". Special attention should be drawn to the fact that the survey articles by Brehm & Bös (2004) about central aims and their assurance in health sport (see below) as well as by Pfeifer, Brehm, Rütten, Ungerer-Röhrich & Wegner (2004) about concepts for vocational training in the area of health sport. The conference's individual articles give an overview of the indication specific or population specific interventional concepts, corresponding methods for their examination as well as of the effectiveness of sport activity during different stages in one's life.

Brehm & Rütten (2004) also fundamentally discuss the chances, effects and qualities in the area of health sport. They distinguish between "sport", "health enhancing physical activity" and "health sport" and point out the resultant interventional attempts. The authors state that it's not a self-evident fact that sport activity will improve someone's health but that this health improvement depends on specific conditions regarding the person taking exercise, their environment and their way of doing exercise (Page 91). The "concept of health enhancing physical activity" is currently being discussed in the Public Health-Research and is internationally known as "Health enhancing physical activity". This concept is also very well known to German speaking sport scientists and proceeds from physical activity in the lived-in-world. The central point of orientation is the determination of physical and sportive activity from the physiological point of view resulting from an extra energy consumption (measuring unit MET, i.e. metabolic equivalent). Brehm & Rütten (2004, Page 91) recommend a minimum of moderate physical activity of ap-

<sup>1</sup> The following professional journals were looked through systematically: 'Sportwissenschaft', 'Sportunterricht', 'Spectrum der Sportwissenschaften', 'Deutsche Zeitschrift für Sportmedizin', 'Psychologie und Sport', 'Sportpädagogik', 'Motorik', 'Prävention', 'Praxis der Psychomotorik' sowie 'Gesundheitssport und Sporttherapie'.

<sup>2</sup> also see [www.dvs-gesundheit.de](http://www.dvs-gesundheit.de) for more information

proximately 30 minutes per day. In the field of Public Health Research the main focus lies on both the approaches on individuals as well as on populations on the whole. There is a special focus on the latter group with approaches towards - among others - interventions in the municipal field as well as the development of infrastructures. Within the evaluation of these approaches, Brehm & Rütten emphasize the fact that concepts on the basis of health enhancing physical activity currently possess an insufficient basis of evidence and that the results regarding the efficiency are generally controversial. In order to learn more about this thematic focus it is advisable to read the article by Rütten & Abu-Omar (2004). This article gives an overview of the interventional measures relating to a population's physical activity and extensively discusses the insufficient basis of evidence. Brehm & Rütten (2004) mark out the third area "Health sport" which - according to the authors' definition - relates to "such physical activities, which are geared in a highly structured way to health enhancing effects for specific audiences" (Page 92). By using the term of structured activities, the authors especially emphasize the aspect of quality orientation of such measures. Regarding the audiences, Brehm & Rütten mainly distinguish between healthy people, suffering from a lack of physical activity and people (re-)starting physical activity programs as well as people with health risks, who, however, don't suffer from any indisposition which needs medical treatment (Page 94). Within this third part's interventional concept, Brehm & Rütten center the concept of the six "core objectives of health sport" and their interdependencies (Page 93), developed by Brehm's Bayreuth task group. In the meantime, this concept is established within the discussion on the theoretical funding of health sport in Germany (also see Brehm & Bös, 2004). Sport organizations use it as a guideline for the certification of health sport offerings as well as within the field of further education of skilled labor. The latter aspect is centered at in the article by Bös, Brehm, Breuer, Fehres, Hartmann, Pauly, Rühl, Schulke, Tiemann, Pahmeier & von Troschke (2005) entitled as "Health enhancing lived-in-worlds in gymnastic and sports clubs"<sup>3</sup>.

In connection with ideas regarding the evidence of health enhancing sport programs, more and more questions regarding the quality management of such measures have been coming to the fore during the past years. In this respect, the publication of Hartmann, Opper & Sudermann (2005) needs to be paid special regard to, as it is dealing with the aspect of quality management of health sport in the setting of sport clubs. The authors can take the credit for being the first investigators to present a theoretical backup of quality management of health sport and - based on that - to have developed and evaluated a concept of quality assurance of health sport offerings in sports clubs. This study was raised by the "Deutsche Turnerbund" (German Gymnastics Association) and narrowly involves the above mentioned model of "core objectives of health sport". Furthermore, it investigates not only the quality of offerings but even the quality of further education of course instructors as well as the quality of institutional development. For this reason, the study constitutes the cutting-edge for the advancement of quality certified health sport programs in Germany.

Concluding this introduction and explaining the basic development trends in the field of "Sports and Health", there will be a discussion on health effects and their basis of evidence (chapter 2), based on publications in the reporting period. Furthermore, newer diagnostic approaches (chapter 3) as well as the general conditions and the characteristics of health sport (chapter 4) will be presented. The audience specific focus of this review will be put at the thematic of health sport for children and young people (chapter 5). Subsequently, there'll be a short overview of the perspectives for the sport scientific research (chapter 6).

## **2 Effects of health sport: Questions of the evidence of health-based sport programs**

The initial point for the conception of health-based sport programs is the relevance of activity as an important element of life style. Against the background of the still dominating risk factor

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<sup>3</sup> All authors are members of the scientific advisory board of the "Deutsche Turnerbund" (German Gymnastics Association);

model regarding health and disease respectively, Berg & König (2005) give an overview of the importance of physical inactivity as a risk factor, which, in most cases, occurs in combination with overweight. Berg & König (2004) extend the topic systematically in view of the significance of physical activity and exercise in the field of overweight prevention. They found out that “the orientation towards a new physical activity behavior, namely towards an energetically balanced way of life with the simultaneous improvement of food quality is probably the most effective approach” towards a healthy aging process (Page 210).

Woll & Bös (2004) have presented an article giving an overview of the basic question of efficiency of health sport. They emphasize the close connection between the basis of evidence of health-oriented sport programs and the latter's conception as well as the broad adoption of such measures in the prevention and rehabilitation process. Woll & Bös' (2004) overview of the current research status concerning the effects of physical-sportive activity is based on the evaluation of the existing reviews and meta analyses and outlines the resulting research deficiencies, especially in view of the studies' quality standards. As a round up, there's to say that the “evidence of a coherence of physical-sportive activity and different indicators of physical health” can be seen as trusted, while the current research status regarding the effects of sportive activity on the psychical health is inconsistent (Page 104). With regard to the question of influence of mortality rates, Bös & Woll (2004, Page 99) determine that “(apparently) the importance of physical-sportive activity mainly lies in the prevention of early mortality and not as much in the attempt to gain a longer life time”. In view of the still dominating cardiovascular diseases in the cause of death statistics, the authors consider the following theoretical questions as significant: “to what extent does sportive activity and coronary disease risks in fact interrelate to each other? Is there a definite main effect or rather an indirectly connected effect resulting from physical efficiency and especially from a person's stamina efficiency?” (Page 99). Particular attention has to be turned to the question of the coherence between dose-rate and effect, and coherence”, especially with regard to the determination of upper and lower exposure limits. Bös & Woll (2004, page 102) recapitulatory state that “both, the more intensive sportive training as well as less intensive life style activities are valuable with regard to the target-group and that both forms of physical activity can develop positive physical effects, depending on their implementation”.

The article by Sygusch, Wagner, Janke & Brehm (2005) can be seen in close connection to the question of the intensity of health sport programs. This article investigates the question of “to what extent can the effects on health be verified when investigating the effects of a low step starting program (approx. 500 – 800 calories per week)?” The article says that improvements in the field of risk factors as well as physical health resources can't be verified (here, the effects will only appear if there is an energy consumption of approximately 1000 calories per week), whereas the health improving effects in the field of subjective medical conditions, well-being as well as psychosocial health resources can be documented. Especially taking into account the difficult question of the long-term bonding in health sport, low-step program conceptions seem to be a good method in order to make it easier for, so far non-active people, to start with regular training units. The evaluation study's total results have been published in the meantime (Brehm, Janke, Sygusch, Wagner, 2006).

### **3 Diagnostics in health sport**

A number of articles, published in the reporting period, discuss the diagnostic aspects of health sport. In this respect, Woll's article (2004) can be primarily cited, which synoptically explains the research status as well as the perspectives of the diagnosis of physical-sportive activities of adults. By taking into account the form, the time (hours per week), the weekly frequency as well as the intensity (calories per week), the dimension of current physical-sportive activity can be measured and thereby energetically qualified. Furthermore, the psychosocial aspect of the different activity forms, e.g. the sportsperson's environmental conditions and motivation basis are being taken into account. According to Woll (2004), there are different ways of investigating and

acquiring physical-sportive activities: the method of behavior monitoring, the measuring method using electronic or mechanical cinometers (e.g. pedometers), the method of measuring physiological parameters (e. g. heart rate measurement) as well as questioning methods (questionnaires, physical training diary). For the German-speaking countries, Woll sees great deficiencies concerning the standardization of instruments, which are not only able to measure the physical active person's energy consumption but also the psychosocial determinants of physical-sportive activities (Page 66), which will have to be advanced in future research projects.

The sports medicine world disposes of two important articles attending to the use of different diagnosis methods. Faude, Nowacki & Urhausen (2004) have compared selected (bloodless) test procedures focusing on the determination of cardio-pulmonary stamina of pupils. They prove the applicability of the Shuttle Run Test as well as the 6-Minutes-Run for the acquisition of stamina performance of pupils aged 11 – 13 years. Considering the area of adult sport, Kemmler, Lauber, Weineck, Mayhew, Engelke & Kalender (2005) have investigated the aspects of intensity regulation of preventively oriented weight training programs. They reason that the intensity regulation by using a special performance demand is to be preferred in comparison with the subjective intensity choice, however, only in case the test persons dispose of corresponding experience with the program and even if the first alternative is more complex and time consuming (Page 169). The review by Marschall & Ruckelshausen (2004) is also worth mentioning. It evaluates 59 studies in view of injury prophylactic effects of stretching. The authors arrive at the conclusion that the question "as to what extent stretching has an effect on the diminution of injury risks (...)" can not be answered explicitly. Similarly, the coherence of physical mobility and injury risks cannot be proved. It tends to the result that there seems to be a higher injury risk for people who are either extremely immobile or extremely mobile. However, this primarily depends on the respective sport's specific work movement requirements". (Marschall & Ruckelshausen, 2004, Page 31).

In the reporting period, also new diagnosis methods in order to acquire motor parameters of health sport programs have been developed. Attention should be drawn to two special methods run by Bös' Karlsruhe task group: the "Karlsruher gesundheitsorientierte Fitnesstest – KGFT (Health oriented fitness test / Karlsruhe) with 11 test items for the conditional field (Tittlbach, Kolb, Woll, Bös, 2005a) as well as the "Karlsruher gesundheitsorientierte Koordinationstest – KGKT (Health oriented coordination test / Karlsruhe) with 7 items for the coordination field (Tittlbach, Kolb, Woll, Bös, 2005b). Both tests can be used for the determination of motor performance of adults of middle and later adult age.

As a conclusion, it can be stated that the differentiated determination of physical activity is indispensable for the advancement of the current sports science research status in the field of health sport. This is necessary in order to verify the efficiency of sport programs aiming at an improved state of health and in order to establish the top ranking of physical-sportive activity in the context of holistic health improvement measures. The starting point of these considerations is the question of "which correlation does exist between physical-sportive activity and a person's state of health in the span of life and how can physical activity be integrated, and influenced respectively, as part of a healthy way of life?" During the past years, the aspect of quality management in the conception of health oriented exercise- and sport programs was paid much more attention to than before, as already explained earlier in this text. The basis of evidence of particular measures and programs becomes more and more important in the context of cost development in the health care system and as a legislative controlling element in health policy; even though the so-called prevention law couldn't be passed, due to Germany's reelection in 2005.

#### **4 Health sport: Parameters and characteristics**

In addition to the question of the evidence of health-based sport programs, questions regarding the determinants of sportive activity, i. e. the influencing factors on the individual and collective

level, are currently arising in the field of sport scientific health research. This review's focus lies on the preventively oriented health sport, however, also discusses the interconnection of different forms of therapeutic sport.

In this context, persistent training is one of the most important training forms in health sport. This training form's importance for the physical as well as psychosocial factors of health were documented some time ago (comp. e.g. Knoll, 1997; Schlicht, 1995). Ring', Stadlmann', Paulweber' & Müller's publication (2004) broaches the issue of the analysis of dose-rate and effects of a one-year persistent training of adults on aerobic fitness and concentration of blood lipids. They found out that running four times a week (30 minutes per unit) with an exposure of 8-10 MET during a period of 6 months has had a very positive and lasting effect on the blood lipid profile of untrained adults. The possibility of adopting reaction games (such as tennis, etc.) as persistent training form in order to improve health effective parameters has not yet been investigated within the sport scientific research process. Heinz, Pfeifer & Söhngen (2004) rose to the challenge of this task and detected the positive health effects of a table-tennis program. Bernauer, Wicharz & Lagerstrom (2004) investigated the effects of a persistent training, aimed at the participation in a marathon. Not only could they supply the evidence for the improvement of physiological parameters but also for the positive development in the psychosocial field. Monitoring a rock climbing course, Stoll, Braun, Schmidt & Duerrenfeld (2004) proved the positive development of exclusively psychosocial parameters.

Studies, considering the impact on the motor system, have been receiving more and more attention during the past years. Osann (2004) gives an overview of the research status on the basis of "evidence based medicine". Individual studies (e.g. Dalichau, Stein, Schäfer, Buhlmann & Menken, 2005; Goebel, Stephan & Freiwald, 2005; Schwesig, Scholz, Kreutzfeld, Müller & Becker, 2004; Streicher, 2005), carried out thematically, can especially be determined by taking into consideration spinal protection and corresponding programs, such as "Rückenschule" ("back school" -> special courses designed in order to learn more about correct posture, etc.). These studies can be seen as the proof for the looming paradigm shift in the exposure to backache. In the course of this paradigm shift, motor therapeutic interventions will become more and more fundamental (comp. Hildebrandt, 2005, and Pfeifer, 2005) and more and more questions regarding the basis of evidence will be discussed (comp. Pfeifer, 2004).

Publications dealing with the question of secondary prevention through physical and sportive activity, still concentrate on cardiovascular diseases (e.g. Halle, 2004); Huonker, 2004; Meyer & Foster, 2004; Niebauer, 2005; Steinacker, Liu, Stilgenbauer & Nething, 2004). Kolenda's (2004) publication is of special interest in this regard. In his publication, Kolenda compared the effects of changes in the life style compared to the effects of a medical treatment on the basis of existing studies. The results are of great significance due to the fact that Kolenda took into consideration the basis of evidence of the selected studies. Related to the partial aspect of physical activity, Kolenda could demonstrate that the "effects of regular physical activity ... can be compared to those of a medical treatment with Simvastatin" (an often used medicament) (Page 1602). In total, the effectiveness of all included life style factors (besides physical activity, nicotine consumption, nutrition and reduction of stress factors) exceeds "the effectiveness of a combined medical treatment by a multiple (Page 1602). This is a clear indication on the importance of a holistic therapy in the field of secondary prevention of cardiovascular diseases.

## **5 Health sport with children and young people**

During the past years, the subject area of insufficient exercise as well as physical activity and health behavior of children and young people, has been a major part in both sport scientific and sport political discussions. Sport scientists took up the subject of "insufficient exercise of children – fact or fiction?" within the scope of the 3<sup>rd</sup> Club of Cologne Conference, and published a consensus assertion (Club of Cologne, 2004), which attracted the interest of Germany's sport scientists throughout the country. Using a synopsis of already published research data, Bös

(2005), for example, emphasizes that motor competences of young people are indispensable for the (healthy) adolescence of children and young people.

During the reporting period, several studies have been carried out, dealing with the question of motor performance, physical activity and the state of health of children and young people. These studies examined the aspects of motor function and state of health of children and young people, either in working with both national and international individual people or interdisciplinary work groups. Especially Saarland's so-called IEDFIKS-Study carried out by the working groups of Emrich and Urhausen (comp. Urhausen, Schwarz, Klein, Papathanassiou, Pitsch, Kindermann & Emrich, 2004; Klein, Emrich, Schwarz, Papathanassiou, Pitsch, Kindermann & Urhausen, 2004; Emrich, Klein, Papathanassiou, Pitsch, Schwarz & Urhausen, 2004) as well as the study carried out by the working group of Wydra in Luxemburg (Wydra, Scheuer, Winchenbach & Schwarz, 2005) or the interculturally comparative study of Ulmer & Bös (2004) for young people from Salvador and Germany. Kretschmer (2004) investigated the influence of modified childhood conditions on the motor performance of children and young people in the so-called Mole-Study. Kretschmer's working group has been presenting dates during the past years, which contradict the thesis of an exacerbating motor performance of the currently adolescent generations. In his article, Kretschmer looks into the question of "to what extent do the indicators of modified childhood conditions – in this respect the familial environment as well as the physical activity conditions - in fact influence second- and fourth-graders' development of motor performance?". Whilst the effects of a changed familial environment could not be demonstrated, the influence of variations in the physical activity conditions could in fact be experientially proved – also because they were closer orientated to the children's physical exercise behavior. However, Kretschmer substantiates "that the performances discrepancies between the different children weren't dependent on the physical activity conditions themselves but on the form and extent of those physical activities exercised by the children" (Page 435).

In the meantime, both, overweight and adiposity of children and young people, have become the long-running issue within the discussion on the importance of physical activity in childhood and adolescence (up to date information about overweight and adiposity of adults on the international level are presented by Ehram, Stoffel, Mensink & Melges, 2004). Huber (2004) gives an overview of infantile adiposity and motor competencies. Huber takes up the model of the "epidemiologic triad" and explains the use of this model in the context of an exercise oriented health enhancing program for basic primary school pupils. This program's evaluation results show that "the diagnostic findings prove the close connection between weight and exercise status", in which the "promotion of coordination competencies play a key role" (Page 227). Out of the series of sport scientific publications, band 29 of the "focal points of sport science" series published by Bjarnason-Wehrens & Dordel (2005) and dealing with the subject of "infantile and adolescent overweight and adiposity" merits special accentuation: on the basis of an examination of 360 fourth-graders, Dordel & Kleine (2005) present dates regarding the motor competence and health as well as the health oriented behavior of overweight and adipose children". This anthology also contains the significant article by Jaeschke (2005) who presents the results of a meta analysis which comprises 130 studies with 5912 test persons and which takes into account the higher-ranking effects of physical training and its evidence in examining adipose children. The measured population effect sizes consistently show the positive effects of multi disciplinary interventional approaches, in which physical activity was an integrated part of a holistic interventional concept. In contrast, the evaluation of studies, which applied physical training as the sole content showed that positive effects could only be observed in cases with a great many of very intensive training units and variable contents. Graf, Kupfer, Kurth, Stützer, Koch, Jaeschke, Jouck, Lawrenz, Predel & Bjarnason-Wehrens (2005) present results of a multi disciplinary interventional study, demonstrating the positive effects on weight and stamina performance of children suffering from adiposity. Further empiric dates with regard to sport- and training participation, strain level and muscular endurance are presented by Vogt, Brettmann, Rhodius,

Bürklein & Banzer (2004) on the basis of a multi disciplinary interventional approach. As a conclusion, it's worth mentioning the comment of the "Sektion Kinder- und Jugendsport der Deutschen Gesellschaft für Sportmedizin und Prevention" (section "children- and young people's sport of the German association for sports medicine and prevention") with regard to exercise and sport as a treatment principle for children and young people suffering from adiposity (Woweries, 2004). "Sportunterricht" ("physical education"), a professional journal even attends a separate supplement on the subject of overweight as "trademark" of younger generations (Brettschneider & Bünemann, 2005). This supplement contains a series of articles (among others Brettschneider & Malek, 2005; Bünemann, 2005; Hesecker, 2005). The article written by Brodtmann (2005) shows the importance of physical education at school and what are the opportunities provided by physical education in order to influence children and young people suffering from adiposity by means of sportive activation. In his article, Brodtmann strongly recommends that – on the basis of the salutogenetic health model - the already existing resources of adipose children and young people should be strengthened, instead of explicitly focusing on the elimination of deficiencies, namely the reduction in weight, which – in the early stages – rather has a discouraging effect on most of the children and young people. Another separate supplement of "Sportunterricht" (issue 11/2004) highlights the contribution to the enhancement of health in school education. This article focuses on a program launched in the German Federal State of Thuringia, where schools have initiated the self-contained "study field" of "Health and Fitness" which forms an important as well as inherent part of the schools' curriculum and which includes many different kinds of sport (Günther, 2004; Ohrt & Thorhauer, 2004; Türk-Noack & Messer, 2004; Türk-Noack & Puta, 2004; Wick & Zahn, 2004). In this regard, the following two articles are also of great interest: the article by Gießing (2005) regarding the pedagogical aspects of muscularity training in the field of school sport as well as the article by Neuber & Wentzek (2005) describing a life style oriented health enhancing program by initiating an "exercised" pilot scheme with trainees. Recla's volume (2004) informs about theoretical principles of an exercise oriented health education in school.

As already reported in the last review, a series of articles also deal with the phenomenon of the attention deficit hyperactivity disorder (ADHD) during the childhood and adolescence age (International Journal of Physical Education, issue 2 / 2004). It is remarkable that there still is a non-uniform nomenclature which becomes clear in the abbreviations for this phenomenon (ADD for attention deficit disorder and ADHD for attention deficit hyperactivity disorder). This notional variety can also be seen as a sign for the wide spectrum of different disorders in this respect (comp. Krowatschek, 2005) and their prevalence rates, which complicate both the systematic cause study as well as the focused intervention. Hamsen, Beudels & Hölter's article (2004) is of specific importance in this respect, as it suggests – according to international standards - the collective name "ADHD" for the three major characteristics of infantile ADHS, namely "inattentiveness, hyperactivity and impulsiveness" (Page 92). The authors give an excellent overview of the both nationally and internationally discussed explanation models and according intentional concepts as well as ideas in order to remedy this disorder (Page 95). With the background of this article, Hölter's working group present the results of a perennial project with the focus on exercise enhancement for children suffering from ADHD (Beudels & Hamsen, 2005). A series of individual articles deal with the varied aspects of attention deficit hyperactivity disorders, e. g. Lüpke's article particularly with regard to cerebral research as well as Skrodzki's article (2005) examining the role of medication or Hahn & Pieper (2005) discussing the different diagnosis options. The therapy of attention deficit hyperactivity disorder is mostly discussed in the field of psychomotor practice (comp. Köckenberger, 2005; Panten, 2005; Passolt & Schindler, 2005).

In the reporting period there was a striking number of publications dealing with the importance of exercise and sport for children of preschool age. Rethorst (2004) discusses the options for the enhancement of motor ability of children attending the Kindergarten and presents the results of a

Bielefeld study headlined “Kinder in Bewegung” (children in motion). Krombholz (2004a, b) presents another model experiment and publishes the results of a quadrennial study on the enhancement of exercise, carried out in 22 Munich kindergartens and day care centers. The author could demonstrate that increased exercise positively influenced both the children’s motor capability as well as their social behavior whereas an improvement of the children’s cognitive ability couldn’t be proved. Bappert, Woll & Bös inform about the currently running project “Kindergesundheits in der Stadt Karlsruhe” (children’s health in the town of Karlsruhe): by organizing vocational trainings for educators as well as informational meetings for parents and interventional days in the day-care centers and kindergartens, it is planned to influence the audiences regarding the aspects of exercise, nutrition and mobility in road traffic. Based on this project, the test procedure for the measurement of these children’s physical ability was developed, the so-called “Karlsruher Motorik-Screening KMS 3-6” (Motor function screening KMS 3-6/Karlsruhe) (Bös, Bappert, Tittlbach, Woll, 2004). Voelcker-Rehage (2005) presents partial results from the Bielefeld MODALIS-Study, which examines the coherence of motor and cognitive development in early infancy. Relating to a very specific partial aspect of the cognitive development, namely the ability of optical differentiation, a positive coherence of this cognitive basic function and the motor function could be demonstrated, however, only relating to coordination abilities. Kambas, Antoniou, Xanthi, Heikenfeld, Taxildaris & Godolias (2004) demonstrated that the coordination ability of preschool aged kindergarten children plays a special role in the prevention of accidents. Weiß, Stehle, Zimmer, Heck & Raab (2004) show the positive influence of a specific program consisting of exercises for the back aimed at a healthy posture as well as improving the motor function.

## 6 Perspectives

As a conclusion, this review makes clear that the sport scientific research in the field of health sport has been focusing more and more on the theoretical backup, the question of evidence as well as the quality assurance of health sport programs. In future, the use of methodically supported test instruments for the review of the evidence of interventional programs will even more come to the fore. Mandatory quality standards for health sport programs – as, for example, the “Deutsche Turnerbund” (German Association of Gymnasts) has presented and evaluated by launching its quality seal “Pluspunkt Gesundheit” (“Advantage Health”) – can thus be defined on the basis of empirically proved evidences and its compliance can then be secured by the implementation of a corresponding quality management. Based on such a system, health sport’s importance and claim can emphatically be brought into the sociopolitical discussion on the reorganization of public health care in Germany. In this regard, the implementation of quality assured health enhancing sport programs is an indispensable element within the creation of health enhancing and preventive programs and actions. One can only hope that the efforts in order to establish this claim in Germany’s preventive law’s new formulation will be successful.

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