

RESEARCH AND PRACTICE OF HEALTH PROMOTION

CHILD HEALTH

EPIDEMIOLOGICAL FOUNDATIONS

VOLUME 5



Publisher: Federal Centre for Health Education

The Federal Centre for Health Education (FCHE) is a government agency, based in Cologne, responsible to the Federal Ministry of Health. Its remit is to design and implement measures aimed at maintaining and promoting health.

It develops campaign concepts and strategies, produces summaries of media and methods, cooperates with a variety of workers and agencies in the health education field, and carries out education measures both for the population as a whole and covering selected topics for specific target groups.

The FCHE uses research results to plan and implement its work, as well as to evaluate its effectiveness and efficiency. This research includes projects on selected individual topics, evaluation studies, and the commissioning of representative repeat surveys. In order to promote an exchange of information and experience between theory and practice the FCHE holds national and international conferences.

These studies and assessments, along with the results of specialist meetings, are published by the FCHE in its specialist booklet series on “Research and Practice of Health Promotion”. This is to be seen as a forum for scientific discussion. The aim of the series – like the existing series on sex education and family planning – is to further extend the dialogue between theory and practice.

**RESEARCH AND PRACTICE OF HEALTH PROMOTION
VOLUME 5**

CHILD HEALTH

EPIDEMIOLOGICAL FOUNDATIONS

Documentation of an expert seminar held by the Federal Centre for Health Education

Federal Centre for Health Education (FCHE)
Cologne, 1999

Die Deutsche Bibliothek – CIP-Einheitsaufnahme

Child Health – Epidemiological Foundations. Documentation of an expert seminar held by the Federal Centre for Health Education (FCHE) / [Publ. by the Bundeszentrale für gesundheitliche Aufklärung (BZgA) Köln. Design/ed. : Dr. Monika Meyer ; Prof. Dr. Cornelia Helfferich]. - Köln : BZgA, 1999
(Dt. Ausgabe u.d.T.: Gesundheit von Kindern)
(Research and Practice of Health Promotion ; Vol. 5)

ISBN 3-933191-21-1

This volume forms part of the specialist booklet series "Research and Practice of Health Promotion", which is intended to be a forum for discussion. The opinions expressed in this series are those of the respective authors, which are not necessarily shared by the publisher.

This volume is a translation of the German edition:

Gesundheit von Kindern – Epidemiologische Grundlagen ; Dokumentation einer Expertentagung der Bundeszentrale für gesundheitliche Aufklärung [Hrsg.: Bundeszentrale für gesundheitliche Aufklärung (BZgA) Köln. Konzeption/Redaktion : Dr. Monika Meyer ; Prof. Dr. Cornelia Helfferich]. - Köln : BZgA, 1998
(Forschung und Praxis der Gesundheitsförderung ; Bd. 3)
ISBN 3-9805282-7-8
Order No. 60 603 000

Published by the
Bundeszentrale für gesundheitliche Aufklärung
(Federal Centre for Health Education - FCHE)
Ostmerheimer Str. 220, D-51109 Köln, Germany
Tel.: +49(0)221/89 92-0
Fax: +49(0)221/89 92-3 00
E-Mail: dr.meyer@bzga.de

All rights reserved.

Editors: Dr. Monika Meyer, Katharina Salice-Stephan

Composition: Salice-Stephan, Cologne
Printed by: Schiffmann, Bergisch Gladbach

Impression: 1.5.3.99

Printed on 100% recycled paper.

This publication can be obtained free of charge from:
BZgA, D-51101 Köln, Germany
or on the Internet at <http://www.bzga.de>

Order No. 60 805 070

PREFACE

Volume 5 of the series 'Research and Practice of Health Promotion' bears the title 'Child Health – Epidemiological Foundations'.

The publication documents an expert seminar, organized by the Federal Centre for Health Education within the context of their target-specific theme 'Health in Children and Adolescents', in November 1996.

It is a common practice to safeguard preventive endeavours academically. The aim of the seminar was to gather the data currently available on the child health situation and, with a critical assessment of the data quality, bring out the central problems regarding health and priority treatment requirements, with a look at the possibilities of primary prevention.

Despite a heterogeneous data supply, it was possible to analyse the appropriate sources of data, to crystallize the relevant starting points and to discuss priorities. With publication, the results of the seminar will be made available to a broader expert audience.

Cologne, March 1999

Dr. Elisabeth Pott
Director of the Federal Centre
for Health Education

OUTLINE OF THE CONFERENCE

Theme:	Child health – epidemiological foundations
Aims:	- Overview of appropriate sources of data - Bringing out central problems regarding health - Discussion of priority treatment requirements
Date of Seminar:	14 November 1996
Speakers:	Dr. Peter Allhoff <i>Institut für medizinische Forschungsberatung, Leverkusen</i> Dr. Lutz Altenhofen <i>Central Research Institute of Ambulatory Health Care in Germany, Cologne</i> Dr. Bärbel-Maria Bellach <i>Robert Koch Institute, Berlin</i> Dr. Sigrid Dordel <i>German Sport University, Cologne</i> Dr. Herman-Josef Kahl <i>Establ. Paediatrician, Paediatric Cardiologist, Düsseldorf</i> Dr. Heiner Mersmann <i>Gesundheitsamt (Office of Health), Cologne</i> Dr. Christian Palentien <i>University of Bielefeld</i> Dr. Hartmut Schirm <i>Akademie für Öffentliches Gesundheitswesen, Düsseldorf</i> Prof. Hans G. Schlack <i>Rheinisches Kinderneurologisches Zentrum, Bonn</i>
Moderator and Editor:	Prof. Dr. Cornelia Helfferich <i>Evangelische Fachhochschule, Freiburg</i>
Organization:	Christine Dorer <i>Kongreßmanagement, Cologne</i>
Organizer:	Bundeszentrale für gesundheitliche Aufklärung (Federal Centre for Health Education) Ostmerheimer Straße 220 D-51109 Cologne Tel.: +49(0)2 21/89 92-3 45 Fax: +49(0)2 21/89 92-3 00 E-Mail: dr.meyer@bzga.de
Concept Management:	Dr. Monika Meyer

CONTENTS

1.	INTRODUCTION	9
2.	DATA SOURCES, DATA QUALITY AND HEALTH REPORTS	13
2.1.	Preliminary Remarks	14
2.2.	Data Sources on the Theme of ‘Child Health in Germany’ Peter Allhoff	15
2.3.	The Programme for Early Diagnosis of Illness in Children: Use and Data Supply Lutz Altenhofen	21
2.4.	Federal Health Reporting – Data Sources Used in Regional Health Reports on Children and Adolescents Bärbel-Maria Bellach, Thomas Ziese, Heidrun Kahl, Matthias Richter, and Gabriela Röseler	30
2.5.	Summary of the Discussion	41
3.	CHILD HEALTH – CONDITIONAL CONTEXTS	43
3.1.	Preliminary Remarks	44
3.2.	The Lifestyle of Children as a Determining Factor in Health and Development Hans Georg Schlack	45

3.3.	Health of School Beginners – Effects of Social Deprivation	
	Heiner Mersmann	56
3.4.	The State of Health and Health Behaviour in Children as a Foundation for Prevention	
	Christian Palentien, Wolfgang Settertobulte, Klaus Hurrelmann	75
3.5.	Summary of the Discussion	82
4.	A CLOSER LOOK AT THE SUBJECT USING ACCIDENTS AND MOVEMENT DISORDERS DURING CHILDHOOD AS AN EXAMPLE	85
4.1.	Preliminary Remarks	86
4.2.	Accidents and Injuries to Children under Special Consideration of Injuries at Home and during Leisure Time	
	Hermann-Josef Kahl	87
4.3.	Aetiology and Symptomatics of Motor Deficiencies and Abnormalities	
	Sigrid Dordel	92
4.4.	Summary of the Discussion	108
5.	SUMMARY OF THE RESULTS – GUIDELINES FOR THE HEALTH EDUCATION OF CHILDREN	109
6.	PARTICIPANTS	113

INTRODUCTION



1.

INTRODUCTION

On behalf of the Federal Government, the FCHE fulfils the function of a clearing house for health promotion and prevention. This task involves quality assurance, coordinating and supporting activities, which it also takes on in its sphere of emphasis 'Health in Children and Adolescents'.

The capacity to activate health potential, especially in early childhood, the extensive effects of the successful promotion of health skills in that age group, and the easy direct access to groups of the same age – e.g. nursery schools, schools, clubs – all of these aspects give health promotion for these target groups a special and indisputable significance. A vital prerequisite of an effective and efficient action is the elaboration, the analysis and the dissemination of scientific foundations as aids to decision-making and guidelines.

In observing this clearing role, the FCHE organized an expert seminar in Cologne, on 14 November 1996, on the subject of 'Child Health – Epidemiological Foundations'. The principal questions dealt with by the seminar were:

- For determining central health questions, and for prioritization, current epidemiological data is of special significance. Which sources of data and reports (regularly) provide information on the health of children and adolescents?
- For the development of strategies, a closer determination of the causal connections and conditional context of health and health impairment during childhood is important. What scientific findings are there in this regard?
- What prioritizations and guidelines follow from that?
- What areas of intervention and target groups are meaningful in connection with determined priority health questions?

The aim of the seminar was to gather the relevant scientific knowledge from experts, on this basis to achieve a consensus on central health problems and to discuss implementation-related treatment requirements and guidelines for health promotion.

The seminar was arranged on an interdisciplinary basis according to the formulation of questions, whereby an emphasis lay on the inclusion of social paediatric and epidemiological knowledge. On account of limited time, a selection had to be made from the wealth of individual aspects which are covered by the subject of health promotion and prevention in children and adolescents. After the clarification of data sources and quality

regarding the state of health of children in general, and conclusions for priority health questions (Chapter 2), the seminar contributions follow, representing selected health indicators and their conditional context; they were discussed together with the formulation of meaningful areas of intervention, target groups and treatment requirements (Chapter 3). In Chapter 4 we have a deeper look at the subject of 'Accidents and Movement Disorders during Childhood'. Chapter 5 contains the summary.

Each chapter is preceded by some introductory remarks, which introduce the context. Then speakers' contributions are presented. Chapters close with a summary of the joint discussion.



**DATA SOURCES, DATA QUALITY
AND HEALTH REPORTS**

2.1. PRELIMINARY REMARKS

Priorities are to be set in the planning of health education activities. 'Not all tasks can be tackled at the same time or with the same intensity. Health policy priorities lie where, because of the frequency, duration and severity of a disease, a large number of people are affected or might be affected, fighting illness involves high economic costs, and preventive measures are promising.' (Federal Ministry of Education and Research [BMFT] [Ed.]: Gesundheitsforschung 2000. Programm der Bundesregierung. Bonn 1993, p. 16). In relation to the target groups of children and adolescents, questions and problems which are frequent, have serious consequences in adulthood, and can be prevented are a matter of priority for health education. This specification excludes rare or minor illnesses, but still includes a broad spectrum of health aspects.

In this sense, the emphasis can be only on the foundations of epidemiological knowledge. This data should constantly be brought up to date, since at one and the same time recording trends provides feedback about changes of problems, and about the effectiveness of intervention. The data should be of high quality and covers the entire spectrum of relevant aspects. For the sound determination of central health questions, current data sources and data quality are of prime importance in the regular provision of information on the health status of children. Also crucial is how data are made accessible, for instance through regularly repeated health reporting.

Questions about data supply and first knowledge of the relevant health questions regarding children stand to the fore in the first two contributions. P. Allhoff gives an overview of the relevant sources under the theme of 'Child Health in Germany' (2.2.). L. Altenhofen makes a critical examination of the data situation in statutory early diagnosis examinations, and reports findings on the health of children (2.3.). The contribution from B.-M. Bellach goes into a summary of the results from these sources of data in health reporting and in reports on the health of children in individual federal states, and provides an assessment of additional data requirements (2.4.). In the joint discussion (2.5.), existing regularly collected and population-related data obtained on child health – with a critical appraisal of the data quality – are considered in respect of their contribution to prioritization. There is also a question of which psychosocial development indicators, which health and ability indicators should regularly and meaningfully be ascertained, and with which profiles the epidemiological basis of health education should be permanently implemented.

2.2. DATA SOURCES ON THE THEME OF 'CHILD HEALTH IN GERMANY'

Dr. Peter Allhoff, Institut für medizinische Forschungsberatung, Leverkusen

Epidemiological foundations for measures in the area of health promotion serve several aims:

- For prioritization, data is required on the relevant health problems which can be affected by primary preventive measures, whereby a comparative evaluation of the various problem areas can be achieved.
- For implementation, planning, data, which can enable a decision to be made on the best means of intervention, are of principal importance.
- For evaluation of such measures, data are relevant which enable the achievement of aims to be described and with which external influences can be controlled.

With an increasing task level and at the same time an increasing degree of complexity, there is ever less of the necessary specific data available. Simultaneously, the lack of relevant data increases with the falling clinical relevance of health problems: while relatively detailed data is available on mortality, on the subject of living conditions there are only very few accessible sources.

This problem also arises in the following description of some relevant sources of data. An attempt is made, however, for instance by including data sources with data processed for review, to provide an overview which goes beyond the first aim set out above.

DATA SOURCES

PERIODICALLY OBTAINED DATA

Federal Statistical Office, Wiesbaden

Population census

Complete population survey (self-completed questionnaires) of (West) German population 1950, 1961, 1970 and 1987. The selected items relate to personal and household income, age (year of birth), gender, social standing, religion and nationality. The only medically relevant statements recorded are about the medical professions and on medical economic activities (businesses).

Health statistics

Complete survey (from registry offices) ongoing since 1946, aggregated on a federal, regional and (limited) district level. The selected items relate to births (various state-

ments in particular on body weight and length as well as deformities recognizable within the first three days) and deaths (cause of death statistics, various statements on age, gender, coding of the fundamental illness causing death according to ICD9 and supplementary codes).

Sample census

Annual 1% sample survey (interview and questionnaire) of all households (obligatory) since 1957. The selected items concern personal and household income, age and gender, various statements on social standing, health insurance protection, and mobility (below 15 years).

Health statistical survey additional to the sample census

Annual 0.5% sample survey of all households together with the sample census (participation voluntary) since 1963, and complete since 1986 (every three years). The selected items relate to illnesses during the past four weeks (duration, treatment, including hospital treatment, and inability to work), reduction of fitness for work.

Road and air accident statistics

All accidents established on a monthly and annual basis since 1953 (air accidents since 1960). The selected items include the age and gender of those involved, accident causes and degree of injury.

Statistics on the severely disabled

Complete survey of all known severely handicapped since 1979. The selected items concern age and gender, type, cause and degree of disability, and regionality (<4 years, 4–15 years).

Statistics on rehabilitation measures

Annual complete survey of all rehabilitation measures concluded since 1971/1981. The selected items relate to age and gender, social standing and occupation, rehabilitation provider up to three rehabilitation measures according to type, duration and result.

Hospital statistics

Complete survey of all hospitals since 1935/1990. The selected items concern characteristics of hospitals, bed statistics, personnel statistics, patient statistics, and sections.

National Association of Statutory Health Insurance Physicians and executive associations of the health insurance funds

Documentation on the statutory early diagnosis programme for children

Complete survey of all early diagnosis examinations carried out from U3 to U9 since 1972, SHI (Statutory Health Insurance) insured. The items relate to 37 diagnosis descriptions, subdivided according to first-time recognition, suspicion diagnosis and definite diagnosis.

Documentation on maternity care and delivery

Statistics put together from the results of perinatal surveys of the Federal Länder since 1990. The items include use, case parameters, etc.

Landesinstitut für den Öffentlichen Gesundheitsdienst (LÖGD) (among others)

(Regional Institute for Public Health Service)

Results of the school-entrance examinations

Survey of standardized results from school-entrance examinations for over 30 years: participation is voluntary. The items relate first of all to school readiness parameters, height and weight measurement, immunization status, etc. Other Federal Länder or cities carry out similar surveys (e.g. Berlin, Hamburg, Hannover, and Hesse).

Results from nursery school and fourth-class examinations

Comparable with the school-entrance examinations, but without blanket implementation.

Research Institute of the Local Health Care Funds (WidO), Bonn*Drugs index of the Statutory Health Insurance (SHI)*

Annual 1‰ sample-survey of all prescriptions without personal or diagnosis reference through pharmacies. It is published as half-yearly information on price (also monthly), quantity and structure development of the 1,000 leading drugs, as well as annually in the drug prescription report (Schwabe/Paffrath).

The selected items relate to age and gender, month of issue, medical area description, ABDA, substance, producer, and price.

Regional Statistical Office of Schleswig-Holstein in Kiel*Hospital-patient statistics for Schleswig-Holstein*

Annual record of all discharge diagnoses since 1969. Publication is issued yearly as 'Illnesses of Hospital Patients in Schleswig-Holstein'. The selected items relate to age, gender, statements on equipment, patients, cost financiers, and principal and secondary diagnoses according to ICD9.

National Reference Centre for the Epidemiology of AIDS*Register of AIDS cases*

Collection of reports concerning AIDS-related illnesses and deaths, as well as HIV confirmation tests (below 15 years)

University of Mainz*German child cancer register, Mainz*

Collection of reports from relevant clinics and doctors: with parental consent as a person-related longitudinal record.

Landesamt für Immissionsschutz Nordrhein-Westfalen (Regional Office for Protection Against Pollution, North Rhine-Westphalia)

Impact survey tests in North Rhine-Westphalia

Regular cross-section studies in areas with high air-pollution levels and free areas for comparison since 1976: children of school-starting age were examined, and women in their sixties. The items related to symptoms and diagnoses, lung function diagnosis, immunological and haematological analyses, concentrations of harmful substances in the blood, urine and milk teeth.

Deutsche Gesellschaft für Ernährung e.V. (German Nutrition Society)

Nutrition report

Expert report on general questions regarding nutritional habits, provisions etc.: on varying special topics at present with a special survey.

ONE-OFF DATA

Institut der Deutschen Zahnärzte (Institute of German Dentists)

National IDZ survey

Survey of the oral health of the population in the old Federal Länder (1989) and in the new Federal Länder (1992) (from 8 to 9 and from 13- to 14-year-olds).

Gesellschaft für Konsum-, Markt- und Absatzforschung (GfK), Nürnberg
(Society for Consumer, Market and Sales Research)

National consumer study

Questionnaire of 540 households in each of 20 roughly representative areas among the old Federal Länder (corresponding to 0.5%), with the help of a structured questionnaire and seven-day record (data survey 1986-1989). In addition, there was a medical survey among approximately 2,000 members of the households questioned (just on 10%). Publication was issued in 'Ernährungsumschau' (nutrition review) 37/3 (1990), pp. 102-107. The selected items concerned age and gender, household structure data, behavioural variables, statements in the nutrition record (type, quantity, serving, packaging, and mealtime intake), blood values, urine values, and drinking-water tests.

Infratest Health Research

Survey of people in need of care and attention in private households commissioned by the Federal Ministry for Family Affairs, Senior Citizens, Women and Youth 1991 (0- to 15-year-olds).

DATA FOR SECONDARY ANALYSIS

Zentralarchiv für Empirische Sozialforschung der Universität Köln (Central Archive for Empirical Social Research at the University of Cologne)

Database cataloguing, archiving and processing sociological data for loan for secondary analyses: examples of subject-related data, sociology bus 7, consumption and misuse of illicit drugs, alcoholic beverages, medicines, sexual behaviour of men and women, in the Federal Republic of Germany, and so on.

REVIEW DATA

National library of medicine

Various pools of data with full text, for instance, Guide to clinical preventive services, AHCPR technology assessments and reviews, NIH consensus development programme, etc.

Cochrane collaboration

Overview works, meta-analyses, etc. in full text, for instance, the Cochrane database of systematic reviews, the database of abstracts of reviews of effectiveness, the Cochrane controlled trials register, etc.

EXAMPLE OF THE USE OF DATA FOR PRIORITIZATION

The statutory maternity care programme has led over the past 20 years to a drastic reduction in infant fatalities (Allhoff/Berg, 1996). The connection between maternity care and perinatal outcome has been frequently documented (e.g. Wallace, 1982; Siegel 1985; Collatz et al., 1979). Furthermore, maternal behaviour and attitude plays a leading role in the (medical) care of children. Mothers, who themselves rarely go to the doctor or hardly take up maternity care, also tend to neglect medical care provisions for their children (Newacheck/Halfon, 1986; Bergmann/Tietze, 1984). Overall, mothers appear to play a go-between role between the doctor or dentist and their family members. Mothers make appointments with the doctor, at least accompany their children to the doctor, receive advice from the doctor, and see to its being carried out. Should we succeed in motivating pregnant women to adequate care conduct, there is a good chance that this will have a positive influence on the use of early illness diagnosis examinations for children, and generally on family compliance.

Data from perinatal surveys show, in this regard, that despite an average increase in the use of maternity care, groups with a considerably lower perception of these tests are to be identified. So, for example, only 60% of recipients of social benefit turn up for prelimi-

nary examination before the thirteenth week of pregnancy, while 90% of other women take advantage of the preliminary examination at the correct time: only around 50% of recipients of social benefit attend ten or more examinations, as compared with over 80% of the overall group. Moreover, in comparison with the overall group, around a quarter more children of recipients of social benefit are transferred from the maternity hospital to a children's hospital.

An appropriate target group can thus be defined for primary preventive measures, the effectiveness of which should be evident when considering the abovementioned connections and findings. Measures like the 'Parental Licence' project, which was implemented around 20 years ago, introduction of behaviour-related information in television 'soap operas', lessons and consultations in classes in the basic vocational year in schools, and last but not least family midwives with the task of continuing care, could all be aimed at.

BIBLIOGRAPHY

- Allhoff, P. / Berg, D. (1996): Effectivitätsaspekte der Perinatalerhebungen. *Gynäkologe* 29, 535–540.
- Bergmann, H. / Tietze, K. W. (1984): Kontinuität als Ziel von Schwangerenversorgungen und Früherkennungsuntersuchungen für das Kind in der Bundesrepublik Deutschland. *Bundesgesundheitsblatt* 27, 106–110.
- Collatz, J. / Malzahn, P. / Schmidt, E. (1979): Erreichen die gesetzlichen Früherkennungsuntersuchungen für Säuglinge und Kleinkinder ihre Zielgruppe? *Öffentliches Gesundheitswesen* 41, 173–190.
- Newacheck, P. W. / Halfon, N. (1986): The association between mother's and children's use of physician services. *Med Care* 24, 30–38.
- Siegel, E. (1985): Low birth weight and preterm birth: the emerging importance of prevention. *Soz. Präventivmed* 30, 118–124.
- Wallace, H. M. (1982): Prenatal care and child health. *Paediatrician* 11, 4–26.

2.3. THE PROGRAMME FOR EARLY DIAGNOSIS OF ILLNESS IN CHILDREN: USE AND DATA SUPPLY

Dr. Lutz Altenhofen, Central Research Institute of Ambulatory Health Care in Germany, Cologne

2

STATUTORY FOUNDATIONS

The programme incorporated in 1971 into the normal benefit list for statutory health insurance on the early diagnosis of illness in children (KFK) represents a secondary prevention measure. The overall objective of the programme is the early diagnosis of illnesses which 'to a not insignificant extent endanger' the development of a child from a physical or psychological point of view (section 26, paragraph 1 SBG V).

Specific statutory parameters for the early diagnosis programme:

'Insured children have a right, until completion of their sixth year, to examination for the early diagnosis of illness which to a not insignificant extent endanger their physical or spiritual development' (section 26.1 SBG V)

With regard to provisions for the early diagnosis of illness, the general parameters of the legislator merely provide for some minimum criteria, which are intended also to find use for secondary preventive measures during childhood. According to these, there is a right to early diagnosis examination within the context of Statutory Health Insurance, so far as

1. It is an illness which can be treated effectively,
2. The pre- and early stages of these illnesses can be ascertained by means of diagnosis,
3. The symptoms are to be ascertained sufficiently clearly from a medical point of view,
4. Sufficient doctors and facilities are available to diagnose in detail and to treat the suspected cases.'

Arrangement of the content of the early diagnosis programme is incumbent upon the Federal Committee of Doctors and Health Insurance System, in so far as these have guidelines to formulate, from which the organizational-structural characteristics of the examinations and the target illnesses of the programme emerge. In the guidelines to the programme of early diagnosis of illness in children, it is stated, for example, which target illnesses or target illness groups are important for which age groups, and within which age-related time periods ('tolerance limits') these examinations should be carried out.

Examination age and time

Age	Stage of examination
1 day	U1
5–6 days	U2
4–6 weeks	U3
3–4 months	U4
6–7 months	U5
10–12 months	U6
21–24 months	U7
43–48 months	U8
60–64 months	U9

The programme currently includes nine examinations which should be carried out for all statutorily insured children up to the end of the sixth year at given intervals.

These stages of examination, of which six take place during the first year of life, represent flexible filter examinations. The list of target illnesses is extraordinarily extensive and extremely complex, in so far as the aim is for early recording of a variety of different illnesses or of not precisely delimitable 'disorders', which affect all bodily organs or groups of organs.

The examinations are carried out in 83% of the old Federal Länder by established paediatricians. General practitioners also provide these examinations.

If one considers just the medical fees payable for the individual early diagnosis examinations, then, in 1992, these led to direct expenses for the Statutory Health Insurance (SHI) of approximately 142.8 million DM in the old Federal Länder.

ACCEPTANCE

The programme of early diagnosis of illness in children is marked by an extraordinarily high level of acceptance.

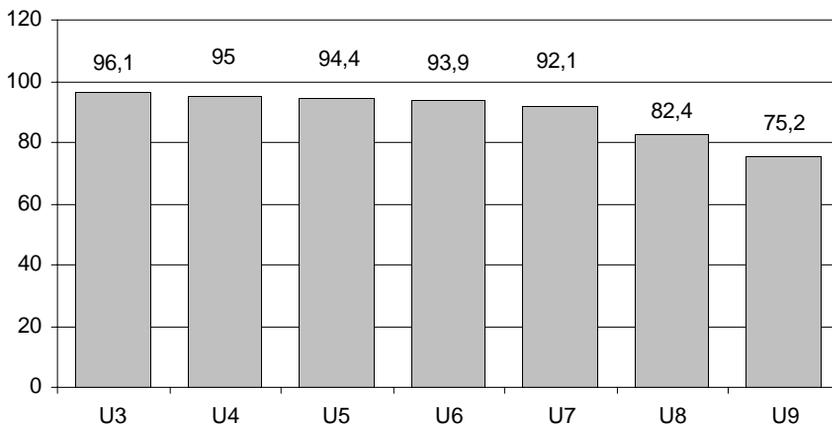
According to the annual surveys by the executive associations of the health insurance funds, participation in the individual stages of examination exceeds the 90% level, at least in the examinations in the first two years of life. On the other hand, acceptance of the 'U9', first introduced in 1990, still lies at a relatively low level. With the exception of this examination, participation levels for all stages of examination have shown a rising tendency for several years. The corresponding levels show a steadily rising trend for all stages of examination since 1978. Recently this trend has fallen slightly, and – so far as the figures are to be regarded as valid – possibly reflects a certain 'saturation effect'.

To qualify this, it must be conceded with regard to these figures that the validity of the survey method, on the basis of which these levels were calculated, is not very clear. Moreover, the important question of individual continuity of participation cannot be answered by cross-section study.

It was shown in various studies that readiness to participate in early diagnosis examinations showed a pronounced class gradient, since in particular the continuity of participation in children from families of lower social classes and foreign children is relatively low (Collatz/Malzahn/Schmidt, 1979; Albrecht et al., 1983).

Programme for the early diagnosis of illness in children – Participation levels 1993 (old Federal Länder)

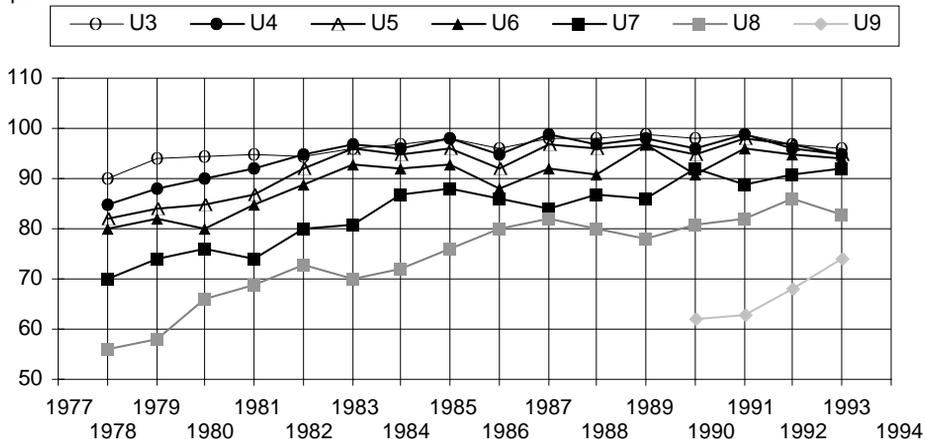
In per cent



Source: details from AOK-Bundesverband

Programme for the early diagnosis of illness in children – Participation levels 1978–1993 (old Federal Länder)

In per cent



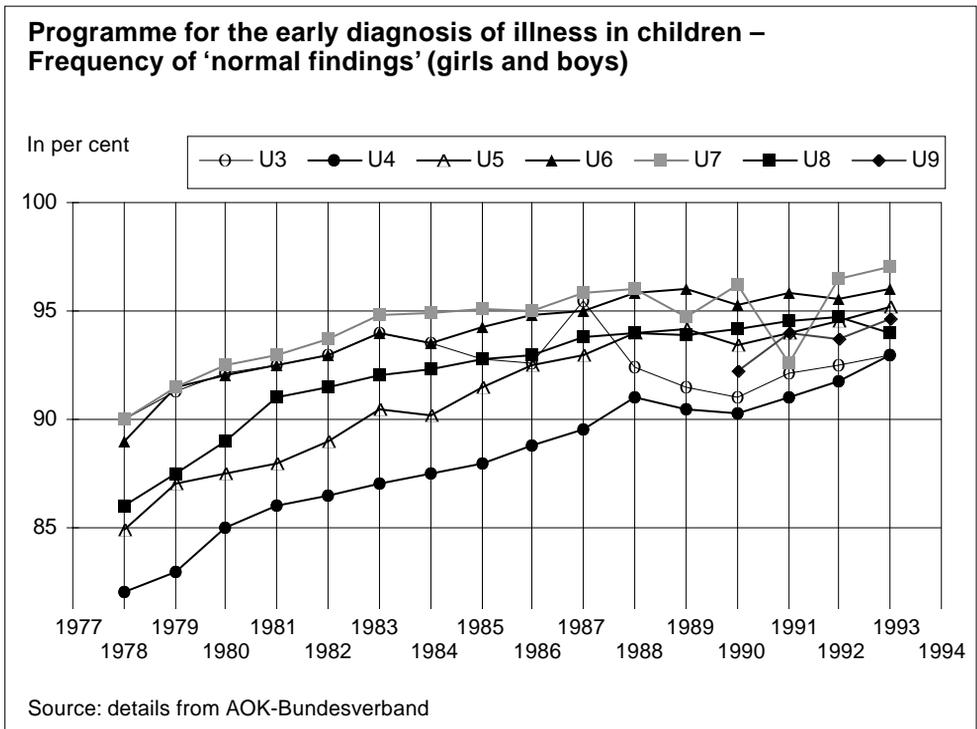
Source: details from AOK-Bundesverband

PROGRAMME RESULTS

The results from the examination documentations are analysed by cross-section on the basis of a complete survey and published annually by the executive associations of the health insurance funds and the National Association of Statutory Health Insurance Physicians (KBV standard documentation 1993). In the first place there is an assessment of the frequency of 'normal examination findings' according to the stage of examination and gender, as well as the frequency of so-called diagnosis indicators ('Diagnosekennziffer', DKZ).

Considering the frequency of abnormal examination findings according to the stage of examination, it is to be suspected that in five to eight per cent of children examined secondary diagnostic measures are initiated. Looking back on the results of the standard assessments of the early diagnosis programme for children in the area of the old Federal Länder since 1978, in past years there appears in all stages of examination a clear fall in the proportion of children for whom 'abnormal findings' were recorded.

For example, while in 1978 'abnormal findings' were recorded in at least 18% of children examined in the three-months age group, this proportion amounted to only 8.5% in 1991. For the other stages of examination too, a sometimes marked increase in the proportion of normal children is noted, within the screening context.



Since it can hardly be assumed that ill health has drastically changed during this period of time, it is more reasonable to assume that this trend reflects changes in documentation methods: perhaps suspicion of an illness is recorded more rarely in examination notes, or it is more often directly clarified. And it is not to be excluded that the extent of early diagnosis examinations actually carried out is handled more flexibly, according to the particular character of the social and individual development of each child, than is actually prescribed in the corresponding guidelines.

The significance of the individual diagnosis indicators (DKZ) varies according to expectations, in accordance with examination age, whereby each DKZ is shown either as a 'diagnosis which cannot be more closely specified', as a 'first-time diagnosis', or as a 'suspicion diagnosis'. With boys and girls, the findings of the so-called 'hip-joint anomaly' (DKZ 33) are of particular importance in the examinations during the first year of life. DKZ 33 can essentially be understood as a generic term for hip-joint dysplasia (incidence 2–3%) and dislocation (incidence 1–2%).

In the following remarks, consideration will be given exclusively to the relative frequencies of so-called 'suspicion diagnoses'. From the rank orders presented here, which were prepared on the basis of the relative frequency of the five most important suspicion diagnoses in the early diagnosis programme for children, it becomes clear that, in particular with girls, the number of 'hip-joint anomalies' is extraordinarily high in comparison with other diagnosis indicators.

Programme for the early diagnosis of illness in children						
Frequency of individual target illnesses U3 – U5						
(Suspicion diagnoses – Girls 1993)						
Position	U3		U4		U5	
	Target illness	per 10,000	Target illness	per 10,000	Target illness	per 10,000
1	Hip-joint anomalies	323.8	Hip-joint anomalies	196.6	Hip-joint anomalies	61.2
2	Cerebral movement disorders	28.7	Cerebral movement disorders	60.8	Cerebral movement disorders	36.6
3	Cardiac defects disorders	28.4	Other funct. development disorders	20.4	Other funct. development disorders	22.2
4	Other skeletal diseases	8.0	Cardiac defects	16.2	Cardiac defects	10.3
5	Urinary tract abnormalities	7.7	Skin diseases	9.5	Squint	10.2

**Programme for the early diagnosis of illness in children
Frequency of individual target illnesses U3 – U5
(Suspicion diagnoses – Boys 1993)**

Position	U3		U4		U5	
	Target illness	per 10,000	Target illness	per 10,000	Target illness	per 10,000
1	Hip-joint anomalies	244.2	Hip-joint anomalies	180.5	Hip-joint anomalies	51.3
2	Cerebral-movement disorders	32.2	Cerebral-movement disorders	83.1	Cerebral-movement disorders	43.3
3	Cardiac defects	29.4	Other funct. development disorders	27.3	Other funct. development disorders	25.2
4	Urinary tract abnormalities	12.8	Cardiac defects	14.9	Squint	10.8
5	Other funct. development disorders	7.5	Skin diseases	11.9	Cardiac defects	10.1

**Programme for the early diagnosis of illness in children
Frequency of individual target illnesses U6 – U7
(Suspicion diagnoses – Girls 1993)**

Position	U6		U7		U8	
	Target illness	per 10,000	Target illness	per 10,000	Target illness	per 10,000
1	Other funct. development disorders	28.8	Speech disorders	19.0	Speech disorders	35.4
2	Hip-joint anomalies	17.9	Squint	15.7	Squint	17.2
3	Squint	16.7	Cardiac defects	10.1	Visual impairment, blindness	14.8
4	Cerebral-movement disorders	16.4	Other skeletal defects	7.9	Squint	14.4
5	Cardiac defects	7.2	Other funct. development disorders	7.8	Other skeletal disorders	12.7

Programme for the early diagnosis of illness in children						
Frequency of individual target illnesses U6 – U7						
(Suspicion diagnoses – Boys 1993)						
Position	U6		U7		U8	
	Target illness	per 10,000	Target illness	per 10,000	Target illness	per 10,000
1	Other funct. development disorders	29.6	Speech disorders	33.8	Speech disorders	57.9
2	Cerebral-movement disorders	19.0	Sexual-organ defects	15.8	Emotional and social disturbances	20.4
3	Squint	18.1	Squint	14.9	Sexual-organ defects	19.3
4	Hip-joint anomalies	12.4	Cardiac defects	10.4	Other funct. development disorders	19.0
5	Sexual-organ defects	8.9	Other funct. development disorders	10.3	Eye diseases	18.1

During the entire first year of life, this target illness (DKZ 33) is among the five most frequent diagnosis for both boys and girls, while the corresponding levels during later stages of examination clearly decrease in comparison with those of examinations at the age of six weeks (U3) and three months (U4). On the other hand, frequencies of the next most frequent diagnosis indicators 'cerebral movement disorders' or 'cardiac defects' are distinctly lower.

If one adds the number of 'first-time diagnoses' and 'diagnoses which cannot be more closely specified', then the result is reached that for almost 5% of all girls at U3 examination and some 3.5% of all boys examined a 'hip-joint anomaly' is recorded in the 'yellow examination file' as a result of the examination. Consequently, it is to be assumed that approximately one half of all the children rated at this stage of examination as 'abnormal' on the basis of suspicion of a defect developing in the hip-joint underwent further diagnostic measures.

Compared with this order of ranking for the early examinations, with girls and boys during infancy, speech disorders, emotional and social development disorders as well as eye and other diseases become increasingly prominent.

PROGRAMME CRITIQUE

The early diagnosis programme was developed in the first place as a medical programme for the individual, the originally envisaged emphasis of which today appears to be fading increasingly into the background. According to Weidtmann, a lasting change to the panorama of disease as a result of the extensive disappearance of infection-related diseases and those caused by nutritional deficiency has led in the practice of early diagnosis to the fact that the discovery of psychomotor abnormalities and the observation of psychological and social development is currently playing a more important role. But this inevitably leads 'to great difficulties in the choice of suitable screening methods [...] which satisfy the demands for screening capability – reliability (reproducibility), validity (force or correctness), simplicity and acceptance' (Weidtmann, 1989, p. 310; Schöne, 1992; Forfar, 1988, p. 254 ff). According to Schwartz, this examination programme emphasizes the early discovery of many target illnesses, 'for which delayed treatment is dangerous, but for which superfluous diagnosis is not very risky or expensive' (Schwartz, 1980, p. 1401). In contrast to early diagnosis measures for adults, it is justifiable to define the 'suspicion threshold as very low, in order to discover all illnesses, accepting the many inevitably false positive cases' (Schwartz, 1980, p. 1401).

The early discoverability of a variety of paediatric diseases or handicaps is set limits even when great examination experience and optimum handling of medical diagnosis are applied. Furthermore, for a considerable number of diseases, a precise delimitation of the many development variations of pathological processes is extremely difficult.

Critique of the early diagnosis programme for children

- Low use by lower social classes
- Non-consideration of certain target illnesses
- Insufficient quality in carrying out early diagnosis measures ('over-/under-diagnosis')
- No approach to primary prevention (parental advice)
- Low meaningfulness of documentation for epidemiological questioning

For many years, critical objections have been put forward with regard to the effectiveness and the efficiency of the early diagnosis programme. There was criticism of the clearly late detection of children with hearing or sight disorders (Peppler/Menz-Hackenberg, 1983; Hohmann, 1987). On the other hand, in view of the requirements contained in the guidelines, the programme is regarded as overloaded (Ohlenberg-Antony/Neuhäuser, 1989), the lack of standardized examination procedures is stressed (Göge, 1988), and a not inconsiderable over-diagnosis of certain symptoms is suspected, for example with hip-joint anomalies and cerebral movement disorders (Lajosi/Allhoff, 1985).

Overall it must be noted at present that, within the context of the early diagnosis programme, the relevant diseases throw up a variety of definition problems, that hardly any

standardized examination procedures are given in the guidelines for their recognition, and that the suspected effectiveness advantages of a screening as against a purely clinical procedure with a variety of target illnesses are at the least controversial (Zalewski 1985, p. 48; Collatz 1989). Not least the lack of suitable epidemiological examinations should have increased the selection of target illnesses in this early diagnosis programme according to individual rather than population-related medical criteria. On the other hand, one could assume that as a result of the regular presentation of children for examination, certain positive side effects may be realized, in the sense of parental education on questions of nutrition, care and upbringing (Weidtman 1989, p. 311).

From the point of view of medical self-administration, it is to be realised, however, that in the current debate on the alleged limits of financing the statutory prevention programme must be regarded more from the point of view of the consequential burden to the given budget induced by them through diagnostic and therapeutic follow-up measures.

BIBLIOGRAPHY

- Collatz, J. (1989): Rahmenbedingungen und Entwicklungstendenzen der Früherkennungsuntersuchungen für Säuglinge und Kleinkinder. *MMG*, 14. Jg., 220–233.
- Forfar, J. O. (1988): Changing paediatric perceptions and perspectives. In: Idem (Ed.): *Child health in a changing society* (pp. 25–286). Oxford/New York/Tokyo.
- Göge, G. (1988): Kritik an pädiatrischen Vorsorgeuntersuchungen. *Neue Ärztliche*, No. 155, 16 August 1988, p. 5.
- Hohmann, A. (1987): Früherkennung kindlicher Sehstörungen – Stand und Perspektiven. Köln.
- Lajosi, F. / Allhoff, P. (1985): Wie früh werden Gesundheitsstörungen im gesetzlichen Früherkennungsprogramm für Kinder erkannt? – Eine epidemiologische Auswertung – 1. Erstes Lebensjahr. *Gesundheitswesen*, 47. Jg., 72–79.
- Ohlenberg-Antony, G. / Neuhäuser, G. (1989): Früherkennungsuntersuchungen für Kinder. *Sozialpädiatrie*, 20. Jg., 729–732.
- Peppler, U. / Menz-Hackenberg, C. (1983): Systematische Literaturstudie zur präventiv-medizinischen Bewertung der Zielkrankheiten im Früherkennungsprogramm für Kinder, Unpublished manuscript. Köln.
- Schöne, L. (1992): Kinderkrankheiten ändern ihr Antlitz. *Fortschr Med*, 110. Jg., 57–59.
- Schwartz, F. W. (1980): Zur Qualität und diagnostischen Effektivität des Kinderscreenings in der Bundesrepublik. *der Kinderarzt*, 11. Jg., 1400–1406.
- Weidtman, V. (1989): Sekundäre Prävention im Säuglings- und Kleinkindesalter. In: Bachmann, K. D. / Ewerbeck, H. / Joppich, G. / Kleihauer, E. et.al.: *Pädiatrie in Praxis und Klinik*, vol. 1 (pp. 308–313). Stuttgart/New York.
- Zalewski, T. (1985): Effizienzanalyse zum Krankheitsfrüherkennungsprogramm der Kinder im Rahmen der gesetzlichen Krankenversicherung. München.

2.4.

FEDERAL HEALTH REPORTING – DATA SOURCES USED IN REGIONAL HEALTH REPORTS ON CHILDREN AND ADOLESCENTS

**Dr. Bärbel-Maria Bellach, Dr. Thomas Ziese, Dr. Heidrun Kahl, Matthias Richter,
and Gabriela Röseler, Robert Koch Institute (RKI), Berlin**

INTRODUCTION

Health reporting ('Gesundheitsberichterstattung', GBE) should observe and evaluate continuous changes in the state of health of the population (monitoring), taking into consideration both demographic and social developments.

The first stage of GBE is the provision of information, i.e. the acquisition and presentation of health-related data and survey findings. On that basis, a second step involves producing the health report, for which a differentiating interpretation of the available data is made together with an epidemiological assessment. The claim that this, once put on paper in a standardized manner, can influence health policy, or people in their health or take-up behaviour, is not automatically realized, but requires further steps. The answer to the question as to who needs what and why, leads to forms of health reporting very different in form and content. This differentiation reaches target groups whose activities realize results such as derived health objectives, prevention and intervention measures. This can change behaviour in the population. An overview of this concept of the controlled loop of federal GBE is provided by figure 1. From 1998, the Robert Koch Institute (RKI) will take on management of the federal GBE, and regularly issue federal health reports. For correct preparation and implementation of health reports from a target-group point of view, the RKI is extremely interested in cooperating with the FCHE.

There is no specific federal health reporting on children and adolescents in existence at the present time. However, some Federal Länder issue special reports on the health situation concerning children. In these reports, the intervention-oriented approach described above is already partially implemented. A rough overview of the reports available until now is given below. In conclusion, there is a summary of the data sources used and subject fields named, in which an improvement of data supply is desirable. From the overview of the data sources used in regional reports it is clear that many Federal Länder carry out their own studies, in order to be able selectively to close the gaps in information for regional health reporting.

For many aspects of action and evidence-oriented health reporting, in particular in the areas of social surroundings, illnesses and health behaviour, there are too few sources of meaningful data available at a federal level.

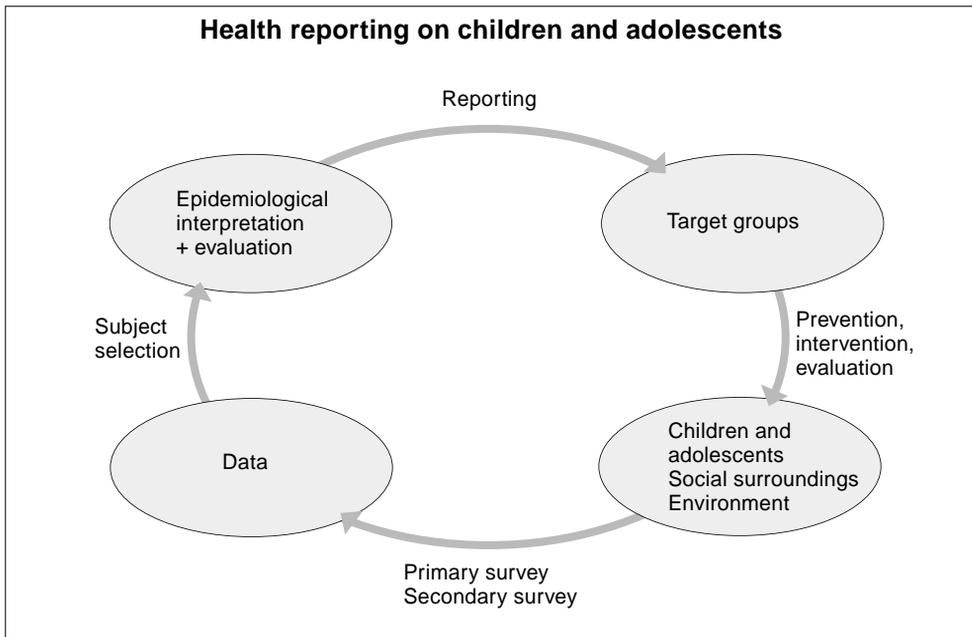


Fig. 1

It became clear, in the research phase of federal GBE, that a greater proportion of the reports on morbidity, health behaviour, health risks, and take-up behaviour in people, could only be drawn up with data from the three rounds of the national health survey, or 'Survey Ost'.

If one applies the experience of federal GBE in the research phase to health reporting on children and adolescents, the necessity for a child and adolescent health survey becomes obvious. With the expedient conception of such a nationwide survey, through synergy effects and modular regional elements, representative statements would be possible, both at a regional and at a federal level, on the health-related living conditions of children and adolescents. A federal health survey for children and adolescents would, in addition, make regional comparisons more simple, because the use of uniform instrumentation would provide data and make it available for federal and region-specific questions.

ANALYSIS OF EXISTING HEALTH REPORTS ON CHILDREN AND ADOLESCENTS

Health reports children and adolescents were available from the following Federal Länder: Baden Württemberg, Brandenburg, Hamburg, North Rhine-Westphalia and Schleswig-Holstein.

Other overall reports from the Federal Länder contain only limited data concerning childhood and adolescence: in some health reports there is reference to a separate publication dealing with school examinations, in other reports, as for instance in Hesse, the results of early diagnosis and school examinations (school-entrance data) are presented in the overall report.

REPORT FROM NORTH RHINE-WESTPHALIA: HEALTH OF CHILDREN IN NORTH RHINE-WESTPHALIA

The first part of the report concentrates on a representation of plans of action and perspectives of the regional government, and emphasizes the following health-policy aspects:

For improvement of GBE for children and adolescents, reference is made to the further development of reporting methods for paediatricians and school examinations. Furthermore, for the child and adolescent health services, the extension of functions and tasks is discussed (among other things with a look at the evaluation of conditions in community institutions as well as cooperation with parents, teachers, authorities, health establishments and health insurance funds). The significance of environmental medical aspects to child health is described by participation in the international ISAAC asthma/allergy study and the investigations of environmental pollution (tobacco smoke, textiles, traffic, and building materials).

Initiatives in the field of health of mother and child (since 1987) include the creation of perinatal centres, a midwife project with home visiting care and study into sudden infant death syndrome (SIDS), with intervention approaches. Emphasis in the immunization strategy remains to ensure success against polio, diphtheria and tetanus, and to increase the immunization rate against measles, mumps, rubella, whooping cough, etc., through offering this to the corresponding population groups.

With cancers (in particular leukaemia), care aspects are also dealt with (for instance treatment in special sections and safeguarding psychosocial care). The principal point in the prevention/health promotion sphere remains addiction prevention, with a regional programme adopted in 1990, which is directed towards causal research, personality strengthening and the health promotional arrangement of living conditions. A further emphasis is placed on road safety, with a programme of measures which mainly concentrate on making the route to and from school safer, speed limits near schools and road-traffic education (cycle helmets).

In the second part of the report there is an extensive presentation of the state of health by means of a broad spectrum of indicators. Commencing with demographic development, the health status of children is presented, arranged according to age and whether infants, pre-school or school children. Causes of death are described in detail for the first year of

life. Then there are reports on major diseases or health markers, among them infectious diseases, diabetes, epilepsy, hearing, sight and behavioural disorders, diseases of the skeletal system, dental disorders, accidents, nutrition, and physical activity.

There is also extensive consideration of the availability and use of health care. The spectrum ranges from a description of genetic advice, prenatal diagnosis and maternity and post-natal care, out-patient and in-patient paediatric care, the tasks undertaken by health officials and environmental medical out-patient departments, through to the activities of self-help groups. Additionally, the number of care establishments, such as nursery schools, refuges, homes, and special schools is also documented. In the environment and health section, more space is dedicated to a presentation on air pollutants (sources, spread), as well as studies on the effects of these pollutants on child health. This relates to air pollution by traffic, benzene, heavy metals, radioactivity, noise and passive smoking. In the last section, attention covers all age groups on subjects like violence, AIDS, allergies, cancer, disability and results on a subjective assessment of the state of health.

Where possible, individual indicators are compared with the federal average, or the situation is assessed within an international context by reference to the literature.

REPORT FROM BADEN WÜRTTEMBERG: ON THE STATE OF HEALTH OF CHILDREN IN BADEN WÜRTTEMBERG

The report is oriented towards a subdivision of the AGLMB indicator list. According to demographic details, extremely detailed presentations on prevention are given. They begin with a presentation on the use of maternity care, as well as the results of a perinatal surveys on risk findings and premature births. There is also a highly extensive treatment of post-natal screening for congenital metabolic disturbances. With regard to tests for early diagnosis of disease, the level of use is dealt with. However, there is a lack of information on development disorders or abnormalities.

There is a presentation with regard to the state of immunization at enrolment in school for measles, mumps, rubella, whooping cough, tuberculosis, polio, diphtheria and tetanus. The problems of immunization damage are also mentioned. Caries prophylaxis has been carried out as group prophylaxis by the Public Health Service (ÖGD) since 1989. The report shows the success of intervention by means of DMFT indices.

As regards environmental influences on health, there are study results on air pollutants in mothers' milk, pseudo-croup studies into the connection between air pollution and childhood respiratory diseases and allergy frequency in pupils in their first year at primary school. In 1992 a pollution-monitoring scheme for children was commenced via 'health observation offices' into heavy-metal pollution in the blood, and an effect-monitoring scheme into air pollution and the frequency/severity of respiratory diseases and allergies.

The section on childhood illnesses includes an extensive presentation on major infectious illnesses (enteritis, meningitis/encephalitis and viral hepatitis). As with infectious diseases, the most important chronic diseases (diabetes, mucoviscidosis, and cancer) are comprehensively presented, up to psychosocial aspects of care.

In the presentation on deformities and acquired disabilities, the significance both of the perinatal surveys and the deformity register in Mainz are dealt with. Alongside the description of out-patient and in-patient care, there is also extensive reference to the early support system.

The report from Baden Württemberg offers an overview of basic statistical data, chronic diseases, and deals in particular with the necessary care arrangements (early support, and day nurseries). Information from school examinations is not contained, as it is published separately.

As for addiction problems and health behaviour, only the results on third-year pupils from the 'Pforzheim study' are available. We consider that the general inclusion of study results on health problems, with which no routine data is on hand, is to be emphasized in this report, since this at the same time covers research activities. By this means of presentation, the report offers a wealth of information to interested parties, even if some subjects are not dealt with (violence and abuse).

REPORT FROM BRANDENBURG: ON HEALTH IN SCHOOL BEGINNERS IN THE STATE OF BRANDENBURG; ACTION PROGRAMME FOR THE STATE OF BRANDENBURG

The Ministry of Labour, Social Affairs, Health and Women produces two reports, which can be looked at within the context of health reporting for children and adolescents.

The report 'On Health of School Beginners in the State of Brandenburg' has three points of emphasis:

1. The state of health of school beginners,
2. The influence of social position on health behaviour, health, use and access to preventive measures,
3. An exemplary description of preventive measures regarding immunization, traffic accidents and iodine provision.

All in all, the report is very user-friendly and clearly brings out the treatment requirement which derives from evaluating the status quo. In the addendum there are extensive regional comparisons of towns and districts within Brandenburg.

The second report 'Action Programme for the State of Brandenburg – Health of Children and Adolescents' describes three focal points of Brandenburg's health objective. The first relates to pregnancy and babyhood. It describes the objectives for improving maternity care, reducing the rate of premature birth, reducing infant mortality, improving infant care and promoting breastfeeding. In the second emphasis of treatment, which is concentrated on infants and children of pre-school age, measures are listed with regard to health promotion in nursery schools and early support for disabled children. Further health objectives for this age group relate to protection provided by immunization, road-traffic accidents and maltreatment.

Children and adolescents of school age constitute the third focal point of the action programme: there are descriptions of the measures to increase integration, for health promotion within schools, and for improvements in dental health. A further emphasis is on drug use among adolescents. Finally, brief attention is given to future treatment-oriented analysis and evaluation of routine examinations in schools.

REPORT FROM HAMBURG: HEALTH OF CHILDREN AND ADOLESCENTS IN HAMBURG

On the basis of reports already in existence (1990/1991), Hamburg attempted to put the health report into concrete form by formulating new defined goals. By showing areas of intervention and considering necessary measures, a common orientation on the part of the various actors in the field of children and adolescents should be made possible.

The established priorities/objectives pick up the treatment requirement from the first reports. They include SST, underweight neonatal children, immunization, violence to children, promotion of breastfeeding, licit drugs, body weight, dental health, unintentional pregnancies, suicide, frequency of accidents, and the social situation and health. In the sections 'What's happened?' and 'What's next?' there is an appraisal of measures carried out as well as their success or failure with regard to objectives, and conclusions are drawn on further action to be taken. This also includes the interdisciplinary and intersectoral approach to certain problem solutions. Thus priorities are set in agreement with specialists from the authorities and experts. In this way, a greater transparency and acceptance of objectives and measures is reached in all professional groups and establishments which bear responsibility for the health of children and adolescents.

REPORT FROM SCHLESWIG-HOLSTEIN: ON THE STATE OF HEALTH OF CHILDREN IN SCHLESWIG-HOLSTEIN

In its basic structure, the report corresponds to the construction principle currently established for federal health reporting.

The report begins with an overview of the age structure of the population, with an emphasis on children and adolescents as it changes with time. Then a survey follows concerning causes of death.

As regards health-related modes of behaviour, it reports on breastfeeding, participation in screening and immunization. It also deals with environmental risks to health. Alongside data obtained from accident statistics, there is information on the contaminants in mothers' milk and the degree of ground pollution in playgrounds.

In the area of medical infrastructure, the type and the extent of care is described. The emphasis of this report lies in the overall view of active paediatricians and the services of paediatric hospitals or departments.

DATA SOURCES OF HEALTH REPORTING ON CHILDREN AND ADOLESCENTS

The following aspects are dealt with in more detail below:

1. Socio-demographic data,
2. Mortality,
3. Morbidity/early diagnosis,
4. State of health/development/health behaviour,
5. Environment,
6. Care and promotional establishments.

SOCIO-DEMOGRAPHIC DATA

In the socio-demographic characterization of this population group, alongside age structure, consideration is also given to migrant status, housing situation, family situation and social status. Distinctions according to parents' level of education, the proportion of single parents and recipients of social benefit, as well as data on the care situation, are only available in part. However, they are important social factors, the influence of which on the state of health is proved in many ways. These parameters in relation to health indicators first of all enable recognition of health problems and thereby the chance of prevention. Data sources on these matters are regional statistical offices, social services offices and the sample census.

MORTALITY

Data on mortality in the first year of life is hardly missing. Premature and late death and the most common causes of death are most extensively reported. Much space is given to

underweight infants and the SIDS problem. Sources are named as statistics on the causes of death, perinatal surveys and the register of deformities. Successful preventive action regarding SIDS through a special programme is described in the report from North Rhine-Westphalia. This subject is also extensively dealt with in the overall report from Cologne.

In the following age groups, accidents are the main cause of death, whereby available data gives insufficiently differentiated information on the type of accident (e.g. during leisure time). Road-traffic statistics are not sufficient as a single source. Furthermore, the mortality rate of children from tumour illnesses, in particular leukaemia, is of importance. The reports from Baden Württemberg and North Rhine-Westphalia offer extensive presentations. Detail thereon comes from the regional cancer registers, the child cancer register in Mainz and the umbrella documentation on cancer at the RKI.

The subject of HIV infection and AIDS in children is dealt with only in the report from Baden Württemberg, although the social problem (care and reactions of all those around) is gaining in significance among the public.

MORBIDITY/EARLY DIAGNOSIS

As regards morbidity, most details are presented on notifiable infectious diseases, and on the state of immunization. The health report from Baden Württemberg deals in detail with individual symptoms (encephalitis/meningitis, enteritis, virus hepatitis and tuberculosis). Such data is lacking in other reports, as well as comments on how often other acute illnesses (e.g. respiratory disorders) occur, which play a dominant role in babyhood and infancy, and in the development of chronic problems.

The results of early diagnosis examinations are hardly used as data sources in presenting the frequency of health and development abnormalities in health reports. Use is presented as a priority. Details of abnormal findings in the sense organs, motive parts, the nervous system or on special symptoms like diabetes, mucoviscidosis and neurodermatitis/chronic eczema, result predominantly from the detection in school-entrance examinations. This also relates to data on allergies, whereby verified results from a series of new studies on the type and frequency of allergy symptoms and illnesses and their causes are now available.

Psychological/social behavioural abnormalities are presented as indicators only in the reports from Baden Württemberg and North Rhine-Westphalia. Otherwise child-psychiatric care is estimated, the figures for which offer no conclusion on actual prevalence. On the other hand, reference is made in the report from Berlin-Hohenschönhausen to the necessity of better detection of behavioural abnormalities. That also applies to the frequency of complaints, which, especially during childhood and adolescence provide pointers to the pollution situation.

STATE OF HEALTH/DEVELOPMENT/HEALTH BEHAVIOUR

Development abnormalities (e.g. hearing, sight and speech disorders, and motor defects), which could be given early treatment or support, are under-presented in the early diagnosis examinations, and often not set out in the reports. As early as 1993, at the conference on prevention of the Ministry of Health (BMG), experts were advising on the necessity of a content-methodical review and improvement of this examination. The activities of the Public Health Service (ÖGD) and the public-health project 'expansion of the EUS' (School-entrance examinations) aim at these requirements. In the reports from North Rhine Westphalia and Baden Württemberg, early support is dealt with extensively. The coordination and cooperation between the individual parties is dealt with, and requirement failings shown in support institutions.

The state of health with regard to consideration of normal development parameters (height and weight, maturity features, e.g. menstruation) is described only in the Berlin health report. As a rule only overweight is seen as a risk factor.

Data on health behaviour in the reports results above all from regional studies like, for instance, the 'Pforzheim study' from Baden Württemberg and the 'Prevalence of the consumption of alcohol, tobacco and illegal drugs by adolescents and young adults' by the EFB Berlin. Here the emphasis is on health-damaging risk behaviour. Breastfeeding, sexual conduct, and sporting activities are comparatively rarely presented, which in many cases could be blamed on a lack of data.

ENVIRONMENT

Environmental influences (air pollution, pollution of mothers' milk) and social aspects in their combined effect on the health of children were mentioned only in a few reports. Statements resulted from special investigations.

CARE AND PROMOTIONAL ESTABLISHMENTS

The presentation of institutions and structures which are responsible for the care of children and adolescents (pregnancy care, social-paediatric and social-pedagogic establishments, the ÖGD, child-psychiatry and child-psychology services), includes the range of tasks, an assessment of use (frequency, reasons), and satisfaction of needs.

SOURCES

The overview prepared by the RKI makes clear that the regional offices of statistics and similar establishments represent the most important providers of data.

The range includes:

Regional offices of statistics, the Senate Department (Berlin), the Health Senator (Bremen), health offices, Federal Statistical Office, BMG publications, regional health offices, regional cancer registers, Regional Office for Data Processing and Statistics (North Rhine-Westphalia).

The sources of school-entrance examinations (EUS) and school-leaving examinations (SEU) are likewise classified here, since they are mostly assessed in the medical statistics sections of health offices. Regional social services offices and labour, health and social services authorities are also quoted as sources of social data.

This essential source of data is not available at a federal level.

Data from health insurance companies or health insurance funds (AOK) are rarely given as sources. Although they record a great variety of documented medical provision, they are hardly used, since they are not always prepared sufficiently in line with epidemiological requirements.

ASSESSMENT OF ADDITIONAL DATA REQUIREMENTS

After inspecting the reports and sifting through the indicators used to present the health situation of children and adolescents, an assessment can be made that differentiated statements in particular are lacking in the following areas:

- on social characteristics of age groups, including the care situation,
- on health behaviour,
- on infectious diseases, immunization, immunization damage,
- on development abnormalities, speech, sight and hearing disorders, motor functions/coordination, milk-tooth caries in pre-school children, on abnormalities of attitude, muscle weaknesses, physical abnormalities, on disabilities in school children,
- on frequency, type, and consequence of accidents, and injuries (especially in the home and at leisure – road-traffic accidents are excluded),
- details of abuse, violence, suicide,
- on health promotion as well as on conditions in children's establishments and schools,
- on cooperation of the various fields and institutions.

From the point of view of health reporting at a federal level, these shortages of data are much more severe than at a regional level, since the regional studies available in some Federal Länder are not applicable at a federal level on account of a lack of any representative nature.

In these subject areas, it is a matter, on the one hand, of areas where there is insufficient availability as regards general federal health reporting through the available information of official statistics, the data of social insurers and existing registers. This short-

age of information should largely be remedied by data from the Federal Health Survey 1997/1998.

On the other hand, the above-mentioned shortages of data show that to describe the social position, health behaviour and development abnormalities, information is necessary which is connected on an individual basis, make characterization of the children and adolescents concerned possible. Only on this data foundation can target-related preventive approaches be identified and corresponding programmes and objectives be developed. A federal health survey, which provides connected information from the essential health-related spheres of life, is therefore a prerequisite for an efficient and treatment-oriented form of health reporting.

2.5. SUMMARY OF THE DISCUSSION



The contributions and the joint discussion show that a broad spectrum of usable sources exists, from surveys through registers to heterogeneous epidemiological studies. Some data is obtained specifically for the target group of children (and adolescents), and other investigations enable an appraisal of population-related data for children as a separate age group. Electronic media today enable data sources, for instance in the USA, to be used, or secondary assessments to be made of records in central archives.

The data quality of surveys or records is being critically discussed at present. With regard to some sources of data, the quality could be improved, for instance by nationwide standardization (school-entrance examinations), or by better recording and raising of participation rates.

A combination of differentiated indicators of social position and indicators of health or development, as would be helpful for a more precise definition of target groups and the localization of risk groups, is to be found above all in small area studies, i.e. as a rule those restricted regionally. With these studies, the question arises, however, of the possibility of generalizing them for the whole of Germany. In addition, it was noted that in individual investigations, health data is frequently not evaluated according to social characteristics, and that the comparability of investigations is made difficult by a non-uniform operationalization of indicators of the social situation. Evaluations including social indicators were, however, considered as sensible and important, since they could show the influence of context circumstances on the occurrence of problems, of risks as well as of protective factors.

It was furthermore shown in the discussion that as a rule the data is obtained in a problem and deficiency-related manner. Additionally, the physical and social development of children is difficult to ascertain, and can only be portrayed in a limited way in medical diagnosis. Since, with health promotion for children and adolescents, the aspect of personal development stands to the fore, considerations were called for on the formulation of specific development indicators alongside health indicators for an efficient monitoring of the state of health of children at regular intervals.

In the discussion, there was confirmation of health impairments and problems which were reported as results of the early diagnosis programme and the school-entrance examinations, and which are partly taken up in regional health reports: speech disorder and disfluency, eye diseases and sight defects, emotional and social development disorders and movement disorders and adiposity. These results are dealt with more deeply in the following contributions.

On balance, a need was established for nationwide surveys with relevant development and health indicators, which are suitable for monitoring the state of health of children. This data should, together with other named sources, be put into a regular children's health report and made generally accessible.

**CHILD HEALTH –
CONDITIONAL CONTEXTS**



3.1. PRELIMINARY REMARKS

For an exact determination of risk affinities, requirements, and spheres of intervention for target health-promotion groups, it is important to analyse which groups of people show certain problems to a particular extent, and a lack of health resources – information, motivation and capabilities in health-promotional behaviour – and therefore have a specific requirement for health education. Data on the distribution of health problems should be expanded by examinations of the differentiated origin contexts, and on the distribution of risks and protective factors.

It is known that lower social classes are more severely burdened, on account of an accumulation of social and health problems and worse access to health resources. Here, connecting factors between social status or social deprivation, on the one hand, and health problems, on the other hand, are to be dealt with in more detail, in order to gain a comprehensible starting point for health education.

By means of the findings of this deeper analysis, requirements for the health education of children can be discussed and individual needs can be determined.

H. G. Schlack presents international findings on the influence of social factors on the health of children – especially relevant here: accident frequency, chronic diseases and readiness to indulge in health-conscious or health-damaging conduct – and cites favourable and unfavourable factors in mental and socio-emotional development (3.2.). By means of an appraisal of the school-entrance examinations in Cologne in 1996 according to town areas with differing proportions of social-benefit recipients (which for its part is consistent with the proportion of foreigners), the contribution from H. Mersmann shows a linear connection between social deprivation and specific health impairments (3.3.). Ch. Palentien, W. Settertobulte and K. Hurrelmann introduce among others the results of the Bielefeld primary-school survey, and discuss the role of the family as the setting for health development, as a protective factor, but even in times of changing family living conditions also as a harmful factor, and as mediator of the effects of social status (3.4.). In the general discussion, guidelines, strategies and needs, which derive from scientific knowledge and from the experiences of the experts as consequences for the implementation of health promotion during childhood, were considered, treatment approaches and cooperation partners were named and the need for co-ordination and information exchange established (3.5.).

3.2. THE LIFESTYLE OF CHILDREN AS A DETERMINING FACTOR IN HEALTH AND DEVELOPMENT

Prof. Dr. Hans G. Schlack, Rheinisches Kinderneurologisches Zentrum, Bonn

The term 'lifestyle' will be used in this context as an expression of the differing qualities of social living conditions, i.e. for social privilege or deprivation and related effects on health and development.

Social and economic living conditions have an extensive effect on health and life expectancy in children. At the end of the 19th century there was an enormous discrepancy noted between the high child mortality among working-class children and the lower level of mortality, moving almost at today's level, among children of the more privileged classes of the nobility. Today, at the end of the 20th century, in which basic improvements in health services, social security and the balancing out of social deprivation has been achieved, there are nevertheless considerable differences in the health and the development opportunities of children determined by social and economic factors.

Which factors play a vital role in this? They can be subdivided into criteria relating to external living conditions and into criteria of social interaction (fig. 1)

SOCIAL DEPRIVATION FACTORS

I. External living conditions

- Lower social status, poverty
- Incompleteness/instability in the family
- Poor living conditions
- Minority status, exclusion
- Limited educational opportunities

II. Social interaction

- Unwantedness of the child, neglect
- Little or one-sided stimulus
- Psychological disorder of the reference person
- Violence in the family
- Excessive demands on the child

Fig. 1

This differentiation corresponds to a certain extent with a macroscopic or microscopic manner of viewing the situation. It is not a listing of factors independent of each other. Much more, the harmful factors in the external living conditions of life are more or less closely correlated, and together exercise a lasting influence on the interaction between the child and the reference persons.

Children are born into their social situation, and as dependants they cannot determine or change this, especially in their first year of life. Comparisons between the differing circumstances of children thus mostly refer to the family, and in particular its socio-economic standing. As a mark of socio-economic standing, first place is taken by family income, the professional status of the 'head of the family' and the educational standing of the parents.

Although there is reason to question the meaningfulness of such individual criteria (e.g. in a time when an academic training is no guarantee against unemployment and poverty), it is, however, noteworthy to what extent mental and physical health is linked with the socio-economic standing defined in this way. Some examples of this:

- Intellectual development is crucially dependent, above all from the second year of life, on socio-economic standing. This is shown, for example, by the Rochester longitudinal study (Sameroff and Seifer, 1983), as well as many other studies with similar results;
- Compensation of biological development risks is essentially determined by the influences of socio-economic conditions. This is observed in many studies, for instance into former premature children, as in the Zurich longitudinal study (Largo et al., 1990).

The following examples are taken from current British documentation (Woodroffe et al., 1993). There is data on mortality and morbidity during childhood, differentiated according to which social class they belonged. Comparable data is not available from Germany. Belonging to a social class is defined according to the professional qualifications of the head of the household, starting in the diagrams at the left with the academic professions (doctors, judges, etc.) (I): there follow managerial employees (II), qualified employees with non-manual activities (III N), skilled workers with manual activity (III M), low-qualified workers (IV), and finally, unskilled workers (V). As emerges from the findings, children from lower social classes are more endangered in many ways:

- Postneonatal mortality is two to three times higher than in upper social classes (fig. 2).
- There is also a clear increase in the number of children born with a weight of less than 2,500 g., a condition which is linked with a higher risk of death in the first year of life and of disability (fig. 3).
- Child mortality after the first year follows the same course as infant mortality (fig. 4).
- Congenital anomalies occur as a part cause of child mortality in large numbers among lower classes (fig. 5). One of the congenital anomalies contained in these statistics is spina bifida. With this, it has in the meantime been proved that folic acid

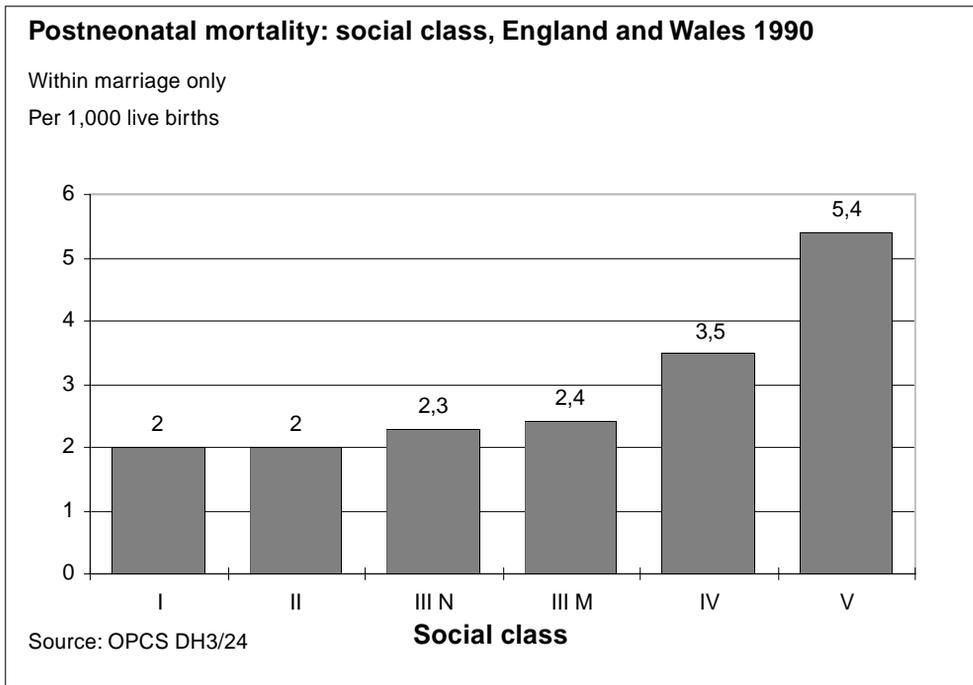


Fig. 2: Postneonatal mortality and social class

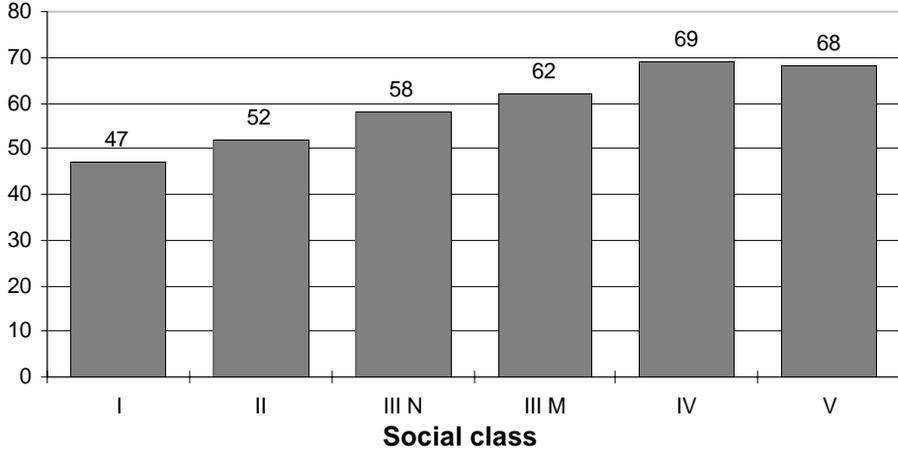
deficiency is conducive to its occurring or that prophylactic folic acid substitution in women can prevent the occurrence of spina bifida in their children. This example provides an explanatory model for pathogenesis: restricted material living conditions – qualitatively inadequate nutrition on the part of the expectant mother – prenatal development disorders in the child.

- The mortality rate from injuries is two to three times higher than for children of upper social classes (fig. 6). In this respect unfavourable living conditions are seen as significant factors.
- The frequency of various acute diseases is higher. Morbidity owing to pneumonia in five-year-olds is presented as an example (fig. 7) but not to the same extent.
- Similarly, the prevalence of chronic illnesses is higher (fig. 8).
- Finally, social surroundings have an obvious influence on readiness to indulge in health-conscious or health-damaging behaviour, here represented by the example of smoking (fig. 9).

Low birthweight: social class, England and Wales 1990

Births under 2.500 g, within marriage only

Per 1,000 live births



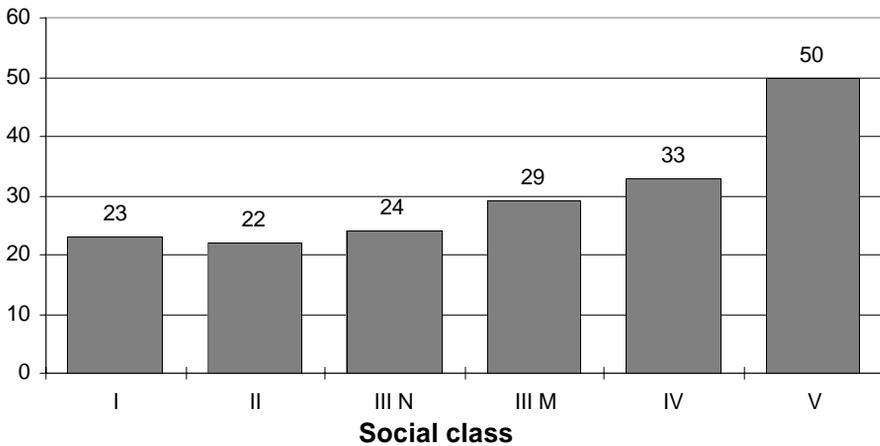
Source: OPCS DH3/24

Fig. 3: Low birthweight and social class

Mortality (all causes) age 1–14 years: social class, England and Wales 1979–80 and 1982–83

Four years averages

Per 100,000 population



Source: OPCS DS8

Fig. 4: Child mortality and social class

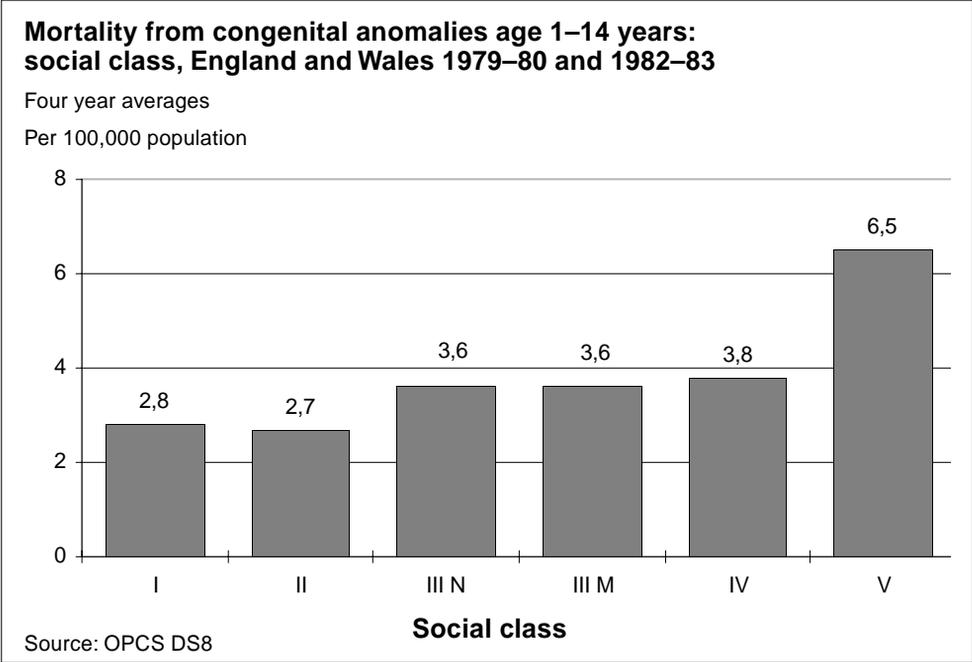


Fig. 5: Social class and congenital anomalies as partial cause of child mortality

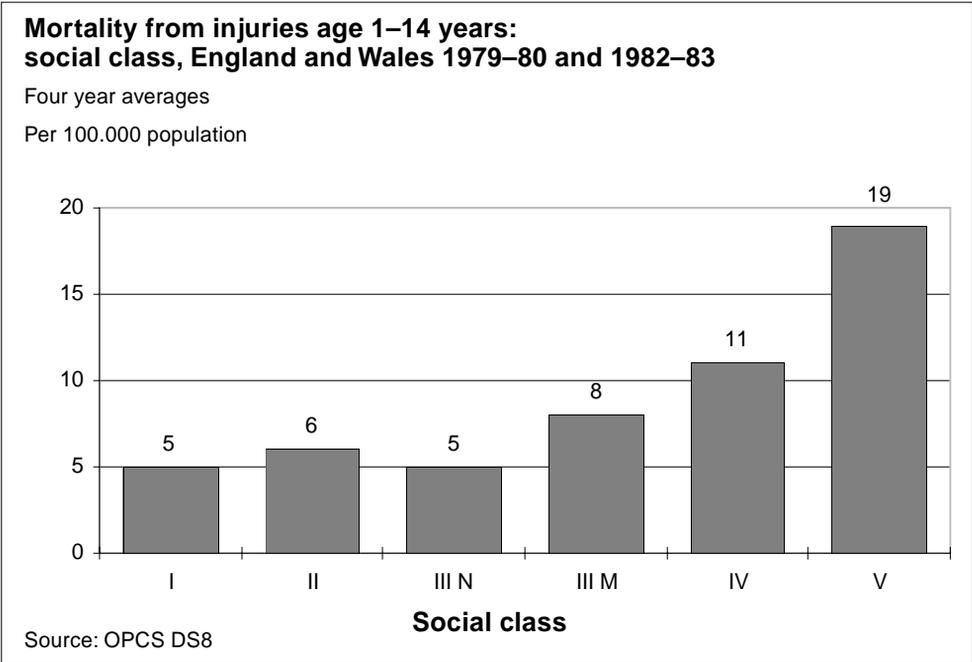


Fig. 6: Social class and mortality from injuries

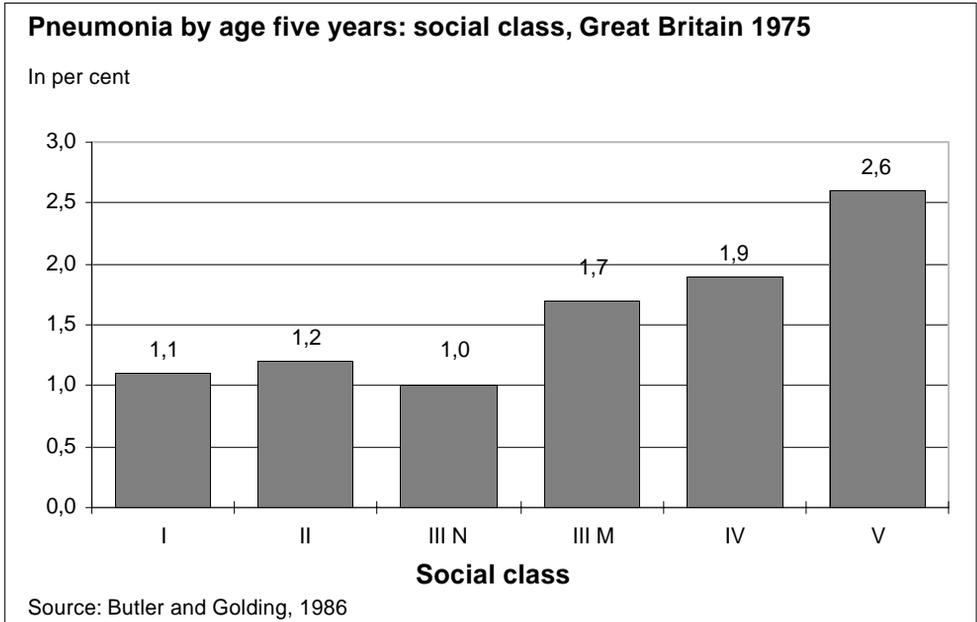


Fig. 7: Social class and mortality through pneumonia

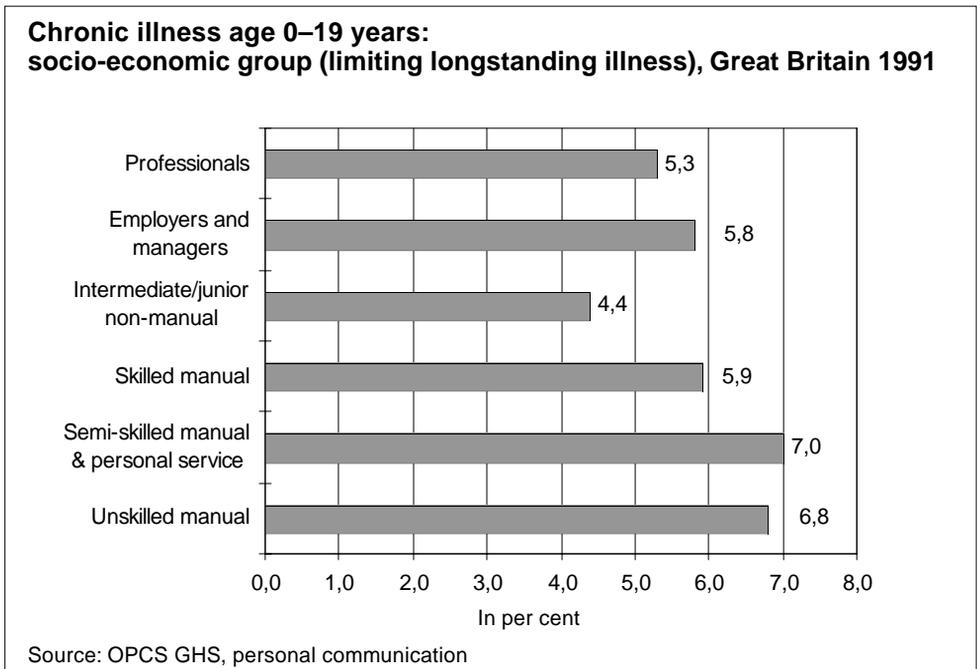


Fig. 8: Social class and the occurrence of chronic illnesses

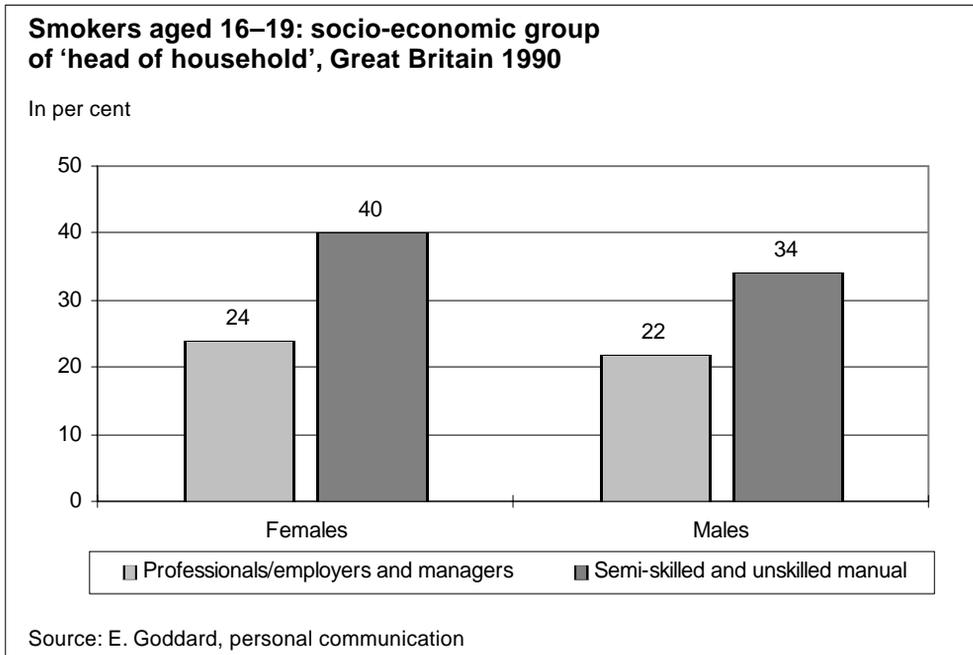


Fig. 9: Smoking behaviour and social class

'Social deprivation' therefore clearly means growing up under living conditions in which the basic physical and spiritual needs of the child are not adequately satisfied, by virtue of unfavourable external living conditions. By means of a number of examples it can be seen to what extent children in Germany are affected.

The first example relates to poverty, which even in our ever more prosperous country is appearing more often. In the poverty report by the DGB and the DPWV (Hanesch et al. 1994), poverty is implied if less than a half of the average income of the population is available; this limit corresponds to the level for claiming benefits according to the BSHG (Federal Social Assistance Act). Children are especially affected by poverty (fig. 10), namely every seventh child, while the population average relates 'only' to every eleventh citizen. An 'abundance' of children is a step on the path to poverty, particularly among unemployed or single parents (Hanesch et al., 1994).

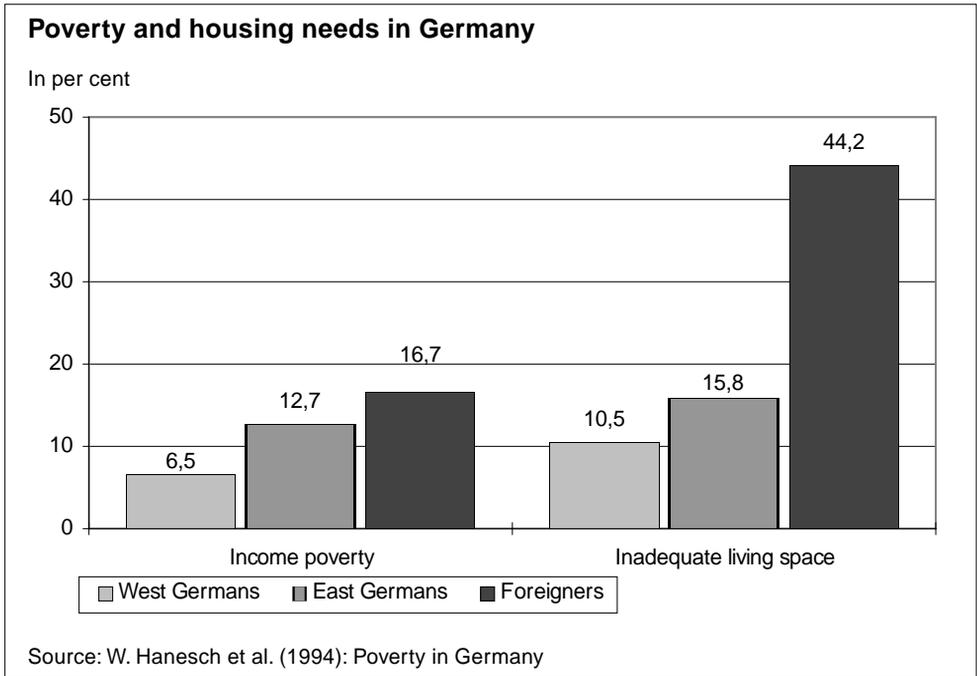


Fig. 10

At least looked at statistically, it is a social disadvantage to be a foreign child in Germany. Foreign families are more frequently poor, but to an even greater extent they suffer deprivation through unfavourable living conditions (Hanesch et al., 1994). That the foreign infant is twice as likely to be killed in an accident than the German ('Priority Health Objectives' project group, 1990), probably has something to do with living conditions.

Another aspect of the difficulties of foreign children is their low educational opportunities: more than one in five children leave school without having achieved an all-round education (21.6%) – 3.5 times more than in German children (6.0%) (7th Youth Report, 1990).

Socio-economic conditions thus have a manifold effect on the health and development of children. Upon the material resources of the family depend, for instance, the quality of nutrition of expectant mothers and children, the size and furnishing of the home, and the comfort or dangers of residential surroundings. Health-conscious behaviour (e.g. breastfeeding, use of care provisions, not smoking, etc.) is connected with the level of education of the parents.

Since the various stress factors are interconnected, and are more or less reciprocal, there is no linear causal connection between individual causes and quoted consequences. It is much more a matter of assuming a complex conditional structure. Sameroff and Seifer

(1983) were able, with the help of factor analysis, to differentiate four pathogenically significant complexes:

1. Socio-economic standing of the family,
2. Mental illness of the mother or father,
3. Parental attitudes, moral concepts and behavioural standards,
4. Critical life events.

Socio-economic status is the most important factor, in the evaluation, for intellectual development, whereby social and emotional development is burdened in the first place by mental illnesses in the reference person (fig. 11).

Fulfilment of the basic mental needs of the child is dependent upon interaction with the reference person, and the interaction for its part is essentially determined by the living conditions of both the parents and the child.

Longitudinal studies, in which biological and psychosocial factors are examined in their effect and interaction with the intellectual and mental development of children, correspondingly show the dominating significance of psychosocial factors. In the Hawaii study (Werner et al., 1968; 1971), the oldest and most famous of these studies, the view, prevailing until then, of the significant and continuous influence of (cerebral) organic factors as causes of developmental disorders was proved wrong: at the latest from the second year of life, psychosocial conditions (the 'lifestyle' in the sense defined above) play a decisive role.

**Order of ranking of unfavourable factors
for mental development**

1. Socio-economic standing
2. Educational attitude and behavioural norms
3. Specific stresses and crises
4. Mental illnesses in the reference person

**Order of ranking of unfavourable factors
for socio-emotional development**

1. Mental illnesses in the reference person
2. Socio-economic standing
3. Educational attitude and behavioural norms
4. Specific stresses and crises

Source: Sameroff and Seifer, 1983

Fig. 11

These findings were also confirmed by comparable investigations in Germany (Meyer-Probst/Teichmann, 1984; Esser et al., 1994; 1995). Furthermore, they show that organically determined development risks can be balanced by favourable psychosocial conditions. The decisive influences occur in the microcosm of social interaction, the quality of which is determined by factors such as emotion, affection, vocalization, lack of verbal restriction, congruence/genuineness, reactivity and stimulation (Esser et al., 1994). Essentially, these factors are conveyed by the educational behaviour of adults, while the child proportion (e.g. by determined features of temperament) is primarily low in comparison.

Secondly the child contributes to a detrimental interaction if as a reaction to unfavourable associations and upbringing, it develops emotional and behavioural disorders: thus a vicious circle arises. In the Mannheim study (Esser et al., 1995), statistical connections provide a definite reference for this transaction hypothesis. It is therefore also understandable and natural that the quality of the mother-child interaction was the criterion which best predicts the development of the child (Esser et al., 1994; 1995).

There is moreover a highly significant statistical connection between the criteria of psychosocial stress and unfavourable upbringing or interaction, and also between psychosocial risks and stressful life events (for instance stays in hospital, emergencies, separation from parents, loss of reference persons, violent arguments in the family, etc.). There is a general tendency towards linking psychosocial stress factors, which lead to an overtaxing of the reference person by living conditions. Frequent expressions of this overtaxing are depressive disorders which occur above all in mothers. In the USA, the prevalence of depressive disorders in certain risk groups (young lower-class mothers) was given at over 50% (Zuckermann/Beardslee, 1987). The extremely unfavourable effect of maternal depression on the mother-child interaction, and thereby on the development of the child has been established in numerous studies (Sameroff/Seifer, 1983; Fergusson et al., 1984; Cox et al., 1987). High use and abuse of psychopharmaceuticals is the frequent result of inadequate stress management strategies (Borchert/Collatz, 1993).

An important supporting function is fulfilled for psychosocially burdened mothers by the 'social network', which is formed by persons who are of significance to the mother as reference persons, supporting her in her maternal tasks (Jennings et al., 1991). A well-functioning social network not only improves the interaction between mother and child, but also the somatic health of mother and child (Oakley et al., 1994). Successful interventions for improving of mother-child interaction can reduce already arisen neuro-psychiatric disorders in the child and thereby contribute to the mental health of the mother (Esser et al., 1994).

Unfavourable interactions can gather momentum over the course of childhood and adolescence, and lead to an increase in neuro-psychiatric disorders. In a Czech study into unwanted children (their being unwanted was proved by the fact that they were born after

requests for termination of pregnancy were twice refused) the problems increase between starting school and adulthood in intensity and frequency. In comparison with a control group, increases were recorded in social behaviour disorders, alcoholism, and delinquency (Matecjek, 1990). On the other hand, the Hawaii study established, among other things, that in the long-term the unfavourable consequences of extremely deprived family conditions can in many cases be balanced if there were an extra-familial social network (Werner/Smith, 1992).

It is a remarkable and at the same time a disturbing phenomenon, that almost all systematic investigations into the connection of social living conditions and child health and development originate from abroad. There is certainly little doubt that these findings are fundamentally applicable to Germany, and that therefore Germany is no fortunate island of egalitarian preconditions for all children. Despite this, there are certainly some special conditions in our country which should be known as a necessary precondition for targeted provision.

There is without doubt a need for social balance initiatives, especially in the prevention of health and developmental disorders in children, and to an increasing extent on account of the intensifying problem of poverty. It is just as necessary to create a satisfactory base for this in socio-epidemiological data.

Bibliography from the author

Prof. Dr. Hans G. Schlack

Rheinisches Kinderneurologisches Zentrum

Waldenburger Ring 46

53119 Bonn

Germany

3.3. HEALTH OF SCHOOL BEGINNERS – EFFECTS OF SOCIAL DEPRIVATION

Dr. Heiner Mersmann, Gesundheitsamt, Cologne

INTRODUCTION

On this subject, two questions are posed first of all:

1. Which health aspects are relevant for school beginners – in particular with regard to schools?
2. Which social deprivations can be (regionally differently) established – considered from an individual and a population medicine point of view?

In this context, health is to be considered principally from a social-medical viewpoint. The individual medical interests of six-year-olds still currently receive adequate attention in respect of contractual medical care. This applies to the extent to which corresponding provisions are taken up by the parents. Especially with preventive measures, this is sadly not sufficiently the case. It is of significance here that the Gesundheitsamt (office of health) is active in a subsidiary and socially compensating manner, where those entitled to care are not in a position to act accordingly. So, alongside the individual medical problems of patients not reached by national health care, all the individual and social aspects of every (school) child are important. These aspects have an influence in the narrower sense on the school career, in the wider sense on the integration of the child into a community institution – or the community as such. Furthermore, such aspects, which influence living together in the community in a specific way and prevent (the spreading of) illnesses, or help to promote health (precautionary measures, immunization, industrial medicine aspects, etc.) must receive special attention.

With regard to social deprivation, numerous factors are known, which have a negative effect on health and health behaviour. These are, in particular, poverty, unemployment, low level of education of parents, foreign nationality, cramped living conditions, one-parent families, or marital disharmony and many other factors (cf. Schlack, 1995).

In order to be able to report on the state of health of school beginners in the above sense, effective documentation is required, and assessment of the data obtained within the context of the relevant examinations. Here the nationwide blanket school-entrance examinations are outstandingly suitable (in so far as available reform endeavours are adequately supported and consistently implemented), since, independently of the personal interest of the examiner, the state of health of a complete year can be examined in a

uniform manner, documented and assessed. A shift of the school-entrance examination into the field of contractual medical care (e.g. U9), as demanded by critics (Hurrelmann, 1996), would rather intensify the points of criticism quoted by them (great variations in examination findings between the individual examiners). Unlike the early diagnosis examination, complete documentation would be a minimum requirement. The paediatric service of the offices of health has made successful endeavours in recent years for standardization and quality assurance in both examination methods and in meaningful epidemiology and reporting (cf. the recently reworked definition of the former Institute for Documentation and Information in Bielefeld – the IDIS – today the Landesinstitut für den öffentlichen Gesundheitsdienst (Regional Institute for the Public Health Service) – the LÖGD. Modern ideas on the further development of the school-entrance examinations (Schulz, 1996) find recognition meanwhile, and base the data listed below for the most part on these newly conceived standards.

With statements on the effects of social deprivation, it remains a problem to establish individual social data (parents' level of education, income situation, etc.), since strict data-protection provisions are an obstacle to this purpose. Reference must therefore be made to generally known data, in this case the data made available by the Statistischen Amt (office of statistics) in the city of Cologne, which exists at a town area level. A generally recognized factor for the determination of poverty and social deprivation can be the receipt of social benefits. In this case, therefore, the number of recipients of social benefits with 6- to 14-year-olds in the individual town areas would be the basis, the Cologne average amounting to 13.2% (1995). This figure is almost identical to the current unemployment rate in Cologne of 13.5%.

DATA SUPPLY

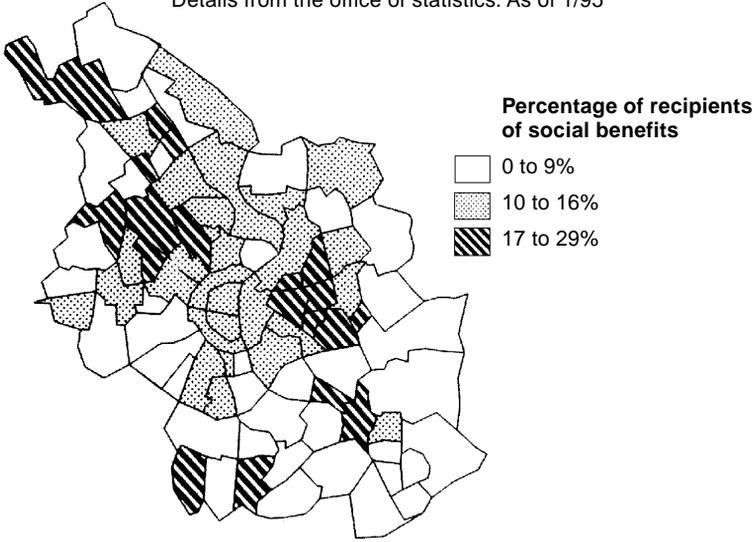
In the following, I should like to present the essential, selected and current findings on the health of school beginners from the school-entrance examinations in Cologne in 1996. I will deliberately go into such findings – be they medically obtained by examination or by case histories – on which receipt of social benefits in the sense of social deprivation has a negative influence, or where such an influence can be presumed.

On average, the percentage of recipients of social benefits with children aged 6 to 14 is 13.2% at a town area level. 9,225 records were used for evaluation. These are the school beginners in Cologne who in 1996 began their education at a regular school (S1). A further 775 children were held back from the previous year, whose data (Z1) are not included in the following assessment. Nor are the data concerning children in remedial nursery schools or special schools given any consideration. Records were related to town areas prior to assessment, each according to social-benefit recipient percentages with 6- to 14-year-olds (abbreviated below to 'SBR') subdivided into three 'classes':

1st SBR = 0–9% (N=3,006); 2nd SBR = 10–16% (N=3,710); 3rd SBR >= 17% (N=2,509).

Percentage of recipients of social benefits with 6- to 14-year-olds

Details from the office of statistics. As of 1/95



Town area map

Subdivision of school-entrance data for 1996 according to SBR* at a town area level

* SBR = Percentage of recipients of social benefits with 6- to 14-year-olds

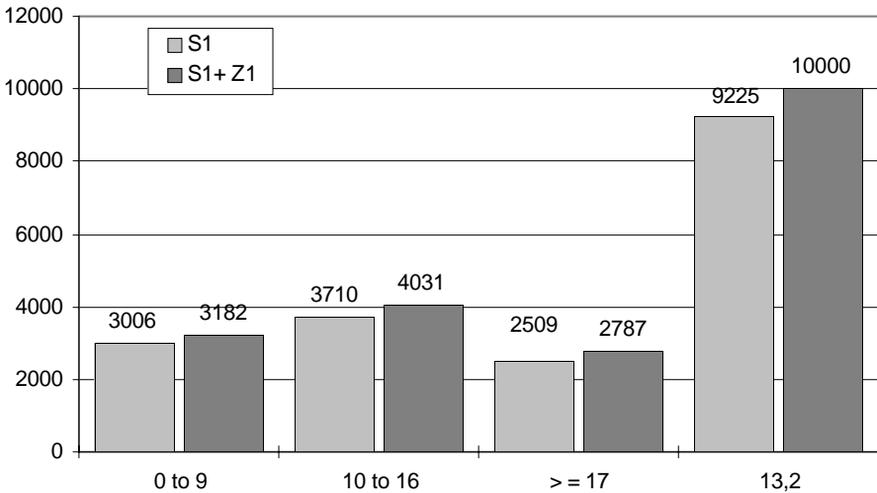
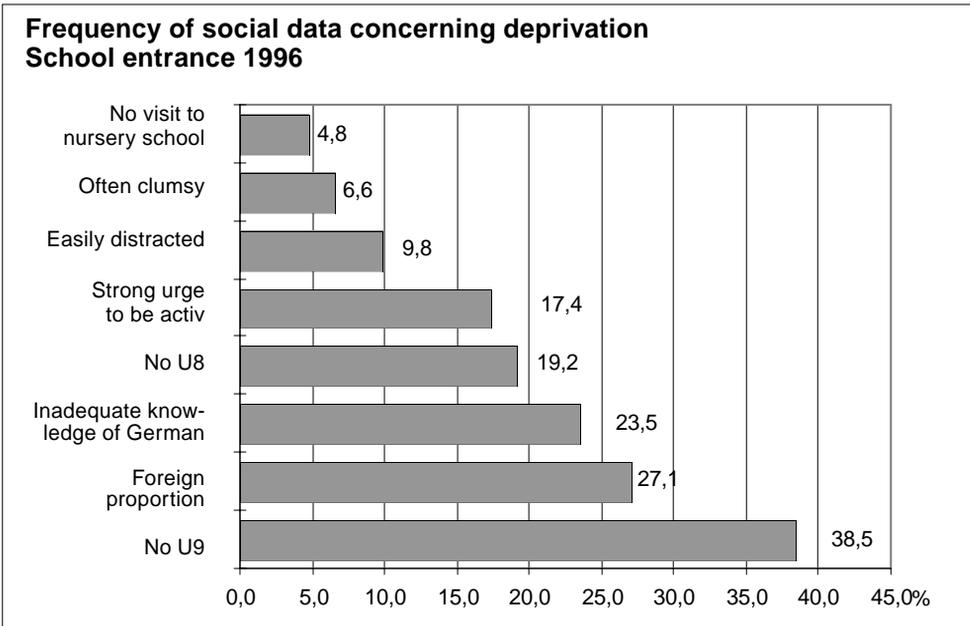


Fig. 1

Alongside the SBR, there was the following social data showing deprivation, in a descending order:

- No participation in U9,
- Foreign proportion,
- Inadequate knowledge of German,
- No participation in U8.



3

Fig. 2

The foreign proportion in Cologne amounts on average among school beginners to 27% (or 29% if children are included who were born abroad with German nationality) of which the predominant proportion were born in Germany (fig. 3).

The high proportion of foreigners is accompanied by inadequate knowledge of German, which – like the foreign proportion itself – shows a linear relationship to SBR (fig. 4).

The use of early diagnosis examinations U8 and U9 is negatively correlated to the SBR. In town areas with high proportions of foreigners a considerably lower participation in early diagnosis examinations is to be noted (fig. 5), although 83.5% of foreign school beginners are born in Germany.

In comparison with Germany as a whole (figures from the Association of Statutory Health Insurance Physicians for early diagnosis examinations 1992), participation in screenings U8 and U9 was on average some 7% to 8% lower in Cologne (fig. 6).

Proportion of foreign school beginners in total and the foreign school beginners born in Germany, 1996, dependent on SBR*

* SBR = Percentage of recipients of social benefits with 6- to 14-year-olds

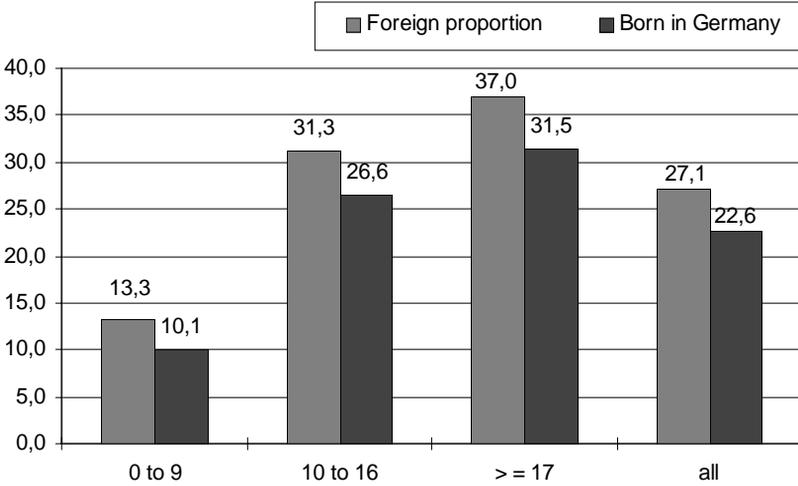
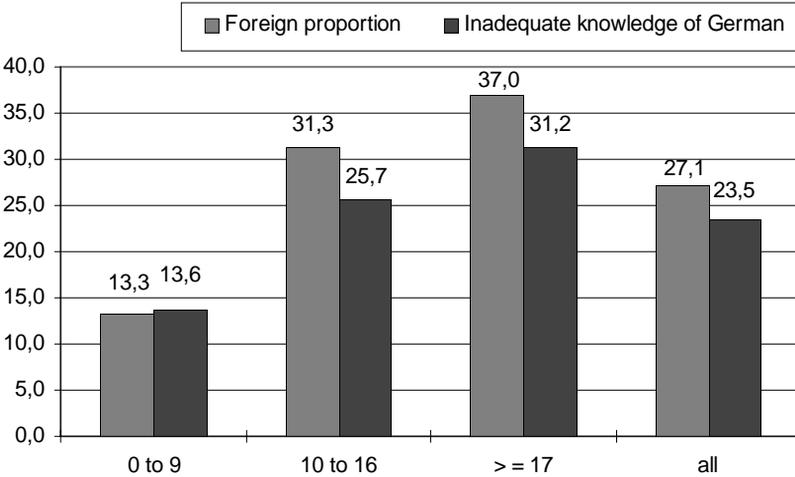


Fig. 3

Proportion of foreigners and inadequate knowledge of German in school beginners in relation to SBR*

* SBR = Percentage of recipients of social benefits with 6- to 14-year-olds

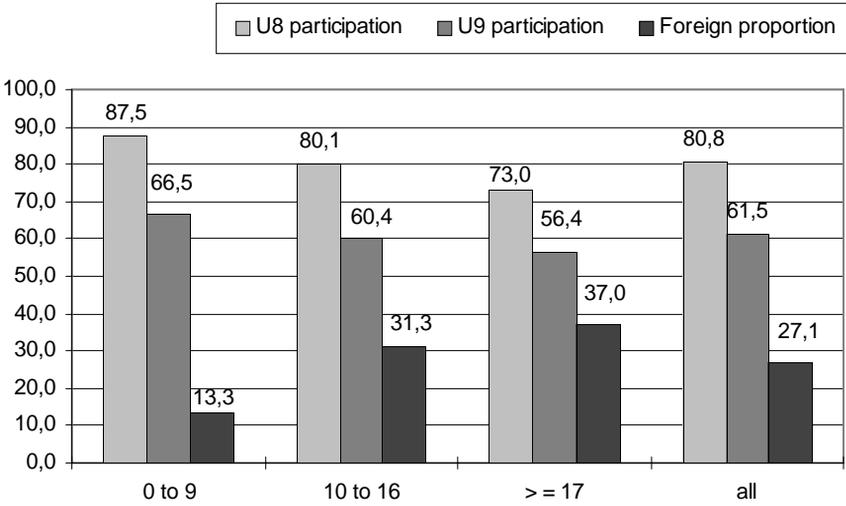


Explanation: children born in Germany or abroad with foreign nationality

Fig. 4

Participation in U8/U9 and proportion of foreigners in relation to SBR* in school beginners, 1996

* SBR = Percentage of recipients of social benefits with 6- to 14-year-olds



3

Fig. 5

Use of U8/U9 in Cologne, 1994/95
(according to school-entrance surveys, 1996)
and in Germany as a whole, 1992
(health insurance (KV) details, 1995)

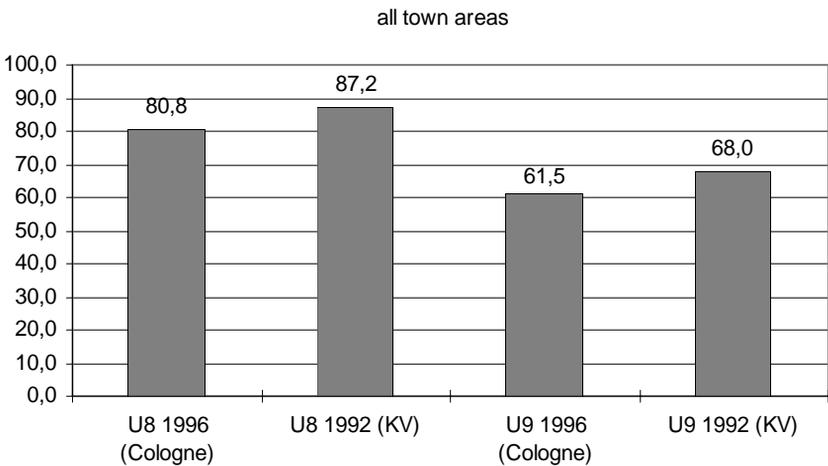
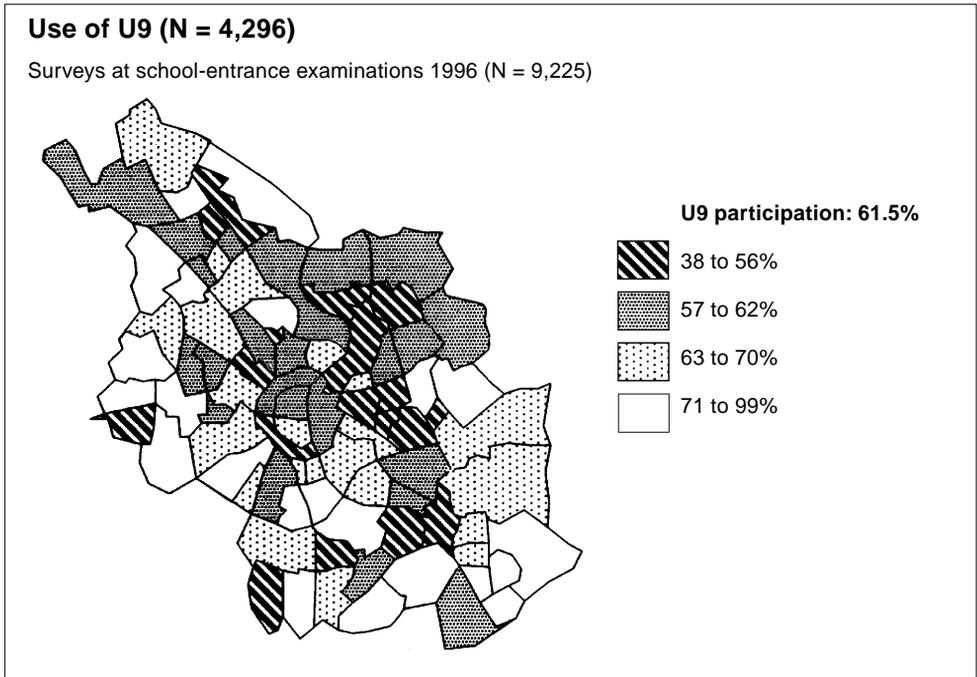


Fig. 6



Town area map

The immunization rate among 6-year-olds is shown in figure 7. Immunization rates are to be found for tetanus, diphtheria and polio, which lie around 95%. At least threefold immunization was required for this assessment. The rate for measles is just over 80% and has risen by approximately 3% in comparison with the previous year. It is, more than other immunizations, clearly dependent on the immunization attitude of established paediatricians.

The BCG immunization rate, after changes to public recommendations, has fallen back from 84% (school entry 1995) to 48%. Rubella immunization (here only immunization of girls was assessed) has risen a little from 54% (school entry 1995) to just 58%. With measles and rubella, one immunization was assessed as being complete. With immunization for Haemophilus Influenza B (HIB) a clear increase is to be noted: in comparison with school entry 1995, where 50% of all children had at least one immunization against HIB, in 1996 some 77% of all school beginners had at least one immunization against HIB. 30% of school beginners, in the meantime, have threefold protection against HIB. Immunization against whooping cough is still taken up too little. 26.5% of 6-year-olds showed at least one immunization against whooping cough. Complete immunization against whooping cough is shown in just 10% of children, although by 1995 a rise took place from 5 to 10%. Happily there is no noteworthy difference in immunization rates in relation to SBR (fig. 8).

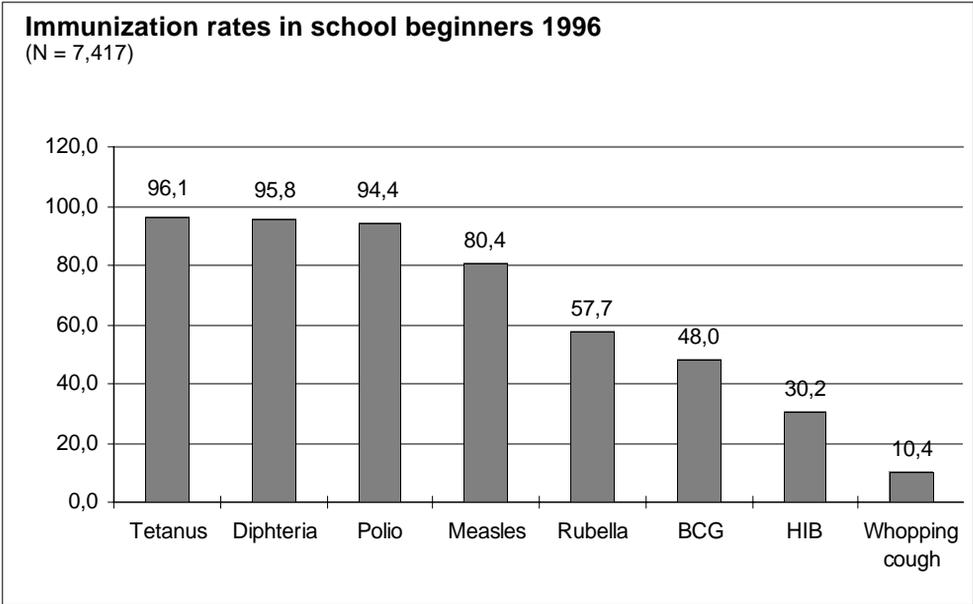


Fig. 7

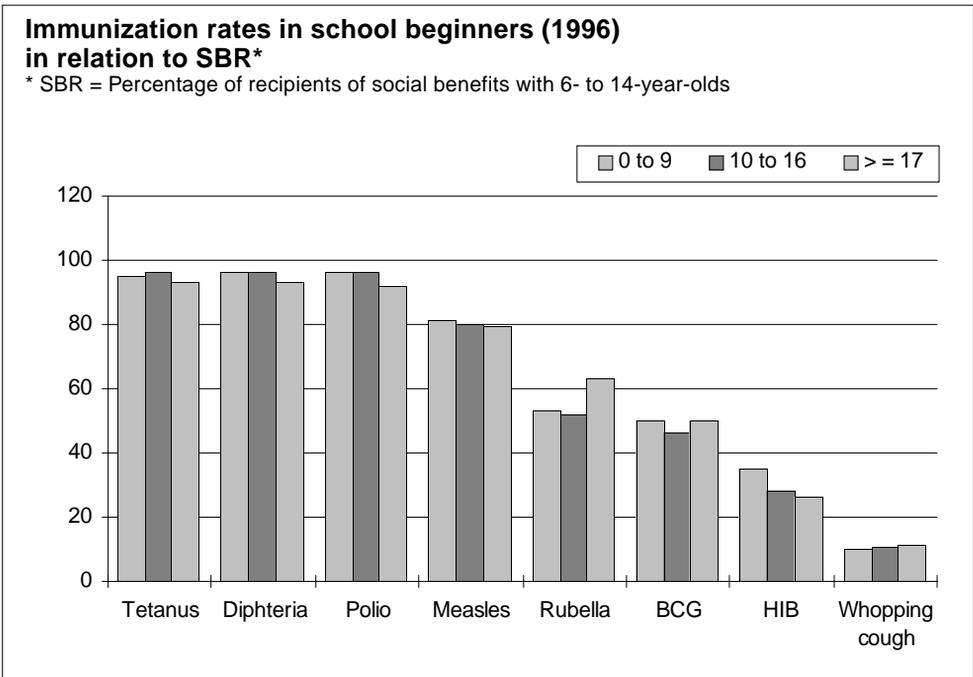
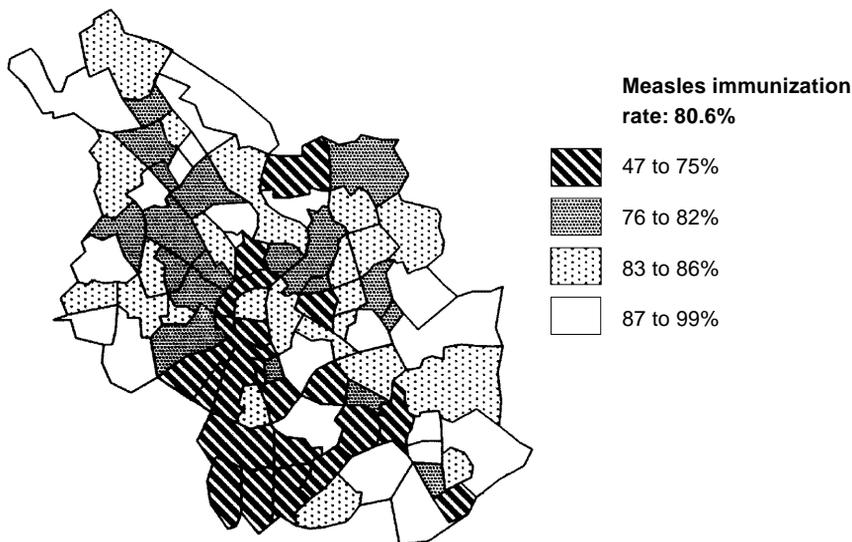


Fig. 8

Immunization rates for measles (N = 5,890)

Surveys at school-entrance examinations 1996 (N = 7,310)



Town area map

It was possible to obtain significant and frequently school-related findings as follows: motor coordination disorders, speech disorders, fine/visuomotor weaknesses, behavioural disorders, adiposity, and others (fig. 9).

With 6.6% of children examined, the development was so severely retarded that still further diagnoses, support and/or therapy were necessary before acceptance in school. Because primary schools have different teaching systems, the schools are given recommendations by the school doctors, in agreement with parents (to be stressed more in future) on suitable support for the children in some areas and different 'school ability profiles' are developed.

In the following, I shall avoid going any further into purely somatic findings such as height, weight, sight and hearing disorders, as well as the findings presented in figure 10, predominantly obtained through case histories, on allergy frequencies as well as scoliosis and weaknesses of posture.

Next to the epidemiological function, the emphasis of the school-entrance examination is placed on describing the individual state of development in the fields of motoricity and physical coordination, visual perception and visuomotor activity, as well as verbal communication skills, in order to assess the functional state of development and, if necessary, to be able to recommend corresponding supporting measures. Here a subtle knowledge of

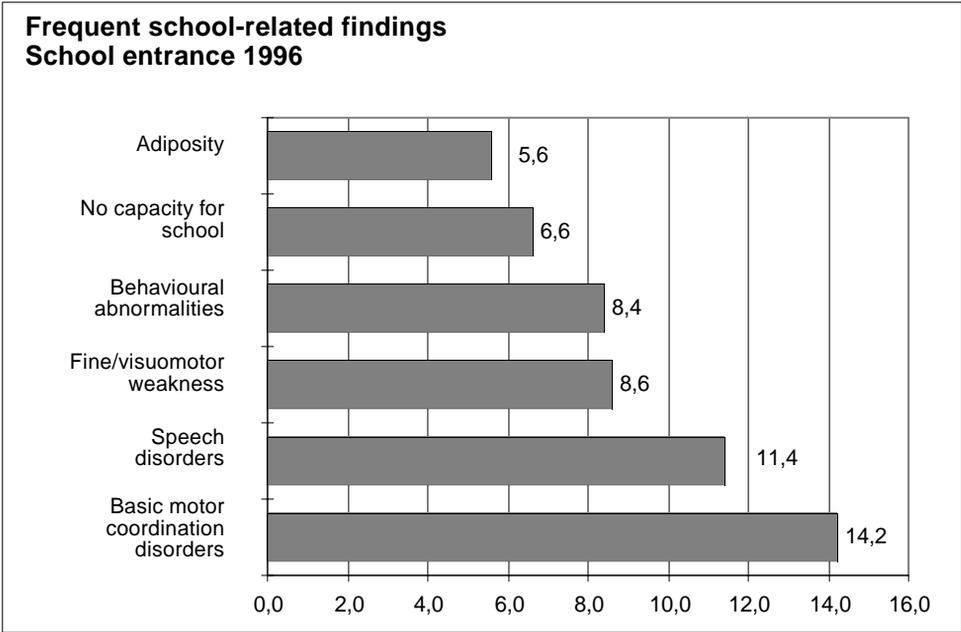


Fig. 9

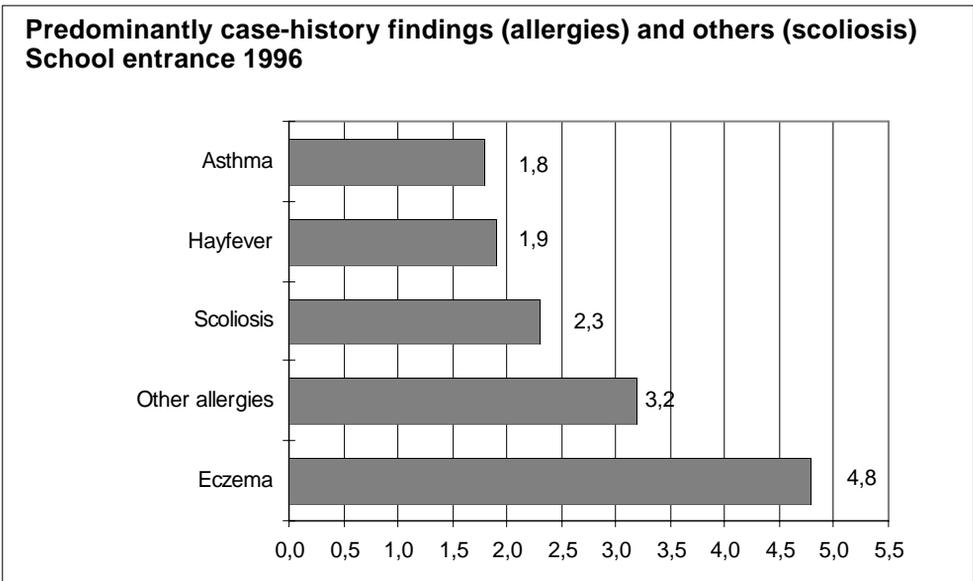


Fig. 10

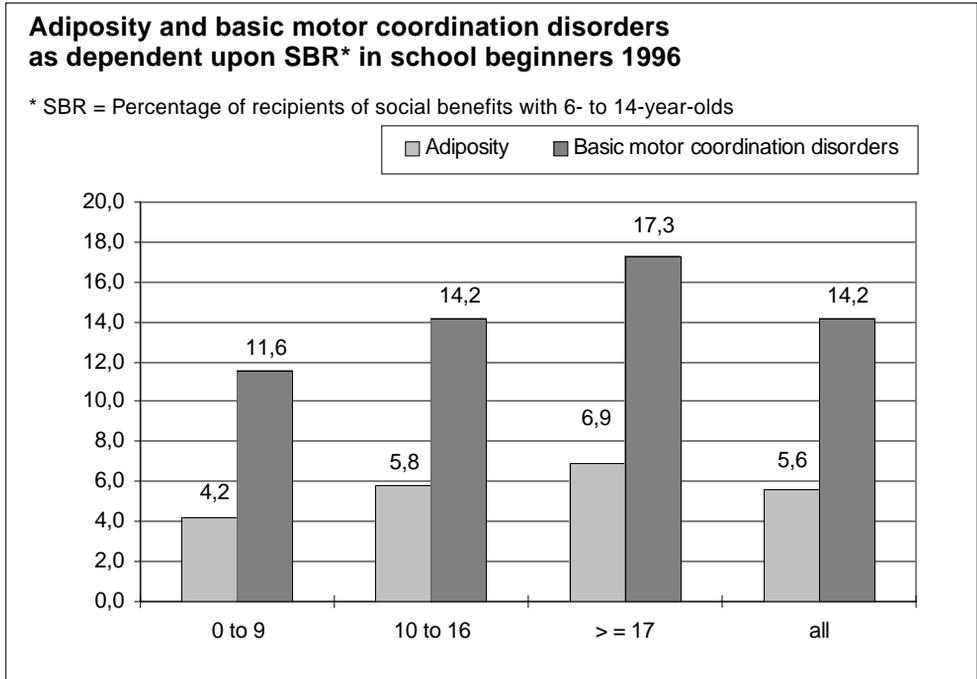


Fig. 11

the regionally different school and support spectrum is necessary. So far as meaningful results are available from early diagnosis examinations, a lengthy physical examination can be dispensed with.

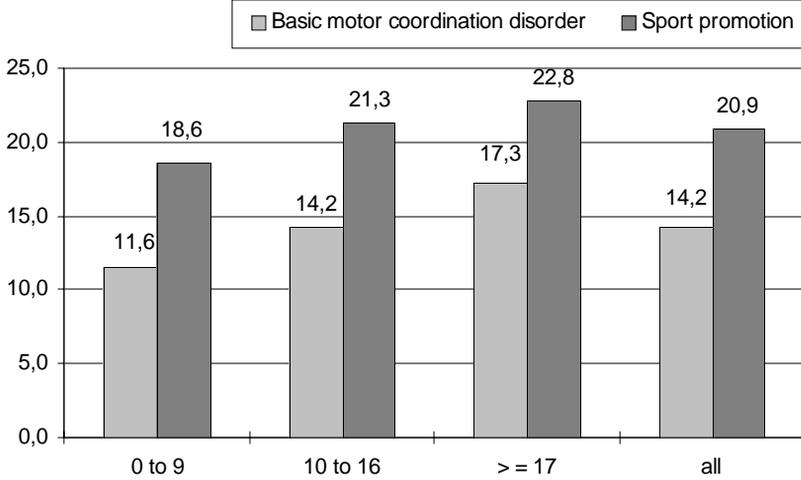
Below I should like in particular to go into the findings in the above-mentioned fields. In figure 11, basic motor coordination disorders are compared with adiposity as dependent upon SBR. The findings are based upon clear appraisal criteria. Adiposity is defined as exceeding the 97th percentile. There appears a linear relationship with SBR.

In figure 12, basic motor coordination weaknesses are compared with the recommendation for motor function promotion. Alongside weaknesses in physical coordination, this recommendation also includes other findings (postural weaknesses, obesity, behavioural abnormalities, including hyperactivity, etc.). In figure 13, adiposity and basic motor coordination disorders are compared with the standardized detected examination parameters (basic motor balance = 'tightrope walking'). Here too, a linear progression appears with increasing SBR, in relation to coordinative weaknesses.

Localised motor abnormalities are often to be found in groups of mentally abnormal children and/or those with educational difficulties (Remschmidt). The selected, standardized examination parameters presented in figure 14 for motor coordination and capabilities in visuomotor activity or visual perception show a negative correlation to SBR.

Basic motor coordination weaknesses and recommendation on sport promotion (school entrance 1996) in relation to SBR*

* SBR = Percentage of recipients of social benefits with 6- to 14-year-olds



3

Fig. 12

Adiposity, basic motor coordination disorder and standardized basic motor balance in school beginners 1996 in relation to SBR*

* SBR = Percentage of recipients of social benefits with 6- to 14-year-olds

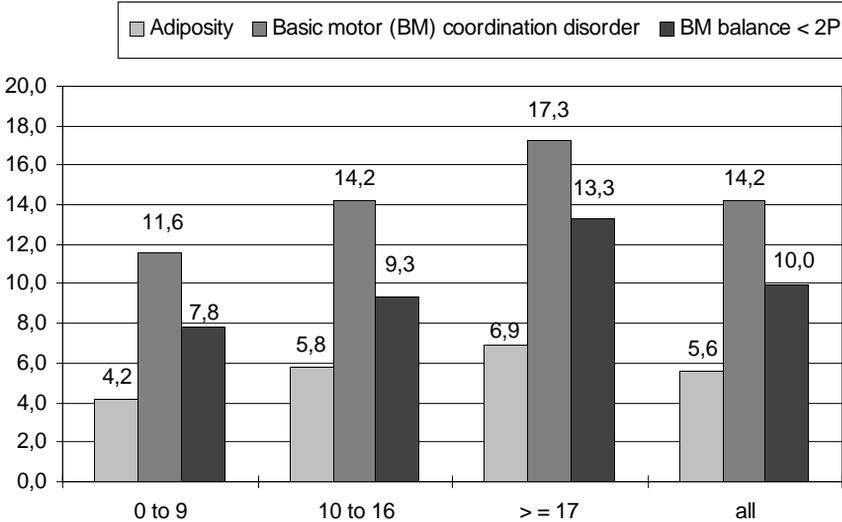


Fig. 13

Standardized examination parameters for fine/visuomotor skills in relation to SBR* in school beginners 1996

* SBR = Percentage of recipients of social benefits with 6- to 14-year-olds

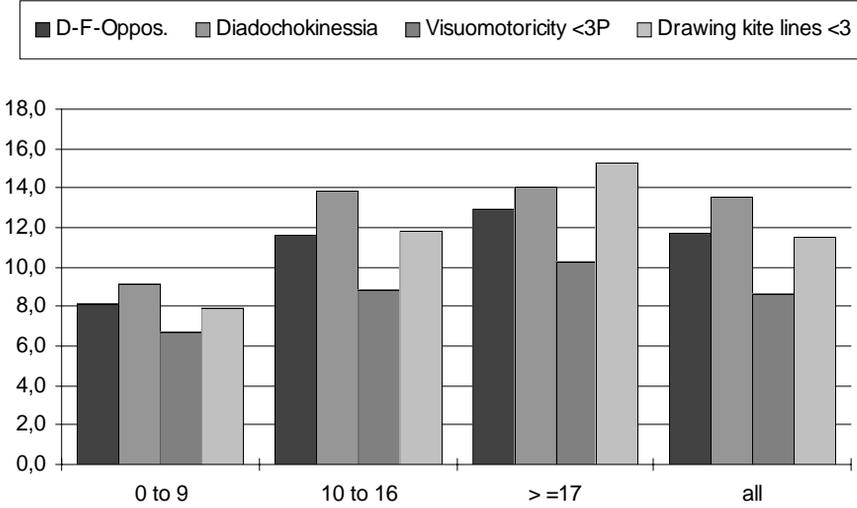


Fig. 14

Auditive perception (syllable repeat/rhythm repeat) and speech abnormalities (according to statements by parents) in relation to SBR* (school entrance 1996)

* SBR = Percentage of recipients of social benefits with 6- to 14-year-olds

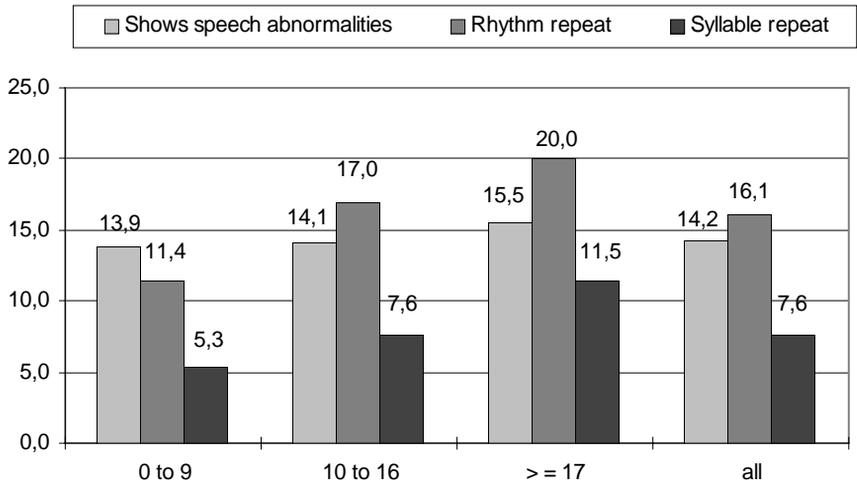


Fig. 15

Here were assessed: form reconstruction ('drawing kite lines'), optical isolation ('star outline') and form reproduction ('visuomotoricity'). The same applies to auditive perception (kinaesthetic articulatory differentiation = 'syllable repeat', rhythmically structured differentiation = 'rhythm repeat'), with regard to speech abnormalities (fig. 15).

It is nevertheless noteworthy here that speech abnormality, according to statements by parents, does not correspond completely in relation to SBR with these examination parameters. Clearly 'upper class' parents are more attentive and critical of the (speech) abnormalities of their children. On the other hand – the number of stammers forming the basis – there are considerably more abnormalities in the 'lower class', however, no dependence with this tendency when comparing the frequencies of stammers between 'upper class' and 'middle class'. Overall, there are speech abnormalities in German school beginners in Cologne on average in 12.7%, whereby this figure from parental statements on speech abnormalities in their children, of 14.2% on average, varies only by 1.5%. The recommendation of speech therapy for the existing speech disorder must have been discussed on average in 6.6% of all cases. With 9.4%, the rate of speech disorders requiring treatment in the 'lower class' was clearly higher than in the two other classes (5.1% or 6.3%, cf. fig.17). The corresponding figures on foreign children can not be comparably presented, since in part only a very limited assessment was possible.

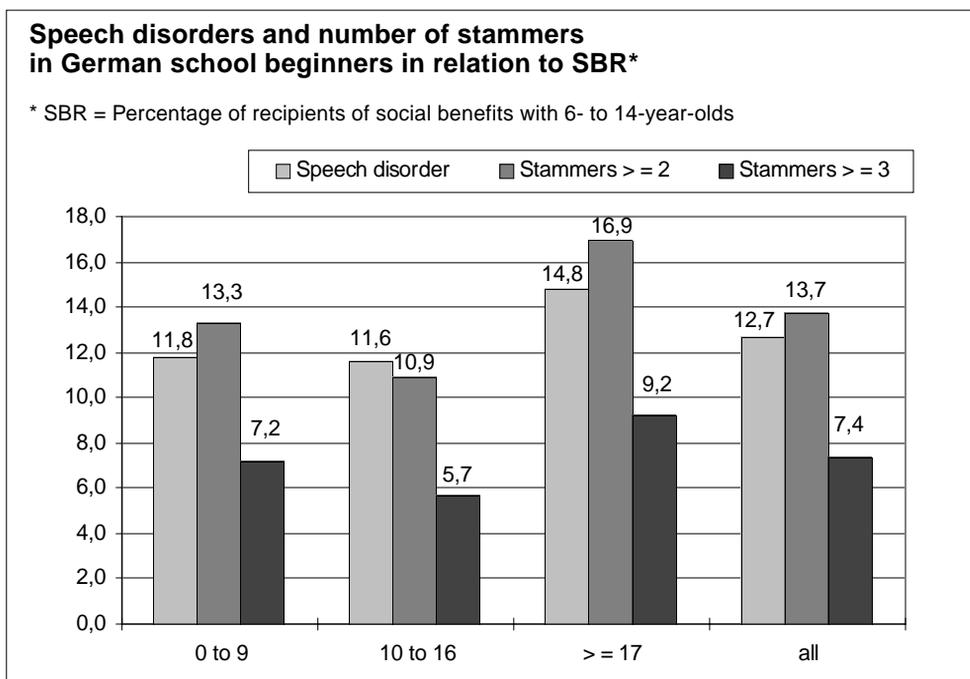


Fig. 16

**Speech abnormalities (parental figures)
Speech disorders and recommendation of speech therapy
in relation to SBR***

* SBR = Percentage of recipients of social benefits with 6- to 14-year-olds

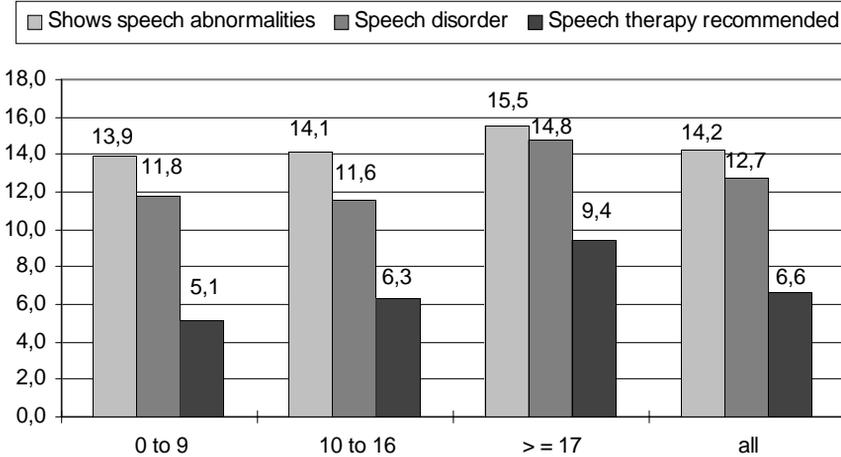


Fig. 17

Figure 18 shows the frequency of speech abnormalities (according to parental statements), speech findings from the school-entrance examinations, as well as the recommendations on speech therapy, in comparison with the frequency of 'speech disorder and disfluency', as they are available according to the health-insurance statistics from the early diagnosis examinations in 1992 (National Association of Statutory Health Insurance Physicians). Thus our figures correspond to a great extent with the figures from the early diagnosis centres and other competent speech therapy establishments. (It is to be noted again that it is simply a matter of the frequency among 'regular school beginners', so that overall a still higher proportion is to be presumed.) This indicates that the established (paediatric) doctors – for whatever reason – at least documented considerably too few speech problems.

School-entrance examinations should identify children with specific requirements, and school-doctor recommendations should help in making the school suitable from a medical point of view, or in exceptional cases prevent a foreseeable failure at school. Previously the recommendation 'school-capable' or 'school-incapable' served for this purpose. There was a clearer connection to the duration of nursery-school attendance, which in turn correlates to the SBR and 'school aptitude' (fig. 19). As already stated, the term school-capable is being dropped and instead detailed recommendations on adequate support are being expressed.

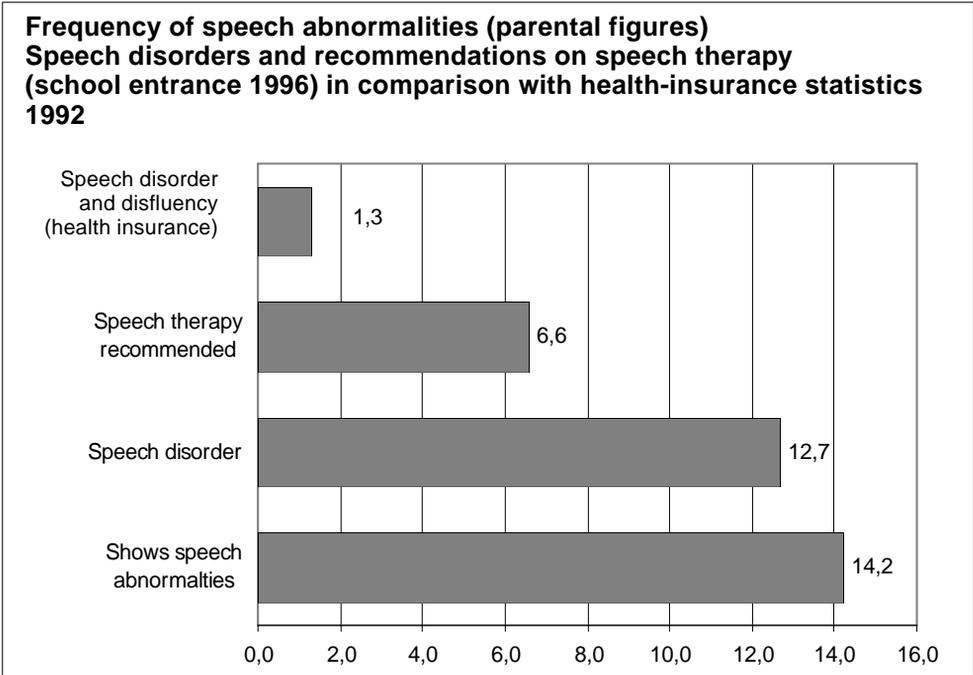


Fig. 18

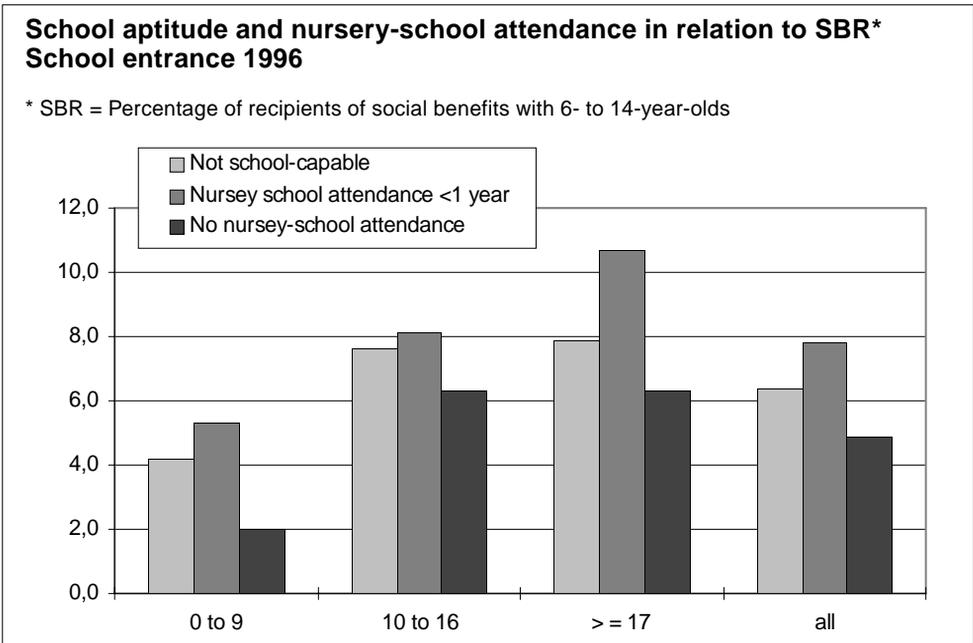


Fig. 19

Findings in respect of behavioural disorders in children can only be obtained in an insufficient quantity within the context of the school-entrance examination. Here reliance has to be placed on statements by parents or teachers. It was possible to assess 85% (N = 7,739) of all parental questionnaires with standard questions, amongst others on behaviour. Furthermore, concerning the possibility of assessing these questionnaires, there was a clear dependence on the SBR (fig. 20).

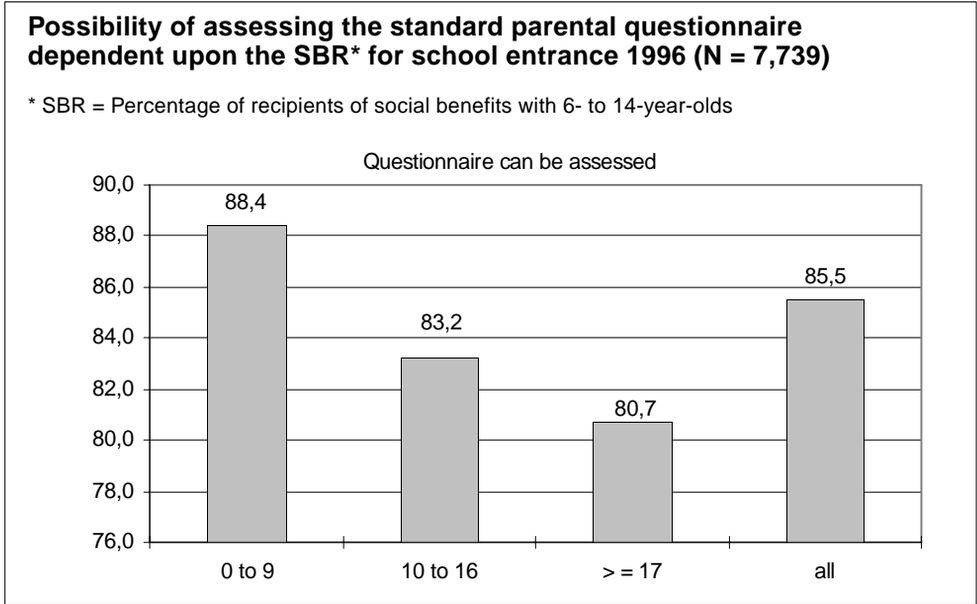


Fig. 20

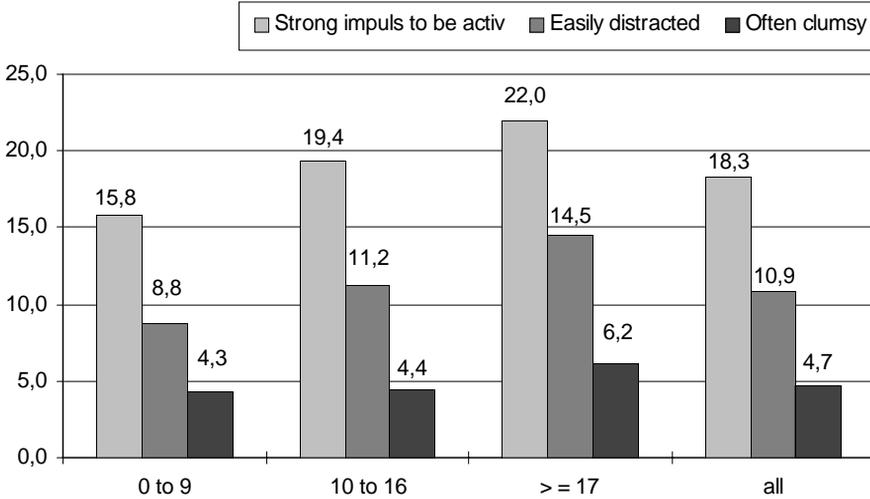
The frequency of behavioural characteristics obtained in a standardized manner and (though not standard) of documented behavioural abnormality again shows a clear correlation to the SBR. The frequency of documented behavioural abnormality amounts on average to 8.4%. The question concerning strong impulse to be active ('shows a strong impulse to be active, is often unsettled and fidgety') was answered in the affirmative for 18.3% of all German children, and the question about being distracted ('can they be easily distracted, do they frequently find it difficult to concentrate') was affirmed for 10.9%, and the question on clumsiness ('are they clumsy in certain tasks, for instance, painting, cutting-out, hopping') was confirmed in 4.7% of all assessable questionnaires. In all three behavioural characteristics there was a clear linear relationship to SBR (fig. 21).

SUMMARY

It is the aim of obtaining data on the school-entrance examination in particular to describe partial performance weaknesses or localised developmental delays in their entirety,

Behavioural abnormalities in school beginners (parental figures) in relation to SBR*

*SBR = Percentage of recipients of social benefits with 6- to 14-year-olds



3

Fig. 21

and social dependence, and by means of efficient epidemiological assessment to work towards the range of promotional measures on offer being oriented to regional requirements and the necessary measures also being implemented. Next to the family, the school is the most important socializing authority in our society. Here on the one hand – and often to begin with secondarily – mental disorders become noticeable as obstacles, and on the other hand specific conditions in the school often contribute to the child developing mental disorders (Remschmidt). The frequency of behavioural abnormalities must therefore be further looked into, as in the past school-entrance examinations in Cologne, initiated in cooperation with the clinic for child psychology. Cramped living conditions, increasing and in part uncontrolled media consumption on a greater scale, unhealthy and non-reflected eating habits and inadequate physical exercise inside and outside school, certainly all contribute to the varying frequencies dependent upon SBR. School doctors will be required, much more than previously, to provide well-founded regional and meaningful but also comparable data for health policy. It is the aim – for instance within the context of town area projects or other health-promotion programmes – to increase health skills in all responsible persons so that need-oriented therapeutic support facilities can be created (fig. 22). In order to be able to control the increasing effects of social deprivation and to create altogether more child-related development conditions, still closer cooperation is necessary with established paediatricians and all bodies responsible for health or health promotion.

Aims of the examination or data gathering/assessment among school beginners

- To recognize localised developmental delays, partial performance weaknesses, and other school-related deficiencies, and to arrange for suitable promotional measures
- To describe social dependence/influence factors and to work towards a regional need-oriented promotional scheme
- To increase health skills in all those responsible (parents, teachers, educators, colleagues and others)
- Participation in cooperation and networking as well as collaboration in town area projects and other health-promotion programmes

Fig. 22

BIBLIOGRAPHY

- Hurrelmann, K. / Palentien, Chr. (1996): Plädoyer für einen Umbau des jugendärztlichen Dienstes zu einem „schulbetriebsärztlichen Dienst“. *Das Gesundheitswesen* 10, pp. 525 ff.
- Kassenärztliche Bundesvereinigung (Ed.): Gesetzliche Krankheitsfrüherkennungsmaßnahmen. Dokumentation der Untersuchungsergebnisse 1992 – Kinder –
- Remschmidt, H.: Psychische Störungen und Schule heute. In: Maser, W.: 100 Jahre für die Gesundheit der Kinder. Der schulärztliche Dienst in Wiesbaden von 1896 bis 1996. Edition 6065
- Schlack, Hans G. (1995): Lebenswelten von Kindern. In: Sozialpädiatrie – Gesundheit, Krankheit, Lebenswelten (pp.83 ff.). Stuttgart/Jena/New York, Gustav Fischer.
- Schulz, G. et al. (1996): Weiterentwicklung der Schuleingangsuntersuchung. Manuskript eines Referats auf der Tagung der Deutschen Gesellschaft für Sozialpädiatrie in Lübeck.

3.4. THE STATE OF HEALTH AND HEALTH BEHAVIOUR IN CHILDREN AS A FOUNDATION FOR PREVENTION

**Dr. Christian Palentien, Dr. Wolfgang Settertobulte,
Prof. Dr. Klaus Hurrelmann, University of Bielefeld**

While some years ago it was the later stages of life which were the focus of health science and health-policy discussions, the discovery that in the early stages of life numerous health-related attitudes and modes of behaviour are already forming, led to the fact that today – especially as regards prevention – considerably greater significance is attached to childhood. Despite this interest, there is a lack not only of valid epidemiological data on childhood. There is still, moreover, a lack of findings which give information on the connection between living conditions and the state of health of this age group.

As a centrepiece of the following contribution stands the question concerning the role of the family as the principal socializing authority in moulding health-related attitudes and modes of behaviour during childhood. Before clarification of this point, there will be a presentation of the health situation among adolescents, which can be described as a starting point for such reflection.

THE STATE OF HEALTH DURING CHILDHOOD AND ADOLESCENCE

If one considers the morbidity and mortality statistics for adolescence, then it appears that many health dangers through illness have fallen during recent years. This quantitative decline, however, faces a qualitative change in the illness spectrum. Current empirical findings observe an increasing significance both of chronic diseases and psychosomatic complaints and also of mental abnormalities among adolescents and young adults.

- Representative studies come to the conclusion that on average some 10–12% of children of primary-school age suffer from mental disturbances in performance, perception, emotion, contact and in other areas of development. In adolescence there is an even higher ratio, of some 15-20% (Remschmidt, 1990).
- Some 7–10% of all young people encounter chronic diseases (Lösel/Bender, 1991): the tendency is increasing, particularly relating to diseases such as allergies, bronchitis, congenital heart defects, epilepsy, diabetes and cancer, which over many years influence the behaviour and feelings of young people.
- The spectrum of psycho-vegetative impairment is becoming broader (Engel/Hurrelmann, 1989). The most frequently determined organ change, which occurs on the

border of definition between psychosomatic and chronic disease, is bronchial asthma (Steinhausen, 1984). The rate of prevalence is assessed at 5–7% and thus lies above that of neurodermatitis and *ulcus pepticus* (Weber et al., 1990).

- Among the predominant ‘civilization diseases’ are drugs, marked by mental and physical substance dependency, and loss of control of consumption. Already in the 12–13 age group, one in four occasionally or regularly drinks wine and beer, and one in ten drinks spirits. 16% of 12- to 17-year-olds regularly smoke cigarettes, 6% already had contact with hard drugs, 3.8% with solvents, and 2.6% with hashish and marijuana (Engel/Hurrelmann, 1989). In the narrower sense, some 3% of adolescents, aged between 15 and 20 years old, must be classified as alcohol-addicted.

EXPLANATORY APPROACH TO HEALTH IMPAIRMENT

The causes of many instances of health impairment, which determine the qualitative change of the illness spectrum, are observed within the context of various factors such as environmental pollution. At the same time, health-related modes of behaviour are increasingly gaining in importance, which are determined by attitude and cognitive pattern (Franzkowiak, 1986). This means, for instance, the fields of exercise and nutrition:

- The literature is unanimous on the necessity of a change in nutritional behaviour for a majority of young people: as consequences of the currently widespread inappropriate nutritional behaviour come heart and circulation diseases, diabetes mellitus, chronic diseases of the liver, alcohol-related illnesses, some types of cancer, gout, neurodermatitis, high blood pressure, as well as deficiency diseases and diseases of the digestive organs and the masticatory apparatus;
- A lack of regular and measured exercise today counts as the main cause of so-called civilization diseases (disorders of the heart and circulation, arterio-sclerosis, coronary insufficiency, restriction of the motive apparatus, and functional organ weaknesses) (Mellerowicz/Dürrwächter, 1985);
- If, on the one hand, a lack of exercise causes numerous illnesses or increases susceptibility to health impairments, then, on the other hand, excessive sporting activity can lead to functional and morphological disorders (Banzer, 1989).

Alongside these direct forms of pathogenic conditions, new discoveries show an increasing significance in mental conditions, which indirectly affect an occurrence of illness. Many illnesses today are thus assessed as indicators of mental overload. They reveal the problem which young people have in dealing with their own body and the clash with the ever rapidly changing social and ecological environment as it becomes more complex

under today's living conditions. Moreover – and above all during compulsory school time – crises ensue through excessive performance demands in school.

Although the consequences of familial and scholastic demands today are described in relation to adolescence, they concern childhood far more strongly – without this being considered appropriately nowadays. Social differentiation and individualization is especially reflected in the family sphere. This leads tendentially to the fact that the protective function traditionally assured by the family must be regarded as increasingly in danger.

THE FAMILY AS AN ENVIRONMENT FOR HEALTH DEVELOPMENT

Next to these indirect factors, a great many direct influences on the part of the parents affect the health of their children. They could already be shown for adolescence, and relate to the role of parents as behavioural model and as conveyer of attitudes, but at the same time also the family climate and the function of social support.

BEHAVIOURAL MODEL

Through their own behaviour, parents generally serve as a model today for health-related modes of behaviour. Daily hygiene and nutrition are concerned here just as much as contact with drugs and pharmaceuticals, dealing with emotions, aggression, coping strategies and social skills (Bandura, 1979; Troschke, 1989).

ATTITUDES

Next to fundamental attitudes towards their own body, physical self-esteem, and feelings of shame, parents have a great influence in early years on the attribution style of children. This finds expression in habits of causal attribution of events in the surroundings. Again this has an effect on motivation to health-promotional treatment. The perception of controllability of one's own state of health ('health locus of control') is just as much concerned here.

FAMILY CLIMATE

Through living together in the family, basic social skills are learned and tested. They are fundamental prerequisites for healthy self-awareness and one's own independent identity (Lohaus, 1993; Mansel/Hurrelmann, 1994).

SUPPORT

The entire family, and not just the parents, similarly provides the closest branches of a support network. This is more or less able, to compensate for problems and critical events.

CHANGED FAMILY LIVING CONDITIONS

Although a large level of personal and social resources can lead to protection from risks, up to an – as an ideal postulated – invulnerability, it is these functions which, also in the context of changing family structures, must be assessed today as increasingly questionable.

New investigations show that children of divorced or separated parents suffer from strong mental and social stresses. The causes and starting points of the relational problems of the parents can be understood by the children only with difficulty (Lüscher/Schultheis/Wehrspan, 1988). At the same time, the consequences of the break-up of parents cannot be assessed in advance by the children with their full implications.

If it comes to the separation of the (married) couples, a difficult phase of reorganization begins for the child in its social relationships and connections with its parents. Often this changing situation also leads to a change of home and social surroundings and is thus linked with friendships and neighbourhood contacts.

Changes in the living conditions of children are not limited to 'split families'. They also concern so-called normal families. An important feature of today's living together of the parents and their children can thus be described as the relationship of negotiating options and a partnership structure instead of parental disciplinary measures. These 'sunny sides', of a great number of freedoms, stand opposite many 'shady sides': children are confronted with a growing number of behavioural expectations and possible emotional diffusions. This instability is fostered by increasing spatial mobility.

To sum up, today there is a combination of social orientation problems, greater demands on individual lifestyles, altered and unstable family lives and often ambivalent emotional conditions, which demand unusually high coping skills of the children. Among health-related aspects, the family thereby gains a status which is to be observed ever more critically: often in these situations both the resources of the children and those of the parents, adequately to reappraise health failings in the children, are overtaxed, without examinations having been carried out into the effects of this situation from the point of view of direct and indirect consequences for health.

As well as the indirect consequences for children arising from the processes of social change there are also direct effects on their health; which are intensified by the influence of social class.

FAMILIES AS MEDIATORS OF THE EFFECTS OF SOCIAL CLASS

In Germany today, some five million people receive social benefits: this is approximately 6% of the entire population. The extent of this 'official poverty' is already shocking. The estimates of welfare associations, however, come to a further number of unrecorded cases, of approximately 1–2 million people, who for various reasons have claimed no benefit and are thus not recorded. A closer look at these figures reveals that some 20% of the poor are single mothers; all statistics show that poverty and family are thus moving ever closer together. More and more young people are living in poverty. Children and adolescents are currently the population group which is most severely threatened by poverty (BMFSFJ, 1994).

The poorer people are, the greater the danger of their incurring health problems. The risk of illness varies along a poverty gradient. It can be clearly proved that there is a linear connection between the degree of social privilege and health; but the connection along the social-class structure also applies for the incidence of protective factors.

In North Rhine-Westphalia, Klocke and Hurrelmann (1995) questioned altogether some 3,328 school children in all types of schools at ages 11, 13 and 15 years, on the professional activity of their father and mother, about their school education and aspects of their state of health and health-related modes of behaviour. The social-class index was formed in this study from the degree of status of the parent's profession, as well as according to available financial resources.

The findings of this study show, for school children from the lower social positions, a worse assessment of their situation in almost all the health indicators: only every fifth child from the lower, but every second child from the upper social positions assessed his or her own state of health as very good. This connection is becoming clear with the psycho-vegetative manifestations which, as symptoms of a physical reaction to over-taxing, also reflect the psychosocial position of the person affected with a certain latency. The lower the position in the structure of privilege in a society, the lower the quality of health.

PROSPECTS FOR HEALTH PROMOTION

If one makes a synopsis of these findings, then it can be established that in a growing number of families there are social orientation problems, greater demands on individual lifestyles, altered and unstable partnership structures, and often ambivalent social conditions, which demand unusually high coping skills of the children. Among health-related aspects, many families increasingly gain problematic standing; often both the resources of the children and the parents are unable to deal with health deficits in the children.

The family offers the place in which children have a series of experiences and can acquire skills which are health promotional. The protective factors which the family provides, thereby result on two levels, the personal and the social level (Antonovsky, 1987). Personal and social protective factors together enable the individual to react adequately in respect of occurring problems, i.e. constructively and suitably, since both problem-solving skills and social support work together.

If the state of health not only during childhood but also in later phases of life is to be improved in a sustained manner, then health-promotional approaches and measures must start here. The aim must be to improve both the personal and social protective factors in the family. Any concrete help which is directed to the health of all those living in the family must, therefore, be accompanied by promotion and support of the family in educational, social but also financial regard.

BIBLIOGRAPHY

- Antonovsky, A. (1987): *Unraveling the mystery of health. How people manage stress and stay well*. San Francisco.
- Bandura, A. (1979): *Sozial-kognitive Lerntheorie*. Stuttgart.
- Banzer, W. (1998): *Präventive Sportmedizin – Chance und Grenzen*. In: Laaser, U. / Murza, G. (Eds.): *Gesundheitsförderung. Sport und Gesundheit im Spannungsfeld von Prävention und Lebensqualität* (pp. 25–41). Bielefeld.
- Baur-Göldner, S. (1986): *Einfluß elterlicher Einstellung gegenüber dem Kind auf das körperliche Wohlbefinden und das Selbstkonzept im Verlauf der Pubertät*. Dissertation. Ulm.
- Bundesministerium für Familie, Senioren, Frauen und Jugend (BMFSFJ) (1994): *Familien und Familienpolitik im geeinten Deutschland – Zukunft des Humanvermögens*. 5. Familienbericht. Bonn.
- Deutsche Gesellschaft für Ernährung e.V. (Ed.) (1988): *Ernährungsbericht*. Frankfurt a. M.
- Engel, U. / Hurrelmann, K. (1989): *Psychosoziale Belastungen im Jugendalter*. Berlin.
- Franzkowiak, P. (1986): *Risikoverhalten und Gesundheitsbewußtsein bei Jugendlichen*. Berlin, Heidelberg.
- Goebel, P. (1984): *Ungewollte Schwangerschaft – Ausdruck eines Konflikts oder Zufall?* In: Lockot, R. (Ed.): *Intimität* (pp. 143–153). Stuttgart.
- Hansell, L. / Mechanic, D. (1990): *Parent and peer effects on adolescent health behavior*. In: Hurrelmann, K. / Lösel, F. (Eds): *Health hazards in adolescence*. Berlin.
- Hurrelmann, K. (1990): *Familienstreß, Schulstreß, Freizeitstreß, Gesundheitsförderung für Kinder und Jugendliche*. Weinheim/Basel.
- Hurrelmann, K. (1990): *Plädoyer für die Kooperation medizinischer und psychosozialer Dienste für Kinder und Jugendliche*. *Prävention* 4, 13, 115–122.
- Klocke, A. / Hurrelmann, K. (1995): *Armut und Gesundheit – Inwieweit sind Jugendliche betroffen?* *Zeitschrift für Gesundheitswissenschaften* (Sonderheft).
- Kolip, P. (1993): *Problembewältigung invulnerabler und auffälliger Jugendlicher: Zum Zusammenhang zwischen Coping-Stilen und subjektiven Situationsmerkmalen*. *Zeitschrift für Gesundheitspsychologie*, vol. II, 2, 122–134.
- Lohaus, A. (1993): *Gesundheitspsychologie, vol. 2 – Gesundheitsförderung und Krankheitsprävention im Kindes- und Jugendalter* (pp. 65–86). Göttingen/Bern/Toronto/Seattle.

- Lösel, F / Bender, D. (1991): Jugend und Gesundheit. In: Haisch, J. / Zeitler, H.-P. (Eds.): Gesundheitspsychologie. Zur Sozialpsychologie der Prävention und Krankheitsbewältigung (pp. 65–86). Heidelberg.
- Lüscher, K. / Schultheis, F. / Wehrspau, M. (Eds.) (1988): Die „postmoderne“ Familie. Familiäre Strategien und Familienpolitik im Übergang. Konstanz.
- Mansel, J. / Hurrelmann, K. (1991): Alltagsstreß bei Jugendlichen. Eine Untersuchung über Lebenschancen, Lebensrisiken und psychosoziale Befindlichkeiten im Statusübergang. Weinheim/München.
- Mansel, J. / Hurrelmann, K. (1994): Außen- und innengerichtete Formen der Problemverarbeitung Jugendlicher. Aggressivität und psychosomatische Beschwerden. Soziale Welt, 147–179.
- Marmot, M. (1993): Epidemiological approach to the explanation of social differentiation in mortality: The Whitehall studies. Sozial und Präventivmedizin, 38, 271–279.
- Mellerowics, H. / Dürrwächter, H. (1985): Training und Sport. Mittel der präventiven Medizin. Deutsches Ärzteblatt, 12, 834–841.
- Melzer, W. / Sünker, H. (Eds.) (1989): Wohl und Wehe der Kinder. Weinheim.
- Nordlohne, E. (1992): Die Kosten jugendlicher Problembewältigung. Alkohol-, Zigaretten- und Arzneimittelkonsum im Jugendalter. Weinheim/München.
- Palentien, Ch. / Hurrelmann, K. (1994): Gesundheitsprobleme und Strukturen medizinischer und psychosozialer Versorgung im Jugendalter. Das Gesundheitswesen, 4, 56. Jahrg. 181–186.
- Remschmidt, H. (1990): Grundsätze zur Versorgung psychisch gestörter Kinder und Jugendlicher. Praxis der Kinderpsychologie und Kinderpsychiatrie, 9–10, 338–347.
- Schmidt, A. / Lehmkuhl, G. (1994): Krankheitskonzepte bei Kindern – Literaturübersicht. Fortschritte der Neurologie und Psychiatrie, 2, 50–65.
- Settertobulte, W. / Müller, M. (1992): Alkohol- und Tabakmißbrauch bei Sonderschülern. Zeitschrift für Heilpädagogik, 43 (9), 592–606.
- Settertobulte, W. (1994): Geschlechtsspezifische Inanspruchnahme von Hilfe: Informelle Unterstützung und medizinische Versorgung. In: Kolip, P. (Ed.): Lebenslust und Wohlbefinden. Beiträge zur geschlechtsspezifischen Jugendgesundheitsforschung. Weinheim/München.
- Settertobulte, W. / Palentien, C. / Hurrelmann, K. (1995): Gesundheitsdienste für Kinder und Jugendliche. Ein Praxishandbuch. Heidelberg.
- Steinhausen, H.-C. (1984): Chronisch kranke Kinder und Jugendliche. In: Steinhausen H.-C. (Ed.): Risikokinder. Ergebnisse der Kinderpsychiatrie und –psychologie (pp. 55–72). Stuttgart.
- Trotha, T. von (1990): Zum Wandel der Familie. Kölner Zeitschrift für Soziologie und Sozialpsychologie, 3, 452–473.
- Weber, I. / Abel, M. / Altenhofen, L. / Bäcker, K. / Berghof, B. / Bergmann, K. E. / Flatten, G. / Klein, D. / Michheis, W. / Müller, P. J. (1990): Dringliche Gesundheitsprobleme der Bevölkerung. Zahlen, Fakten, Perspektiven. Baden-Baden.
- Werner, E. E. / Smith, R. S. (1982): Vulnerable but invincible. New York.

3.5. SUMMARY OF THE DISCUSSION

The contributions and the discussion concur on the following central health problems during childhood:

- Motor-development and coordination disorders;
- Speech disorder and disfluency, hearing and sight disorders;
- Adiposity and problematical nutritional behaviour (malnutrition);
- Accidents;
- Concentration disorders;
- Behavioural abnormalities and aggression;
- Low participation in early diagnosis programmes and immunization.

All these aspects can be influenced broadly, effectively and preventatively. Other points raised were caries and dental prophylaxis. Furthermore, the importance of addiction prophylaxis and sex education in young age groups was noted. In the spheres of speech disorders (in particular late development of speaking ability), and also movement and coordination disorders, it was noted that they could in general be taken as indicators of problematic development. A series of aspects are interconnected, such as, for instance, adiposity and movement disorders, or accidents and movement disorders.

It was emphasized that appropriate access to risk groups, for example to the so-called 'multi-problem families', must be found. Especially in connection with social deprivation and migration, there appeared both an accumulation of developmental stresses and problems in children and adolescents, and marked deficiencies in health and precautionary behaviour, and a great non-participation to preventive and curative care provisions (among others immunization and early diagnosis examinations).

Health promotion should take social factors into account through the development of lifestyle-oriented approaches. 'Lifestyle-oriented' health education takes into consideration the resources and orientations of the target groups (with corresponding consequences for the selection of medical access and the messages to be imparted). The quality of resources affects the health and development of children: it is for its part determined by the quality of social living conditions. A special requirement of targeted promotion tailored to problems and resources, and the development of specific strategies, are both extremely important for groups which are 'difficult to reach'.

The listing of health problems leads first of all to specific, problem-oriented measures. Furthermore, (unspecific) competence-promoting approaches were regarded as important. Going beyond problem-oriented and competence-promoting approaches, the importance of primary prevention was brought in, which attacks the basic causes, where

these are accessible to influence. These approaches have a particular weight with regard to the spread of violence, ill-treatment and abuse, and their consequences for later health and personality development.

Both problem-oriented and competence-promoting approaches can also be directed to children and parents too. As a competence, parents can be given an appropriate 'cultural knowledge' on health, illness or contact with illness, development or assessing development. Parents are not only 'mediators' of stresses and resources, and they not only determine the field of conditions, in which occur a positive or negative development with its facets of behaviour, sensual perception, motor function, physical and mental health. At the same time they are key figures for the early perception of abnormalities and for the appropriate use of preventive and curative care provisions. Biographically early and target-specific imparting of preventive parental skill is particularly meaningful: an example was given of the appropriate provision of professional-preparatory measures for school children or the use of the 'kindergarten' setting.

To sum up, the discussion gave rise to the following aspects:

- Target group reference, lifestyle orientation (this relates in particular to measures which are directed towards social deprivation, migrant families and other groups which are only difficult to reach);
- Consideration of gender differences and integration of gender-specific approaches;
- With reference to the difficult reachability of highly stressed target groups, use of the many varied available means of access was seen as important;
- With reference to the crossing of individual aspects of development and health disorders, strategies were advised in which interconnected problems were bundled together;
- Long-term strategies ('with staying power') and measures taken early;
- Alongside problem-oriented approaches, competence-promoting approaches should be adopted. Competence promotion is directed not only at children but as much towards parents or professionals;
- Primary prevention approaches should be made (e.g. in the field of 'violence to children').

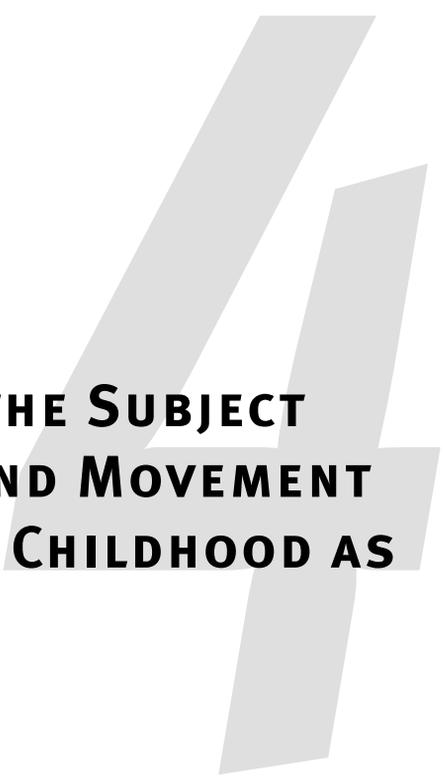
All in all, the debate confirmed the close connection between health and development during childhood, the significance of the social context as regards development or health, and the importance of target-specific and lifestyle-oriented measures, with particular attention to the inclusion of groups which are difficult to reach.

In the discussion, further comments were gathered in which institutional context approaches to health promotion for children already find attention, and corresponding projects and measures are realized or materials developed.

So, for example, in the nursery-school sphere as well as in the school context, there already exists a broad spectrum of ideas, initiatives and measures for health promotion, for instance relating to healthy nutrition, exercise promotion, competence provision to parents, etc. As principal cooperation partner in connection with health promotion during childhood, emphasis was placed on the paediatric sector as well as the public health service/youth doctor service, with its position of trust and specific access to children and parents. Furthermore, the leisure sector – and here in particular approaches to the inclusion of sports clubs – was selected as a central theme.

Altogether, a great many representatives and institutions with varying objectives are active in individual fields in a preventive manner, and promoting child health. There are plenty of means of access (prevention in the family, in nursery schools, in clubs, in the neighbourhood, etc.) and the possible direct target groups (children, parents, and professionals). In view of this variety, there is a requirement for sector- or problem-related overviews of the actors and providers, as well as listings of available material, media and measures (with figures on target groups and, if possible, evaluation findings).

In this variety of measures lie usable resources for health promotion during childhood, as represented for instance by possible cooperation partners, gathered expert knowledge and experience of measures taken. An organized use of resources requires networking, exchange and cooperation. Qualified persons can be integrated as multipliers and further education facilities developed. Experiences in relation to the effectiveness and transferability of measures should be gathered, analysed, and made generally available.

A large, light gray, stylized number '4' graphic is positioned on the right side of the page, partially overlapping the text.

**A CLOSER LOOK AT THE SUBJECT
USING ACCIDENTS AND MOVEMENT
DISORDERS DURING CHILDHOOD AS
AN EXAMPLE**

4.1. PRELIMINARY REMARKS

Not all areas which come into question for the setting of priorities could be dealt with in detail. In the example of accidents and the impairment of motor development, epidemiological data was presented, causal contexts analysed, and prevention proposals derived.

These problem areas are suited to deeper presentation, because they were in many instances relevant and frequently mentioned. Relating to accident frequency, reference has already been made to risk groups in chapter 2; children and adolescents in lower social classes or foreign children and adolescents are particularly exposed; boys are also considerably more at risk than girls. Motor deficiencies have been shown to be major risk factors in accidents among nursery-school children, which can be effectively influenced by prevention.

The contribution from H.-J. Kahl introduces detailed findings on the epidemiology of accidents during childhood (4.2.). S. Dordel reports on the extent of motor weaknesses, the increase of which is connected with changes in the living conditions of the children concerned (4.3.).

4.2.

ACCIDENTS AND INJURIES TO CHILDREN UNDER SPECIAL CONSIDERATION OF INJURIES AT HOME AND DURING LEISURE TIME

Dr. Hermann-Josef Kahl, establ. Paediatrician, Paediatric Cardiologist, Düsseldorf

The epidemiological foundations with regard to the occurrence of accidents and injuries to children and adolescents are still unsatisfactory. We are only able to estimate the absolute numbers on the basis of projections, e.g. on the household survey made by the Federal Institute for Occupational Safety and Health. The first representative survey took place in the old Federal Länder in the years 1988/89, whereby approximately 130,000 households were questioned, and 7,209 accident reports were assessed. A similar representative survey took place in the new Federal Länder in the years 1991/92, whereby 70,000 households were questioned and 2,514 home and leisure accidents were assessed. On the basis of projections, we come to a figure of 900,000 accidents at home and during leisure time per annum involving under 15-year-olds.

The European Commission has endeavoured to establish an information system, which is intended to reappraise accidents occurring during childhood in an epidemiological manner and is called the European Home and Leisure Accidents Surveillance System (EHLASS). There remains, however, a handicap, in that through this system the only accidents and injuries which can be recorded are those which are treated in hospitals; and the returns have only been very poor.

The overall frequency of accidents and injuries to under 15-year-olds is at an approximate level of two million per annum.

ACCIDENT CATEGORIES

Accidents and injuries essentially extend over four spheres of activity. These concern the area of home and leisure (approx. 44%), the school, including the way to school and school-sports accidents (approx. 43%) sport, considered in isolation (approx. 7%) and traffic accidents (approx. 2.5%).

FATAL INJURIES

Approximately 1,000 fatal injuries occur to under 15-year-olds each year. Of these some 45% involve road traffic and 55% fall in the other categories (fig. 1).

In order to complete the picture, it is worth mentioning that for every fatally injured child approximately two children are so seriously injured that life-long disability remains.

Causes of death Deaths through accidents according to category, age group and gender						
Number						
Age groups	Total	According to accident category				
		Work/school	Traffic	Home	Sport/game	Misc.
0-1	86	–	17	34	–	35
1-5	326	–	92	100	38	96
5-15	534	7	310	52	61	104
15-25	2,869	75	2,492	56	57	189
25-35	2,805	149	2,141	128	68	319
35-45	2,222	219	1,239	267	59	438
45-55	2,114	226	975	365	41	507
55-65	2,292	148	900	520	32	692
65-75	2,473	39	819	783	22	810
75-85	4,163	3	651	1,866	6	1,637
85 and over	5,238	3	260	2,683	5	2,287
Total	25,122	869	9,896	6,854	389	7,114

Source: Federal Statistical Office 1994

Fig. 1

ACCIDENTS AT HOME AND DURING LEISURE TIME

As already mentioned, some 900,000 accidents and injuries to under 15-year-olds occur each year. In first place it is necessary to mention injuries resulting from both vertical and horizontal falls. Then follow injuries sustained from striking objects and from sharp objects, heat-related injuries, poisoning and aspiration, as well as bathing accidents; additionally, animal bites to children must not be ignored (fig. 2).

Boyhood agility, which is often described, does not seem to be true any more according to more recent examinations; it is indeed a fact that serious injuries prevail among boys, but the number of injuries appears to be divided equally among girls and boys (Limbourg, 1996). According to estimates, the costs which arise from accidents at home and during leisure time amount to some 1.3 to 2 billion DM per annum.

ACCIDENTS ACCORDING TO AGE

It is known that from the age of ninth months, accidents represent the most frequent cause of illness and death in children and adolescents. One- to three-year-olds are most particularly affected here. From the age of four, frequency remains the same in all age groups up to adolescence (fig. 3).

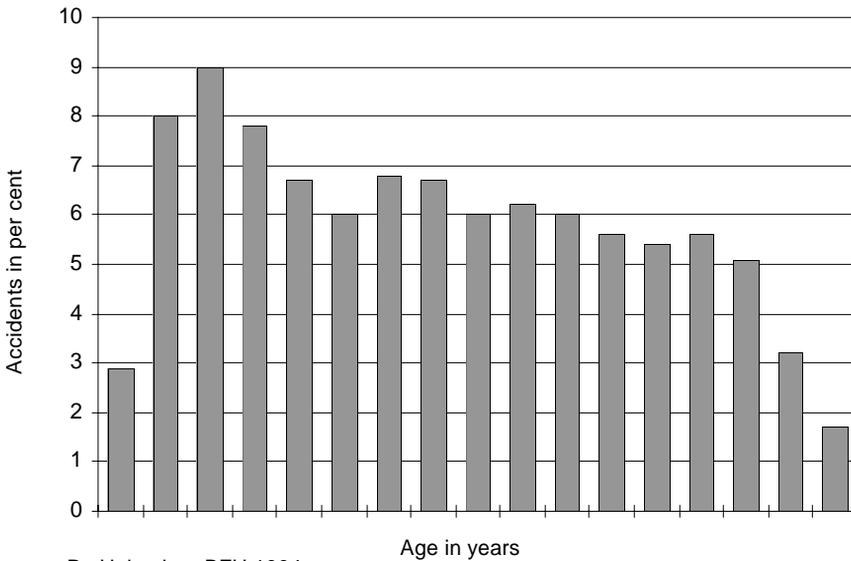
Childhood accidents and injuries – Home and leisure

Types of accident and injuries at home and during leisure time

Falls	46–51%
Striking objects	25%
Injuries on sharp objects	9%
Burns, scalds, electricity	3%
Poisoning	1–7%
Aspiration/strangulation	2%
Bathing accidents	0.7–2.5%
Misc., including injuries from animals	10%

Fig. 2

Accident proportion per age



Source: Dr. Hubacher, BFU 1994

Fig. 3

AGE AND TYPE OF ACCIDENT

If we examine the various accidents, then the danger of falling appears as the central theme throughout childhood and adolescence (fig. 4).

Falls from babies’ changing tables, beds and bunk beds already play a major role in early infancy. Falls downstairs, from windows and balconies must be given special attention. At school age and during adolescence, dangers of falling move to the playground, the bicycle and other forms of leisure activity (e.g. rollerblading).

Age and type of accident							
Type of accident	Accidents according to age group (%)						
	0	1–2	3–5	6–8	9–11	12–14	15–16
Poisoning, corrosion	3.1	6.0	1.2	0.0	0.0	0.0	0.0
Fall	66.0	50.3	55.1	52.9	51.3	49.6	42.3
Burns, scalds	15.0	7.0	3.4	1.7	0.9	1.5	0.1
(Almost) drowning	0.0	0.4	0.7	0.1	0.2	0.2	0.0
Effects of objects	2.5	10.8	14.3	17.7	16.6	16.6	21.4
Effects of people/animals	6.6	7.0	6.5	5.7	8.1	9.2	10.0
Collision	5.6	11.1	12.7	14.9	12.9	12.8	10.3
Other	1.3	7.3	6.1	7.0	10.0	10.2	15.9
Total (%)	100	100	100	100	100	100	100
Total (abs.)	3.590	20.585	24.654	23.696	21.662	19.508	5.984
Source: Dr. Hubacher, BFU 1994							

Fig. 4

The dangers through poisoning, corrosion, burns and scalds are particularly high in the first three to four years of life. Furthermore, dangers from low-viscosity oil-refined products (coloured lamp oils, barbecue lighting fluids, etc.), as well as poisonous plants in the house and the garden should not be underestimated.

With increasing age, there is an increase in the danger stemming from objects such as falling furniture, shelves, televisions, etc. In addition, injuries increase from tools, kitchen apparatus and equipment at work and in the garage. Not to be ignored are injuries from animals, which also increase as children grow older.

PREVENTION OF INJURIES AND ACCIDENTS DURING CHILDHOOD

The abbreviation **ESD** to be applied to prevention must read:

1. **E**nvironmental management,
2. **S**afety awareness in adults,
3. **D**anger recognition by children and adolescents.

Management of the environment as a creative area of activity for our children is one of the most significant requirements in the field of prevention; homes, gardens and closer surroundings of the house must regularly be examined as to safety-related aspects. To be included are all the areas in which children spend their leisure time (playgrounds, play streets, etc.).

Safety awareness on the part of adults is to be trained in such a way that all the people collaborating in the education of children carry out a regular check-up with regard to preventive measures.

The curricula of educators and teachers must in future contain preventive aspects in accident avoidance.

The schooling of parents must be promoted through paediatricians in cooperation with other institutions. Coupled with the medical check-ups, age-adequate accident-prevention measures must be passed on to parents, children and adolescents.

As a result of all these measures, an earlier recognition of danger arises both by children and by adolescents; we know that children who are often told about dangers develop a preventive danger awareness earlier than others do. Only as a result of this do the previously mentioned preventive consequences arise.

Bibliography from the author

Dr. Hermann-Josef Kahl

Uhlandstraße 43

40237 Düsseldorf

Germany

4

4.3. AETIOLOGY AND SYMPTOMATICS OF MOTOR DEFICIENCIES AND ABNORMALITIES

Dr. Sigrid Dordel, German Sport University, Cologne

INTRODUCTION

Prevention as regards the wide variety of illnesses arising in adults through the civilizing effect of society begins during childhood. For the development of their personality, children require a particular amount of movement – the younger they are, the more they need. Movement is – before being able to speak – the first medium of interaction and communication. For a child, the development of posture and locomotion means increasing independence. Motor function makes a vital contribution with regard to the development of emotionally affective, psychosocial and cognitive functions. Not least of all, according to the Roux law, diverse motive stimuli are imperative to an appropriate degree for physical development. The natural impulse to move, which is typical for children, is a guarantee of a normal motor and physical development.

LACK OF EXERCISE AS A RISK FACTOR DURING CHILDHOOD – POSSIBLE CAUSES AND EFFECTS

The natural childhood impulse to move is physiologically founded. Familial and social conditions, which have a substantial influence in the course of development of a child, do not really allow children, however, to develop freely and thus to realize their impulse to move.

In the current discussion on childhood changes, a significant role is attributed to the increasing lack of physical perception and spatial experience within the context of generally reduced motor activities or changed movement behaviour (cf. Dordel, 1997; Rolff/Zimmermann, 1993 et al.).

Confinement to the house and isolation are named as characteristic features of a changed childhood; children play more at home, since playing in the yard, on the street or in the playground is not possible, perhaps even forbidden, or seems either too dangerous or of little attraction. The living-space – the area which serves as the focal point for life at home – can often no longer be taken over by children, or extended. Many activities take place so far away from home that children have to be transported by adults; this causes isolation. Space and time for exercise can become greatly restricted in this way. The influence of the media on the development of children is much debated. Indeed the extent

of television viewing should not be overestimated (cf. Ledig, 1992); however, a high degree of audiovisual stimulus, in the sense of a flood of stimuli, represents, especially for children, a strain on the vegetative nervous system which should not be underestimated. Apart from a possible emotionally affective over-demand through the content of television programmes, passive consumption brings about a reduction in active exercise time; limited perception and movement processes are the consequence. To this is added the fact that the exercise behaviour of children in the sense of sporting behaviour is very much moulded by models in the media, but also through institutional opportunities; on the other hand, original creative motor activities lose their meaning.

The socio-economic conditions, briefly sketched here, and typical of today's society, should be greatly extended and varied. They considerably reduce the quantity and quality of childhood movement experience. Furthermore, as another cause for the lack of exercise in children, handicaps and especially chronic illnesses, which in part can also be caused by socio-economical factors, should not be overlooked. They too can considerably affect individual exercise time and variety.

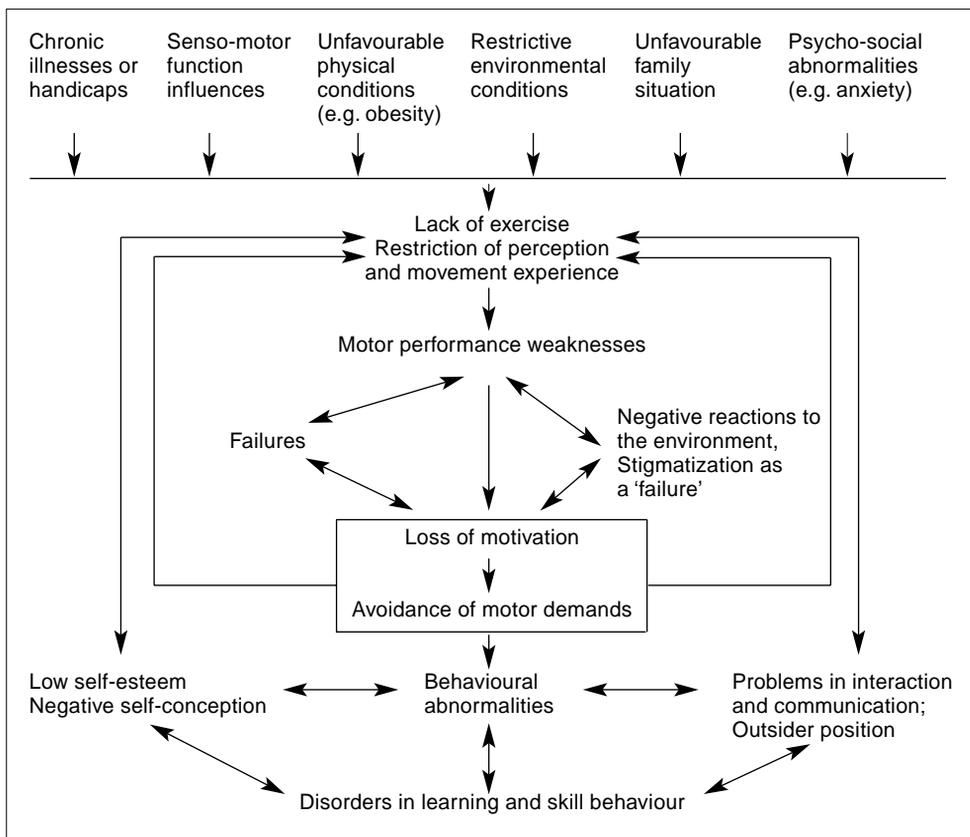


Fig. 1

Figure 1 represents conditional factors in the lack of exercise during childhood, in connection with possible consequences; restricted perception and movement experience during childhood leads to physical performance weaknesses and motor deficiencies and abnormalities. These in turn can – according to the significance of motor function in the development of a child – bring about abnormalities in other spheres of personality. Here one can in particular list negative effects on the development of self-conception and social behaviour, and also disorders in learning and skill behaviour.

LOWER MOTOR PERFORMANCE AS A CONSEQUENCE OF ALTERED DEVELOPMENTAL CONDITIONS

In surveys involving sports teachers with regard to their assessment of the motor capacity of children, they often point out that the capacity of children ‘today’ is lower than in ‘the past’. Even primary-school children fundamentally lack sporting basics, such as rolling, throwing, catching; they are often only difficult to motivate and generally show low readiness for exertion and poor concentration. Such subjective appraisals are to be interpreted with care. Here the personal position of the individual teacher, the specific conditions in the school and the sports education, as well as the respective didactic decisions as to method, play a role which should not be underestimated. In addition, attention should be paid to the fact that the motor capacity of children is always marked by the exercise culture of the time. So children today are probably not able to throw as well, or to catch, as they could previously; but they can perhaps roller skate or rollerblade much better, even perhaps ride a unicycle or juggle.

Whether physical capacity has worsened over the course of past decades, in association with changes in social conditions, has previously only rarely been subject to targeted examination. Two current studies should be quoted here.

Rusch, Bradfisch and Irrgang (1994) developed the selection test for special sports instruction (ATS), for assessing the physical capacity of school children. The test involves tasks to test coordinative and conditional abilities: ball bouncing, throwing at a target, trunk bending, high jumping from a standing position, holding on in a hanging position and a box test. In 1986 the ATS test was standardized by means of a sample test of 289 children and adolescents aged between 11 and 14 years. In 1995 the test was repeated, with 850 test subjects of the same age. A comparison of the results of the two studies, 10 years apart, impressively shows the change in physical capacity of the two test groups (fig. 2; Rusch/Irrgang, 1996); in 1986 16% of the subjects were classified as requiring help, and in 1995, 47% of them were described in the same way.

Defined as ‘requiring help’ are school children whose test results achieve or do not exceed an average value less a standard variation.

In a work by Dordel and Köster in 1996, 550 children aged between 7 and 11 years were examined on their jumping ability (Köster, 1997). As a classic test task, use was made of

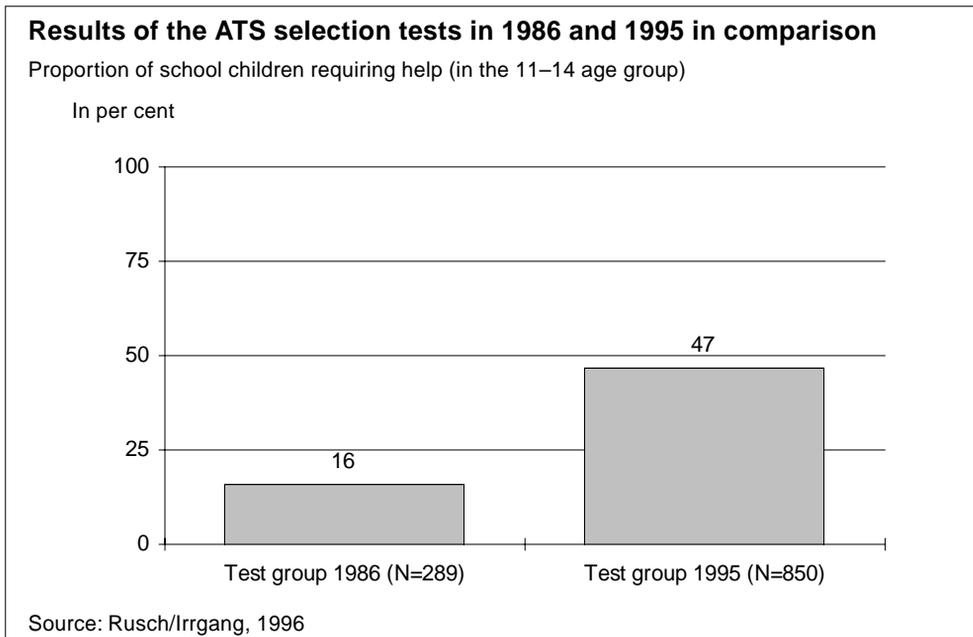


Fig. 2

the long jump from a standing position, for which standards are available from Kirsch (1974) as well as from Fetz and Kornexl (1978). Figure 3 shows a comparison of the average distance jumped by 7- to 11-year-old girls and boys in tests which were carried out 25 years apart. Tests were carried out by age and gender on 100 to 200 children. The findings are unambiguous (fig. 3).

In 1996, the children tested generally had less jumping power than in 1974. The differences range over a scale of 13 (8) cm jumping distance for 7-year-old girls (boys); up to 24 (20) cm jumping distance for 11-year-old girls (boys); this corresponds to a reduction in jumping power of a minimum 6% for 9-year-old boys, up to 14.6% for 11-year-old girls when comparing the 1974 and 1996 tests.

It is to be emphasized that generally the girls in 1996 have greater deficiencies as regards the data from 1974 than the boys. It is also conspicuous that, when comparing the younger and the older children, the reduction in jumping power in 11-year-olds as against 7-year-olds is clearly greater (10.0% or 6.2% reduced performance in 7-year-old girls and boys as compared with 14.6% or 12.0% reduced performance in 11-year-old girls and boys). As a natural conclusion it can be mentioned that, during school time, the school increasingly occupies the time of the child; thus exercise time is lost. To this comes the fact, with increasing age, that the spectrum of possible leisure activities for children and adolescents becomes greater and, particularly with adolescents in connection with

puberty, a turning away from sporting activity stands out. Clearly girls react more sensitively to changes in developmental conditions over the course of time than boys; this tendency appears not only in the investigation carried out by Dordel and Köster, but also in that of Rusch and Irrgang (1996). Nevertheless, these tendencies should be given due consideration; here further investigations are necessary, which consider larger groups of subjects, broader facets of motor capacity and, in particular, certain different developmental conditions.

Results of the sporting test – long jump from a standing position – for 7- to 11-year-old girls and boys			
	KIRSCH (1974)	FETZ/KORNEXL (1978)	DORDEL/KÖSTER (1996)
7-year-olds			
girls	1.30 m	1.24 m (N = 39)	1.17 m (N = 53)
boys	1.30 m	1.24 m (N = 46)	1.17 m (N = 50)
8-year-olds			
girls	1.39 m	1.34 m (N = 39)	1.25 m (N = 51)
boys	1.41 m	1.47 m (N = 33)	1.28 m (N = 66)
9-year-olds			
girls	1.44 m	1.43 m (N = 46)	1.31 m (N = 56)
boys	1.50 m	1.57 m (N = 48)	1.41 m (N = 67)
10-year-olds			
girls	1.57 m	1.63 m (N = 70)	1.17 m (N = 53)
boys	1.57 m	1.67 m (N = 67)	1.17 m (N = 54)
11-year-olds			
girls	1.64 m	1.66 m (N = 279)	1.17 m (N = 50)
boys	1.67 m	1.72 m (N = 234)	1.17 m (N = 50)

Fig. 3

FREQUENCY OF PHYSICAL PERFORMANCE WEAKNESSES DURING CHILDHOOD

On the frequency of physical performance weaknesses at school age, the data of Hollmann et al. (1978), expanded by Dordel (1985), are quoted time and again:

- 50 to 65% posture weaknesses and damage,
- 30 to 40% coordination weaknesses and damage,
- 20 to 25% heart and circulation weaknesses and circulatory regulation disorders (stamina weaknesses).

In comparison, the corresponding results of health checks by school doctors regularly turn out lower. So, for instance, in 1990

- 8.4% (boys) or 8.8% (girls) posture weaknesses,
 - 8.7% (boys) or 3.4% (girls) coordination disorders,
 - 0.1% (boys and girls) circulatory regulation disorders
- were found among school beginners (IDIS, 1990).

With these serious differences, the question is posed with greater urgency as to fundamental definitions and evaluation criteria. With the example of stamina, this problem is to be more closely explained.

CARDIOPULMONARY CAPACITY

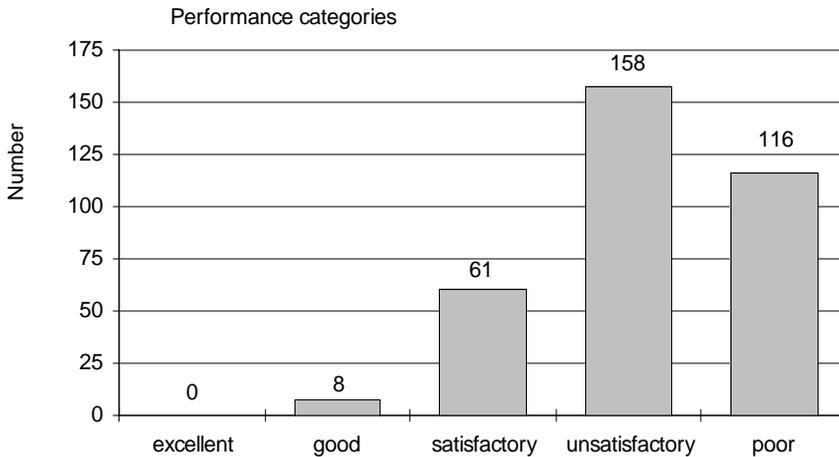
In the 'Bielefeld model' (IDIS, 1990), *circulatory regulation disorders* are ascertained from case histories. Enquiries are made of fainting fits, conditions of dizziness, orthostatic problems, concentration weaknesses and lack of drive, periodic drowsiness and so on; performance impairments could not be determined within the context of the routine examination.

However, *heart and circulation weakness* means *reduced stamina*. A clear statement with regard to assessment can be found in Liesen and Hollmann (1977, 47): 'a normally developed and capable child should ... achieve a performance of 3 watts or more per kilogram of body weight. Should performance fall below 2.5 watt/kg., then there is certainly a reduced capacity.' A cycling ergometric examination carried out within the stress scheme of Liesen and Hollmann (1977) among 80 primary-school children aged between 6 and 10 years (v. Keitz, 1993) shows that 50% of these children do not achieve a performance of 2.5 watt/kg. 61 of the 80 children (76.3%) do not reach the performance regarded as normal of 3 watt/kg. A comparison of the findings in boys and girls turns out clearly to the disadvantage of the girls (Dordel, 1996).

In parallel with the work of v. Keitz (1993), Mathee (1993) carried out an 8-minute run with 343 children aged between six and ten, the assessment criteria of which were established by Dordel and Bernoteit (1981) based on the statements of Liesen and Hollmann (1977). Figure 4 shows the findings of this examination: 79.9% of the random test are classified as weak or very weak in the performance categories. It is to be remarked critically here that a clear correlation between the results of the running test and the cycling ergometric examination cannot be produced. The eight-minute run requires a high degree of feeling for time, tempo and distance, which children as a rule still do not possess; moreover, motivational problems often affect the result of the running test. Nevertheless, figure 4 impressively shows that the findings are not distributed normally, but are clearly shifted to the right – to the side of reduced capacity.

4

Frequency distribution of the running performance of the total group (N = 343) over the performance categories of the eight-minute run



Source: Mathee, 1993

Fig. 4

The questions which are always to be posed in connection with the frequency and the meaning of physical and motor performance weaknesses during childhood are certainly prominent here:

Which factors are particularly important in respect of health – heart and circulation regulation or stamina – on the one hand for the current well-being of the child, and his psychosocial situation, and on the other hand in the sense of a possible health risk in later adulthood?

From this, the question urgently arises concerning the appropriate and practical appraisal procedure; within the context of series examinations carried out by the school doctors and/or teachers, and most likely by sports instructors within the context of school sports, all children should be examined with the most efficient procedure possible, in order to be able to assist with existing performance weaknesses.

Finally, the question urgently arises as to the norm: what is normal, and what must be described as abnormal? What does 'normal' mean, if almost 80% of all children examined are abnormal (cf. Dordel, 1996; Mathee, 1993)? Is it necessary to establish that the basic standards were valid 20 years ago, but should be revised today on account of altered developmental conditions? Or is the conclusion to be drawn in this regard that the norms founded in sports medicine are significant from a health point of view and are as valid as

before? In this case the present findings can only be described as alarming in the highest degree; strategies must be urgently developed and the means made available to intensify measures for the promotion of exercise.

COORDINATIVE CAPACITY

Within the context of motor diagnosis, the physical coordination test for children (KTK) developed by Kiphard and Schilling (Schilling, 1974) can already be described as a classic appraisal procedure. The KTK tests the overall physical coordination and physical control of children aged between 5 and 14 years. By means of standards tables it is possible to classify test results.

Out of the great many works, in which the KTK has been used, the findings of just three such examinations, which were carried out at the same primary school, are presented here – with other objectives, namely the testing of the efficiency of the motor promotion programme (Otten, 1991; Rittershaußen, 1994; Spiess, 1992). Figure 5 shows the results of these studies. It becomes clear – as in figure 4 – that there is no normal distribution; the number of children with abnormal or disturbed overall physical coordination is significantly higher than those with good or high coordinative capacity.

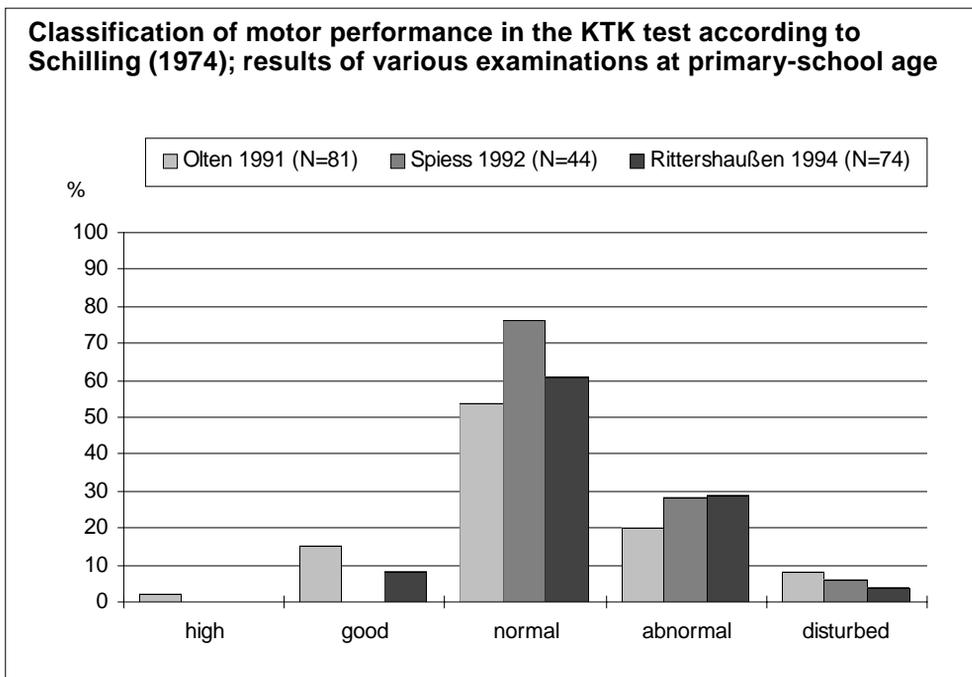


Fig. 5

The question arises here, just as with the interpretation of the results of the stamina tests, as to whether so many children (63 of 199 children; 31.7%) are actually to be described as abnormal or disturbed in their coordination, or whether, after more than 20 years, the norms should be revised.

POSTURAL CAPACITY

Posture or postural capacity is an extremely complex phenomenon, which cannot be determined with an appraisal procedure alone. Alongside situational and psychosocial aspects, a role is played above all by 'a sense of posture', the perception of posture as a coordinative component, and by muscular strength as a conditional component, or by flexibility (cf. Dordel, 1993; Klee, 1994).

For the appraisal of postural coordination, a test involving holding the arms out forwards is often used (Groeneveld, 1976; Matthiass, 1966, 1977). In order to lessen the severe disadvantages of the procedure – high subjectivity and brevity – the subjects were photographed during the test in front of a grid wall (cf. Dorde, 1993; Klee, 1994); the results can then be ascertained in a metric manner, and thereby objectified considerably. Examples are presented here of the results of the examinations by Bastian (1992) with 5- to 8-year-olds and by Holle (1993) with 8- to 10-year-olds, as well as by Berends (1996) and Schöler (1996) with 10- to 12-year-olds (figs. 6, 7, 8). Apart from the 5- to 6-year-olds in the examination carried out by Bastian (1992), where possibly the development-related stretching of the hip has not yet occurred, the high numbers with abnormal posture coordination in all age groups, in particular the 10- to 12-year-olds, must be taken seriously.

The examinations into muscular balance or possible muscular imbalance in children are to be viewed in connection with the results of the arm-stretching test. In the examinations carried out by Bastian (1992) and Holle (1993) with 5- to 8-year-olds or 8- to 10-year-olds, as well as by Hormann (1996), Janssen (1996) and Leithäuser (1996) with 10- to 13-year-olds, with the help of tasks of muscle-function diagnosis (Janda, 1979; cf. also Badtke et al., 1988; Schmidt et al., 1983) the strength or extensibility of the muscle groups responsible for pelvis position was examined. It is also true for muscle-function diagnosis, that this procedure can at best be described as semi-objective. However, no tasks were selected here which were carried out against resistance, but only those where gravity was involved; the subjectivity of the appraisal can thus be minimized. Moreover, the test tasks were photographically documented, and could be assessed carefully and at leisure.

Results of the arm-stretching test (Bastian, 1992)

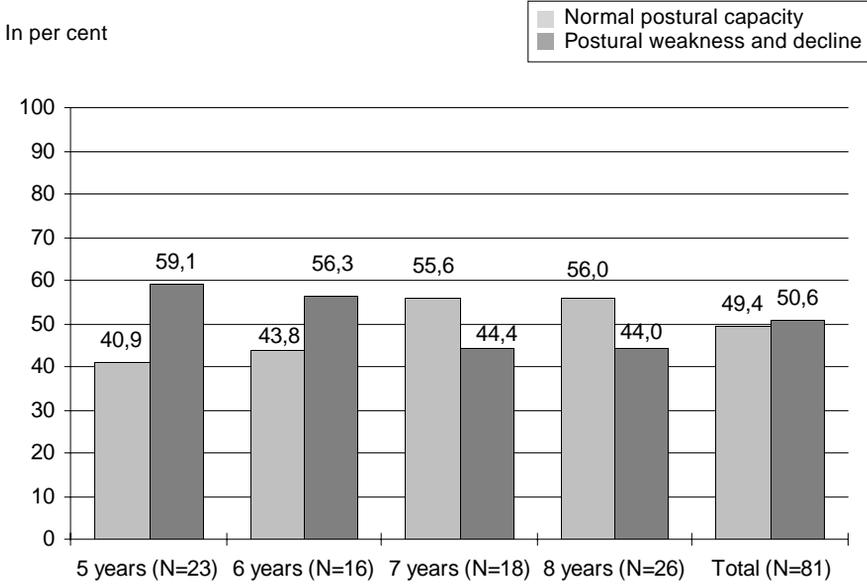


Fig. 6

Results of the arm-stretching test (Holle, 1993)

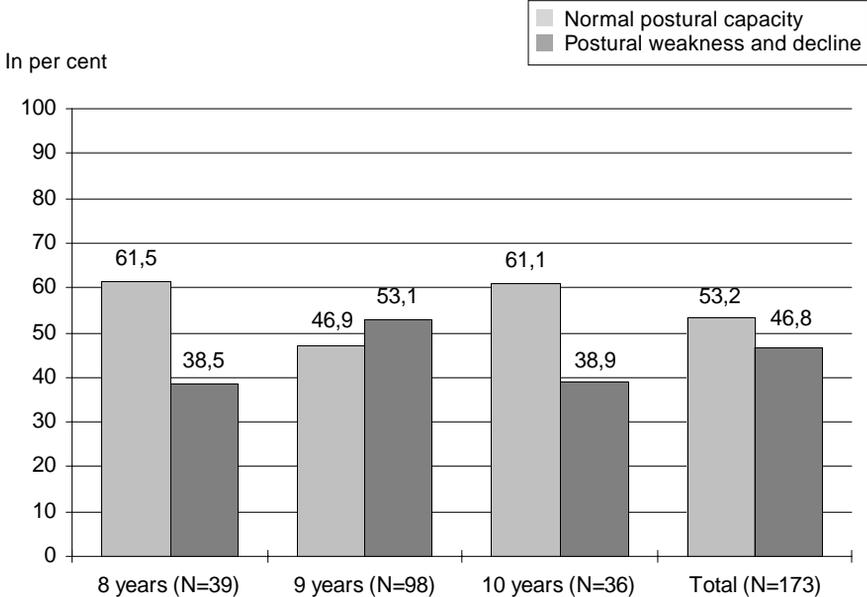


Fig. 7

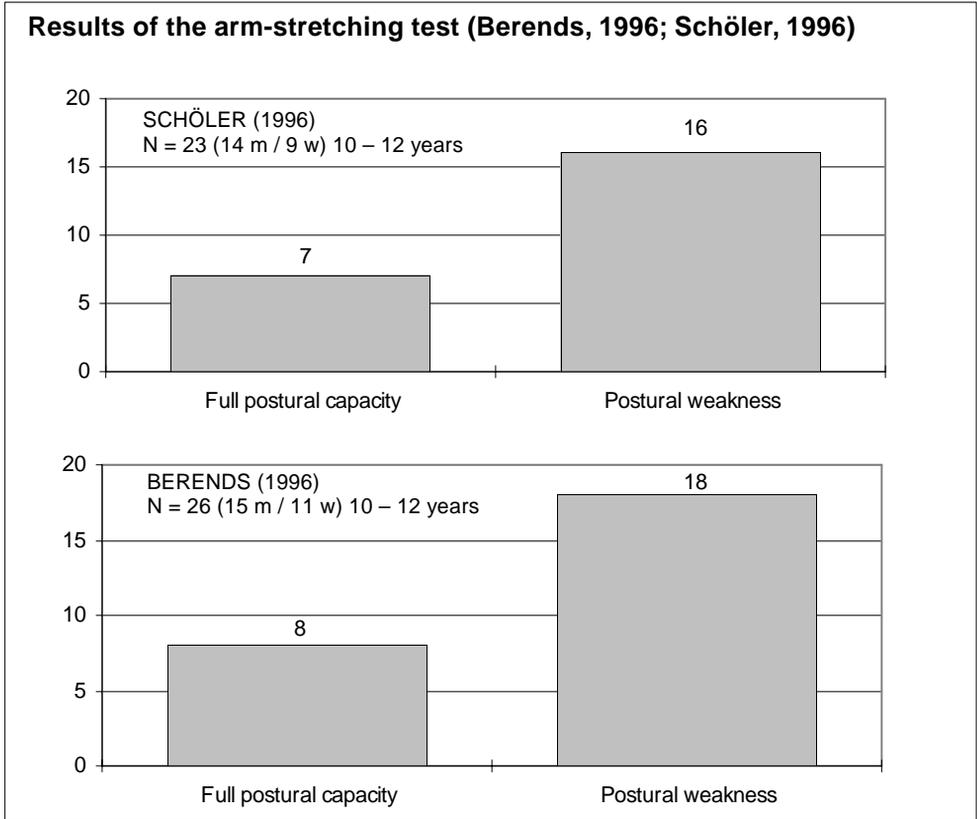


Fig. 8

Figures 9 and 10, or 11 and 12 show, by way of example, the results for 9-year-olds (Holle, 1993) and 10- to 12-year-olds (Hormann, 1996). If one assumes that, on the one hand, the physical strength of children on the basis of their natural impulse to move and varied physical demands must be high enough, to lift and to hold own body-weight against gravity, on the other hand, the development of flexibility reaches its peak at the approximate age of 12 years, then, stage 5 should predominantly be reached, within the context of muscle-function diagnosis. That this is not the case, has been illustrated many times in the literature (cf. Bittmann et al., 1987; Tauchel/Müller, 1986). These results likewise show that in a high number only the requirements of stage 4 can be fulfilled. The results are not to be interpreted individually here. Emphasis must, however, be given to the abnormal muscular imbalance which is to be recorded in the sphere of hip flexor/hip extensor. This result is to be found throughout all the age groups examined. Low strength of the *M. gluteus maximus* is conspicuous. The reduction of extensibility in the *M. iliopsoas* and the *M. rectus femoris* appears, on the other hand, at least in younger children, to be rather insignificant. Insufficient everyday demand on the hip extensor, and above all the stretching of this muscle group in the frequently adopted sitting posture, may be responsible for the clear weakening of the posterior musculature.

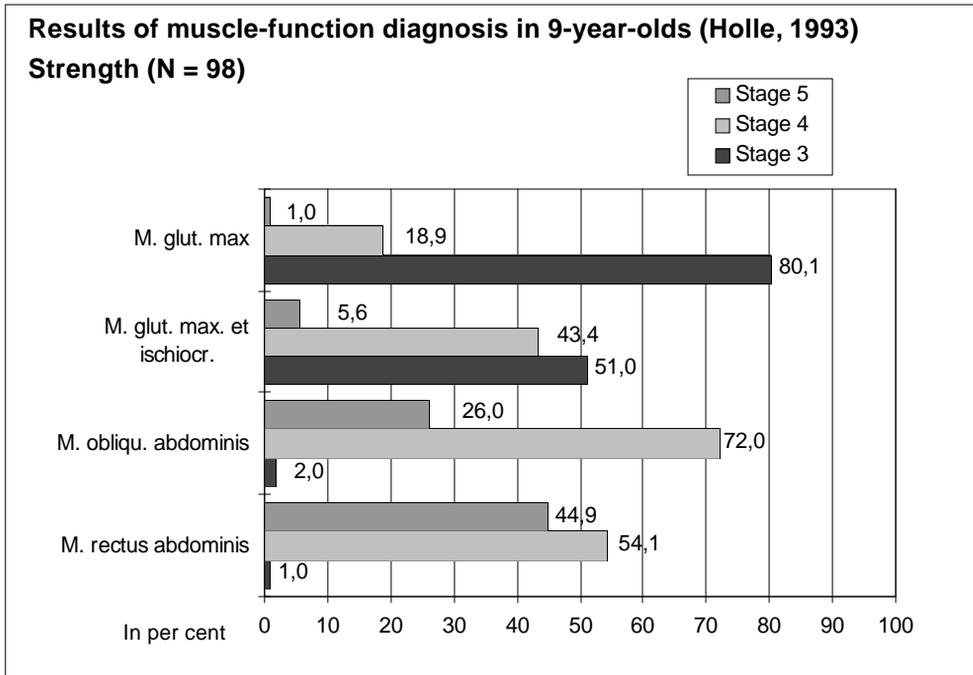


Fig. 9

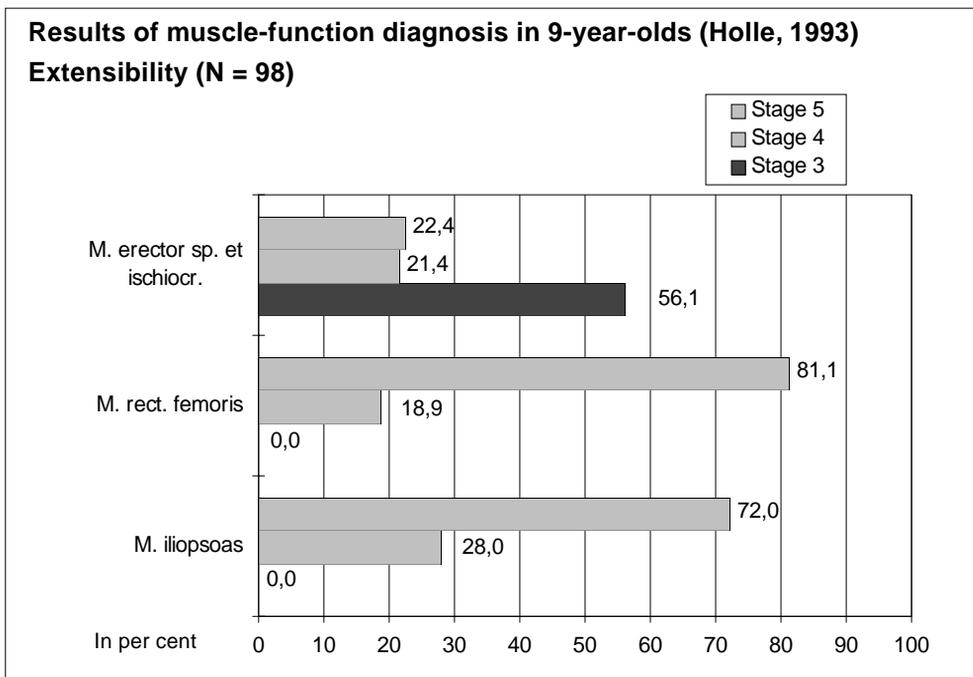


Fig. 10

Results of muscle-function diagnosis in 10- to 12-year-old school children (Hormann, 1993)

Strength (N = 23)

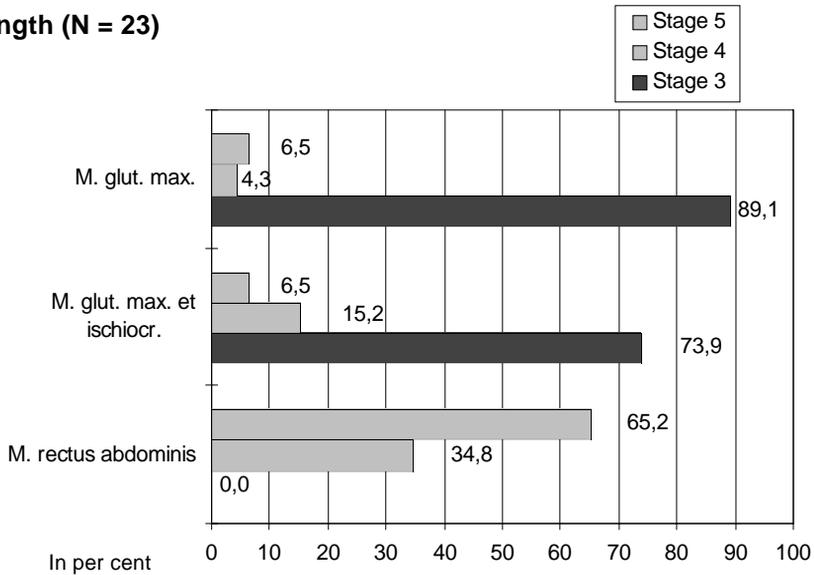


Fig. 11

Results of muscle-function diagnosis in 10- to 12-year-old school children (Hormann, 1993)

Extensibility (N = 23)

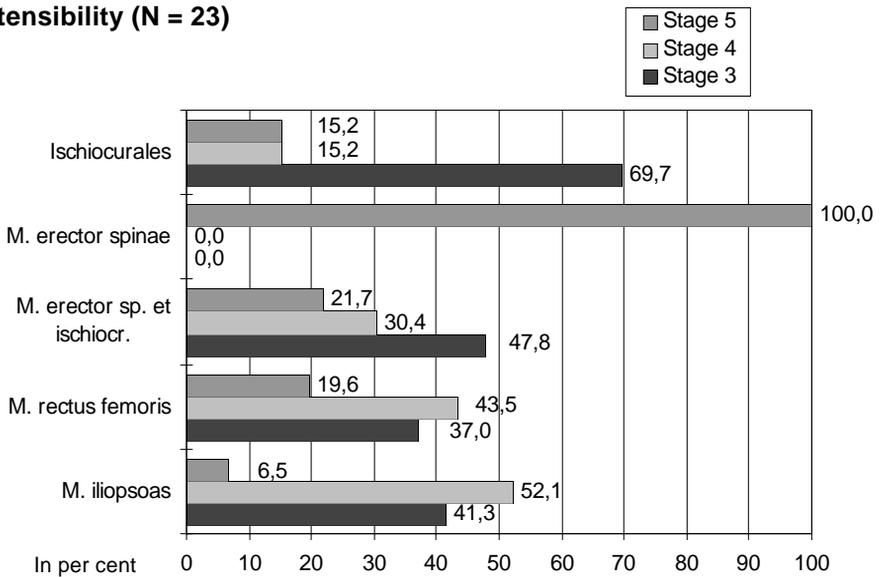


Fig. 12

For the muscle groups which tend to shorten, tenseness due to tonus increase is the most to be expected in early school age, not any morphological changes (cf. Bittmann et al., 1987); in this respect it is understandable that, despite existing muscular imbalance, sufficient flexibility can be detected if careful attention is given to the subjects relaxing while the test tasks are being carried out.

As a result of these examinations it should be noted that efforts to heighten the awareness of children, parents and teachers of the problems concerned with sitting too frequently or for too long in non-physiological seats in unfavourable sitting positions must be reinforced. In the exercise promotion programmes – sports education, fitness programmes and so on – there must be greater consideration given to targeted strengthening of the posterior musculature than in the past.

SUMMARY AND OUTLOOK

Motor deficiencies and abnormalities can significantly impair the development of a child; negative effects probably extend far into adulthood. Intervention – principally in the sense of the promotion of body awareness – is quite possible during childhood (cf. Dordel, 1993; 1995; 1997; et al.). Data on the frequency of motor performance weaknesses is readily available; it must generally be described as alarming. It appears especially noteworthy that, over the course of the past two decades already, the motor capacity of children has clearly worsened in several areas. However, the available data should be critically analysed and discussed, since at present there is no consensus with regard to the health significance of individual symptoms.

The aim of a committee, which is as interdisciplinary as possible, must be to elaborate guidelines in order to clarify which motor deficiencies and abnormalities are understood as relevant to health, and which appraisal procedures or which assessment criteria should be used. On the basis of these guidelines, an extensive study can/should be carried out, and repeated at greater intervals, in order to be able to make reliable statements on child health.

BIBLIOGRAPHY

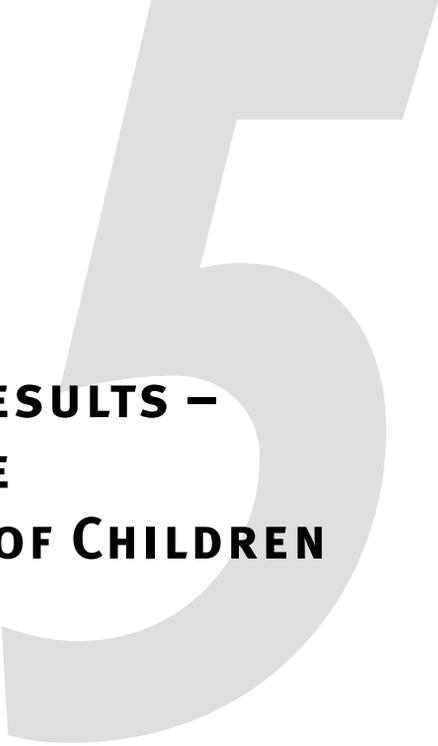
- Badtke, G. / Bittmann, F. / Bull, H. J. (1988): Ausprägung einer zweckmäßigen Körperhaltung im Schulsport. *Körpererziehung* 38, 365–371.
- Bastian, K. (1992): Zur Haltung und Handlungsleistungsfähigkeit im Bereich des Beckengürtels. Eine empirische Untersuchung bei fünf- bis achtjährigen Kindern. Köln.
- Berends, R. (1996): Die Überprüfung der Effizienz eines Rückenschulprogramms im Zusammenhang mit dem AOK-Fitball als Alternativsitzmöbel in der Schule – unter besonderer Berücksichtigung der stützmotorischen Haltungscoordination. Köln.
- Bittmann, F. et al. (1987): Muskelfunktion und Haltung im Schulalter. *Medizin und Sport* 27, 101–103.
- Dordel, S. (1985): Die körperliche Leistungsschwäche im Kindersalter. *Sport und Gesundheit* 2, 30–33.
- Dordel, S. (1993): Bewegungsförderung in der Schule. *Handbuch des Schulsonderturnens/Sportförderunterrichts*. Dortmund.
- Dordel, S. (1995): Körperwahrnehmung – ein zentrales Anliegen des Sportförderunterrichts. *Gesundheits-sport und Sporttherapie* 11, vol. 4, 7–11.
- Dordel, S. (1996): Ausdauerleistungsfähigkeit im Grundschulalter. *Haltung und Bewegung* 16, vol. 4, 29–41.
- Dordel, S. (1997): Sportförderunterricht (Schulsonderturnen) – ein schulischer „Reparaturbetrieb“ für alle Störungen? In: Zimmer, R. (Ed.) *Bewegte Kindheit*. Schorndorf.
- Dordel, S. / Bernoteit, M. (1981): Ausdauer bei 8–9-jährigen. Ein Beitrag zur Auswahluntersuchung für das Schulsonderturnen. *Sportunterricht* 30, 345–350.
- Dordel, S. / Köster, S.: Zur Entwicklung der Sprungkraft bei Grundschulkindern. (In prep.).
- Fetz, F. / Kornexl, E. (1978): *Sportmotorische Tests*. Berlin/München/Frankfurt a. M.
- Groeneveld, H. B. (1976): *Metrische Erfassung und Definition von Rückenform und Haltung des Menschen*. Stuttgart.
- Holle, D. (1993): Beurteilung der Handlungsleistungsfähigkeit, speziell im Bereich des Beckens und der Lendenwirbelsäule im Rahmen des Auswahlverfahrens des Sportförderunterrichts. Köln.
- Hollmann, W. et al. (1978): Zur gesundheitlichen Bedeutung des Schulsports. *Sportwissenschaft* 8, 142–151.
- Hormann, C. (1996): „Sitzschule“ in der Schule. Untersuchung der Auswirkungen auf haltungsbeeinflussende Muskelgruppen im Bereich des Beckengürtels. Köln.
- IDIS (Institut für Dokumentation und Information, Sozialmedizin und Öffentliches Gesundheitswesen) (1990): *Schuleingangsuntersuchung nach dem Bielefelder Modell in NRW. Annual report 1990*.
- Janda, V. (1979): *Muskelfunktionsdiagnostik*. Leuven.
- Janssen, T. (1996): Die Überprüfung der Effizienz eines Rückenschulprogramms im Zusammenhang mit der Einführung des AOK-Fitballs als Alternativsitzmöbel in der Schule – unter besonderer Berücksichtigung der Diagnostik der haltungsbeeinflussenden Muskelgruppen. Köln.
- Keitz, T. v. (1993): Die Beurteilung der Ausdauerleistungsfähigkeit bei 6–10-jährigen Grundschulkindern mit Hilfe eines Fahrradergometertests nach Liesen/Hollmann. Köln.
- Kirsch, A. (1974): Internationaler Standard-Fitneß-Test. In: Drefke, H. / Vent, H. / Kirsch, A.: *Schulsport in NRW. Internationaler Konditionstest und Bewertungskriterien für Gymnastik und Tanz. Supplement*.
- Klee, A. (1994): *Haltung, muskuläre Balance und Training*. Frankfurt a. M.
- Köster, S. (1997): Der Standweitsprung als sportmotorische Testaufgabe für Grundschüler – eine Revision.
- Ledig, M. (1992): Vielfalt oder Einfalt – Das Aktivitätenspektrum von Kindern. In: *Deutsches Jugendinstitut (Ed.): Was tun Kinder am Nachmittag? Ergebnisse einer empirischen Studie zur mittleren Kindheit*. München.
- Leithäuser, A. (1996): Überprüfung der Einsatzfähigkeit alternativer Schulmöbel am Beispiel des Sitzballes in der Sekundarstufe I einer Regelschule und dessen Einfluß auf die Handlungsleistungsfähigkeit. Köln.

- Liesen, H. / Hollmann, W. (1977): Grundsätzliche Erwägungen zum Schulsonderturnen aus sportinternistischer Sicht. In: Volck, G. / Reiber, H. (Eds.): Schulsonderturnen in der Diskussion. Schorndorf.
- Mathee, J. (1993): Die Beurteilung der Ausdauerleistungsfähigkeit bei 6–10jährigen Grundschulkindern mit Hilfe des modifizierten Cooper-Tests, 8-Minuten-Lauf. Köln.
- Matthiass, H. H. (1966): Reifung, Wachstum und Wachstumsstörungen des Haltungs- und Bewegungsapparates im Jugendalter. Basel/Freiburg/New York.
- Matthiass, H. H. (1977): Regelvorgänge der Haltung – Grundlagen der menschlichen Haltung. In: Volck, G. / Reiber, H.: Schulsonderturnen in der Diskussion. Schorndorf.
- Otten, G. (1991): Psychomotorische Förderung von motorisch auffälligen Schülern des 1. und 2. Schuljahres. Überprüfung eines gezielten Übungsprogramms im Sportförderunterricht. Köln.
- Rittershaußen, A. (1994): Zur Effizienz motorischer Förderung im Grundschulalter. Eine Längsschnittstudie. Köln.
- Rolff, H. G. / Zimmermann, P. (1993): Kindheit im Wandel. Weinheim/Basel.
- Rusch, H. / Bradfisch, J. / Irrgang, W. (1994): Auswahltest Sportförderunterricht. Haltung und Bewegung, vol. 1, 4.
- Rusch, H. / Irrgang, W. (1996): Verändert sich die körperliche Leistungsfähigkeit von Kindern und Jugendlichen? Eine Studie über die Entwicklung der körperlichen Leistungsfähigkeit. (Personal communication).
- Schilling, F. (1974): Körperkoordinationstest für Kinder. KTK Manual. Weinheim.
- Schmidt, H. et al. (1983): Der Muskeltest nach Janda für die sportmedizinische Praxis. *Medizin und Sport* 23, 271–278.
- Schöler, M. (1996): „Sitzschule“ in der Schule. Untersuchung der Auswirkungen auf die Haltungsleistungsfähigkeit. Köln.
- Spiess, H. (1992): Ganzheitliche Entwicklungsförderung von psychomotorisch auffälligen Schulkindern des ersten Schuljahres durch Bewegung, Sport und Spiel unter besonderer Berücksichtigung der Schulung der Bewegungskoordination. Überprüfung der Wirksamkeit eines psychomotorischen Förderprogramms. Köln.
- Tauchel, U. / Müller, B. (1986): Untersuchungen zu Muskelfunktionsstörungen im Kindesalter und die Bedeutung des arthromuskulären Gleichgewichtes für die sportliche Betätigung. *Medizin und Sport* 26, 120–125.

4.4. SUMMARY OF THE DISCUSSION

As the contributions showed, and the discussion confirmed, accidents and movement disorders during childhood and adolescence represent a central problem area; they occur frequently (in certain age groups, accidents are the most frequent cause of death), they have serious and enduring consequences and can be influenced in a preventive manner.

The discussion, moreover, noted that, disorders in motor development, being disorders in a central area of development, point to overall defects in maturation, that they often go along with other impairments, for instance adiposity or accidents, and that they are anchored as symptoms in today's living conditions of the child. Therefore, in individual settings, which could be the place for realizing preventive actions, the interrelated aspects should be joined together, and integrated, comprehensive strategies should be developed for health promotion.



**SUMMARY OF THE RESULTS –
GUIDELINES FOR THE
HEALTH EDUCATION OF CHILDREN**

On 14 November 1996, on the invitation of the FCHE, an interdisciplinary working conference took place, with experts from the fields of social medicine, epidemiology, and developmental psychology, on the subject of 'Child Health – Epidemiological Foundation'. The aim of the conference was to gather the relevant data and scientific knowledge, together with the experts, to highlight out the central health problems consensually on this basis and to discuss the necessary treatment requirements, guidelines and strategies.

- An emphasis was placed on presentation and discussion of the data. Knowledge of data sources, data quality and the accessibility (reporting) of data is the foundation for determining central health problems, which can frequently be effectively tackled by preventive measures, or for ascertaining the relevant health resources.
- A second emphasis was placed on the analysis of conditional connections relating to health behaviour and health influences during childhood, with regard to the results of research currently being undertaken.
- In the general discussion, resulting guidelines for health promotion during childhood as well as aspects of their realization and treatment requirements were determined, and cooperation partners and fields of action localized.
- As an example, the subject of 'movement disorders, motor-development deficiencies, and accidents' was selected from the range of possible points of focus, scientific results were presented and discussed in depth.

RESULTS ON DATA SUPPLY, DATA QUALITY AND HEALTH REPORTING FOR CHILDREN

In certain fields, an additional data requirement was reported; in particular, the investigation of health-impairment indicators would be meaningful, as well as the formulation of developmental indicators and health-resource indicators. Data should be obtained regularly and representatively for Germany, so that changes in the state of health and the effects of intervention can be established. These data should be assessed according to differentiated social characteristics, and processed together with other sources in regular health reports for children, to be made widely accessible.

Necessity of regular and comprehensive health reporting on children

RESULTS ON THE CENTRAL HEALTH PROBLEMS IN CHILDREN AND APPROACHES TO HEALTH PROMOTION

On the basis of the underlying data sources and scientific findings, the following problem areas were determined to be central and influenced by preventive measures:

Child health – central problems

- Motor-development and coordination disorders,
- Speech disorder and disfluency, hearing and sight disorders,
- Adiposity and problematical nutritional behaviour (malnutrition),
- Accidents,
- Concentration disorders,
- Behavioural abnormalities, aggression,
- Low participation in early diagnosis examinations and immunization.

These aspects can be effectively and widely influenced by preventive measures. Some are interconnected (e.g. concentration and movement disorders, or movement disorders and adiposity). Retarded speech acquisition and motor-development deficiencies can apply as indicators of maturity disorders. Addiction prevention, sex education and prevention of violence were named as priority subjects.

For these specific fields, problem-oriented prevention approaches exist or are demanded (e.g. compensatory support for school children with speech disorders, exercise and relaxation training, accident prophylaxis, activities to promote dental hygiene). Alongside these, approaches would be desired in competence promotion, for example also for parents as a target group. They could be provided with the corresponding ‘cultural knowledge’ about health, illness or dealing with illness, development or assessment of development.

GUIDELINES ON HEALTH PROMOTION

In brief the floor discussion resulted in the following general guidelines in relation to health promotion during childhood:

Guidelines on health promotion during childhood

Measures and initiatives for health promotion during childhood, with the aim of imparting health-related knowledge and motivating health promotional behaviour

- take place in relation to target groups and in a manner oriented towards living conditions;
- are connected with specific phases of development;
- include – alongside problem-oriented approaches – competence-promoting approaches; competence promotion is aimed not only at children but also at parents and professionals;
- lay down – in consideration of the overlap between individual aspects of development and health impairments – strategies which link together connected problems and deal with them at the same time;
- consider gender differences and integrate gender-specific approaches;
- pay particular attention to socially deprived families as well as other heavily burdened social groups which are difficult to access – here approaches oriented towards living conditions are especially important;
- try to use the many available means of access – in view of the difficult accessibility of certain important target groups;
- place value on long-term strategies and early primary preventive measures.

NECESSITY OF COOPERATION, EXCHANGE AND SURVEYS

The discussion dealt with which areas and through which participants health promotion measures were already being carried out. Possible cooperation partners were: nursery schools, paediatricians, health insurance funds, the public health service/paediatric service, (primary) schools, clubs and individual initiatives. Owing to the wide variety of participants, forms of access, subject fields, measures and media, the following requirements were established:

Further development requirements

- Need for surveys and market analyses
- Need for networking, exchange, cooperation, and coordination
- Need for qualification in the sense of further education and training

PARTICIPANTS



Dr. Peter Allhoff
Institut für medizinische Forschungsberatung
Imbach 27, D–51381 Leverkusen

Dr. Lutz Altenhofen
Zentralinstitut für die Kassenärztliche Versorgung
in der Bundesrepublik Deutschland
Herbert-Lewin-Str. 5, D–50931 Cologne

Rosi Apitz
Bundesministerium für Gesundheit, Referat 313
D–53108 Bonn

Dr. Bärbel-Maria Bellach
Robert-Koch-Institut, Fachbereich 6
Nordufer 20, D–13353 Berlin

Manfred Brandt
Bundeszentrale für gesundheitliche Aufklärung
Ostmerheimer Str. 220, D–51109 Cologne

Dr. Sigrid Dordel
Deutsche Sporthochschule Köln
Carl-Diem-Weg, D–50927 Cologne

Christine Dorer
Kongreßmanagement
Steinfelder Gasse 9, D–50670 Cologne

Heike Ettischer
Bundeszentrale für gesundheitliche Aufklärung
Ostmerheimer Str. 220, D–51109 Cologne

Prof. Dr. Peter Franzkowiak
Fachhochschule Koblenz, FB Sozialarbeit
D–56075 Coblenz

Prof. Dr. Cornelia Helfferich
Ev. Fachhochschule Freiburg, Fachbereich Sozialpädagogik
Buggingerstr. 38, D–79114 Freiburg

Dr. Heidrun Kahl
Robert-Koch-Institut, Fachbereich 6
Nordufer 20, D-13353 Berlin

Dr. Hermann-Josef Kahl
Niedergel. Kinderarzt, Kinderkardiologe
Uhlandstr. 43, D-40237 Düsseldorf

Viola Lübke
Bundeszentrale für gesundheitliche Aufklärung
Ostmerheimer Str. 220, D-51109 Cologne

Gisela Marsen-Storz
Bundeszentrale für gesundheitliche Aufklärung
Ostmerheimer Str. 220, D-51109 Cologne

Dr. Heiner Mersmann
Gesundheitsamt Köln
Neumarkt 15, D-50667 Cologne

Dr. Monika Meyer
Bundeszentrale für gesundheitliche Aufklärung
Ostmerheimer Str. 220, D-51109 Cologne

Dagmar Noßke
Bundeszentrale für gesundheitliche Aufklärung
Ostmerheimer Str. 220, D-51109 Cologne

Dr. Christian Palentien
Universität Bielefeld, SFB 227
Postfach 100131, D-33501 Bielefeld

Dr. Elisabeth Pott
Bundeszentrale für gesundheitliche Aufklärung
Ostmerheimer Str. 220, D-51109 Cologne

Dr. Renate Scherz
Bundesministerium für Gesundheit, Referat 313
D-53108 Bonn

Dr. Hartmut Schirm
Akademie für Öffentliches Gesundheitswesen
Auf'm Hennekamp 70, D-40225 Düsseldorf



Prof. Dr. Hans G. Schlack
Rheinisches Kinderneurologisches Zentrum
Waldenburger Ring 46, D-53119 Bonn

Hans Schnocks
Bundeszentrale für gesundheitliche Aufklärung
Ostmerheimer Str. 220, D-51109 Cologne

Dr. Bernd Simon
Berufsverband der Ärzte für Kinderheilkunde
und Jugendmedizin Deutschland e.V.
Mielenforster Str. 2, D-51069 Cologne

Dr. Albert Statz
Bundesministerium für Gesundheit, Referat 313
D-53108 Bonn

Dr. Sigrun Steppuhn
Ministerium für Arbeit, Soziales, Gesundheit und Frauen
Heinrich-Mann-Allee 103, D-14473 Potsdam

Jürgen Töppich
Bundeszentrale für gesundheitliche Aufklärung
Ostmerheimer Str. 220, D-51109 Cologne

In the specialist booklet series "Research and Practice of Health Promotion" has been published previously:

Volume 1 - *Gender-related Drug Prevention for Youths*

Practical Approaches and Theory Development.

Final report of a research project by Peter Franzkowiak, Cornelia Helfferich and Eva Weise commissioned by the FCHE.

Order No. 60 802 070

Volume 2 - *Ecstasy: Use and Prevention*

Empirical Research Results and Guidelines.

Documentation of a FCHE status seminar held in Bad Honnef from 15 to 17 September 1997

Order No. 60 801 070

Volume 3 - *Quality Assurance in AIDS Prevention*

Report of the Expert Conference in cooperation with the World Health Organization/Regional Office for Europe (WHO/EURO) from 13 to 15 November 1995.

Order No. 60 803 070

Volume 4 - *What Keeps People Healthy?*

The Current State of Discussion and the Relevance of Antonovsky's Salutogenic Model of Health.

An experts' report by Jürgen Bengel, Regine Strittmatter and Hildegard Willmann commissioned by the FCHE.

Order No. 60 804 070 (will be publ. in May 1999)



BZgA

**Bundeszentrale
für
gesundheitliche
Aufklärung**

ISBN 3-933191-21-1