

## SUMMARY

On September 27 1999, the Advisory Council on Health Research (RGO) was asked by the Minister of Health, Welfare and Sport (VWS) to prepare a report on the programming of sports, physical activity and health research and on possible infrastructural improvements in this field (see Appendix 1).

The Council accordingly formed a committee of experts (see Appendix 2). It was decided that sports health should be interpreted as including all health issues relating to sporting activities or exercise/physical activity. Sport and exercise can have both positive and negative effects on health: increasing fitness and preventing certain chronic conditions on the one hand, but causing injury on the other. Effects of both types are regularly the subject of scientific research. The Council's report is structured around these positive and negative effects, which are seen in both healthy individuals of all ages and in people with chronic illnesses or disabilities, and are associated with physical inactivity, recreational exercise, recreational sport and top-level sport.

Where research into the positive effects of sport is concerned, special attention is paid to the scientific basis for structured preventive health programmes for particular groups, such as people with cardiovascular disease, diabetes mellitus or other chronic conditions.

The public dissemination of health information via the mass media is not considered in the report, nor is research into rehabilitative care or occupational health care (reintegration). (See Appendix 3.)

Both top-level sport and recreational sport are considered important, but the report gives more attention to the latter because of its greater significance for the health of the population at large. Emphasis is given to sport as a means of *health promotion* rather than to *improving performance*. Naturally, issues that are the subjects of research in top-level sport can be relevant for people who do sport at a lower level and for patients. Furthermore, greater importance is attached to sports health research than to sports research.

The Council's first step in preparing the report was to make an inventory of ongoing research and gaps in sports health care (the supply side) and of the areas where research is needed (the demand side). Structured interviews with more than forty experts involved either on the supply side or the demand side (see Appendix 4) were used to get a picture of the present research situation in the Netherlands, of the extent and funding of research, of the factors restricting research and of future research needs. The information thus obtained was summarised in a number of tables, then assessed for its consistency and coherence.

The inventory of ongoing research revealed that research institutes are more inclined to investigate the positive effects of sport and exercise than the negative effects. Studies into the *positive* effects tended to focus on the musculoskeletal system and, to a lesser extent, on the cardiovascular and pulmonary systems; much less research was done in connection with the neurological system, immune system, endocrine system or digestive system. Gaps exist in relation to psychiatric illness, lung cancer and breast cancer.

Most researchers looking into the *negative* effects of sport and exercise were concerned with injuries to the musculoskeletal system, particularly the upper and lower extremities and, to a much lesser extent, the spinal column/pelvis and the head/neck. Few research institutes were doing work into negative effects on cardiovascular system, pulmonary system, neurological system, immune system, endocrine system or digestive system.

The demand-side inventory revealed a need for research in the following areas: the effectiveness and efficiency of sport and exercise; strain and injury; sport and exercise in relation to particular groups; implementation; and the organisation and practice of sports health care. The level of correlation between the supply and demand patterns was assessed by determining which institutes were active in each field. Next, demand was assessed in relation to three specially defined descriptors: 1. Current supply and demand are broadly in line; 2. There is a clear imbalance between supply and demand, making the promotion of this essentially application-oriented research desirable; 3. The research is of a more fundamental nature and does not yet have clear applications in sports health care.

Research fields to which descriptor 3 applies are not strictly relevant to the RGO's focus area

Research fields in which there is an imbalance were highlighted as priority areas. Thus, five priority areas were identified (see subsection 4.3.).

1. The effectiveness and efficiency of sport and exercise, including: a. research into the effectiveness of various forms of sport/exercise in relation to the prevention of particular conditions/illnesses; b. research into the optimal relationship between exercise and health; c. research into the cost-effectiveness of (measures involving) sport and exercise in terms of health benefits and economic benefits; d. research into exercise programmes.
2. Strain and injury: a. the prevention of sports injuries and sport-related problems; b. the diagnosis, prognosis and treatment of sports injuries; c. etiological research into strain-related injury.
3. Specific groups, such as people with chronic illnesses or disabilities, older people, working people and young people.

4. The implementation of exercise programmes, treatment guidelines and prevention guidelines.
5. The organisation and practice of sports health care, including: a. research into the support, supervision and treatment of (top-level) sportspeople/exercisers; b. research into the quality of sports health care and supervision/care and care providers; c. research into the use and effect of sports checkups and supervision.

From the inventory made to identify problems in the field of sports health research, it is clear that research is conducted at universities (in faculties of medicine and in other faculties) and at non-university research institutes. 'Other' university faculties involved in this field include sports science, health science, - social science and technology. The available academic staff (about 115 to 120 fte's) which is active in the field of sport, exercise and health, is divided between a large number of research groups. It is estimated that about a hundred of them work in universities and about eighteen elsewhere. Although this is quite a large number of people, the size of the field (sport, exercise and health) needs to be taken into consideration, as does the fragmented nature of the research activities.

According to the inventory, university research into sports health care is funded to the tune of 30 to 35 per cent from primary sources (i.e. the university's basic budget). This figure is an average, with the range extending from 15 to 80 per cent. This may be regarded as structural funding. Other research is conducted on a project basis, i.e. involves short-duration studies carried out by different researchers. Funding from various bodies is used for sports health research on an ad hoc basis, but there is no dedicated source of funds for such research.

The Council makes the following recommendations:

1. University and non-university research should be concentrated in a small number of centres with appropriate professorship definitions. Three professorships should be created, each with a remit based upon the five priority research fields. Each should be supported by a permanent staff of three or four fte's and should be within the medical faculty of a leading university. Obvious candidate universities include (in no particular order) those of Groningen, Maastricht, Utrecht and the Free University of Amsterdam.
2. It is desirable that a national consultative forum should be established to promote the coordination and alignment of sports health research. This forum should include people representing carers (sports doctors, sports physiotherapists, Association for Sports Medicine (VSG), Netherlands

Association of Sports Physiotherapists (NVFS), etc.), the suggested professors of sports health, researchers and the Netherlands Olympic Committee\*Dutch Sports Federation (NOC\*NSF). The forum could consider from various angles research priorities and quality control issues relating to sports health care and the training of people providing such care.

3. A sports health research programme should be established under the auspices of the Netherlands Health Research and Development Council (ZON) working in close collaboration with the Netherlands Organisation for Scientific and Medical Research (NWO-MW). The consultative forum referred to in recommendation 2 should support the programme with information from the care and research fields. A sum of forty million Dutch guilders is considered necessary to fund this programme over an eight-year period. A phased build-up of funding, starting at perhaps two million in 2001 and rising to five or six million in subsequent years is considered advisable. Funding should be targeted particularly on the five priority research fields; these fields should receive approximately half of the total budget.
4. In view of the present fragmented nature of research activities in the field of sports health, research should be driven both top down and bottom up. Good access to the academic centres is also considered important, particularly for sports physiotherapists, trainers and coaches. Finally, consultation and coordination between the scientific research centres and existing or planned knowledge and dissemination centres are considered desirable.