

Sport, Health and Physical Education: A Reconsideration

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Abstract

This paper seeks to: (i) outline and critically evaluate the widely accepted idea that exercise and sport are beneficial for health; (ii) examine the different patterns of social relations associated with exercise and sport; (iii) examine some of the health consequences of these social differences; and (iv) explore the implications of this analysis for physical education. No simple generalisations can adequately encapsulate the complexity of the relationships between physical education, sport and health. In terms of their social relations and their consequences for health, we need to differentiate (i) between exercise and sport and (ii) between types and levels of sport, with the distinctions between contact and non-contact sport and between mass and elite sport being particularly important.

In the case of rhythmic, non-competitive exercise, health benefits substantially outweigh health 'costs'. However, as we move from non-competitive exercise to competitive sport, and as we move from non-contact to contact sport, so health 'costs', in the form of injuries, begin to mount. Similarly, as we move from mass sport to elite sport, the constraints to train more intensively and to continue competing through pain and injury increase, with a concomitant increase in the health risks.

The physical activities prioritised in the revised National Curriculum for Physical Education in England and Wales enforced by recent official and semi-official statements, are precisely those competitive and contact sports in which the health 'costs' are greatest while those activities which are marginalised within the physical education curriculum offer substantial health benefits with fewer health 'costs'. To the extent that they are successful, recent policy initiatives in relation to physical education are likely to work against the promotion of those forms of exercise which are most beneficial to health and thus hinder the promotion of health-related exercise in physical education.

Introduction: Exercise, Sport and the Healthy Body Ethos

There are probably few ideas which are as widely and uncritically accepted as that linking sport and exercise with good health. What is particularly striking about this ideology is its near universal acceptance across a range of societies for, in developing and developed societies, in capitalist and communist societies and in democratic and totalitarian societies, there is a broad consensus that 'sport is good for you'.

The ideology linking sport and health has a long history. In nineteenth century Britain, the birthplace of many modern sports, an ideology of athleticism which linked sport with health, both physical and 'moral', was developed in the Victorian public schools (Mangan, 1981), while the promotion and maintenance of the health of schoolchildren has long been an area of concern to physical educators. Colquhoun and Kirk (1987:100), for example, note that when physical education was introduced as a subject in the elementary school curriculum in the early twentieth century, it 'had the express purpose of improving the medical, physical and hygiene provision for children in schools'. Throughout the interwar period, *The Health of the School Child*, the annual report of the Chief Medical Officer of the Board of Education, regularly made reference to the importance of physical education for children's health, and the idea that sport and exercise are associated with health is widely known and accepted by British schoolchildren

today; a recent study for the Sports Council (1995:128) noted that 92% of schoolchildren agreed that it was important to keep fit and 82% agreed that they felt fit and healthy when they did sport and exercise. The idea that sport is health-promoting is also frequently stressed by those involved in sport; to quote the former Olympic gold medalist Sebastian Coe: 'Sport is an integral part of a healthy lifestyle in today's society' (foreword to Mottram, 1988).

Such views have been endorsed in a variety of official and semi-official health publications. In 1988, *The Nation's Health*, a report from an independent team, noted that regular and moderate exercise has a number of health benefits while *The Allied Dunbar National Fitness Survey* (1992) and the Department of Health in its *Health of the Nation* (1993) similarly noted a number of health benefits associated with regular physical activity. More recently, in its policy statement *Sport: Raising the Game*, the government argued that 'through sport, young people come to appreciate the long-term benefits of regular exercise and are able to make informed decisions about adopting a healthy and active lifestyle in future years' (DNH, 1995:6), whilst in its consultation document *England, the sporting nation: a strategy* the English Sports Council (1997:3) pointed to the 'well rehearsed' benefits of sport including health.

Such views are not confined to Britain. In 1993 an authoritative report from the American College of Sports Medicine and the Center for Disease Control recommended that adults should take 30 minutes of moderate activity on most days of the week (Wimbush, 1994). Riordan has pointed out that governments in developing societies frequently place considerable emphasis upon the development of sport, not only for the consequences which sport can have for nation-building and national integration but also for the effects it can have on hygiene and health; indeed, Riordan

(1986:291) argues that 'of all the functions of state-run sport in modernising societies, that to promote and maintain health must take first place', and he goes on to note that 'in many such states sport comes under the aegis of the health ministry'.

It might be noted that although the ideology linking sport and health is widely accepted, the view that sport is good for health has only relatively recently come to be applied to women as well as men for, during much of the 19th century, women were actively discouraged from taking part in vigorous exercise, which was often seen as *damaging* to their health (Vertinsky, 1990). Fletcher (1987:145) has noted that women's growing participation in cycling, swimming, golf and hockey in the late 19th century was met with resistance from eugeneists such as Dr Arabella Kenealy who, in 1899, argued that women were in danger of neutering themselves by over-indulgence in athletics. The resistance to women's full participation in sport has similarly been documented for nineteenth century New Zealand (Crawford, 1987), Canada (Lenskyj, 1987) and America (Vertinsky, 1987).

The Ideology of Healthism and Victim Blaming

It is not surprising that those involved in what is sometimes called the 'fitness industry' have generally supported the idea that sport and exercise are health-promoting though it is noticeable that such people have frequently conflated the concepts of fitness, health and beauty as a means of more effectively marketing their services. Perhaps of rather greater importance, however, since they directly affect every school-child in many countries in the developed world, have been recent developments in school physical education which have promoted the role of regular physical activity in achieving and maintaining health. In this context, Colquhoun (1991:5) has written of an 'explosion' of interest from the physical education profession

in teaching health-related issues, an explosion which, he suggests, is indicated by the burgeoning number of professional articles and curriculum guides in several countries, especially Britain, Australia, Canada and the USA.

This is, of course, not a new role for physical education. However, Kirk and Colquhoun argue that:

the recent re-emergence of health matters to occupy a place of central importance in school physical education marks a new moment in both the production of physical educators' views of their professional mission and in the production of a new health consciousness in society at large (1989:417).

Colquhoun and Kirk (1987) have identified several processes which, they suggest, have influenced this re-orientation of physical education towards health related issues, including a growing societal interest in health matters, increasing concern over the prevalence of heart disease and the spiralling costs of medical care; to these might be added the fact that many physical education teachers, perhaps conscious of the relatively low status of their subject vis-à-vis what are often considered more 'academic' subjects, have been happy to draw upon the prestige associated with medicine and science to provide what they hope will be a more secure and 'intellectual' basis for their subject.

However, Colquhoun (1991) has suggested that this emerging ideology of health based physical education (HBPE) is not unproblematic, for it presents a very partial and distorted view of the causes of health and illness. Drawing upon Crawford's (1980) concept of 'healthism', Colquhoun argues that health based physical education is premised upon and helps to disseminate the idea that our health is largely under our own control. More specifically, he argues that:

by focusing on individual lifestyle as the major determinant of an individual's health, health based

physical education (HBPE) conforms to the practices of conventional health education and has therefore been severely restricted in its potential for emancipation, social justice, equality and social change. Indeed, the political issues which accompany HBPE have not yet been fully exposed (1991:6).

The ideology of healthism, it is argued, serves to focus attention on individual responsibility for our own health and, simultaneously, to divert attention away from wider social processes — for example poverty, unemployment, industrial pollution, or the poor quality or lack of accessibility of health services — which may be associated with high levels of illness; by thus shifting responsibility for health away from manufacturers, governments and other powerful groups, the ideology of healthism diverts attention away from the key issues in the politics of health. As Crawford (1980:368) has noted, it perpetuates the misleading — or, at best, greatly oversimplified — idea that we can, *as individuals*, control our own existence. Moreover, our assumed ability individually to control our lives gradually becomes transformed into a moral imperative to do so for, suggests Crawford (1984), we live in an era of a new health consciousness where to be unhealthy has come to signify individual moral laxity. Thus slimness signifies not only good health but also self-discipline and moral responsibility whereas fatness, in contrast, signifies idleness, emotional weakness and moral turpitude. In this sense our bodies, whether slim or obese, signify not merely our health status for they also become, quite literally, the embodiment of moral propriety or laxity. Within this context, those who fall ill are increasingly likely to be seen not as unfortunate and innocent victims of processes beyond their control but, rather, as people who, through their moral laxity and lack of self-discipline, have 'brought it on themselves'. The Victorian differentia-

tion between the 'deserving' and the 'undeserving' poor is, in some respects, in the process of being replicated in the differentiation between the 'deserving' and 'undeserving' sick.

Exercise and Health

There is now a substantial body of data from both epidemiological and clinical studies which indicates that moderate, rhythmic and regular exercise has a significant and beneficial impact on health. In Britain, the Coronary Prevention Group (1987) has listed the following range of beneficial effects on health:

- Improved cardiovascular function
- Increased metabolic rate
- Better control of obesity
- An increase in the HDL/LDL ratio (HDL — High-Density Lipoprotein — is the 'good' type of cholesterol; LDL — Low-Density Lipoprotein — is the 'bad' type of cholesterol)
- Decreased blood pressure
- Delayed onset of post-menopausal osteoporosis
- Improved glucose tolerance in diabetes
- Antidepressant, and possible anti-anxiety effects

The Royal College of Physicians of London (1991:28) has echoed these views, arguing that:

There is substantial evidence that regular aerobic exercise such as walking, jogging, dancing or swimming is beneficial to general physical and psychological health. Regular exercise appears to be particularly effective in prevention of coronary disease and osteoporosis and of some value in the management of obesity and diabetes.

Studies in North America similarly suggest that regular exercise is associated with reduced mortality from all causes, from cardiovascular disease

and from cancer of combined sites (Paffenbarger, Hyde, Wing and Hsieh, 1986; Blair, Paffenbarger, Clark, Gibbons and Cooper, 1989) while a review of four North American population surveys suggests a positive association between physical activity and lower levels of anxiety and depression (Stephens, 1988).

At first glance, such studies might seem to indicate that the health based arguments in favour of sport and exercise are overwhelming. On the basis of such studies, it has been claimed that it 'is now firmly established that regular, appropriate physical activity is beneficial to health', and specifically that the establishment of lifelong exercise patterns helps to minimise the risk of adult chronic disease (Riddoch and Boreham, 1995:87-88). Amongst physical educationalists, it is frequently argued that 'encouraging children to adopt physically active lifestyles and to maintain adequate levels of aerobic fitness may have significant health benefits' (Armstrong, McManus, Welsman and Kirby, 1996:19) and concern has been expressed that the levels of physical activity among contemporary school-children are not only insufficient to improve their health (Cale and Almond, 1992) but that the levels of pupils' physical activity particularly among girls, 'deteriorate as they move through secondary school' (Armstrong and McManus, 1994: 23).

Notwithstanding this apparent consensus, one should be careful when interpreting the results of studies like those cited above, for there are important provisos to be borne in mind when considering these studies. The first proviso is that they do not suggest that *all* exercise is beneficial; rather, they indicate that exercise of a *particular kind, amount and intensity* has a beneficial impact on health. *The Nation's Health* (1988:126), for example, refers quite specifically to the beneficial effects of what it calls 'moderate, rhythmic and regular exercise', which it goes on to define as exercise such as

that involved in brisk walking, running or swimming for 20-30 minutes about three times each week. The British Medical Association (BMA, 1992:14) similarly suggested that the 'recommended amount of exercise from a health perspective is about twenty to thirty minutes of moderate exercise three times a week' and noted that the exercise that is most frequently suggested is brisk walking. The precise activity which is considered to constitute 'adequate' exercise varies from one study to another, but activities mentioned in this context include 'energetic getting about' and manual work around the house and garden (Morris, Everitt, Pollard and Chave, 1980), dancing (BMA, 1992) and regular climbing of stairs (Paffenbarger *et al*, 1986). It is important to emphasise, therefore, that what these studies have documented is a beneficial effect on health of 'moderate', or even gentle, forms of exercise; as Morris *et al* (1980) noted, the 17,944 male participants in their study were 'no athletes' (p.1210). The BMA (1992:19) noted that several studies 'have suggested that only rather low levels of activity are necessary to confer some degree of protection against heart disease both in terms of the intensity of effort and of the total amount of exercise taken'.

Within the context of physical education, Harris and Cale (1997: 59) have noted that the minimum standard of activity outlined in Corbin *et al*'s (1994) Children's Lifetime Physical Activity Model 'is one that inactive children can achieve with a modest commitment to childhood games and activities, or lifestyle activities such as walking or riding a bicycle to school or performing physical tasks around the home' and they add that 'guideline one of the physical activity guidelines for adolescents, encourages the incorporation of physical activity into daily life such as walking upstairs, walking or riding a bicycle for errands or doing household chores' (p.60).

This is an important point to note for, quite clearly, one cannot assume that

the health benefits associated with moderate exercise will simply be duplicated — still less can one assume that they will be increased — by exercise which is more frequent, of longer duration and of greater intensity, for exercise of this kind, as we shall see later, may generate substantial health 'costs' in terms of additional stresses or injuries. In short, to suggest that a thirty minute gentle swim three times a week is good for one's health does not mean that running 70 miles a week as a means of preparing for running marathons is good for one's health in an equally simple or unproblematic way. Indeed, it might be noted that one of the American studies, which found that death rates generally went down as levels of physical activity increased, also found a reverse trend at the highest levels of physical activity (Paffenbarger *et al*, 1986:606). It might also be noted that one study in New Zealand (Sullivan, Wong and Heidenheim, 1994) — significantly it was a study of competitive athletes, many of whom were ranked in the top 10% nationally in their age group and who, therefore, presumably engaged in relatively intensive training — found a strong positive association between exercise and a large number of symptoms, including anxiety related to competition, stitches, lightheadedness, muscle cramps, wheezing, chest pressure, 'spots in front of eyes', retching and incontinence of urine and stool, while it was negatively associated with only a few symptoms, including headaches, abdominal bloating, sneezing and depression.

The second proviso concerning the studies cited above is that most relate primarily to exercise or activity levels rather than specifically to sport. Although sport and exercise are overlapping categories, there are nevertheless important differences between them, and these differences have important implications for their health consequences. It is to these issues that we now turn.

Exercise and Sport

Most sociological definitions of sport include the element of physical exertion as an essential component (Edwards, 1973; Guttmann, 1978; Macpherson, Curtis and Loy, 1989). However, if all sport involves physical exercise, it is not the case that all physical exercise involves sport, for what is usually considered a further necessary component of sport — the competitive element — is frequently more or less absent from many forms of physical exercise. Moreover, since sport is inherently competitive, it must involve more than one person, for while one can exercise alone, one cannot play sport alone, since one needs an opponent. This relatively obvious difference between sport and exercise has important implications for their potentially very different health consequences and, as we shall indicate later, for recent developments in physical education.

As we have seen, most of the studies cited earlier were concerned with the health consequences of 'moderate, rhythmic and regular' exercise. One important difference between sport and exercise is that non-competitive exercise involves a rather different pattern of social relations than does sport and, associated with this, the former is much more likely than is the latter to involve physical movements of a rhythmic nature and, of critical importance, the intensity of the exercise is likely to be, to a much higher degree than in the case of sport, under the control of the individual participant. Consider, for example, the situation of a person who regularly takes a brisk walk, or goes jogging or swimming, as a means of 'keeping fit'. When such activities are undertaken alone, as they frequently are, the precise nature of the physical movement — that is the action of walking, jogging or swimming — as well as both the duration and the intensity of the exercise, are to a high degree under the control of the individual doing the exercise. Thus, for example, a person jogging or swimming alone can deter-

mine for how long to continue the exercise, and at what pace. Where exercise of this kind is undertaken in a small group of perhaps two or three friends, as is also common, the duration and intensity of the exercise are likely to involve a level of activity agreed upon by all participants and with which all participants are reasonably comfortable. It is important to note that this is not the situation in the case of sport.

As we noted earlier, sport cannot be played alone for it must involve two or more opposing players. This, together with the fact that sport involves not only cooperation but also competition, means that sport, and particularly team sport, is usually a considerably more complex social activity than is non-competitive exercise. Consider, for example, a game of soccer or rugby or hockey. The game involves a complex interweaving of the actions of a substantial number of players, together with the relationships between players and match officials, club coaches and many others including, at the elite level, large numbers of fans. Even if we considerably oversimplify the situation by confining our analysis to the interactions between the players, it is clear that we are dealing here with a social phenomenon of some complexity.

One aspect of the complex structure of sports such as football is that each match tends to develop what is often called a 'game pattern'. Though there is sometimes a tendency to speak of this game pattern as though it were something separate from the players, it is important to remind ourselves that it is in fact nothing other than the complex interweaving of the actions of a large number of players (Elias and Dunning, 1986:192-3). However, it is also important to note that, as the game pattern becomes more complex — for example as we move from a two-person game such as tennis to a multi-person game such as soccer — it becomes increasingly beyond the ability of any single player to control this game pattern and, indeed, from the perspective of any single player, this

game pattern may appear to have a life of its own.

The complex structure of many sports means that, by comparison with non-competitive exercise, any individual player is much less able to control his/her own movements and the pace and intensity at which he or she is required to play. Thus while the lone jogger and walker can determine their own movements with minimal reference to others, the movements of a soccer or hockey player can only be understood in relation to the movements of other players on their own and the opposition side. Moreover, as a means of beating opposing players, players frequently initiate moves, or respond to the moves of others, involving rapid changes of pace and direction. In most sports, this gives rise to a pattern of movement which is the very opposite of rhythmic, for it often involves sharp and intensive bursts of anaerobic activity, interspersed with short periods in which individual players may be able to take a 'breather'. It is important to emphasise, firstly, that the frequency and intensity of these bursts of activity are, at least in complex games, largely beyond the ability of any single player to control; secondly, that players are almost inevitably constrained by the moves of their opponents to engage in activities which are anything but rhythmic; and thirdly, that many of these movements, such as those involved in rapid acceleration and deceleration, or the twisting or turning movements involved in rapid changes of direction, impose considerably greater stresses on the body than do the much more rhythmic movements involved in non-competitive walking, jogging or swimming. These considerations, however, do not exhaust the health-related differences between sport and exercise. The competitive character of sport, in particular, requires further elaboration.

Sport and Competition

The long-term trend towards the

growing competitiveness of modern sport has been particularly marked in the post-1945 period, and has been associated with, amongst other processes, the increasing politicization and commercialization of sport, both of which have had the effect of greatly increasing the importance of, and the rewards associated with, winning while downgrading the traditional value associated with taking part (Waddington and Murphy, 1992). This trend has not, however, been without health 'costs' for athletes, particularly in the form of more stress injuries and overuse injuries, and increased constraints to continue competing while injured.

Overuse and recurrent injuries constitute growing problems and ones which are almost certainly associated with the increasing constraints on sportsmen and women to compete and more particularly to win with, one suspects, often scant concern for the potential longer-term health effects. Donohoe and Johnson (1986:93) have noted that to succeed in modern sport, 'athletes are forced to train longer, harder, and earlier in life. They may be rewarded by faster times, better performances and increased fitness, but there is a price to pay for such intense training'. Part of the price of such intense training and of the readiness — often encouraged by coaches, medical advisers and, within the context of school sport, by teachers — to continue training and competing despite injury, is unquestionably paid in the form of overuse and recurrent injuries, which now constitute a serious problem in sport, and not just at the adult elite level.

Examples of athletes playing on despite painful and potentially serious injuries are commonplace and there is considerable evidence that, particularly at the elite level, there are considerable constraints on players to play through pain and injury 'for the good of the team'. Consider, for example, the following extract from a pre-match team talk to the Wigan Rugby League team by their coach, John Monie:

There's just one more thing I want to enforce. It doesn't matter what's wrong with you when you're injured, I want you on your feet and in the defensive line....I don't care if the physio's out there and he wants to examine you and all that stuff. That's not important. What's important is you've got twelve team-mates tackling their guts out, defending like anything inside the 22....

There are no exceptions to that rule. So from now on, the only reason you stay down hurt and get attention from the sideline is because there's a break in play or you're unconscious — no other reasons will be accepted (Hanson, 1991:77).

Monie's team talk may perhaps be regarded as the English equivalent of the American view that 'you play unless the bone sticks through the meat' which, as Young (1993:382) has noted, has long been used to rationalize injury in the National Football League. Although it may not always be expressed in such blunt terms, it is clear that, particularly at the elite level, there is a common expectation — which is shared by many players — that whenever possible, players should continue to play through injury 'for the good of the team', even if this means playing with pain-killing injections. Although such pressures on players to tolerate and to play through pain may in some respects be associated with particular conceptions of masculinity — to be examined later — it is also clear that there are broadly similar constraints on women athletes to continue competing despite pain and injury and that many women athletes respond in a broadly similar way to their male counterparts (Young and White, 1995:51). It is also clear that the problem of overuse and recurrent injuries is not confined to adults. In relation to children's sport, Donnelly (1993:96) has noted that:

As children encounter opportunities for increasingly lucrative careers as

professional athletes, parents are tempted to encourage their children to become heavily involved in professional sports at early ages... there is an obvious trend toward earlier and more intensive athletic involvement for younger and younger children.

Donnelly notes that injuries characteristic of overtraining among young athletes have been widely reported (e.g. Rowley, 1986), and that such injuries were also reported by a majority of the 45 recently retired high-level athletes who were interviewed in Donnelly's study and who spoke about their own experiences as young athletes.

Given the highly competitive characteristic of much modern sport, it should come as no surprise to learn that overuse and recurrent injuries are very common (e.g. Lynch and Carcasona, 1994). It would, however, be wrong to think that such injuries only occur at the elite level, for there is little doubt that in most western countries sport at *all* levels has become increasingly competitive and this has given rise to large numbers of recurrent injuries at the non-elite, as well as the elite level. A Sports Council survey estimated that in England and Wales there are 10.4 million incidents a year resulting in recurrent injuries (Sports Council, 1991:25). Quite clearly, we are not dealing with a phenomenon which is confined to elite sport, but one which is extremely widespread.

Sport, Violence and Aggressive Masculinity

Many sports, unlike most forms of non-sporting exercise, involve physical contact and are, in effect, mock battles (Dunning, 1986). This is perhaps most evident in the case of combat sports, in some of which — for example, boxing — a central object is to inflict physical damage on one's opponent. Clearly, however, the use of violence is not confined to combat sports, for though the level of physical violence permitted

in sport has, in general, shown a long-term decline as sports have become more 'civilized' (Dunning and Sheard, 1979; Dunning, 1990), the use of physical violence in the form of aggressive 'body contact' remains, to a greater or lesser degree, a central characteristic of modern sport; indeed sport is probably the main — for many people the only — activity in which they are regularly involved in aggressive physical contact with others. The link between sport and aggression has also been noted by Reid (1997:12) who points out that all sporting competition 'involves coming, within a certain well-defined context, to take a view of our fellow human beings as *the opposition*, to be defeated, conquered, overcome and so on' (emphasis in the original) and he adds that 'the teaching of competitive sports and games in schools... is likely to encourage...aggressive tribalism, arrogance and hostility'.

Although Reid is, perhaps, overstating the case, the link between sport, aggression and violence does provide an important key to understanding why sport is a major context for the inculcation and expression of gender differences and identities, for sport constitutes perhaps the most widely available arena for the legitimate expression of masculine aggression and for the display of traditional and dominant notions of masculinity involving physical strength and courage. Young, White and McTeer (1994) have pointed out that these traditional and dominant concepts of masculinity involve, as a central proposition, the idea that 'real' men play sport in an intensely confrontational manner. In such a context, players are expected to give and to take hard knocks, to injure and to be injured and, when injured, to 'take it like a man'. A prime example is provided by American football which, though considerably less violent than it was in the late nineteenth century, remains, by comparison with most sports, relatively violent; it is significant that proponents of American football list among what they see as the positive

features of the game its bellicosity and its similarities to actual warfare and the pain and self-sacrifice which it requires, whilst injury becomes what Guttmann (1978:121) has called 'a certificate of virility, a badge of courage'. For many players and fans alike, relatively violent sports such as American football and rugby are, precisely because of their violent character, arenas *par excellence* for young men to demonstrate their masculinity. Not surprisingly, injury rates associated with such sports are considerably higher than those associated with most other sports and very much in excess of those associated with non-competitive exercise.

The Epidemiology of Sports Injuries

Sports injuries are extremely common and, quite clearly, the risk of injury has to be taken into account in any attempt to assess the health 'costs' and benefits of sport and exercise. In this context, a large-scale study carried out for the Sports Council in England and Wales (1991) provides much relevant information.

This study estimated that there were 19.3 million incidents resulting in new injuries and a further 10.4 million incidents resulting in recurrent injuries, making a total of 29.7 million injuries a year. The direct treatment costs of new and recurrent injuries were estimated at £422 million, with costs of lost production (due to days off work) estimated at £575 million, giving a total annual cost of sporting injuries of £997 million (1991: 25, 31). Given these data, one can understand why one text on sports injuries (Vinger and Hoerner, 1982) is subtitled 'The Unthwarted Epidemic'.

As noted earlier, injury risks vary markedly from one sport to another with the highest risks being associated with contact sports. The Sports Council study (1991:33) found that rugby was by far the most dangerous sport, in terms of risk of injury, with an injury rate of 59.3 per 100 participants per four weeks, followed by soccer (39.3),

martial arts (36.3), hockey (24.8) and cricket (20.2). A recent study in New Zealand (Hume and Marshall, 1994) similarly found that rugby union had the highest injury rate; other high-risk sports included horse riding, soccer, cricket, netball and rugby league. There is a close association between physical contact and injury risk; Lynch and Carcasona (1994:170-1) cite a study of youth outdoor and indoor soccer in the United States which found that 66% of injuries in the outdoor league and 70% of injuries in the indoor league resulted from physical contact.

It should be noted that many of the injuries typically associated with sports in the physical education curriculum have potentially serious ramifications for physically developing children. Helm (cited in Pool and Carnall, 1997:10) has pointed out that at the age of about 12 (girls) and 14 (boys) 'the skeleton is at its most vulnerable to fracture. During these years the bones are growing rapidly and muscle cannot keep up, so there is a danger of dislocation and fracture'.

In this context, Pool and Carnall (1997) have identified a number of injuries which are commonly associated with sports on the physical education curriculum. These include fractured cheekbones, often sustained in games such as hockey and lacrosse; torn cartilages and damaged hamstrings, tendons and ligaments which are common in athletics, many team games and, indeed, all contact sports involving extensive twisting, turning and rapid explosive movements; and spinal injuries, most common in games like rugby, particularly where opponents are mismatched in terms of size, strength and fitness, which is often the case in age-grouped school sport and representative teams. It is not perhaps unreasonable to suggest that, in many respects, the structure of school sport appears routinely to court the risk of injury for growing youngsters.

The activities with the lowest risks of injury are the non-contact and rhythmic (and largely non-competitive) activities

involved in 'keep fit' (6.5 incidents per 100 participants per 4 weeks) and swimming and diving (2.9) (Sports Council, 1991:33). However, even relatively rhythmic and non-contact activities may be associated with substantial injury risks; it has been estimated that in the United States, a third of the nation's 15 million joggers sustain a musculoskeletal injury each year and nearly a half of habitual runners experience lower extremity injury, while there are also one thousand spinal injuries each year as a result of swimmers diving into water (Heil, 1993:5).

Most sporting injuries are relatively minor, but a substantial number are more serious. The Sports Council study (1991:18-19) found that 25% of new injuries and 31% of recurrent injuries required treatment by a health professional, while 37% of new injuries and 43% of recurrent injuries involved some restriction on activities; 7% of all injuries resulted in the participants taking time off work and, in total, 11.5 million working days a year are lost in England and Wales as a result of sports injuries. Both the risk of injury, and also the risk of serious injury, increase in more violent contact sports.

Sport, Physical Education and Public Policy in the U.K.

Before offering some general conclusions regarding the relationship between sport and health, as well as the implications for physical education, it may be useful to examine government policy in relation to sport for school-age children.

Of particular interest in this regard is the way in which the Conservative government of the early/mid 1990s sought not only, in its view, to re-establish the centrality of sport in schools, but also to prioritise certain kinds of physical activities while marginalising others. National Curriculum Physical Education (NCPE) has been taught in schools in England and Wales since 1992 and features six activity areas: athletics, competitive games, swimming, gymnastics, dance

and outdoor and adventurous activities. Subsequently, however, powerful voices within government, particularly those of the then Prime Minister, John Major, and his Minister for Sport, made clear their unhappiness at what they perceived as a lack of sufficient emphasis on sport (and especially team games) in the NCPE and sought to re-prioritise sport and, in particular, 'traditional' team games, within NCPE (Penney & Evans, 1997). Two major initiatives — the revised NCPE for England and Wales (implemented in August, 1995) and the government's 1995 policy statement *Sport: Raising the Game* — 'extol the virtues, and seek to retrieve a presumed decline in competitive team sports' (Roberts, 1996a:50) despite substantial evidence demonstrating that (i) within the overwhelming majority of schools competitive sports, and team games in particular, had maintained a dominant place on the physical education curriculum (Penney & Evans, 1994; Roberts, 1996a & 1996b) and (ii) among adults there has been a 'decline in partner and team sports...matched by increased participation in fitness-oriented, non-competitive, individual, flexible lifestyle activities such as walking, swimming, cycling, keep fit/aerobics and weight training' (English Sports Council, 1997:7).

As well as seeking to re-prioritise sport and team games within the PE curriculum, *Sport: Raising the Game* also seeks to promote within schools a sporting culture which, among other things, involves linking schools with sports clubs and rewarding those schools that place even greater emphasis on sport and team games in extra-curricular physical education. This attempt to encourage children to become heavily involved with sport and sports clubs from an early age mirrors the trend which Donnelly (1993), above, identifies as characteristic of children's sport — earlier and more intensive athletic involvement for younger and younger children.

As with sport and health, the linking of sport and physical education in

public policy appears widely and uncritically accepted both beyond, and also largely within, the physical education subject-community. Government and other official views of physical education often appear to view sport as the primary focus of physical education, and this view is more likely to be confirmed than challenged by representatives of the physical education subject-community. In 1995, the then Secretary of State to the Department of National Heritage, Stephen Dorrell, expressed his belief that the government's commitment to putting sport back 'at the heart of school life', as expressed by the Prime-Minister in *Sport: Raising the Game*, 'is shared... by the great majority of the teaching profession' (Dorrell, 1995). By the mid-1990s, the views of the Prime-Minister, the Secretary of State for National Heritage, the Minister for Sport, the Sports Council, sports governing bodies, and many physical education teachers, were in broad agreement in welcoming the government's policy statement. Almond, Harrison and Laws (1996:7-8), responding to *Sport: Raising the Game* on behalf of the Physical Education Association of the UK commented that the Association 'is extremely pleased with the public statements made by both the Prime Minister and the Government' and acknowledged that games would 'still have a major and significant role to play within the PE curriculum'.

As Penney and Evans (1997) have pointed out, recent Government policy thus privileges defined 'activity areas' — specifically competitive sports and, in particular, traditional team games — over broader, permeating themes such as 'health-related exercise'. However, this renewed emphasis on sport and games within the physical education curriculum has potentially significant consequences for the relationship between physical education and health. It is to this issue that we now turn.

Sport, Health and Physical Education

It is helpful to evaluate government

policy in the light of the concept of health-related exercise which has come to provide an increasingly important justification for physical education in recent years. Harris and Cale (1997:64) note that policy statements from the Department of Health, the Sports Council and the Health Education Authority all suggest that 'much faith and responsibility is being placed on school PE to educate children about exercise and to promote lifetime physical activity'. Moreover, the taken-for-granted relationship between physical education, sport and health is clearly illustrated by the comment of Alderson and Crutchley (1990) that 'the essential focus for physical education in schools should be sport', and that the role of physical educationalists 'should be to prepare children for sport culture within our society so that they may make best use of it in relation to their personal development, their effective use of leisure time and their *physical and psychological well-being*' (p.54; emphasis added).

The basic principle of health-related exercise is that, through an appropriately structured curriculum in physical education, young people can be introduced to forms of physical activity which will benefit their health and which, it is hoped, they will continue to practise not just in their school years, but throughout their adult lives. In this context, it is important to note that the traditional emphasis which was placed on team games in British schools was never very effective in terms of encouraging the active involvement of more than a small minority of young people in playing sport after they left school. Roberts (1996a; 1996b) notes the substantial decline in the drop-out rate of sporting participation by young people in the last decade and suggests that this has been associated with the fact that schools and leisure centres have responded to the changing lifestyles of young people by making a wider range of sports available and also by enabling young people to tailor their own

sporting activities to their individual lifestyles. He writes (1996b:112-113):

School sport in Britain has evolved alongside young people's changing leisure styles....This will be one of the processes whereby sports participation has become part of present-day youth cultures....School sport will have adapted, among other reasons, because teachers have been responsive and innovative, have known 'what works' with their pupils, and have ranked 'sport for all' ahead of producing winning teams....The curriculum has adapted by complementing the older team games, and upgrading facilities for a variety of additional sports such as badminton, squash, swimming, and even golf and skiing that can be practised individually and played by small groups of young people (and adults) at times and places of their choosing....Over the past 20 years Britain's schools have increasingly been using lesson time to introduce pupils....to a wide variety of sports.... Simultaneously, local authorities have opened multi-sport indoor centres which can be used throughout the year, and which individuals can attend to play their preferred sports, with their own friends, at times of their choice....levels of participation have risen, especially steeply among the young....because the mode of delivery has coincided with the age group's preferred leisure styles.

Roberts (1996b: 113) suggests that government policy in this area is seriously flawed: 'Returning to the traditional games regime in schools... will almost certainly lead to a flight from sport by Britain's young people'. Such policies were not effective in the past in maintaining young people's involvement in playing sport after leaving school and, he suggests, they will be even less effective in the changed conditions of the late twentieth century.

We noted earlier that the health

'costs', for example injuries, associated with non-competitive exercise are substantially less than those associated with competitive sport. We also noted that the health 'costs' associated with contact sports are considerably greater than those associated with non-contact sports. In this context we might note that those activities within NCPE which the government is seeking to prioritise are precisely those competitive sports, and often contact sports, in which the health 'costs' are greatest while those which are marginalised — notably dance and outdoor and adventurous activities — are those which offer substantial health benefits but with far fewer health 'costs'. This would not seem to be the most rational policy if we wish to make a substantial contribution towards improving the health of young people.

The renewed prioritising of sport in the physical education curriculum, together with concern about the low level of physical activity that children experience during PE lessons, has led some teachers to adopt what Harris and Cale (1997:61) call a 'hard line approach' which involves 'increasingly forcing pupils into 'hard' exercise, such as arduous cross-country running or fitness testing'. If we are genuinely concerned about the health of young people, such an approach should be questioned. It is important to note that whilst physical education teachers may be aware and generally accepting of the role they are encouraged to play in promoting physical activity for health they also appear to be largely unaware of recent exercise recommendations and may not appreciate the implications for health-related physical activity (Harris and Cale, 1997). Whilst the Children's Lifetime Physical Activity Model (Corbin *et al*, 1994) highlights the fact that exercise does not have to be strenuous to be beneficial to health and that 'moderate activity is associated with improved adherence in children... and a lower risk of injury' (Harris and Cale, 1997:61), it appears that teachers may be reluctant to recognise and

incorporate moderate rather than vigorous forms of activity into health-related exercise lessons and frequently promote vigorous physical activity 'at the expense of less strenuous forms of exercise' (Harris and Cale, 1997:61). It should not be surprising, then, that children's and young people's perceptions of fitness and health are such that 'fitness tends to be associated with high levels of performance and uncomfortable physical exertion' and that fitness is often viewed 'in relation to sporting achievement rather than relative to everyday life activities' (Harris, 1994: 147).

Even amongst more critical observers, however, there remains at least partial taken — for-granted acceptance of a positive relationship between sport and health. Thus, whilst acknowledging the tendency of physical educationalists mistakenly to view vigorous exercise as necessary for health benefits, Harris and Cale (1997:62; emphases added) still claim that 'It is...desirable...that exercise... advice and guidance stresses to young people that *all forms and amounts* of exercise, performed safely, are beneficial and that any level of physical activity is better than none'. Our point is precisely that some forms of exercise, particularly those likely to be experienced in sport (and especially in team games) are by their very nature difficult to perform safely and are not necessarily beneficial to health; indeed, they are as likely to result in health 'costs' as health benefits.

Conclusion

What conclusions, then, can be drawn about the relationships between physical education, sport and health? Four points would seem to emerge from the data reviewed here. The first is that no simple generalisation can adequately encapsulate the complexity of these relationships. The second, related, point is that it is clearly necessary to differentiate between exercise and sport, for they involve rather different patterns of social

relationships and, associated with this, they are likely to have rather different consequences for health. The third point is that we also need to differentiate between types and levels of sport, with the distinctions between contact and non-contact sport and between elite and mass sport being particularly important in terms of their consequences for health. The fourth and final point is that whilst, on the one hand, there does seem to be overwhelming evidence that regular, rhythmic and moderate exercise has a significant and beneficial impact on health, it is also clear that the forms of physical activity prioritised in the revised NCPE and reinforced by recent official and semi-official statements, are precisely the kinds of competitive and contact sports that are likely to hinder the promotion of health-related exercise in physical education. At worst, and to the extent that these developments are successful in encouraging young people towards sport and away from other forms of physical activity, they are likely to work against the promotion of those forms of exercise which are most beneficial to health. As we indicated earlier, the activities being prioritised in government policy are precisely those in which the health 'costs' are greatest while those activities which are being marginalised are those which offer substantial health benefits with fewer health 'costs'.

It is probably reasonable to suggest that in the case of rhythmic, non-competitive exercise where body movements are, to a relatively high degree, under the control of the individual participant, the health benefits substantially outweigh the health 'costs'. However, as we move from non-competitive exercise to competitive sport, and as we move from non-contact to contact sport, so the health 'costs', in the form of injuries, begin to mount. Similarly, as we move from mass sport to elite sport, the constraints to train longer and more intensively and to continue competing through pain and injury also increase, with a

concomitant increase in the health risks. While the health-related arguments in favour of regular and moderate exercise may be overwhelming, such arguments are rather less persuasive in relation to sport in general, and very much less persuasive in relation to elite, or professional, sport.

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Résumé

Sport, Santé et Education Physique: un réexamen

L'objet de cet article est: (i) d'esquisser et porter un regard critique sur l'idée largement acceptée que l'exercice physique et le sport sont bénéfiques pour la santé; (ii) d'examiner les différents types de rapports sociaux à l'exercice et au sport; (iii) d'étudier quelques une des conséquences de ces différences sociales sur la santé; et (iv)

d'analyser les conséquences de cette étude pour l'éducation physique. Aucune généralisation ne peut convenablement résumer la complexité des rapports entre l'éducation physique, le sport et la santé. Concernant les rapports sociaux et leurs conséquences pour la santé, une différence doit être établie entre: (i) l'exercice physique et le sport, (ii) les types de sport et les niveaux de pratique, en tenant compte des distinctions entre sport de contact et sport de non-contact, entre sport de masse et sport d'élite, distinction particulièrement importante.

Dans le cas des exercices physiques rythmiques, non compétitifs, les bénéfices dépassent considérablement les coûts de santé. Cependant comme une évolution se marque vers le sport de compétition, et du sport de non-contact vers le sport de contact, les coûts de santé, par le biais de blessures, commencent à augmenter. De la même façon, comme une évolution se marque du sport de masse vers le sport d'élite, les contraintes dues à l'entraînement intensif et la poursuite de la compétition, malgré la douleur et les blessures, augmentent de façon significative les risques pour la santé.

Les activités physiques valorisées dans le 'National Curriculum' pour l'éducation physique, et appuyées par les récentes formulations officielles et semi-officielles, sont précisément ces sports de compétition et de contact pour lesquels les coûts pour la santé sont plus élevés, alors même que les activités qui sont marginalisées au sein du curriculum de l'éducation physique, offrent des avantages significatifs et des coûts moindres pour la santé. Dans la mesure où elles sont couronnées de succès, les initiatives politiques récentes pour l'éducation physique ont de fortes chances de lutter contre le développement de ces formes d'exercice, qui sont les plus favorables à la santé, et ainsi de gêner le développement de l'exercice lié à la santé en éducation physique.

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