

COMMENT

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What the Paris 1924 olympics tell us about promoting oral health for community sport - a call to action

Ian Needleman^{1*}

Abstract

Sport participation has huge benefits to individuals and communities including both physical health and wellbeing, prevention of non-communicable diseases, promoting equity and reducing inequalities. Sport participation can disadvantage oral health with a life-long shadow of treatment need and potential psycho-social consequences, despite these problems being preventable. It is therefore a priority to collaborate with partners in community sport to embed oral health promotion as one of the foundations of overall health in order to gain the most equitable and sustainable benefits from sport participation.

Keywords Health Equity, Oral health, Sports Medicine, Exercise, Environmental policy

Oral health and the Paris olympics 1924

Harold Abrahams featured in the celebrated 1981 biopic, *Chariots of Fire*, winning Olympic 100 m gold (in an Olympic record time). Following a career-ending injury the following year, Harold was commissioned to write one of the first training guides to athletics [1]. Surprisingly, he starts the very first section of the first chapter with the following:

Many might be surprised that I should with teeth, but they are a vital incident in the road to achievement. Many eminent doctors attribute breakdowns of muscle to bad teeth, and of my own knowledge two prominent athletes of the day who broke down possessed some dreadful specimens of advanced decay in their mouths... Apart from the risk of toothache at the period before an important contest, when all ones' nerves are likely to be 'on edge,'

the effect on general health which bad teeth undoubtedly have is a most deleterious one...Prevention is better than cure...'. Although Abrahams recognised the importance of good oral health to sport a century ago, it is only recently, that attention is again being paid to this important determinant of health and wellbeing.

Physical activity, community sport and population wellbeing

Physical activity is essential for living and ageing well [2] and is critical for supporting a sustainable future, particularly through better health and reducing inequalities [3]. Community sport could be a powerful resource to deliver these aims as well as to promote the development of cohesion in communities. By community sport, I mean organised sport activities at local level, open to participants regardless of background. Community sport is moving rapidly to become more inclusive of ability and more diverse particularly in relation to age, gender and ethnicity [4] and is therefore a compelling target to influence health behaviours and risk factors recognised as health determinants.

*Correspondence:

Ian Needleman
i.needleman@ucl.ac.uk

¹Centre for Oral Health and Performance, Unit of Periodontology, Eastman Dental Institute, University College London, London, UK



In view of the benefits to the individual and to the community, it is important to remove barriers to participation. Poor oral health can be such a barrier as a result of pain or disability, as well as lowered confidence, esteem and self-worth due to the effects of oral health on appearance. Furthermore, the most disadvantaged communities, who stand to gain most from community sport, will also have the highest levels of oral diseases and life-quality impacts [5]. It is important therefore, to consider whether there are additional challenges and opportunities regarding oral health in sport.

Oral health in elite sport

'*Bodies of gods, teeth of yobs*' is how The Times of South Africa reported on elite athlete oral health [6]. We demonstrated the striking dissonance between the peak physical health of elite athletes and their oral health at the London 2012 Olympics [7]. Further research from our group and others has strengthened this evidence and consistently found common negative impacts on self-reported performance regardless of demographics [8]. Overall, elite athlete oral health appears to be disadvantaged by participating in sport. The determinants are not yet fully clear but will include a complexity of health behaviours, structural issues (especially access and cost of oral healthcare) and real or perceived challenges such as frequent intake of sugars to support energy balance and hydration needs during training and competition.

What are the challenges to oral health in community sport?

There is very little information about oral health in community sport participants. It is likely that enhancement of some positive health behaviours from increased physical activity will result in a decreased risk of oral diseases for instance reduced cigarette smoking although this might not be straightforward. In elite sport it is worrying that smokeless tobacco use (with possible cancer risk) might be high in professional football [9] and could point to similar behaviours outside of professional sport.

Community sport participation also brings well-recognised challenges. One of the most documented is the consistently high use of sports drinks, particularly in children and adolescents. In south Wales, 89% of 12–14-year-olds reported using sports drinks with 78% of boys using them during physical activity [10]. Sports drinks have high levels of free sugars and therefore contribute both to excess calories and risk of overweight and obesity (and type 2 diabetes risk) as well as dental caries. Furthermore, these supplements are unlikely to have useful performance benefits (including energy need or hydration) over the use of water in this context [11]. Tellingly, taste was the commonly reported reason of use (90%). 14–18-year-olds living in the United States, believed sports drinks were

healthier than energy drinks. Furthermore, the stronger the participant's own sense of athletic identity the more likely they were to consider sports drinks to be healthier [12].

In summary, we know that oral health is poor in elite sport but have insufficient evidence for community sport to draw conclusions. Known risk factors, such as high sugar intake from sports drinks, are likely to be detrimental to community sport participants both in relation to oral and general health. Based on this conclusion, we should look at community sport to explore whether there are opportunities for oral health interventions to lead to benefits in oral and general health.

Interventions in community sport

Community sport is already a focus for health and social interventions although as yet, there is only limited evaluation of their effect [13]. Such interventions appear cost-effective, and with positive health and social outcomes.

GULP (Give up loving pop) was launched in 2015 as an initiative between academia, local NHS public health teams and the charity Food Active, a sister organisation to Healthy Stadia [14]. A key driver for the programme is to address general health inequalities. The programme typically engages with a professional sports club foundation to train their coaches to deliver the intervention in primary school settings, hence creating local capacity and resource. Key Stage 2 children receive four sessions each with a classroom and playground-based component with a focus on oral health, nutrition labels and hydration. Children also receive a re-usable water bottle, toothbrush/toothpaste pack and informational postcard (available in six languages). A recent programme with Blackburn Rovers FC Community Trust was delivered to 810 year 3 children (7–8 years) by the community sports coaches [15]. Importantly, behaviours were changed by the intervention with an increased use of water rather than sports drinks during physical activity. Crucially, Blackburn Rovers FC Community Trust are keen to continue the programme hence emphasising the importance of intervention design and engagement on sustainability, especially in areas of marked deprivation. It would also be fascinating to evaluate the impact of the programme on the coaches' behaviours as well as those of the children's parents or carers to understand how much impact occurred to the wider ecosystem. Surely, if Harold Abrahams could see these initiatives in sport, he might feel that the fires of change he lit were beginning to have impact.

Call to action

1. Oral health partnerships should work to support physical activity across the lifecourse. This is essential to maintain physical and mental health as well as social cohesion.
2. We must raise awareness that oral diseases are common and negatively affect the way people live their lives including physical activity and sport performance.
3. We must both *recognise* that sport participation can bring threats to oral health and *act* with simple low-costs interventions since these diseases are fully preventable with good evidence of effectiveness.
4. Oral health partnerships should develop collaborations with local sport groups to engage, influence and inspire physical activity across the whole community and to embed oral health as a key element of overall health and wellbeing.

Abbreviations

GULP Give up loving pop

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Ian Needleman conceived and wrote the manuscript.

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Not applicable.

Consent for publication

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Competing interests

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