The performing artist as an elite athlete

The care of dancers still represents one of the greatest challenges in occupational medicine. Demands and training required of the profession are intense, every bit as demanding as the professional athlete. However, unlike athletes who can to some extent select the event for which they are most suited and who can train accordantly at their own speed, dancers are driven by the tempo of the music, the conductor’s beat and the wishes of the choreographer. A good choreographer will modify the moves to conform to the physique of the dancer to whom the piece is dedicated. Inevitably, when a second cast of different dancers return to the piece at revival, their physique may not match the original requirements and injuries may ensue. A close collaboration among the physician, the sports physiologist and the choreographer or technique teacher might avoid such injuries. The medical management of this profession provides many insights for the application of occupational rheumatology to less glamorous professions.

The letters section of this issue of Rheumatology contains a brief but intriguing 5-year follow-up [1] to a seminal paper that was published in 2004 [2]. That paper, by Moira McCormack and colleagues, drew attention to the extent to which joint hypermobility and joint hypermobility syndrome was prevalent in dancers at the Royal Ballet School and the Royal Ballet Company, arguably the two most prestigious ballet organizations in the UK. Two clinicians with expertise in hypermobility along with two physiotherapists were employed by the two organizations to produce some intriguing findings. Earlier work, dating from 1972 [3], suggested that ballet dancers displayed hypermobility at joints where this was neither required in ballet nor acquired by ballet training; dancers were probably pre-selected to some extent by virtue of inherited hypermobility. A surprise in the larger 2004 survey was that the prevalence of joint hypermobility syndrome tends to fall with age in dancers from students to those with the most accomplished professional standards despite regular training to retain flexibility. Arthralgia was common in all dancers, more so in men than women, but women seemed to have a close anatomical correlation between painful joints and those that were most hypermobile. Hormonal influences were not considered and the need to measure dancers ‘warm’ as well as ‘cold’ was, perhaps, not fully addressed [4].

Some 5 years on, Alan Hakim and the same co-authors have now revisited this population by means of a self-reporting questionnaire, which determined the frequency and type of injuries and the periods of recovery required. A response rate of 69% is perhaps reasonable to expect from the questionnaires circulated. Of the 135 dancers from the original study who could be approached again, as many as 93 replied to this survey (55 women and 38 men). A subsidiary analysis suggested that the characteristics of the populations in the first and follow-up study were very similar, avoiding any selection bias. Tendon injuries, recurrent injuries and longer rehabilitation periods were more common in subjects with joint hypermobility syndrome. This is the first study to record the duration of the periods of sickness required by dancers as they convalesce with the implication of substantial financial loss that might be improved through closer care to injury prevention and greater attention to rehabilitation. These data, it should be remembered, come from a company that, with its full paramedical support team, is arguably best endowed to avoid injury among all other companies in the UK.

Help may be at hand. One of the first surveys of dance injuries came from Bowling in 1989 [5]. This survey drew attention to the hard graft of the profession, the need to keep as aesthetic weight and, in some cases, the problems that might cause, and crucial factors that are often forgotten, such as the degree of springing of the floor and the rake (or slope) of the stage. Subsequently, Dance UK has coordinated wider ranging enquiries using epidemiological techniques to attempt to identify factors that put dancers at risk [6]. As a result, expertise is accumulating in dance research. In this respect, the Jerwood Centre associated with Birmingham Royal Ballet and Laban, recently combined with Trinity College of Music, specializing in contemporary dance, are accepted centres of excellence. Hopefully, the new purpose-designed building in Leeds for the Northern Ballet Theatre and Phoenix Dance Theatre (a contemporary dance company) will act as a catalyst not only for another centre of excellence serving the needs for the north of the country but will also allow direct comparisons between different styles of dance.

Hypermobility may also be advantageous in certain sports [7, 8], including gymnastics and diving. In each of these sports, a combination of artistic and technical skills are required, although much more so than in the case of dance; the onus is now placed back in the hands of the performer. Moves of increasing complexity are allocated an increasing tariff. Providing sufficient tariff points are accrued during a performance, the athlete can to some extent choose between a large number of moves with low tariff or a small number of moves with high tariff. In turn, the option to concentrate on moves best suited to the performer and, therefore, less likely to cause injury is available. Interestingly, in general, coaches prefer stiff individuals who can train to become flexible rather than hyperflexible individuals with their greater risk of injury [9]. Also, there is wide variation in the medical support staff provided between, for example, a premiership football club and a sport that attracts a lower income in terms of gate money and advertising.

Neither should the needs of musicians be forgotten. Musicians at the highest level will train just as frequently and compulsively as dancers. Musicians are, therefore, arguably athletes of the upper limb contrasting with the dancers’ need to use the whole body (though the thoracic spine can be particularly problematic in cellists and the lumbar spine in double bass players). The diversity of instruments also presents additional challenges. Unlike keyboard instruments and dance in which strain can be anticipated to be distributed across both sides of the body, dominant and non-dominant functions of the two arms in string players are quite different. Other nuances are sometimes forgotten. The clarinet, for example, is essentially a nine-fingered instrument, since the thumb of the right hand is held rigid and used entirely to support the weight of the instrument. Embouchure may be just as important as integrity of the flexor and extensor tendons in the hands and this becomes even more critical when playing brass instruments. The singer is also dependent on the elite function of striated muscle in the larynx. Elsewhere, arguably, the writing of works by composers who perform their own music for a living provides an accurate reflection of their hand function and size [8]. Some composer pianists, e.g. Rachmaninov, undoubtedly have hyperlaxity of the hands, with extreme lateral movement of the three middle fingers and medical debate continues as to whether Paganini did or did not have Marfan’s syndrome [10].
Arguably, musicians have been better served than dancers over
the past decade or so. British Association for Performing Arts
Medicine (BAPAM) has been active in providing clinics for
performing artists since its early origins in 1984. A register of
clinicians willing to conduct specialist clinics is maintained
(currently, there is a shortage of rheumatologists!), booked
through BAPAM’s central London office, allowing performers
to get an initial appointment at no cost, which would usually
allow a recommendation for further treatment, often under the
National Health Service. In parallel, a sister organization,
Association of Medical Advisers to British Orchestras
(AMABO) nominates a General Practitioner working alongside
and in conjunction with each of the major symphony orchestras
nationwide. In some cases, regular clinics are held on premises
loaned by the orchestra when the option of working closely with
teachers and non-injured players often arises. Intriguingly, experi-
ence in some clinics such as those has shown that players are
reluctant to attend a clinic on home ground for fear of attracting
the attention of management to a previously undeclared injury.
Players often prefer to attend a more distant clinic, which might
apply to dancers as well.

The need for appropriate training of clinicians also arises.
Performers are rarely the subject of government targets and, in
turn, this rare but complex area of medicine is relatively neglected.
For about the past 15 years, the University of Leeds has been
offering student-selected components in the third year of training
devoted to rheumatological care of the musician and dancer.
Sports medicine also offers an abundance of training courses,
but the holistic and total management of the musician or dancer
is perhaps a little more complex than the management of injury in
the elite athlete. Dancers are beginning to see that they stand to
learn a lot from the application of sports science (at least in
moderation) to their art. With this in mind, BAPAM currently
has a working party exploring the concept of a diploma in
performing arts medicine that would attract physicians as well
as physiotherapists, Pilates’ teachers, podiatrists, Alexander tech-
nique teachers, osteopaths and others. Patrons of the arts and
even arts administrators may begin to realize that support of
such a venture represents a cost-effective investment.

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