delay between the causal incident and the appearances of radiographic abnormalities. The radiographic abnormalities may be classified in three types: type A, juxta articular lesions leading to osteoarthritis; type B, head, neck and shaft lesions; type C, lesions looking like bone island. Early detection of the bone necrosis is important to monitor compressed air workers. Detection depends on good quality radiographs (modifications of the trabeculae in a susceptible area). Bone areas of bone damage may go completely unrecognised on a radiograph. Lesions, early or doubtful, can be confirmed by MRI or bone scintigraphy but only 18% of the positive bone scintigraphy will develop radiographic abnormalities.

Survey of caisson workers is necessary because they can develop lesions in previously normal areas in the absence of further exposure to hyperbaric pressures. It is not certain that a repair process always takes place and it is impossible to detect juxta articular lesions that do not progress to structural failure of the joint surface and those that are going to progress to a secondary degenerative joint disease. So, there may be a long delay in making a diagnosis in an individual susceptible worker resulting in continuous of the same type of work and thus exposure to the risk of further bone damage.

There is no good preventive treatment: prevention by the use of official decompression tables seems to be inadequate because decompression sickness tends to be underreported related to the delay of diagnosis and it has been found that the tables do not decrease the number of dysbaric osteonecrosis. Oxygen decompression seems to be one of the only viable method for the safely decompressing tunnel workers.

SP0085 MUSIC AND RHEUMATISM

W Grassi, R De Angelis, A Farina, C Cervini. *Department of Rheumatology, University of Ancona, Jesi, Italy*

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The relationship between music and rheumatism is strong, complex, and interesting. It can be classified into five general categories:

- Occupation-specific musculoskeletal diseases in musicians due to repetitive strain injury;
- Joint hypermobility-related benefits among musicians;
- Joint hypermobility-related disadvantages among musicians;
- Rheumatological pathography of famous composers (e.g., Beethoven, Schumann, Paganini);
- Joint music (acoustical analysis of joint sounds by digital phonarthrometry);
- Music therapy for pain and anxiety management.

Musculoskeletal symptoms are highly prevalent among musicians at all levels of performance.¹

This is not surprising in the context of activities involving repetitious movement and/or postural constraint. Increased tension in the affected muscles could play an important causative role.

Playing-related musculoskeletal disorders in musicians (PRMD) are chronic and disabling conditions that may lead to the loss of a career and incomes because of the weakness of the executant muscle actions and loss of agility, speed and accuracy. PRMD are also under-recognised and under-researched causes of pain and disability especially in music students. Data from previous surveys indicate that the prevalence of PMRD in adult classical musicians is comparable to the prevalence of work-

related musculoskeletal disorders reported for other occupational groups.

Clinical findings of PMRD are deeply related to size, weight, playing position of the instrument, playing time, posture, and technique.

Soft tissue rheumatism and predisposition to injury are common associations of joint hypermobility among musicians.² However, joint hyperlaxity may confer advantages in playing some instruments such as flute, piano, and violin.³ The outstanding virtuosity of the violinist Niccolò Paganini has been related to the remarkable laxity of his joints.

Hand pain is a very common complaint among classical musicians. Clinical syndromes include: piano and guitar cramp, traumatic synovitis of the wrist joint, dystonia, carpal tunnel syndrome, acro-osteolysis, ulnar neuropathy and premature closure of the growth of the fingers in adolescents.

The onset of clinical features is generally associated with an increase in playing or practice load.

Hand difficulties are more frequent among pianists. They include: pain, weakness, tightening, cramping, curling and drooping, and loss of control.

The diagnosis of PRMD can be difficult when symptoms are mild and only occur on playing.

The management of PMRD is often difficult. Early and regular prevention, rest, splinting, correction of technical problems by skilled teachers of the instrument, and ergonomic redesign of some instruments can be of critical importance. Non steroidal anti-inflammatory drugs and local steroid injection can provide good symptomatic relief. Occupational therapy can be very useful.⁴ Trills, arpeggios or octaves should be avoided or reduced in pianists with hand complaints. Some composers such as Tchaikovsky (Piano Concerto N. 1 in B-flat Minor) or Beethoven (Piano Concerto N. 3 in C Minor; Sonata in E Major, opus 109; Sonata in C Major, opus 2 N. 3) seem to be at higher risk of worsening hand pain and inability.⁵

Music therapy as a treatment for chronic pain disorders and for depression has been proposed.

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SP0086 OCCUPATIONAL PHYSICAL ACTIVITIES AND KNEE OSTEOARTHRITIS

D Coggon. *MRC Environmental Epidemiology Unit, Southampton General Hospital, Southampton, UK*

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Assessing the contribution of occupational activities to knee osteoarthritis presents several methodological difficulties. Nevertheless, a strong body of evidence has accumulated that the disease is more common in people who have carried out heavy physical work, and particularly in those whose work has entailed prolonged or repeated kneeling or squatting. The precise