

The Productivity of Older Workers: The Role of Exercise

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Demographic considerations show that with aging of the "baby-boomers", employers in most countries must now contend with a progressively aging labour force. The phenomenon has important implications for employee productivity. This presentation looks at the impact of normal aging on physical work capacity, muscular strength, endurance, and the tolerance of thermal stress. It also examines how far changes can be reversed by suitably adapted exercise programs, and considers employer options where irreversible changes impair worker effectiveness.

The physiology of aging is straightforward. In a typical older worker, the pump function of the heart is limited by a progressive decrease in peak heart rate. Other adverse circulatory changes include a decreased filling of the ventricles, a decreased contractile force in the heart muscle, an increase in the blood pressure against which blood must be pumped, a diversion of available blood flow from the working muscles to the skin, and an increased mechanical cost of breathing. Muscle strength steadily decreases because the body loses lean tissue. There is a selective loss of type II muscle fibres, responsible for fast, powerful contractions, and the worker can generate less force per unit of cross section of muscle. Tolerance of hot working conditions is also compromised by a decreased rate of sweating, a lower peak cardiac output, poorer regulation of the blood supply and an increase of subcutaneous fat.

In theory, an over-taxing of the heart and skeletal muscles and a poor tolerance of the heat should reduce the productivity of older employees. It would also seem likely to cause increased manifestations of worker fatigue such as absenteeism, accidents and industrial disputes, with an increased susceptibility to musculo-skeletal injuries, heart attacks, strokes, and other forms of ill-health. A substantial part of the functional loss can be countered by suitably adapted exercise and lifestyle programs that emphasize regular physical activity, a control of body mass, and avoidance of cigarette smoking. Nevertheless, such programs cannot reverse the inherent manifestations of aging. Even athletes who continue to train regularly still show a substantial deterioration in both physiological function and competitive performance.

Often, the productivity, health and safety of older worker cause fewer practical problems for employers than might be anticipated from the physiology of aging. Reasons for this paradox will be discussed. Options for dealing with the worker who can no longer meet a reasonable level of worksite attendance and production will be reviewed in the context of setting non-discriminatory employment standards for an aging population. Finally, the need to push workers to their limits will be questioned in the context of the current potential for the automation of production processes.