Journal of Osteoporosis & Physical Activity

Yonge and Berven, J Osteopor Phys Act 2016, 4:2
DOI: 10.4172/2329-9509.1000171

Rapid Communication open access

Frailty Screening and Pre-habilitation in Older Spine Patients – Reversing the Effects of Sedentary Life-styles to Improve Surgical Outcomes for Older Patients and Reduce Healthcare Costs

Yonge RP* **and Berven SH**

Department of Orthopedic Surgery, UCSF, USA

***Corresponding author:** Yonge RP, Department of Orthopedic Surgery, UCSF, USA, Tel: 1 415 233 2217; E-mail: Richard.Yonge@ucsf.edu

Received date: Feb 25, 2016; **Accepted date:** Apr 04, 2016; **Published date:** Apr 11, 2016

Introduction

Over the last century daily life for Homo Sapiens has become considerably easier, particularly for those individuals living in western industrialized societies. A combination of technological advances, including factory automation, farm machinery, labor saving devices for the home, the automobile, telephones, television and computers has allowed us to become steadily more productive. At the same time these innovations have made our species much more sedentary, obese and prone to a variety of chronic degenerative diseases which put a considerable financial burden on the health care system [1].

Since the pioneering work of Jerry Morris in the early1950's that observed an increased risk of heart disease in sedentary London bus drivers [2], medical science has built a wealth of knowledge about the importance of physical activity for long-term health. Promotion of healthy life-styles by the Centers for Disease Control [3] and others is ubiquitous and yet nothing seems to be stopping the rise in sedentary behavior in western societies, indeed we appear to be exporting it to developing nations. It has come to the point that a recent study, from the National Institutes of Health, comparing self-reported and accelerometer measured physical activity levels, concluded that probably fewer than 5% of the adult US population get the equivalent of 30 minutes of walking a day [4].

This sedentary behavior poses a particular problem for musculo-skeletal health especially among older adults, 65 years and older. Physical activity such as regular walking is a major factor in preventing the osteoporosis that is associated with aging as well as reducing frailty in the elderly. Osteoporosis is a major contributor to degenerative spine disorders and frailty compromises the body's capacity to adapt to degenerative changes in structure. It also impacts the body's ability to cope with surgical intervention. Spine deformity patients who are physically frail often need to receive post-surgical rehabilitation in specialized nursing facilities. This has been found to be the leading predictor of complications and readmissions in patients undergoing spine surgery [5].

It is well established that regular walking and strength training can reverse frailty status in older, sedentary patients [6]. Programs of such activities could easily be made available to older spine patients through Physical Therapy Departments or Community Groups. This would enable patients to get a level of physical pre-habilitation that could markedly reduce their risk of complications from surgery. In addition, if increased mobility, as recommended by the CDC, is continued after surgery the range of potential health benefits includes reduced risk of heart-disease, diabetes and some cancers [7]. Metrics for frailty include simple tests such as the Timed Up and Go and Grip Strength tests [8] that are very easy to administer and could be undertaken routinely in a spine clinic or in primary care. Our ability to quantify frailty enables us to identify which patients are a greatest risk and design interventions that may improve frailty. The preponderance of the evidence is that pre-habilitation for a few weeks prior to surgery will result in fewer complications, a reduction in length of stay in hospital, improved health related quality of life and reduced health care costs.

Frailty tests are an important metric of the health status of older adults. If we are to meet the long-term needs of these older patients we should make these simple tests as routine a part of any medical examination for those 65 and older as the measuring of blood pressure. Without knowing the frailty status of individuals physicians cannot make a fully informed decision about treatment options particularly where elective surgery is indicated. Health insurers and major health care providers need to take the initiative in enabling frailty testing to become routine so that their patients can have improved surgical outcomes and their bottom lines can benefit from long-term cost savings.

References

1. Colditz GA (1999) Economic costs of obesity and inactivity. Med Sci Sports Exerc 31: S663-S667.
2. Morris JN, Heady JA, Raffle PA, Roberts CG, Parks JW (1953) Coronary heart-disease and physical activity of work. Lancet 265: 1053-1057.
3. Physical Activity and Health: A Report of the Surgeon General (1999) Centers for Disease Control.
4. Troiano RP, Berrigan D, Dodd KW, Masse LC, Tilert T, et al. (2008) Physical Activity in the United States measured by accelerometer. Med Sci Sports Exerc 40: 181-188.
5. Waldrop R, Cheng J, Devlin C, Fehlings M, Berven S (2015) The Burden of Spinal Disorders in the Elderly. Neurosurgery 77: 546-550.
6. Gomez-Cabello A, Ara I, Gonzales-Aguero A, Casjus JA, Vincente-Rodriguez G (2012) Effects of Training on Bone Mass in Older Adults: a Systematic Review. Sports Med 42: 301-325.
7. Diehr P, Hirsch C (2010) Health Benefits of Increased Walking for Sedentary, Generally Healthy Older Adults: Using Longitudinal Data to Approximate an Intervention Trial. J Gerontol A Biol Sci Med Sci Sep 65A: 982-989.
8. Hayes KW, Johnson ME (2003) Measures of Adult General Performance Tests. Arthritis & Rheumatism (Arthritis Care & Research) 49: S28-S42.