

## Vertebral Compression Fractures:

November is Osteoporosis month in Canada thus we dedicate this issue to the subject of vertebral compression fractures (VCF's).

One in four postmenopausal women will experience a VCF. This number increases with age. VCF's are not restricted to women. Compression fractures of the spine lead to significant morbidity, mortality and loss of independence. More than one fracture will increase the risk of comorbidities. As our population ages there is increasing demand for both pain relieving and preventative measures.

Percutaneous vertebroplasty (PVP) involves the placement of bone cement into the collapsed or partially collapsed vertebrae. In Canada we use relatively less PVP than in the United States. Complication rates from the procedure are relatively low and pain relief is often very good but refracture rates are high with most occurring within the first year.

### **Long term Effects of Back Strength Exercise**

Following a two year randomized controlled trial of back strength exercises, the exercise group maintained greater back muscle strength than controls, had greater bone mineral density at ten year follow-up, and had fewer VCF's (1.6% versus 4.3% in controls).

### **Standing Tall Exercise**



### **Shoulder Blade Squeeze Exercise**



### **Preventing Refracture after Vertebroplasty:**

The Mayo Clinic published a retrospective study that compared refracture rates following PVP. The exercise group followed the Rehabilitation of Osteoporosis Program- Exercise (ROPE) that included back extensor strength exercises.

At 12 months the following was noted:

- PVP only patients 75% refracture rate
- PVP - ROPE patients 35%
- ROPE only patients 5%

Median time to refracture for each group was:

- PVP only patients 4.5 months
- PVP - ROPE patients 20.4 months
- ROPE only patients 60.4 months

The number of vertebral compression fractures is on the increase. A well designed exercise and education program should be considered for anyone with osteoporosis risk factors. Age should not preclude treatment.

### **References:**

- Huntoon EA, Schmidt CK, Sinaki M. Significantly fewer refractures after vertebroplasty in patients who engage in back extensor strengthening exercises. *Mayo Clin Proc.* 2008 Jan;83(1):54-7.
- Heffernan EJ, O'Sullivan PJ, Alkubaidan FO, Heran MKS, Legiehn GM, Munk PL. The Current Status of Vertebroplasty in Canada. *Can Assoc Radiol J.* 2008;59(2):77-82.
- Sinaki M, Itoi E, Wahner HW, Wollan P, Mullan BP, Collins DA, Hodgson SF. Stronger back muscles reduce the incidence of vertebral fractures: a prospective 10 year follow-up of postmenopausal women. *Bone.* 2002;30(6):836-41.
- Old JL, Calvert M. Vertebral Compression Fractures in the Elderly. *Am Fam Phys.* Jan 1, 2004.

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