



Remember: You can live well with osteoporosis!

Compliant Flooring: A Potential Way of Reducing Injuries due to Falls

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Fracture

Fact:

80% of patients who are treated for an osteoporotic fracture are not given osteoporosis therapy. As a result, hundreds of thousands of Canadians needlessly fracture again and again because their osteoporosis goes undiagnosed and untreated.

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As was described in the May 24, 2013 newsletter, falls and the injuries they cause are a major health concern for older Canadians. Approximately 10-15% of falls cause injury such as fractures (broken bones), which may lead to pain, disability, loss of independence, reduced quality of life and even death.

Thus, the development of improved strategies to prevent falls and fall-related injuries among seniors is a public health priority in Canada. Scientists have been researching ways by which falls can be prevented both in and outside the home. Our last newsletter described many tips for falls prevention. In addition to methods designed to prevent falls, researchers are also investigating strategies that may reduce fall-related injuries. A novel strategy that is currently under development may be of interest to some of you. This method, which is still being researched, is called compliant flooring. Although it does not prevent falls, it may reduce the severity of injury should a fall occur.

Compliant flooring, also commonly known as “safety flooring” or “low stiffness flooring,” is similar to the rubber tile found on some children’s playgrounds. The logic is simple: decreasing the stiffness of the floor will decrease impact forces during falls and thus reduce the chance of injuries, such as fractures. Laboratory-based studies conducted over the past 10 years have determined that compliant floors can reduce the force applied to the hip by about 35% during simulated sideways falls and the force applied to the head by about 50% during simulated backwards falls, without impairing an individual’s balance. Therefore, installing compliant flooring in high-risk environments, such as nursing homes and hospitals, may reduce the incidence and

severity of fall-related injuries.

Researchers at Simon Fraser University, B.C., in partnership with the Fraser Health Authority, are embarking on a research study of compliant flooring called the Flooring for Injury Prevention (FLIP) Study. The FLIP Study will take place at a nursing home in British Columbia, and will compare the effects of different types of flooring. The study will monitor the number and cost of falls and fall-related injuries over time to determine if one type of flooring is better than another. The results of the FLIP Study will be used to guide programs and policies for fall and injury prevention in older adults, and to improve the design and renovation of various types of infrastructure, including non-profit housing, assisted living complexes, long-term care facilities, hospitals and seniors' recreation facilities.



The FLIP Study is part of a team research grant called Technology for Injury Prevention in Seniors, which is funded by the Canadian Institutes of Health Research (CIHR). If you are interested in reading more about the FLIP Study, please visit www.sfu.ca/tips.

To further illustrate this concept of compliant flooring, here is one example of a commercially available product: SmartCells[®] made by SATech (Chehalis, Washington, USA). SmartCells[®] flooring is made of a continuous rubber surface layer that is supported by cylindrical rubber columns (Figure 1).

Figure 1. SmartCells[®] compliant flooring composed of a continuous rubber surface layer that is supported by cylindrical rubber columns.

The flooring is firm under normal walking conditions, but the rubber columns collapse upon impact, reducing the impact or force of potentially injurious falls. SmartCells[®] are typically installed as a sub-floor and are then covered with vinyl or carpet as shown in Figure 2.



Figure 2. An example of the SmartCells[®] compliant flooring installation in a resident's room at a nursing home in British Columbia (left: Smart Cells[®] sub-flooring; right: SmartCells[®] sub-flooring with vinyl overlay – the finished product).

High-tech floor reduces impact of falls for seniors: An article in the Vancouver Sun provides an interesting update to the one above on Compliant Flooring.

At the New Vista Care Home in Burnaby, researchers are testing a new kind of “compliant floor” intended to prevent injuries due to falls. The floor is slightly resilient – not so that we would notice it in ordinary walking, but enough to lessen the impact of a fall.

Falls are a major cause of injury and death among older adults.

The floor is being tested in a clinical trial by the Technology for Injury Prevention in Seniors (TIPS) program at Simon Fraser University (SFU) in collaboration with Fraser Health. Half of New Vista has the new high-tech floor, while the rest has conventional flooring.

“We have done a lot of biomechanics testing to see what kind of protection the floor can provide, and our hypothesis is that the floor will reduce injury by 50 per cent,” says Dr. Fabio Feldman of TIPS.

Falls are the cause of over ninety per cent of hip and wrist fractures and sixty per cent of head injuries in older adults. More than a fifth of hip fracture patients will die within one year. A third of falls in care homes result in head impact.

TIPS is focusing on reducing injuries from falls rather than preventing them in the first place. That, says Feldman, is innovative.

Read more:

<http://www.vancouversun.com/health/High+tech+floor+reduces+impact+falls+seniors/10464115/story.html#ixzz3an0JtFl>

If you have questions about this article or any other aspect of osteoporosis, please call toll-free 1-800-463-6842 (416-696-2663 in the Greater Toronto Area) to speak to an information counsellor.



Vitamin D: The Sunshine Vitamin?

These are the “lazy, hazy days of summer,” and no doubt we are all basking in the sunshine, thinking that we are getting our recommended daily intake of vitamin D from the sun. Unfortunately, in Canada, this is not generally the case. In fact, research shows that even individuals who live in tropical areas are often low in vitamin D. To set yourself straight on the facts about vitamin D, click here: www.osteoporosis.ca/wp-content/uploads/coping_july_5_2013.pdf.

FUNNY BONE:

Always borrow money from a pessimist. He won't expect it back.

Moved? Changed phone number or e-mail address?

Let us know by calling 1-800-463-6842 or emailing copn@osteoporosis.ca and we'll update your information. This will ensure we keep you up to date!

A Recipe from our Sponsor

Jerk pork sliders with Fresh Mozzarella

Course: *Hors D'œuvres & Appetizers*

Preparation Time: *20 mins*

Cooking Time: *15 mins*

Yields: *4 to 6 servings*

2/3 milk product serving(s) per person

Calcium: 25% DV/ 271 mg



The satisfying grilled flavour in this light-tasting little bite gets surprising contrast from cantaloupe and Canadian Fresh Mozzarella.

Ingredients

1 lb (450 g) pork tenderloin
1 tsp (5 mL) allspice, (or blend of ground cinnamon, ginger, cloves and nutmeg)
1 tsp (5 mL) ground cayenne pepper
2 tbsp (30 mL) lime juice
Salt and freshly ground pepper

12 slider buns
6 oz (180 g) **Canadian Fresh Mozzarella**, thinly sliced
4 lettuce leaves
1 cup (250 mL) cantaloupe, thinly sliced
1/4 cup (60 mL) sweet pickle relish

For more information about this recipe:

<http://www.dairygoodness.ca/getenough/recipes/jerk-pork-sliders-with-fresh-mozzarella>

Preparation

Preheat grill to medium-high heat.

In a dish, sprinkle pork tenderloin with spices and lime juice. Season with salt and pepper.

Cook pork tenderloin on grill for 15 minutes,* turning over a few times. Remove from grill, cover with aluminum foil and let rest 5 minutes. Slice thinly.

Meanwhile, heat the buns. Place Fresh Mozzarella slices on bottom halves and let melt.

Add lettuce, slices of pork and cantaloupe and garnish with relish.**

Tips

*Cooking time may vary depending on the thickness of the tenderloin and the heat intensity of the grill.

**The combined sweetness of the relish and cantaloupe softens the spiciness of this recipe.

Use a potato peeler to get very thin cantaloupe slices.

Cheese alternatives: Canadian Gouda, Mild Cheddar, Edam.

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