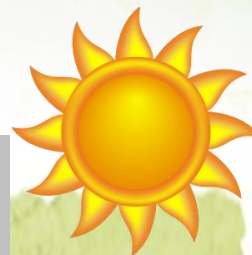


WINTER UPDATE

VITAMIN D: Do I Need It?



Vitamin D is a nutrient produced in the body through exposure to the sun's rays; it can also be found in some food sources. Vitamin D plays an important role in strengthening bones by helping the body to absorb calcium from food and supplements; too little vitamin D in the body can lead to the development of soft, thin, and brittle bones. Vitamin D also participates in nerve and muscle function, function of the immune system, and helps to reduce inflammation.



The body produces vitamin D when the skin is directly exposed to the sun. Five to 30 minutes of sun exposure between 10am and 3pm several times per week during the summer can provide sufficient amounts of vitamin D; however it is still important to be mindful that excessive sun exposure increases the risk of skin cancer, and therefore it is advisable to use sunscreen. Shade, cloudy days, and having dark coloured skin, decreases the amount of vitamin D the body can produce; living in the northern hemisphere during the winter months reduces your sun exposure, thus supplementing or eating foods with good sources of vitamin D is recommended.

Other groups of people who should consider supplementing with vitamin D include:

- Breastfed infants;
- Older individuals because their skin produces vitamin D less efficiently, and their kidneys are less able to convert vitamin D to its active form (D₃);
- People with dark skin;
- People with Crohn's or Celiac disease who do not handle fats well, because vitamin D needs fat to be absorbed; and
- Obese individuals because their body fat binds vitamin D and prevents it from getting into the blood.

Vitamin D is essential for nourishment and health of bones. In children a deficiency in vitamin D can result in rickets, in which the bones become soft and bendable; adults may develop osteomalacia from vitamin D deficiency, a condition causing bone pain and muscle weakness. Older adults, particularly women, are susceptible to osteoporosis; in this case, the bones become fragile and may fracture easily with falls. Supplementing with vitamin D (700-800IU/day) and calcium (500-1200mg/day) can reduce the risk of bone loss and fractures.

Dietary Sources of Vitamin D:

- Fatty fish (salmon & tuna) and fish liver oils are the best sources
- Beef liver, cheese, egg yolks, some mushrooms provide small amounts
- Milk is usually fortified with 400IU of vitamin D
- Vitamin D is added to some breakfast cereals, orange juice, yogurt, margarine, and soy beverages

Vitamin D Recommended Dietary Allowances (RDAs):

0-12mos	400IU	
1-13yrs	600IU	
14-18yrs	600IU	Pregnant/Lactating 600IU
19-50yrs	600IU	Pregnant/Lactating 600IU
51-70yrs	600IU	
>70yrs	800IU	

Always consult your physician before beginning any supplementation

Drug Interactions: **Corticosteroids** can reduce calcium absorption and impair vitamin D metabolism, which can contribute to bone loss and osteoporosis with long-term use. **Weight loss drugs** (e.g. Xenical) and **cholesterol lowering drugs** (e.g. Questran) can reduce absorption of vitamin D and other fat soluble vitamins.

Product Spotlight

BIOFREEZE



Biofreeze is available in spray, gel, and roll-on applications.

Biofreeze is a topical agent that when applied to the skin creates a cold sensation providing pain relief for muscle strains, sprains, stiff and sore muscles, arthritis, joint pain, and more.

How does Biofreeze Work?

Biofreeze elicits a counter-irritant effect, inhibiting pain signals from reaching the brain; this process is known as the 'Gate Control Theory'.

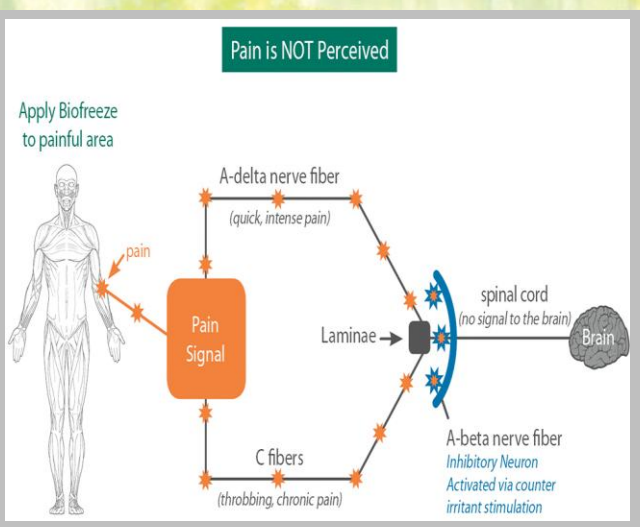
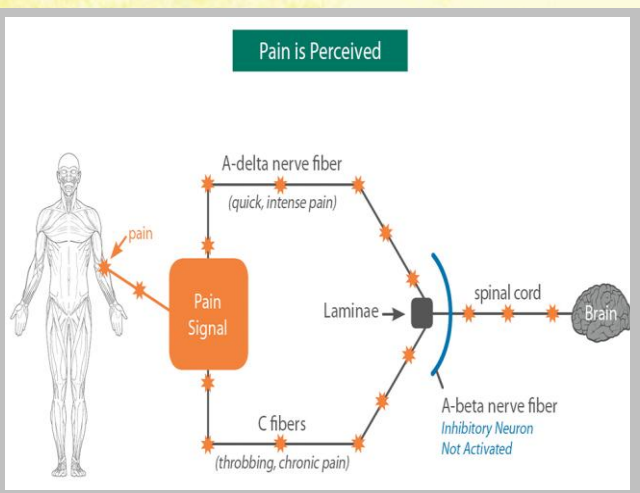
Pain is transmitted by two types of nerve fibres: A-delta and C fibres; there is a third type of neuron that does not transmit pain known as A-beta fibres. The Gate Control theory states that painful stimuli travelling in either the A-delta or C fibres and be blocked via stimulation of the A-beta fibres, thus inhibiting the perception of pain; these A-beta fibres are activated via counter-irritants, such as Biofreeze.

Biofreeze also contains the active ingredient Menthol, which stimulates specific cold receptors (TRPM8) in the skin; cooling and cold has long been known to provide analgesic effects.

Watch the Biofreeze ["How It Works"](#) video.

Safety

Biofreeze can be used up to four times per day. When applying the product, be sure to avoid contact with the eyes, and mucous membranes. Do not apply to wounded or irritated skin; should skin irritation occur, discontinue use. Biofreeze should not be used with wraps or heating pads as blistering of the skin may occur; ice may be used before or after application to prolong the cryotherapy effects.



For more information about Biofreeze and its effects, visit: www.biofreeze.com

WINTER ACTIVITY

HOW TO AVOID INJURY

Warming up prior to outdoor activity is essential to help avoid injuries such as muscle spasms, strains, and sprains; in addition do not underestimate the importance of layering warm clothing. In cold temperatures your blood vessels contract to help conserve body heat, reducing the blood supply to your extremities, and thus lowering the functional capacity of muscles; this effect is particularly evident in the physically unfit.

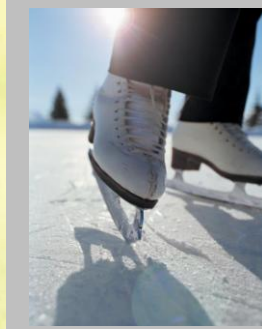
If you are pressed for time, it is better to shorten your workout and include time to warm-up rather than skipping the warm-up and jumping straight into your activity. A good warm-up should include 7-10 minutes of light aerobic activity (jogging, biking, fast walking), and activity specific stretches or exercise.

Skiing: do 10-15 squats. Stand with your feet shoulder width apart and knees aligned over your feet. Slowly bend your knees, lowering your buttocks toward the ground. Straighten your knees.

Skating: do lunges. Take a moderate step forward with one foot and allow the back knee to lower toward the floor. Keep your shoulders aligned over your hips. Return to your original standing position then repeat with the other foot.

Sledding/tobogganing: do knee to chest stretches to combat compression injuries from repeated bouncing over the snow. Either sitting or lying on your back, pull on knee up to your chest and hold for 30 seconds.

After any sport or activity, do not forget to include some cool down stretches. If you are sore, apply an ice pack to the affected area for 20 minutes, then remove it for a couple hours and repeat throughout the next day or two. If the soreness does not resolve, do not hesitate to seek treatment from your healthcare provider.



Snow Shovelling

- Layer clothing to keep your muscles warm and flexible
- Stretch muscles in your shoulders, back, buttocks, and legs before shovelling to prevent strain of de-conditioned muscles
- Push snow straight ahead and walk it to the snow bank. Avoid throwing snow, and sudden twisting and turning movements
- Bend your knees to lift the snow, allowing the muscles of your arms and legs to do the work, not your back
- Take frequent breaks. Fatigue increases your risk for injury.
- **STOP** if you feel **chest pain**, have **shortness of breath** or become very tired. You may require immediate professional help.



HOLIDAY SURVIVAL GUIDE SHOPPING TIPS

- **Bring only necessary items** (driver's license, credit card) & leave heavy purses at home
- Take items to your car so you do not carry more than necessary
- **Wear shoes with cushioning** to absorb the impact of walking on hard mall floors, and **layer clothing** to account for temperature differences (outdoors vs indoors)
- **Take breaks** every 45 min to 1 hour, drink plenty of **water** (caffeine adds stress to the body and should be avoided), and eat **light foods** (salad vs burger & fries)
- **Leave children at home!** They do not have the stamina for long shopping trips and you will become frustrated with one another. It is also easier for them to wander off if you are carrying items and not holding their hand.

ACA Healthy Living: "Holiday Survival", "Winter Activities", "Vitamin D"
<http://ods.od.nih.gov/factsheets/vitamind#en1>
www.biofreeze.com



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