

## RIN #15 – Sunscreens and Their Correct Application

This RIN provides information on sunscreen protection and correct usage. It addresses the consequence of incorrect sunscreen application on the protection provided, and includes some general recommendations on sun protection for adults and children.

**PROTECTION FACTS:** Sunscreens reduce the amount of ultraviolet radiation reaching the skin and as a result extend the length of time in the sun without sunburn. The SPF number or "*Sun Protection Factor*" shown on the sunscreen container can help the user determine how much longer sunscreen-covered skin can be exposed to sunlight before sunburn occurs. For example, a fair skinned person whose unprotected skin would burn after 20 minutes of sun exposure uses a sunscreen of SPF 15. This person could now be exposed for up to 15 times longer (i.e. 20 minutes x 15 = 300 minutes or 5 hours) before a burn would result, provided the person had applied sunscreen correctly to the skin. Recent information shows that people may be applying sunscreens inappropriately or not following the manufacturer's instructions on the correct use of the product.

**THE PROTECTION PROBLEM:** The protection achieved from using a sunscreen of a particular SPF depends on how **thick** the user applies it. To achieve the SPF listed on the sunscreen container the user must apply **2 mg** of sunscreen uniformly on each square centimetre of the skin surface (i.e. 2 mg/cm<sup>2</sup>). This is the internationally agreed application thickness that is used to determine the SPF. Studies have shown that people apply sunscreen thinner and often less evenly, than this. Typically about a quarter to two thirds of the required amount of sunscreen is applied. This reduces the actual protection provided to between about a **1/3<sup>rd</sup> to 1/10<sup>th</sup>** of the stated SPF. Sunscreen labelled as SPF 30, when applied this way, results in protection equal to only about SPF 3 - SPF 10. **This misuse can lead to sunburn, even when an appropriate SPF sunscreen was selected and applied!**

**WHAT SPF IS REQUIRED?** The table below shows the sunscreen SPF required by people of differing sun sensitivity, when they plan to be outside for only 4 hours around midday in the summer sun here in BC, if applied correctly and when applied typically (insufficiently):

<u>Skin Sensitivity</u>	<u>Effect on skin</u>	<u>SPF required if applied correctly</u>	<u>SPF required when applied "typically" *</u>
<b>Very sensitive skin</b>	Always burns and never tans	<b>SPF 30</b>	<b>SPF 90+</b>
<b>Moderately sensitive skin</b>	Who tans but sometimes burns	<b>SPF 10</b>	<b>SPF 30+</b>
<b>Least sensitive skin</b>	Tans with little or no burning	<b>SPF 5</b>	<b>SPF 15+</b>

\*The last column, (SPF required when applied "typically") shows what SPF would be needed to achieve the same protection, when poor sunscreen application occurs.

**CORRECT APPLICATION:** Before applying any sunscreen, users should read and follow the manufacturer's instructions. A 120 ml bottle (or 24 teaspoons) will cover the entire adult body skin surface only four times, to achieve a thickness of 2 mg/cm<sup>2</sup>. An adult male arm requires 2/3<sup>rd</sup> teaspoon or 3 ml. Similar amounts would need to be applied to the following areas of the body: each arm, each lower leg, each upper leg, the upper chest, the upper back, the lower back, the lower front and the head/neck to obtain the required thickness, with careful uniform spreading to achieve full coverage of exposed skin.

The initial application must be made 15 to 30 minutes before sun exposure, and then reapplied to sun exposed sites within 30 minutes after sun exposure begins. Further reapplication is needed after any vigorous activity that could remove sunscreen, such as swimming, towelling, excessive sweating and rubbing.

**GENERAL RECOMMENDATIONS:** People with sensitive skin should select a SPF of 30 or higher, be diligent in applying sunscreen thickly before exposure, and re-apply it to maintain coverage.

Sunscreen use is just one means of protecting the skin from sunburn when outside on sunny days. Take advantage of shade from trees, buildings, umbrellas and parasols, and wear protective clothing, including wrap around style sunglasses and hats that fully shade the face and neck. When possible, avoid outdoor activities during the peak sun hours from 10 am till 4 pm. Protection for young children is especially important due to their sensitive skin, which may more readily burn. Babies must not be exposed to the sun.

For further information contact:

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