

How to Use this Sun Smart Instructor Guide for Ski School Instructors

This instructor's guide should be read in advance of ski school instructor training. The training may take place in 6 modules, 10 minutes in length, or a single training session, approximately 60 minutes in length.

There are six major topics covered in this guide. The first topic introduces the sun smart concept, reviewing the incidence of skin and eye damage from excessive sun exposure and the role of ski school instructors as opinion leaders in preventing this damage. Topic two focuses on the degree to which you are at personal risk from exposure to the sun. The third topic provides general information about the anatomy of the skin, and explains two major types of skin cancer that can develop from sun damage to the skin. Topic four describes how to examine your skin for early signs of skin damage. The sixth topic covers how to spread the word about sun smart practices to your ski school students and other mountain guests.

Each topic begins with background information that will help you "get the word out" to the people in your ski school. This includes basic facts about the sun and its effects; objectives to guide you as you discuss each topic with your co-workers; time required to cover the topic; and a list of key vocabulary used in each topic.

As a companion to this guidebook, we have created an activity sheet for coworkers with tools to assess their personal risk for skin damage from the sun and to set personal sun smart goals. We have also created a Web site that we urge you to look at - www.gosunsmart.org. It contains additional information about being sun smart at work and at play.

Here are tips on how to provide good instruction:

- Read the presentation completely and rehearse.
- Arrange the room so that every student can clearly see the slide presentation.
- Position yourself so you can comfortably refer to this instructor information.

Module 1: Introduction to Sun Smart

Background for Instructor:

Skin cancer is growing at an alarming rate in North America. Compared to Australia, where skin cancer is on the decline, North America's cases of skin cancer are rapidly increasing. The reason is simple. The Australians, who once led the world in the incidence of skin cancer, have become some of the most sun savvy people on the face of the earth.

Likewise, cataracts of the eyes are common in North America. Cataracts cloud the lens of the eye making it difficult to see and, if left untreated, can lead to blindness.

You don't have to be the proverbial "rocket scientist" to understand why too much sun in general, and too much sun in an alpine environment especially, can lead to more than the temporary discomfort of badly sunburned skin. The anatomy and biology of skin cancer and eye damage is fairly straightforward.

Why is it important that ski school instructors learn about sun protection?

- 1) As someone who spends a lot of time outdoors, you need to be aware of how to protect yourself from the harmful ultraviolet radiation in the sun that can damage your skin. There are some very simple steps you can take to reduce this damage.

- 2) Ski school instructors are a very important source of safety information at ski areas. In a survey of ski area employees, ski school instructors were cited as credible and respected employees for information about staying safe on the mountain, such as sun safety. Ski school instructors are "opinion leaders" at ski areas on safety issues. Opinion leaders are very important people in any social group. People turn to opinion leaders for information. People also watch opinion leaders to see what they like, how they behave, what opinions they express and then act accordingly. Thus, ski school instructors can influence other employees, ski school students, and other guests at the ski area to be sun safe.

Learning Objectives:

- Introduce sun smart behavior as an environmental risk issue.
- Describe the features of the alpine environment that increase risk.
- Identify examples of incidence & prevalence of skin damage.
- Emphasize the need for sun smart behavior for self, co-workers, students, guests and families.

Approximate Training Time: 10 minutes

Vocabulary:

Cancer:	A disease in which abnormal cells grow out of control. A cancer tends to spread locally and to other parts of the body and often causes death if not treated. Skin cancer can be caused by too much UV radiation exposure in one's life.
Cataracts	A disease of the eyes in which a film of protein is deposited on the lens of the eye, which clouds the vision. Cataracts can be caused by over exposure to UV radiation.
Ultraviolet (UV) Radiation:	Harmful rays from the sun, some of which are absorbed by the ozone layer, that can damage our skin and eyes. Seeking shade, limiting time in the sun during peak hours and wearing sunscreen, sunglasses and protective clothing can help prevent harmful UV rays from affecting us.
Opinion Leader	A person in a social group who is respected for their ideas and information. Opinion leaders usually emerge informally within a social group. They often have more contact with information sources outside of the group. They influence group members through their words and actions.

Training Content:

[Show introduction slides]

The sun is an important, but often under-recognized *environmental risk issue* on the mountain. UV rays from the sun can *damage the skin*. Some of this damage is disfiguring, while other types can be deadly.

[Show slide 4 – UV Rays Damage Skin]

The American Cancer Society estimates that 90% of skin cancers are caused by exposure to the sun's UV rays.

UV rays can also *harm the eyes*. They can burn the retina tissues and cause cataracts, other problems of the lenses and aging of the retina. Blue-light from the sun can also damage the eyes.

- In alpine environments, there is a greater amount of UV rays than at lower elevations. In fact, the amount of UV rays increases by 5% for every 1,000 feet of elevation. So, at 8,000 feet, there is 40% more UV radiation than at sea level.
- The snow can reflect 85-95% of the UV rays.

- In the spring, UV and other rays from the sun are substantially higher than in midwinter.
- In the fall and spring, the sun is still low enough in the sky that its rays hit the retinas of the eyes more directly than in the summer

[Show slide 5 – Incidence of Skin Cancer]

The ***incidence & prevalence*** of skin damage due to environmental exposure to UV rays is increasing dramatically in North America.

- Over 1 million cases of non-melanoma skin cancers will be diagnosed in the United States in 2001. Over 70,000 cases will be diagnosed in Canada.
- 51,400 cases of melanoma were diagnosed in the United States and 3,800 cases, in Canada in 2001. Melanoma will result in 7,800 deaths in the United States and 820 deaths in Canada in 2001.
- The incidence of melanoma has doubled since the early 1970s.

[Show slide 6 – Instructors & Sun Smart]

You are in a position to reduce risks of skin damage for yourself, your family, employees at the mountain, ski school students and other mountain guests.

- By understanding the ***factors that increase the risk of skin and eye damage***, you can assess your own level of risk. And, there are simple steps you can take to reduce your sun exposure.
- Your co-workers have identified ski school instructors as ***opinion leaders for other workers at this resort***. Opinion leaders are special. They comprise less than 15% of the general population. While they may be small in number, they are the people most responsible for others adopting new ideas and health practices. Opinion leaders are perceived as central members of their community and are respected as such. But because they are usually perceived to having knowledge and skills above and beyond the people with whom they live and work, their advice is highly valued. Unlike "outside experts," other workers see opinion leaders, such as yourself, as "one of us." As a result, they will listen to and follow your lead. Because you are a ski school instructor, you are an opinion leader for many of the employees at this resort. You are in an ideal position to influence their sun smart behavior.
- As ski school instructors, you are ***opinion leaders for ski school students and other mountain guests***. Suggesting sun smart behavior should be a part of your customer service efforts.
- Finally, for those of you with families, it is important to be ***sun smart with your spouse and children***. Most people receive the majority of their sun exposure during childhood so it is especially important to make your children sun smart. Evidence suggests that two severe, blistering sunburns in childhood may double a child's risk for developing skin cancer later in life. Promoting sun smart behavior during childhood can have large lifelong benefits for your children.

In this training, you will:

- Identify factors that can increase risk of skin damage from sun exposure
- Determine your own personal risk
- Describe the biology behind skin damage
- Adopt simple ways that you can protect yourself from over-exposure to the sun and provide advice to ski school students and other mountain guests.

Module 2: Personal Risk for Skin Damage

Background for Instructor:

Although sunlight is necessary for sight and some biological functions, we do not need as much of it as most of us think for the body to properly function. It's another one of those instances when a little is good doesn't necessarily mean a lot is better.

Three things affect one's chances of being exposed to too many of the sun's damaging rays:

Where you live:

Altitude, latitude and climate are three environmental factors that can greatly increase the intensity of UV radiation from the sun and put you at risk for sun damage. Locations at low latitudes (close to the equator) receive more direct sunlight. The more direct the sun's rays, the stronger (and more damaging) the UV radiation exposure. If you live in higher altitudes, the atmosphere is thinner and more UV rays are present, which puts you at risk for more intense UV radiation exposure. Locations that have lots of clear, sunny days throughout the year have more intense UV rays than places with varying weather and seasons.

Who you are:

Personal characteristics that you are born with determine your skin's reaction to the sun. Characteristics such as fair skin, light colored hair and blue or green eyes indicate that you are more vulnerable to the sun's harmful rays. People with light colored skin are less likely to be protected from the sun because they have less melanin—the skin pigment that protects skin from sun damage.

What you do:

A longer amount of time spent in the sun without sun protection can increase your risk for sun damage. This is particularly true during mid-day (10 am – 3 pm) when the sun is located directly overhead, which makes UV rays more intense. To reduce your risk of sun damage, you need to protect yourself from harmful UV rays by using sunscreen, sunglasses, a hat with a brim, long clothing and shade.

Given this picture, being sun smart simply makes good sense for you and all employees.

Learning Objectives:

- Describe the factors that increase the risk from sun exposure.
- Determine your personal risk resulting from sun exposure.
- Endorse the need to engage in protective sun smart behaviors.
- Explain the interaction between physical characteristics, personal behavior and the environment as it relates to personal skin damage from sun exposure.

Approximate Training Time: 10 minutes

Vocabulary:

Altitude (elevation): The height above sea level. The higher the elevation of a place, the smaller atmosphere there is to protect you from UV exposure.

Latitude: Distance north or south from the equator measured in degrees. Locations at low latitudes (close to the equator) receive more direct sunlight and therefore have stronger and more damaging UV rays.

Photosynthesis: A food-making process that occurs in green plants. Light from the sun causes plants to go through photosynthesis.

Training Content:

[Show slide 7 – Module 2]

In our last training session, we talked about the damage that the sun can cause to our skin and eyes. As ski school instructors, you are in a position to reduce risks of skin damage for yourself, your family, employees at the mountain, ski school students and other mountain guests. Today we will discuss our personal risk of sun damage.

Exposure to the sun is associated with many positive aspects of our lives. For example, the light and warmth from the sun are essential to life on earth. However, despite the sun’s positive affects, it is important that we acknowledge the risks that come with too much UNPROTECTED exposure to the sun.

[Show slide 8 – The Sun: Benefits & Harms and lead the group in a discussion of the relative balance of benefit and harm, emphasizing that the risk of harm increases with unprotected exposure]

Beneficial and Harmful Effects of Sun Exposure	
Beneficial Effects	Harmful Effects
Heat	Sun tans
Light	Sunburns
Photosynthesis	Skin aging
Provides an outdoor environment for physical activity	Freckles
Aids in the production of Vitamin D	Wrinkles
Makes us feel happy and positive	Skin cancer
	Eye damage (cataracts)

We want to enjoy the benefits we get from working in the sun, while at the same time, minimize the drawbacks.

[Show slide 9 – Your Risk]

All humans are vulnerable to the harms from the sun's energy. However, our risk for sun damage varies due to the following characteristics:

- Genetic factors (who you are)
- Behavioral factors (what you do)
- Environmental factors (where you live)

[Show slide 10 – Your Personal Risk Assessment and distribute the Personal Risk Assessment Form found on the training CD or in the Employee Brochure]

Take a moment to fill out your ***Personal Risk Assessment***.

[Show slide 11 – Scoring Your Personal Risk Assessment]

See what your personal risk is for skin damage from the sun.

[Show slide 12 – Personal Risk for Sun Damage]

Remember, your risk of getting harmed from the sun is the sum of three important components:

$$\begin{array}{l} \text{Who you are} \\ + \text{What you do} \\ + \text{Where you live} \\ \hline = \text{Personal risk for sun damage} \end{array}$$

Who you are:

- People with light colored skin have less of the pigment, melanin to protect their skin from sun damage.
- Even if you have darker skin, meaning that you have more melanin than those with lighter skin, you are still at risk for the aging effects of the sun, eye damage and even skin cancer.

What you do:

- A longer amount of time spent outdoors without sun protection can increase your risk for sun damage.
- Spending time outdoors during mid-day (10 am - 3 pm), when the sun is located most directly overhead, increases your UVR exposure.

Where you live:

- Altitude - In places with higher elevation, like in the mountains, the atmosphere becomes thinner (it has less ozone) and you are exposed to more UV rays.

- Latitude - Due to the angle of the sun, the closer you are to the equator, the more intense the sun's UV rays.
- Climate - Locations that have a lot of clear sunny days throughout the year are exposed to more intense UV rays than places with varying seasons.
 - However, as much as 70% of the UV rays still gets through the clouds on a cloudy day

We live in the mountains with abundant sunshine and high altitude, so remember: No matter what your score on the Personal Risk Assessment, we *all* have to be careful in the sun!

Module 3: How Sun Damages the Skin

Background for Instructor:

This topic focuses on the ways UV rays in sunlight damage the skin. There are three different types of UV light – UVA, UVB and UVC – which are classified based on the length of their waves. UVC (shorter wavelengths) is completely absorbed by the earth’s atmosphere, but UVA (longest wavelengths) and UVB (medium wavelengths) penetrate to the ground and are responsible for skin damage. A helpful rule of thumb is: “**A** (UVA) is for **a**ging, **B** (UVB) is for **b**urning.”

The skin is the largest organ in the human body and is made up of three layers: the epidermis, the dermis and the subcutis. The skin acts as a cushion to protect the internal organs, as a barrier to external harm, and as a regulator of both body temperature and water content. In addition, its nerve receptors allow us to experience critical sensations like touch, temperature and pain.

Skin damage from sun exposure can take many forms – from tanning to freckling to wrinkling and, ultimately, to skin cancer. During our lifetimes, normal cells grow, divide and die in an organized way. However, sometimes cells become abnormal. In most cases these abnormal cells die or our bodies get rid of them without us ever knowing. Sometimes, the abnormal cells begin to grow erratically and out-of-control. This is what we know as cancer.

Just as there are many different types of cells in the human body, there are many types of cancer. When doctors talk about different kinds of cancers, they usually refer to the primary site. For example, if you have malignant melanoma that metastasizes to your internal organs, your disease is still classified as skin cancer.

Cancerous cells can accumulate and form a tumor (a mass of tissue that doesn’t belong in the body). Tumors can compress, damage and even take over normal cells and tissue. In some cases, cancerous cells will break away from the main site and travel to other areas of the body. This process is called metastasis, and it’s how cancer spreads.

Skin cancer comes in 3 forms. Each form affects a different kind of cell in the skin’s epidermis: 1) basal cells (basal cell cancer), 2) squamous cells (squamous cell cancer) and 3) melanocytes (melanoma). Both basal cell and squamous cell cancers are highly treatable and are usually not deadly if detected and removed at an early stage – though they can be disfiguring. Malignant melanoma, on the other hand, is an extremely aggressive cancer that can quickly metastasize to other locations.

All skin cancers, if detected early, can be removed. Regardless, once a person has been diagnosed with a skin cancer, that person is more likely to have additional cancers in his or her lifetime; so regular medical checkups are crucial. Despite the high cure rate, any kind of skin cancer is bad, and reducing your exposure to the sun’s UV rays can prevent 90% of skin cancers.

Don't be fooled into thinking that a tan can adequately protect you from the damaging effects of UV rays. It is a common misconception that a base tan from a tanning bed is a good way for you to prepare your skin for real sun exposure. Another misconception is that getting an initial sunburn that turns into a tan is protective against further sun damage. It is estimated that the protection a tan provides is the equivalent of an SPF (Sun Protection Factor) of only 4!

Learning Objectives:

- Describe the structure (layers) of the skin.
- Explain the effect of exposure to UV rays on skin cells (e.g., cancer) and eye tissue (e.g., cataracts).
- Explain the interaction between physical characteristics, personal behavior and the environment as it relates to sun exposure and skin damage.

Approximate Training Time: 10 minutes

Vocabulary:

Epidermis:	The thin outer layer of the skin that forms an insensitive covering over the dermis; includes basal cells, squamous cells and melanocytes. UVB can burn your unprotected epidermis and leave you with a painful, red sunburn.
Dermis:	The middle layer of the skin that contains hair follicles, sweat glands, blood vessels and nerves. UVA rays can reach all the way to your dermis and can cause wrinkling and other signs of aging.
Subcutis:	The innermost layer of skin (below the dermis) that is made up of fat cells and collagen. The subcutis functions to keep your body warm and protect it from injury by acting like a shock absorber. UVA rays can reach all the way to your subcutis and can cause wrinkling and other signs of aging by drying up the collagen.
UVA Rays:	The longest of the ultraviolet rays; most of the waves are not absorbed by the atmosphere and reach the ground. UVA can damage the skin and cause premature aging. Remember that UVA is for Aging .
UVB Rays:	Ultraviolet rays that are partially absorbed by the atmosphere, though some still reach the ground. UVB rays are responsible for the actual burning of the skin – sunburns. Remember that UVB is for Burning .

Basal:	A type of cell found in the epidermis layer of the skin. One type of non-melanoma cancer occurs when there is uncontrolled growth of the basal cells.
Squamous:	A type of cell found in the epidermis layer of the skin. One type of non-melanoma cancer occurs when there is uncontrolled growth of the squamous cells.
Non-melanoma:	A less deadly type of skin cancer that results from uncontrolled growth of either basal cells or squamous cells in the epidermis. Non-melanoma cancers can usually be removed and stopped if caught early, although the process is painful and can leave scars.
Melanoma:	Cancer of the melanocytes in the skin's epidermis. Also called malignant melanoma, this is the worst kind of skin cancer. Melanoma can be deadly if not caught and treated before it spreads.
Malignant:	Tending or likely to result in death. Malignant melanoma, a deadly type of skin cancer, can quickly spread to other places in your body.

Training Content:

[Show slide 13 – Module 3]

We determined our personal risk for sun damage during our last training session. It is important to remember that since we live in the mountains with abundant sunshine and high altitude, no matter what your score on the Personal Risk Assessment, we *all* have to be careful in the sun!

How does the sun's UV rays damage the skin?

[Show slide 14 – Your Skin]

Take a look at this diagram. It shows the 3 major layers of the skin.

- The *epidermis* is the outermost layer of the skin--the one you see when you look at yourself.
- The *dermis* is the middle layer of skin. It is much thicker than the epidermis and contains hair follicles, sweat glands, blood vessels and nerves.
- The *subcutis* is the layer below the dermis and is a network of fat cells and collagen. It keeps your body warm and acts like a shock absorber to protect you from injury.

Different wavelengths of UV rays penetrate different layers of your skin.

- UVB radiation is responsible for sunburns (think: "B" for "Burning").
- UVA radiation also plays a part in sunburns, but because it can get through to deeper layers of your skin (all the way to the dermis), it's also responsible for wrinkling and other signs of aging (think: "A" for "Aging")

[Show slide 15 – Sun Tans & Sunburns]

In reaction to sunlight, the skin *suntans* by producing melanin. Melanin darkens the skin in an attempt to protect it from the damaging UV rays. So, a suntan is a sign that your skin has been over-exposed to UV rays and it is trying to protect itself from more harm. However, contrary to a popular myth, a suntan is not the best way to protect you from skin damage. And a so-called, "base tan," will only give your skin a very small amount of protection. Plain and simple—a suntan isn't "healthy."

With that in mind, you should avoid *sun burning* altogether. When your skin turns red, or, in the worst case, blisters, you've literally fried your epidermis.

Sunburns and even suntans cause premature *wrinkling* and *aging*. Your skin reacts to the UV rays just like a grape when it's out in the sun for a long time -- it becomes dried out and turns into a raisin.

The best medical evidence indicates that exposure to too much of the sun's UV rays over a long period of time can cause *skin cancer*.

What is skin cancer? Actually, there are three kinds of skin cancer.

[Show slides 16 and 17 – Skin Cancer (Basal Cell and Squamous Cell)]

- **Basal cell** and **squamous cell** skin cancers are often called non-melanoma skin cancers. They aren't usually deadly because they don't spread to other kinds of tissue in the body. Most times, if caught early, a dermatologist can remove non-melanoma skin cancers. But this procedure can be painful and can leave scars.

[Show slide 18 – Skin Cancer (Melanoma)]

- **Malignant Melanoma** is the worst kind of skin cancer because it is deadly. Malignant melanoma is quick to spread to other places in your body, like your lungs, liver or bones. Malignant melanoma cancer appears on your skin just like non-melanoma skin cancer. If discovered early, malignant melanoma can be removed before it spreads.

[Show slide 19 – Reduce Your Sun Exposure]

There are two ways that you can over-expose your skin to the sun's harmful UV rays.

- 1) *Several sunburns that are results of **intense, intermittent exposure*** to UV rays. Intermittent exposure appears to increase the risk of developing basal cell and melanoma skin cancer.
- 2) **Total exposure** to UV rays over your lifetime. People who are chronically exposed to the sun, like people who regularly work outdoors, are more likely to develop non-melanoma skin cancers, especially squamous cell skin cancers, than people who are only intermittently exposed to the sun. Estimates suggest that outdoor workers are 1.5 to 3 times more likely to develop non-melanoma skin cancer than indoor workers. Outdoor workers may also be at greater risk of developing melanoma, lip cancer, and melanoma of the eye.

The damage caused by both intense, intermittent and total exposure to UV rays cannot be reversed.

Module 4: Being Sun Smart by Reducing Sun Exposure

Background for Instructor:

All humans are vulnerable to the harmful effects of the sun's UV rays. Protecting yourself from UV radiation is the best way to prevent skin cancer and eye damage. Sun smart behaviors include wearing "cover-up" clothing (such as long sleeves and pants), wide brimmed hats and sunglasses or goggles. Sun smart products like sunscreen and lip balm protect the skin by setting up a chemical shield, thus stopping potential damage from UV rays. Limiting the amount of UV ray exposure to our skin greatly reduces our risk of developing skin cancer.

Sunscreen is a lotion formulated with unique chemical components to absorb UV light. While the list of chemical ingredients is quite long and complicated, the actual process by which sunscreens work is relatively simple. When sunscreen is applied to the skin, the chemical molecules are arranged in an invisible, protective layer. As UV rays hit the skin, the chemicals in the sunscreen act as a shield, stopping UV rays from penetrating our skin's top layer and damaging the sensitive skin cells beneath. Most sunscreens contain chemical absorbers. Some of the chemicals absorb UV rays before they reach the skin and cause damage. Others contain particles that physically block UV rays from reaching the skin.

Sunscreens have now become primary ingredients in items ranging from lip balm to body lotion to several make-up products. With so many items available, you can easily incorporate sunscreen use into your daily routine!

All sunscreens stop UVB. But only sunscreens labeled "broad-spectrum" will stop both UVA and UVB. The best "broad spectrum" sunscreens contain chemical ingredients that protect your skin from both UVA and UVB like titanium dioxide, zinc oxide and avobenzone. Because sunscreens can wear off easily, they cannot shield the skin from all of the sun's UV rays.

The term **SPF** (sun protection factor) was developed to describe the amount of protection provided by sunscreen. SPF numbers inform a person the amount of time that they can remain in the sun before burning. For example, if your skin usually burns in 10 minutes (without any type of sun protection) then a SPF of 15 means that you can stay in the sun 15 times longer (150 minutes) until you begin to burn. Since SPF measures "time to burn," it is only an indication of UVB protection. Unfortunately, there is no way to measure the amount of UVA protection a sunscreen provides.

You will often hear that you need to put sunscreen on about half an hour before you go out in the sun. This is true for sunscreens that contain chemical absorbers. Chemicals need time to soak into your skin and form an even layer of protection. Physical blockers will work as soon as you rub them on.

Higher SPF values block more rays than lower SPF values, therefore providing better protection. It is important to note that no matter what a sunscreen contains (SPF value) it cannot block 100% of the UV rays. Some rays will always get through.

There are some basic rules that everyone should follow before going out into the sun:

- Consider how long you are going to be out in the sun. The longer you will be in the sun, the higher the SPF you will need.
- People with lighter pigmented skin need to choose higher SPFs.
- Regardless of personal characteristics, everyone should use a sunscreen with an SPF of 30 or higher to ensure protection against most UV rays (about 93%).

One more thing about sunscreen—SPF values cannot be added to increase protection. This means that if you put on a sunscreen with a SPF of 12 and then put on one with a SPF of 8, you are not getting a SPF of 20. You are only getting an SPF of 12. This is also true when reapplying sunscreen. If you put on a SPF 15 sunscreen and then reapply it 4 hours later, you still only have the original SPF 15.

“Why do I have to reapply my sunscreen then?” you ask. That’s simple. Sunscreen wears off, rubs off, sweats off and washes off. So, you have to reapply it every few hours, especially if you have been sweating heavily or swimming.

Also, use a generous amount of sunscreen whenever you apply it. Most people have a tendency to use less sunscreen than is really needed to achieve its maximum protection.

Because sunscreen cannot give you full protection and can wear off, you should not rely only on sunscreen to protect your skin. You should minimize your exposure to UV rays by wearing cover-up clothing, sunglasses, a hat and seeking shade or going indoors whenever possible, especially during the middle of the day. A person should not use sunscreen simply to extend the time it takes to get a sun burn. In fact, if you put on sunscreen and then stay out in the sun for an extended period of time without re-applying it, your skin can sunburn. And believe it or not, that type of sunburn is just as damaging as one you would have gotten in a shorter time outside, without using any sunscreen. Sunscreen should be used routinely to avoid sun burning and to reduce overall exposure to the sun’s UV rays.

The first essential thing to remember in your quest for sun safety is to limit your time in the sun. As the earth rotates around the sun, the sun’s rays become stronger when it is directly overhead, because rays have a shorter distance to travel. So, take sun smart action like limiting time in the sun or covering up during the middle of the day, especially between 10 am and 3 pm.

Clothing is the next best protection if you can’t stay out of the sun. Two main characteristics to look for when picking sun smart clothing is *construction* and *coverage*. Clothing items constructed with a tighter weave (smaller holes between the threads) allow less of the sun’s harmful rays to pass through to your skin. The more skin you cover the better protected you are.

Some clothing advertises a **UPF (ultraviolet protection factor)**. The UPF tells you how much the fabric is blocking UV rays, not the time it takes to burn. A difference between SPF and UPF is that SPF is calculated by testing the products on human skin; UPF is calculated by testing products with machines.

Protective clothing also includes other gear such as hats and sunglasses. Wearing a wide-brimmed hat with a three-inch brim all the way around is a simple way to protect your face, ears and eyes from the sun.

Sunglasses and goggles usually have consumer labels that advertise the percentage of UV rays blocked by the sunglass lenses. Lenses that block 100% of the UV rays are best and many of them are inexpensive.

Seeking shade is another easy and effective way to protect you from UV radiation. The shade cast by trees, buildings, shelters and numerous other structures can block harmful UV rays. Look for solid shade whenever possible. For example, shade from buildings doesn't let sun through at all. But if you can't find solid shade, look for any kind of shade. Remember, any shade is better than none.

The key to becoming sun smart is to use as many of these strategies as possible to protect you at work and at play.

Learning Objectives:

- Identify characteristics to look for in a good sunscreen.
- Use a sunscreen's SPF (Sun Protection Factor) to estimate how long it will protect the skin from sun exposure.
- Describe how to use sunscreen.
- Describe the role of clothing and hats in sun protection.
- Discover the importance of limiting time in the sun during peak hours of the day.

Approximate Training Time: 10 minutes

Vocabulary:

Broad-spectrum: A type of sunscreen that will block both UVA and UVB rays. Broad-spectrum sunscreen differs from normal sunscreen in that it protects you from UVA and UVB rays. Normal sunscreen only protects against UVB rays.

SPF (Sun Protection Factor): The measure used to determine the strength and effectiveness of sunscreens from protecting against the UVB rays. Generally, the higher the SPF, the longer one can stay out in the sun without getting burned. But remember that SPF only measures protection

against UVB, and not UVA. The SPF number is determined by testing the product on human skin.

UPF (Ultraviolet Protection Factor): A measure used to determine the strength and effectiveness of sunscreens from protecting against UV rays. Often used with fabrics. The higher the UPF, the greater the protection against UV rays. The UPF number is determined by using a machine to test the protection value.

Sunscreen: A substance used to protect the skin from excessive ultraviolet radiation. Applying sunscreen 30 minutes before going outdoors, and reapplying it every two hours, can help to protect your skin from UVB rays. If the sunscreen you choose is labeled “broad-spectrum,” it will also protect your skin from UVA rays.

Training Content:

[Show slide 20 – Module 4]

Now that we know exactly how the sun’s UV rays harm our skin and eyes, you will be happy to hear that it is actually very easy to protect yourself from being over-exposed to the sun's harmful UV rays.

[Show slide 21 – Sun Smart Behaviors]

As you can see from this list, *sun smart behaviors* are simple and can be carried out easily by instructors.

[Show slide 22 – Choosing the Right Sunscreen]

One of the most common ways people can protect their skin from the sun is by applying *sunscreen* to skin that is uncovered and exposed to the sun. Sunscreen is a lotion that contains properties that either absorb or block UV rays.

There are several things to look for when selecting the right sunscreen for you.

- Regardless of your skin type, select a sunscreen with a SPF of at least 30.
- Make sure the sunscreen protects you from both UVA and UVB rays. The label on the sunscreen bottle usually advertises whether it blocks UVA/UVB rays. The label might also read, "broad spectrum." This means the sunscreen protects against both UVA and UVB rays.
- Select a waterproof sunscreen. The type that won't stop working when you sweat.

[Show slide 23 – What is SPF?]

People are often confused by the term **SPF**. SPF stands for Sun Protection Factor. Basically, SPF is a number that tells you how long the sunscreen will protect your skin from sun burning.

Use the SPF to estimate how long it will take your skin to burn if it is exposed to the sun without sunscreen. Most of us have a pretty good idea how long it takes our skin to burn. By sunburn, I mean turn red. Even if it is not painful, skin that turns red reveals a sunburn. For example, if you are outside in March for 30 minutes, your skin will sunburn.

[Show slide 24 – SPF Equation]

To determine how long a sunscreen of SPF 15 will protect your skin from sunburn, multiply 30 minutes by 15 (the SPF). This calculation shows you that you can stay outside for 450 minutes before your skin will sun burn.

You might be thinking, “That’s too long!” But it’s better to be safe than sorry.

[Show slide 25 – Go Sun Smart with Sunscreen]

Let’s take a look at some basic rules for applying sunscreen and the rationale that supports each:

- Apply sunscreen 30 minutes before going out into the sun. Some sunscreens need time to be absorbed by your skin before they start working.
- Apply it over all exposed skin. Don’t forget places like the back of your ears, around your nose, on your neck, and on your hands (if you take them out of your gloves)
- Use an amount of sunscreen the size of a large grape to cover your face, ears, neck, and hands. Most people don’t apply enough sunscreen. Unfortunately, sunscreen many not work fully if you don’t put enough of it on.
- Re-apply sunscreen every two hours throughout the day. Sunscreen can stop working if you sweat it off or rub it off.
- Make it a habit! Put on sunscreen at the beginning of every day.

[Show slide 26 – Sun Smart Clothing]

In addition to sunscreen, you can increase your protection from the sun by wearing **hats** and **clothing** that cover your skin. These items often protect your skin from the sun better than sunscreen.

- More is better! When choosing hats and clothing, select long sleeve shirts and jackets rather than short-sleeved ones and select pants rather than shorts.

- Tightly woven clothes block sunlight, regardless of color. The tighter the weave of the fabric in your hats and clothes the better the protection that they afford.

[Show slide 27 – Sun Smart Hats]

- When selecting a hat, choose one that shades your face, ears and neck. It is best to wear a hat with a wide brim. However, if this is not an option, wearing a hat with any type of brim is better than wearing one without a brim or wearing no hat at all.

[Show slide 28 – Sun Smart Sunglasses]

Protecting your eyes from UV rays is just as important as protecting your skin. An increasingly common eye problem that appears to be related to UV ray exposure is *cataracts*. Cataracts occur when the lens of the eye becomes cloudy and is no longer able to focus light onto the retina.

Wearing *sunglasses* with lens that block 100% of UV rays will protect you eyes from over-exposure to the sun. Sunglasses have labels that advertise how much UV rays they block. Good news! Many sunglasses that block 100% of the UV rays are inexpensive.

[Show slide 29 – Limit Your Time in the Sun]

Given the mountain environment where ski school instructors work, it can be very hard to avoid the sun. But, you should *limit your time in the sun* by seeking shade and going indoors whenever possible. Do whatever you can to limit your time in the sun, especially during the middle of the day. For instance, sitting in the shade or indoors on your breaks from work or on your lunch hour will give your body a break from the sun.

Module 5: Being Sun Smart by Examining Your Skin

Background for Instructor:

Another important prevention strategy is to examine your skin routinely for skin damage from the sun. Skin cancers start on the surface of the skin--therefore skin cancers can be readily seen and found early. Most skin cancers can be cured if detected early.

The best way to detect the beginning signs of skin cancer is by examining the body for signs of skin damage from the sun. This is especially important for people who spend a lot of time in the sun over many years.

The purpose of skin self-examinations is to look for changes in existing moles, for the appearance of new moles and for other unusual spots or changes in the skin. Adults should perform a full body examination every month in order to become familiar with their own pattern of moles, freckles, blemishes and other marks on the skin.

Anyone can perform skin self-examinations. When conducting self-examinations it is important to look at all skin areas. People often forget to look at areas between toes, on the palms of the hand, soles of the feet, and scalp or back for signs of skin cancer. Adults should solicit help from spouses or other partners in order complete a thorough examination.

Signs of basal and squamous cell skin cancers include:

- Pale, wax-like, pearly bump (or nodule).
- Red, scaly, sharply outlined patch of skin.

Other general signs of skin cancer include:

- Scaling, oozing, bleeding or change in appearance.
- Sensitivity, itching, tenderness or pain.

Nearly everyone has moles and almost all of them are harmless. But because moles may change into melanoma, it is important to look carefully at them. A normal mole is usually a tan, brown or black spot, evenly colored and less than 6 millimeters (1/4 inch) in diameter. Moles can be present at birth or show up during childhood or young adulthood. Once it appears, a mole usually stays the same size, shape and color for many years. Melanoma usually starts as small, mole-like growths that get larger and change color, so it is important to recognize these changes early.

Dermatologists have developed the *ABCD rule* to help you remember the simple warning signs of malignant melanoma:

- 1) Look for **A**symmetry in moles, where one half of the mole is not the same size as the other half.
- 2) Look for moles with irregular **B**orders that are blurred or uneven.
- 3) Look for a mole with **C**olor that is not uniform, with different shades of tan, brown or black or with red, white and blue markings.

- 4) Also, look closely at large moles, with **Diameter** of greater than six millimeters (the size of a pencil eraser). Note any change in size, especially any enlargement of a mole.

If you see one of the warning signs of skin damage, it is important to see a physician immediately. A physician can perform a clinical skin examination. If a spot on the skin or a mole is suspicious, a physician may order a laboratory test to see if it cancerous. If it is cancer, a dermatologist is often consulted to determine the best treatment.

Skin cancers must be removed to prevent them from spreading to other parts of the body. Basal and squamous cell cancers are removed through surgery, radiation therapy, electodesiccation (burning), cryosurgery (freezing), and laser therapy.

Melanoma removal is much more intense. The primary spot of melanoma must be removed and sometimes lymph nodes around the melanoma are removed and examined for evidence that the cancer has spread. Radiation therapy, immunotherapy, or chemotherapy can be conducted for advanced cases of melanoma.

It is sun smart for people who spend a lot of time outdoors over several years to examine their own skin for signs of skin damage. They should also consider having a cancer-related check-up with their physician every 1-3 years, which includes a clinical skin examination. That way, skin damage can be found early when it most curable.

Learning Objectives:

- Acknowledge the importance of regular skin examinations.
- Perform skin self-examinations.
- Identify the warning signs of melanoma.

Approximate Training Time: 10 minutes

Vocabulary:

Skin self-examination	Examination performed by a person of their entire skin looking for signs of skin damage from the sun. Routine skin self-examinations help people become familiar with their pattern of moles, freckles, blemishes and other marks in order to see changes that might indicate skin cancer.
Clinical skin examination	Examination performed by a physician or other health professional to find signs of skin damage from the sun.
Dermatologist	Physician who specializes in caring for the skin.

Mole	An evenly colored brown or black spot on the skin that usually is present at birth or appears in childhood or early adulthood. Most moles are harmless.
ABCD Rule	An easy way to remember the warning signs of melanoma— A symetry, irregular B orders, uneven C olor, large or change in D iameter of a mole.

Training Content:

[Show slide 30 – Module 5]

During the last training session we focused on protecting yourself from over-exposure. Protecting yourself from over-exposure to the sun's harmful rays is only one part of becoming sun smart. Because you spend a lot of time outdoors in the sun, it is important that you monitor your skin and look for skin changes and signs of skin damage.

[Show slide 31 – Be Sun Smart By Examining Your Skin]

There are two ways to examine your skin.

- 1) A trained physician or other medical personnel can perform a clinical skin examination. This is usually done in the privacy of a clinic office. A clinical skin examine requires the patient to disrobe fully. The physician or medical practitioner carefully examines all of the skin, sometimes with the help of a magnifying device. A record of skin damage or lesions is made for future reference. Clinical skin exams are usually performed with some regularity, depending on the patient's risk factors and history of skin damage.
- 2) You can perform skin self-examinations. People should examine their skin for changes that may be warning signs of melanoma or other skin damage. Skin self-examinations should also be done regularly; monthly, if possible.

[Show slide 32 – Know Your ABCs – and D!]

It's important to be able to recognize the warning signs of melanoma. The ABCDs, created by the American Academy of Dermatology, is an easy way to recall the warning signs of melanoma.

When looking at pigmented (colored) spots (lesions) on the skin, check for:

- **A**symmetry - one half is unlike the other half.
- **B**order - irregular, scalloped or poorly defined border.
- **C**olor - color that varies from one area to another; shades of tan and brown, black; sometimes white, red or blue.

- **Diameter** - larger than 6 millimeter in diameter as a rule (larger than the diameter of a pencil eraser)

[Show slide 33 – Steps in a Complete Skin Self-Examination]

You can examine your own skin or ask a family member for assistance. The key is to examine all of your skin, including the palms of your hands, soles of your feet and the area between your toes. If you conduct the examination, you will need a wall mirror and a hand mirror.

Steps to complete skin self-examinations:

- Disrobe and stand in front of a wall mirror. Check the front of your body and then each side of your body. Be sure to look under your arms.
- Examine your forearms, upper arms, fingers and palms.
- Using the hand mirror to look at your back, the back of your neck, the back of your ears, and your scalp (parting the hair). Check your buttocks as well.
- Sit down and use the hand mirror to examine the backs of your legs and feet, including the area between your toes and soles of your feet.

Look for changes in the skin and keep a record of what you observe.

Consult your family physician or a dermatologist immediately if you are uncertain about any spot or mole on your skin or if you think you see a warning sign of melanoma.

Module 6: Sun Smart Customer Service

Background for Instructor:

There is no substitute for taking the actions necessary for students to get the most out of their mountain experience. This includes helping them to become sun smart. To achieve this, you must be knowledgeable about, and have a genuine commitment to, customer service.

Few people are in a better position to influence customer behavior than skiing and snowboarding instructors. The habits your students acquire when learning to ride or ski can affect their entire lives on the mountain. Thus, it's crucial that one habit you try and instill in all of your students is sun smart behavior. Being sun smart, you should tell them, is just another way to make skiing and riding more enjoyable.

Like it or not, we never get a second chance to make a positive first impression. People judge others within the first 90 seconds of contact. Because older learners are often opinion leaders in their community and at work, they are likely to influence other people who consider visiting your resort. So, when you create a favorable or unfavorable impression with one adult learner, you are affecting many other *potential* guests.

It's also important to recognize that parents will form an impression of your ski school based on their children's experience. Keeping their kids sun smart, then, is just one more way that you can make your school stand out in their minds when they talk to their friends about your resort.

Here are some simple guidelines to follow when creating a favorable impression with your students.

- Be proactive. Anticipate your students' needs.
- Reduce their uncertainty. Volunteer to help answer questions or give directions.
- Be expressive. Use your face and hands to communicate that you are happy to see and serve your students.
- Smile. It is physiologically impossible to both smile and maintain a negative attitude.
- Treat every day as if it was your first day on the job.

Making students aware of the mountain conditions is an important aspect of customer service. That's where sun smart comes in. It is simple to alert and remind students about being sun smart while visiting the ski area. And, they will thank you for it. Severe sunburns can ruin students' experiences at our ski area. And sunburns are memorable – students who recall that they got sunburned while at our ski area may choose to go elsewhere for vacation next winter.

Everyone should make it a priority to engage in sun smart customer service.

Learning Objectives:

- Define the ski school instructor's role as an opinion leader for employees on sun smart behavior.
- Articulate the importance of promoting sun smart behavior to insure student satisfaction with the visit to the ski area.
- Describe ways of suggesting sun smart behavior to employees and students.

Approximate Training Time: 10 minutes

Vocabulary:

Students: People who visit the ski area and use the recreational services and facilities. These include children and adults who visit at any time of the year, but especially those that enroll in ski school.

Customer Service: Positive and proactive employee behaviors that assist students in satisfying their needs, solving their problems, and helping them relax in what may be a new environment for them.

Role model: A person who is held in high esteem by others. Those who serve as role models can informally influence others. This influence is achieved by talking with others and also by setting a good example.

Training Content:

[Show slide 34 – Module 6]

Congratulations, you are well on your way to becoming a sun smart ski school instructor. However, sun smart actions don't stop there. Think about the other employees at our ski area and our students. They are at risk for over-exposure to the sun. They often are not aware of how easily their skin and eyes can be damaged in the mountains.

[Show slide 35 – Promote Sun Safe Behavior]

You probably already know that other employees hold ski school instructors in high esteem. Other employees ask you for information on the weather, snow conditions, terrain, and mountain safety. Some of your co-workers are very knowledgeable about living, working and playing in our mountain environment. But every year we hire new employees, who are not very informed about how to work safely on the mountain. As a consequence, new employees get sunburned--sometimes severely. As a ski school instructor, you can influence them and help them avoid the dangers of over-exposure to the sun.

In addition to new employees, you need to think about your students. If you haven't seen the guest first hand, chances are one of your co-workers has told you the story about the guest who seemed to suffer from permanent brain freeze. You know the one we're talking about. A guy bakes his face to the color of a New England lobster because he wants to get a little color before going back to work. Or, a woman refuses to wear a hat on a cloudless spring day, because it messes up her hair. Or, a parent with the Rolex who drops his kid off at ski school not wearing even a pair of drugstore goofy sunglasses to "protect" the child's eyes.

What do you say to employees and students? Should you say anything at all?

[Show slide 36 – How Can Instructors Promote Sun Smart Behavior to other Employees]

Besides being no fun, sunburns and eye damage are dangerous and should be avoided by all *employees*. We are asking you to set a sun smart example for your co-workers and be a source of sun smart information at the ski area. Here are some simple strategies.

- ***Be a role model*** - Let other employees see you applying sunscreen and lip balm. Wear protective clothing at all times, including a hat with a brim and sunglasses.
- ***Remind employees to be sun smart*** - One of the biggest reasons ski area employees cite for not adopting sun smart behaviors is that they “forget” to do it. Give simple reminders about wearing sunscreen and sunglasses to employees. If you see an employee who is starting to sunburn, let them know about it. Sun smart reminders are powerful.
- ***Make sun smart part of the daily routine*** – There are lots of times at work when employees can talk to one another about issues such as being sun smart. Work it into conversations during breaks or at lunch. Mention sun safety when co-workers ask you about the weather or snow conditions on the mountain. When you see co-workers in the locker room, ask them if they've applied sunscreen before starting work.

[Show slide 37 – How Can Instructors Promote Sun Smart Behaviors to Guests]

As for our *students*, if they experience sunburns or eye damage while visiting our ski area, it can be enough to can turn them off to winter sports. Even worse, the next time they think about taking a winter vacation, they will remember their screaming sunburn and possibly decide not to return to our ski area. On the other hand, if they remember the glorious environment at our ski area and all the fun they had during their stay, they may return year after year.

Let's think about how we can promote sun smart behaviors as yet another service provided to our students. For instance, we can suggest in the following ways that our students be sun smart.

- ***Be a role model*** – Just as with co-workers, let students see you applying sunscreen and lip balm. Wear protective clothing such as a hat with a brim and sunglasses.
- ***Make sun smart part of the lesson*** – Teach sun smart behavior as another facet of mountain safety. Spend time talking about sunscreen, clothing, head wear and eye protection as you work your way through the lesson. Show students how much sunscreen they need and where they need to apply it. Also talk about seeking shade when taking a break.
- ***Alert students to be sun smart*** – Suggest to students that they wear sunscreen and sunglasses. Do this when you encounter them in lift lines or on chair lifts. Remember, students see you as a mountain safety authority. They'll appreciate that you talked with them about sun safety.
- ***Wear Sun Smart Gear*** – Gear with the Go Sun Smart logo provides a simple reminder that is easy for guests to see. And, they might ask you about sun safety.
- ***Remind parents to protect their children*** - Parents often worry more about the safety of their child than their own safety. When you encounter parents skiing with their children, remind them to put water-resistant sunscreen on their children, to reapply it later in the day, and to give the child sunglasses or goggles. This is also a great way to indirectly remind parents to be sun smart themselves.

[Show summary slides]

Our ski area is committed to be sun smart. This information will help you, your co-workers and our ski school students avoid the harmful UV rays from the sun.