While shade is a potentially valuable means of protection from the damaging effects of the sun’s ultraviolet (UV) rays, not all shade is equally protective. People can spend long hours in the shade while still receiving quite a lot of sun exposure and risking skin damage. This is because UVC rays, often considered the most harmful part of sunlight, can reach the skin indirectly. Indirect or diffuse UV light is radiation that has been scattered by the clouds and other elements in the atmosphere, and/or bounced back from UV-reflective surfaces like dry sand or concrete. In fact, a large percentage of the UV light we receive while sitting under a tree or an umbrella is indirect. We can rely only on deep shade (where we cannot see the sky and no UV penetrates) to offer truly complete protection.

**HEADS FIRST!**

Skin cancers are disproportionately concentrated on the head compared with other parts of the body. Faces (the nose in particular) are especially at risk, and for men, the ears are a focal point for melanoma, the deadliest form of skin cancer. Although the head is easy to protect, too often it is left bare because hats are seen as unfashionable or an unnecessary burden. We can rely only on deep shade (where we cannot see the sky and no UV penetrates) to offer truly complete protection.

**If You Can See Sunlight, Seek the Shade**

unfashionable or an unnecessary burden. See “Hats: The Stylish Route to Sun Protection,” p.22. Even when hats are worn, many provide only minimal shade — especially for the nose, ears, and neck.

Hats with broad brims all around and those with brims angled downwards provide the greatest UV protection: brims must be at least three inches wide to provide reasonable sun protection around the nose and cheeks (Figure 1a). Research has shown that broad-brimmed hats provide protection equivalent to an SPF (sun protection factor) of approximately 5 for the nose, ears and neck, while baseball-style caps (Figure 1b) offer about the same protection for the nose but little for other parts of the face, including the cheeks and chin. Legionnaire-style hats, which resemble baseball caps but have long ear and neck flaps, provide satisfactory protection (SPF 5 or more) for the neck as well as the face.

**UMBRELLAS**

Unlike they are very large, umbrellas provide relatively little UV protection. Their SPF can range from 3–10 and their UPFs up to 50+ (UPF, the ultraviolet protection factor, measures protection from UV radiation in fabrics). A shirt with a UPF of 30 indicates that just 1/30th of the sun’s UV radiation can reach the skin, but no matter how high the fabric’s SPF or UPF, the amount of UV present beneath an umbrella can be up to 84 percent of that in the sun depending on the levels of indirect UV; the amount of indirect UV is proportionate.
If You Can See Sunlight, Seek the Shade

When shade is a potentially valuable means of protection from the damaging effects of the sun’s ultraviolet (UV) rays, not all shade is equally protective. People can spend long hours in the shade while still receiving quite a lot of sun exposure and risking skin damage. This is because UVB rays, often considered the most harmful part of sunlight, can reach the skin indirectly. Indirect or diffuse UV light is radiation that has been scattered by the clouds and other elements in the atmosphere, and/or bounced back from UV-reflective surfaces like dry sand or concrete. In fact, a large percentage of the sun’s radiation in fabrics. A shirt with a UPF of 30 indicates that just 1/30th of the sun’s UV radiation can reach the skin, but no matter how high the fabric’s SPF or UPF, the amount of UV present beneath an umbrella can be up to 84 percent of that in sun-dependent on the levels of indirect UV, the amount of indirect UV is proportionate to the amount of open sky visible from the shade. Therefore, a single umbrella on a sandy beach by the sea provides limited sun protection because so much UV is reflected under the umbrella from the surfaces of the sand, water and sky.

We can rely only on deep shade (where we cannot see the sky and no UV penetrates) to offer truly complete protection.

Shade alone can rarely provide full UV protection, especially for prolonged periods. However, it is one important element in a comprehensive sun protection program that includes covering exposed skin with clothing (particularly clothes made of bright- or dark-colored, tightly woven fabrics), wearing hats and sunglasses, and regularly using sunscreen with an SPF of 15 or higher. All these steps taken together will help ensure that we are adequately protected from the sun’s rays when we are outdoors.

Factors that increase the amount of scattered or indirect UVB, such as reflective surfaces, will decrease the protection trees can provide. The same tree actually gives less protection earlier and later in the day, when the proportion of diffuse UV is high, than it does in the middle of the day when the sun is more directly overhead. Similarly, someone sitting under a tree on a sunny day with little indirect UV is better protected than someone sitting under the same tree on a cloudy day, when there is more indirect sunlight. However, any tree cover is better than none.

OTHER SHADE STRUCTURES

Shade structures such as roofed areas, shade-sails (UV-protective fabrics that can be installed over outdoor areas) and pergolas (free standing, open-roofed arbors) vary widely in the amount of protection provided. Since levels of indirect UV can still be high beneath these shade structures, many have real SPFs of only around 3–6. In a recent study of 29 shade structures in New Zealand primary schools, only six had SPFs of 15 or greater, the minimum acceptable amount recommended for outdoor activities. This was alarming, given the importance of protecting children against UV and the strong evidence that excessive sun exposure during childhood significantly increases the risk of developing skin cancer later in life.

References available on p.111.