Group 3 Safety Newsletter

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Stay Safe In The Sun:

Protection from sun exposure is important all year round, not just during the summer or at the beach. Any time the sun's ultraviolet (UV) rays are able to reach the earth, you need to protect yourself from excessive sun exposure. UV rays can cause skin damage during any season or temperature. Relatively speaking, the hours between 10 a.m. and 4 p.m. are the most hazardous for UV exposure in the continental United States. UV radiation is the greatest during the late spring and early summer in North America. UV rays reach you on cloudy and hazy days, as well as on bright and sunny days. UV rays will also reflect off any surface like water, cement, sand, and snow.

There are three types of UV rays: ultraviolet A (UVA), ultraviolet B (UVB), and ultraviolet C (UVC). UVA is the most abundant source of solar radiation at the earth's surface and penetrates beyond the top layer of human skin. Scientists believe that UVA radiation can cause damage to connective tissue and increase a person's risk for developing skin cancer. UVB rays are less abundant at the earth's surface than UVA because a significant portion of UVB rays is absorbed by the ozone layer. UVB rays penetrate less deeply into the skin than do UVA rays, but also can be damaging. UVC radiation is extremely hazardous to skin, but it is completely absorbed by the stratospheric ozone layer and does not reach the surface of the earth. UV exposure appears to be the most important environmental factor in the development of skin cancer and a primary factor in the development of lip cancer. Although getting some sun exposure can yield a few positive benefits, excessive and unprotected exposure to the sun can result in premature aging and undesirable changes in skin texture. Such exposure has been associated with various types of skin cancer, including melanoma, one of the most serious and deadly forms. UV rays also have been found to be associated with various eye conditions, such as cataracts.

To counter these threats, you can wear protective clothing, such as a wide-brimmed hat, long-sleeved shirt, and long pants. For eye protection, wear wraparound sunglasses that provide 100 percent UV ray protection. And always wear a broad-spectrum (protection against both UVA and UVB rays) sunscreen and lipscreen with at least SPF 15. Remember to reapply as indicated by the manufacturer's directions.

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DENSITY ALTITUDE

Density altitude can affect the takeoff, climb, and landing performance of any aircraft. The distance required to take off and land and the rate of climb are affected by density altitude. Aircraft will perform better in low density altitude conditions. Low density altitude conditions exist when the air is dense. This occurs when the temperature is cold combined with a high pressure system. The air is the most dense in this situation and the aircraft will perform as if it were at a lower altitude. For example, a plane is at an airport with a station elevation of 7,000 feet MSL. The atmospheric conditions at that airport indicate a low density altitude situation. The density altitude is calculated to be 5,500 feet MSL. The plane will perform as if it were at 5,500 feet MSL instead of 7,000 feet MSL. This low density altitude situation will decrease takeoff and landing roll while increasing the initial rate of climb. While low density altitude increases aircraft performance, high density altitude can lead to an aircraft accident. High density altitude situations are more prevalent at higher elevations. High temperatures combined with a low pressure system will produce a high density altitude situation. (The air is least dense in this situation.) Airports in mountainous terrain are more susceptible to high density altitude situations because they already have a high station elevation. The combination of a high station elevation, high temperatures, and low pressure will produce a very high density altitude situation. For example, a plane is at an airport with a station elevation of 7,000 feet MSL. Using the values of station elevation, temperature, and pressure, the density altitude is calculated to be 12,000 feet MSL. Any aircraft taking off or landing at that airport will perform as if it were at an airport with a station elevation of 12,000 MSL. For some aircraft, a high density altitude situation will indicate an altitude higher than the service ceiling of that specific aircraft. In that case, if a pilot attempts to take off during a high density situation, the aircraft will not be able to gain altitude but stay in ground effect and possibly crash.

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