

## Medicine, Science and Health: Addicted to Sunbathing

The incidence of skin cancer is on the rise. In the UK alone there are approximately 68,000 cases of skin cancer diagnosed every year, with 6,000 of these being malignant melanoma, the deadliest form of skin cancer (source - The Association for International Cancer Research). This situation, however, is not just confined to the UK. In the USA, more new cases of skin cancer are diagnosed each year than the combined incidence of cancers of the breast, prostate, lung and colon. One in five Americans will develop skin cancer at some point during their lifetime and one American an hour dies from the disease, primarily melanoma (source - The Skin Cancer Foundation). In Australia, skin cancer accounts for 81% of all new cancers diagnosed each year, with skin cancer being the most common cancer amongst young people.

Although there are a number of factors that put people at an increased risk of developing skin cancer such as having very fair skin that burns easily or having lots of moles, over 90% of all skin cancers are caused by sun exposure (source - The Skin Cancer Foundation). Originally it was thought that it was UVB light that caused skin cancer but more recently it has been discovered that UVA light is also responsible (source - The Association for International Cancer Research).

Through numerous education campaigns, the effects of over exposure to ultra violet light, whether from the sun or sunbeds, are widely known and yet many people simply can not seem to help themselves when it comes to getting a tan.

One reason for this maybe people's failure to assess their own vulnerability to harm from sun exposure, in spite of all the information warning them of the risks. A team of Swedish researchers have recently published the results of their study into the associations between different risk perceptions, sun-related behaviour and a readiness to change that behaviour. Questionnaires were completed by 722 visitors to a mobile skin screening unit. The researchers found that even amongst these people who were obviously concerned about their skin and who had realistic views on the risks inherent in ultra violet light exposure, skin cancer incidence in the general population was seriously under-estimated, as was the impact of skin cancer on general health. The researchers concluded that even amongst this concerned population, there was a failure to use all the available information in a consistent way so as to formulate a judgment regarding their own vulnerability to harm. As the team noted "people need to be informed about the high incidence of skin cancer, the personal risk factors of skin cancer, and the fact that unintentional as well as intentional sun exposure increases the risk of developing skin cancer" (Ullen *et al.* (2005)).

Another reason for some people's apparent inability to stop themselves from sunbathing and over exposing their skin to ultra violet light, maybe the fact that being tanned is still perceived by many as a sign of health and beauty. Indeed, Arielle Kauvar, an associate professor of dermatology at the New York University School of Medicine and also a spokesperson for the New York-based Skin Cancer Foundation, believes that such a notion is so widespread that it is "the greatest driving force behind sunbathing" despite all the warnings to the contrary.

In a recent study, Richard Wagner, a dermatologist at the University of Texas Medical Branch in Galveston led a team of researchers to examine why it is that people continue to sunbathe in spite of the risks. Wagner observed that some people who have tans and develop skin cancer are told to cut down on their sun exposure "but they just can't seem to stop". These people appear to be addicted to suntans and sunbathing in the same way that other people are addicted to alcohol, nicotine or drugs.

Wagner's research was based on two surveys, the CAGE (Cut down, Annoyed, Guilty, Eye-opener) Questionnaire, used to screen for alcohol abuse or dependence, and the American Psychiatric Association Diagnostic and Statistical Manual of Mental Disorders, Fourth Edition, Text Revision (DSM-IV-TR) criteria for substance-related disorders, both of which were modified to evaluate subjects for substance-related disorders involving ultra violet light tanning. One hundred and forty five, randomly selected sunbathers at Galveston Island Beach in Texas were asked to complete the two surveys. The participants were asked such things as did they often spend more time in the sun than they had initially intended to and did they feel guilty about staying in the sun too long.

The results demonstrated that "individuals who chronically and repetitively exposed themselves to ultra violet light (in order) to tan may have a novel type of ultra violet light substance-related disorder". Of the 145 subjects, 38 (26%) met the modified CAGE criteria, and 77 (53%) met the modified DSM-IV-TR diagnostic criteria for substance-related disorders with regard to ultra violet light and related sun tanning. This means that 26% of the sunbathers would qualify for having a substance related disorder and 53% could be called tanning addicts. This addiction theory could, therefore, go some way to explain why some people continue to sunbathe despite all the warnings about the risks involved.

It should be noted, of course, that the cohort in the Wagner study was very small and that the research was carried out at a beach which would inevitably yield higher figures than if applied to the population as a whole,

because the beach is where sunbathers are most likely to be found in greater numbers.

Research has also shown that when people are exposed to ultraviolet light from the sun or a sunbed, their bodies produce endorphins, making them feel good. Indeed, it maybe the endorphin buzz that the sunbathers are really addicted to. As Wagner comments "people think they are going to the beach for the tan, which they are getting. But the real reason is the endorphin production, which makes them feel so good".

Warthan M, Uchida T, Wagner R. UV Light Tanning as a Type of Substance-Related Disorder. Arch Dermatol 141: 963-966.

Roach J. Tanning "Buzz" Could Lead to Addiction. National Geographic News. August 2005.

Branstrom R, Kristjansson S, Ullen H. Risk perception, optimistic bias, and readiness to change sun related behaviour. Eur J Public Health. 2005 Sep 29.