

MELANIN: Nature's sunscreen?

The positive effects of sun exposure of well-being, relaxation and vitamin D synthesis (protective against cancers), are counterbalanced by a darker side which is the increasing incidence of skin cancers. These are higher now than at the beginning of the last century when to be pale was fashionable. The incidence of skin cancer is rising faster than that for any other form of cancer.



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Sunlight contains UVB, UVA and visible light.

The last two – UVA and visible light – produce free radical damage in skin. Free radicals are highly reactive chemicals linked to cancer. **RAFT** is currently carrying out research into the damage caused by UVA and visible light.

Despite earlier warnings, many holidaymakers are at risk due to inadequate sunscreen protection against UVA rays. Sunscreens that protect against burning caused by UVB rays may give a false sense of security and result in prolonged sunbathing and therefore exposure to UVA and visible light. We detected severe skin damage in Caucasian skin after about 20 minutes exposure to the equivalent of the Mediterranean sun.

Skins with high concentrations of melanin (e.g. Afro-Caribbean skin) are mostly protected from this type of damage. Our research illustrates that nature has developed an effective sunscreen in melanin at high concentration and that free radical protection is achievable.

We have developed a new method, not currently used, that would allow sunscreen manufacturers to give a free radical protection rating. The technique we have developed enables quick and rapid screening of free radical damage to skin and a means of measuring protection by sunscreens against all forms of the sun's radiation. This patented technology is now available for licensing.

Some sunscreen manufacturers have already incorporated a degree of protection against UVA in their products. We feel that our research could improve things even further and provide even more effective sunscreens. We are inviting sunscreen manufacturers today to work with us on improving the current sunscreens on market.

RAFT receives no Government funding for this work so needs to raise every pound we spend. We are also appealing to the British public to help us in the fight against skin cancer. You can help by giving a donation online on www.raft.ac.uk or send a donation to **RAFT**, Leopold Muller Building, Mount Vernon Hospital, Northwood, Middlesex, HA6 2RN

RAFT is a reconstructive plastic surgery research charity devoted to advancing the care of patients with damage or potential damage to their skin. Our research focuses on repairing burn and other skin injuries through the development of artificial skin, reducing or eliminating scarring and skin cancer prevention and treatment.

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