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RAFT, a UK based independent medical research charity, has been made aware of a growing health concern over the use of the Melanocyte-stimulating hormone drugs by certain members of the public. The unregulated sale, of drugs such as Melanotan I and Melanotan II, is putting people's health at risk, and is illegal. Given RAFT's expertise in research into melanin we are concerned that our research may be used to give legitimacy to these products. Leonor Stjepic, CEO of RAFT states "We would strongly encourage those currently buying these drugs to stop using them straight away and contact their Doctor. We understand that people want to look tanned, especially as we are entering the party season but there are ways of doing that without risking your health. We are horrified at the thought of people injecting themselves with anything without having been trained, let alone hormone drugs that are unregulated"

Melanotan works by users injecting themselves into the stomach with an Alpha Melanocyte-stimulating-hormone analogue, which induces the Melanocytes in skin to produce melanin, and causes the skin to appear darker.

Melanotan is an unlicensed medicine that is being marketed online, as an injectable tan. Melanotan underwent testing in Australia, America and Europe and did not pass regulatory standards due to side effects, which ranged from rashes, depression, nausea, headaches, to over production of melanin in the regions of where moles grow.

RAFT is seriously concerned that untrained members of the public are self administering injections which could lead to all sorts of complications and, of course, we are all aware of the dangers of sharing needles. The Medicines and Healthcare Regulatory Agency (MHRA) is also concerned about this matter, as well as many of the other drug regulator bodies like the FDA. The MHRA have commented themselves "warning people not to use an unlicensed medicine called Melanotan which is being advertised and sold illegally as an injectable tan on the internet and in some tanning salons and body building gyms". David Carter, Head of the Medicines Borderline Section at the MHRA said; "We are warning people not to use this product. Don't be fooled into thinking that Melanotan offers a shortcut to a safer and more even tan. The safety of these products is unknown and they are unlicensed in the UK. The side effects could be extremely serious." The MHRA have instigated raids on premises that they believe to be producing and distributing the illegal medicines, and they hope to spread the message of the dangers of using unlicensed drugs.

In many cases the drug acquired is not the original drug, but an altered poorer quality drug, which has the potential to have much more dangerous side effects. The drug Melanotan need to be diluted with Bacteriostatic water (a prescription-only medicine) before it can be self-injected into the skin. According to the MHRA press release on Melanotan, they have seen “websites offering to reconstitute the product prior to sending it to the consumer”. Reports of those who have attempted to administer the drug themselves state that the instructions are very vague and this can lead to the use of incorrect doses. The biological and physical effects of the administration of large amounts of melanocyte stimulating hormone to increase melanin production could potentially be very harmful.

Dr Rachel Haywood, Group Leader of Cancer Research at RAFT, and an expert in the field of melanin, explained that; melanin, is complex and can be both protective and potentially damaging depending on the type, amount and distribution in the skin. It has some sun screening properties when present in the very high amounts formed in Afro-Caribbean skin, which is also distributed in a way to provide effective screening. Caucasian skin does not produce these very high levels of melanin, organised in such an effective way. In people who do not tan well (often fair/auburn hair) the skin is unlikely to produce more melanin in response to hormone drugs, or if the melanin is in moles or freckles, then pigment will only increase in these areas. It is established that melanin is not a sunscreen, and is damaging, in the low amounts formed in these latter skin types. People with large numbers of moles are already at a higher risk of developing skin cancer. Additionally, in response to sunlight, the natural hormone acts locally in areas exposed to sunshine. Injection of the hormone and widespread distribution in blood and tissues, where it is not normally present, may have adverse health effects, which are not yet known. Melanin is also present in the nervous system and brain, and involved in brain function and memory. The side effects here may be serious in the long term.

A depressing fact is that many users of the Melanotan drug are aware of these side effects but still persist in using the drug. Those using the ‘Tan jab’ are being informed that unlike other fake tans it will even give you natural protection when you go into the sunshine, this is unproven. On some websites, Melanotan is being promoted as a preparation for sunbed use. Sunbeds have capacity to emit very high levels of UV, many times stronger than the midday summer sun in most countries. RAFT is concerned about the use of sunbeds, and supports the call to ban people under the age of 18 using them.

Even if the melanin inducing drug was effective at providing a natural protection, it would still be incredibly limited. Users may potentially burn less, but will still be susceptible to deeper sun damage, causing potential melanomas.

RAFT again would like to advise anyone currently using the illegal Melanotan drug, or medicines of a similar nature, to discontinue their using for the sake of their own health.

1. Medicines and Healthcare products Regulatory Agency (MHRA). Press release. "Tan-jab" is an unlicensed medicine and may not be safe – warns medicines regulator.
www.mhra.gov.uk/NewsCentre/Pressreleases/CON031009
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RAFT is an independent charity working to prevent and improve the treatment of major traumas such as burns and wounds and cancers of the skin through advances in medical research and in reconstructive plastic surgery.

RAFT is carrying out cutting edge research into:

**Skin Cancer - Prevention, Education & Cure
Artificial Skin**

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