SAC 4- Analysis and Evaluation of Media Communication

Name:_____

Instructions for students:

This media article is intended for general public science awareness and communication. You have 1 week to become familiar with the article and research anything to help prepare for the test conditions SAC on Organic compounds and reactions (Unit 4, AOS1). You may highlight/ underline this article.

This copy will not be allowed into the SAC if there are other notes or annotations drawn on.

This article was modified from the original sourced media from ABC NEWS, written by Rachel Caronell and Caitlyn Gribbin, published June 5th 2026.

Abnormal moles seen developing in patients chasing perfect suntan by using peptide melanotan-II

By national health equity reporters Rachel Carbonell and Caitlyn Gribbin

When a teenage boy lifted his shirt, his mates were horrified by what they saw. Nearly 40 moles had appeared all over his back. Confronted, his friends urged the boy to show his parents and a doctor.

When dermatologist Lisa Byrom saw the boy's "atypical, worrying" moles, she was overcome with emotion.

"I did tear up. I just thought, 'what has this young person done?'" she said.

She was deeply worried that the boy's moles might be early melanomas. "At such a young age, what does this mean for the future?"

The boy had been injecting an unregulated peptide, melanotan-II (MT-II), to give himself a tan.



Large moles similar to these appeared on the young person's back after they used melanotan-II. *(Supplied)*

His skin darkened but Dr Byrom said the patient also "developed lots of funny-looking moles, all over their back very, very quickly" and she cut some out immediately. "It was a very confronting consult" and while the results were negative for melanoma, the number of abnormal moles on the teenager's back would be a lifetime worry, Dr Byrom said.

Why experts are worried about the peptides craze

The latest wellness craze to take social media by storm is fuelling a growing grey market of injectable peptides in Australia, and it has experts worried. Tanning drugs are severely linked to dangerous moles.

Melanotan-II (MT-II) is a synthetic peptide, unapproved for human use or sale in Australia.

Some of Australia's most senior skin doctors told the ABC they had seen a growing number of patients present with worrying side effects — including multiple atypical moles, a known risk factor for melanoma — after using MT-II.

"It's essentially tricking our skin cells to believing that it needs to produce more pigment, so it fast-tracks skin darkening," dermatologist Leona Yip said.

Doctors have been issuing warnings about MT-II for a number of years. Despite those warnings, there has been an explosion in popularity of unregulated injectable peptides in Australia, driven by social media users promoting their supposed benefits for health and beauty.

"A lot more needs to be done to regulate this space," Dr Yip said.

"We need to have multiple agencies and regulatory bodies sitting together with health professionals, as well as tying in big names, celebrities and credible influencers to talk about the dangers of melanotan, the dangers of … skin cancers, particularly targeting vulnerable young people."
Australia's medicines regulator, the Therapeutic Goods Administration (TGA), has warned unregulated peptides pose a "significant" public health risk. Even so, instructions on how to buy and use them are rife on social media. With MT-II coming in the form of nasal spray; holding potential for other complications when reacting with lung tissue or in an injectable liquid form, Dr Yip said she was concerned it was experiencing a surge in popularity in recent months.

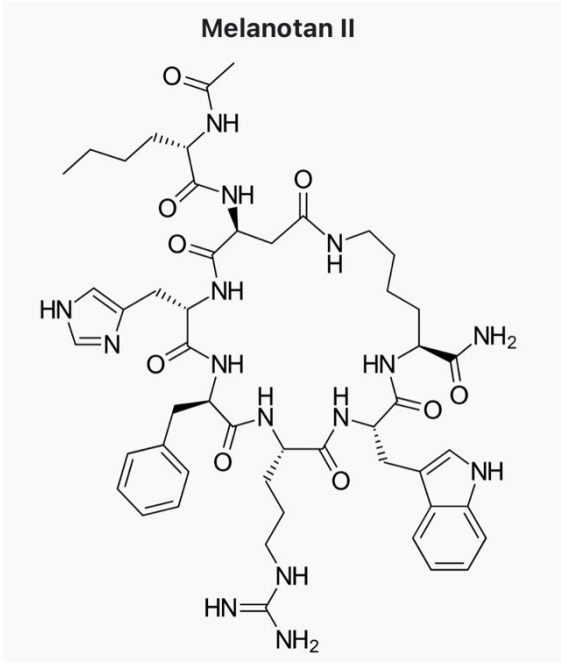
Dr Yip said there were a number of case reports in medical literature of moles changing quickly, with melanoma developing a lot faster in people who have used MT-II.
She said the tanning drug's potential adverse effects were not just limited to skin. "There have also been many other side effects reported, such as nausea, vomiting, headaches, kidney failure, and you can also get brain swelling," Dr Yip said.

Very worryingly, some research showed an unusual correlational trend between those who were MT-II and ester flavouring vape users, such as citrus or fruit flavoured vapes. These dual users were at a higher risk of developing issues or melanomas at the skin cells where the peptide interacts. It was also found that these dual user subjects had higher acidity levels in their bloodstream and suffered from other increasing side effects such as acid reflux and kidney issues the more they continued to use both vapes and MT-II simultaneously.

The type of molecule the MT-II peptides are do not react or breakdown easily, unless in acidic conditions. This makes them ideal to stay as a larger molecule until they reach the intended cell site to then send a message for that cell to produce melanin.

The structure of synthetic peptide **MT-II** is seen to the right →

This has a chemical formula of $C_{50}H_{69}N_{15}O_9$



The peptide chain can also be written in the format of:

Ac-Nie-Asp-His-D-Phe-Arg-Trp-Lys-NH_2

Ac stands for Acetyl group (CH_3CO-) seen on the top end of the peptide and NH_2 for the other end or terminal.

How it works:

MT-II is a synthetic version of a hormone that occurs naturally in your body; melanocyte stimulating hormone (a-MSH), both peptides fits into a particular cite on your skin cell membranes and act as a key to open a channel and instruct the cell to start making melanin, which then darkens the skin tone.

The naturally occurring a-MSH peptide chain has a format of:

Ac-Ser-Tyr-Ser-Met-Glu-His-Phe-Arg-Trp-Gly-Lys-Pro-Val-NH_2.

Naturally occurring peptides are kept within very particular levels by the body, meaning that increasing their levels via injections could throw its systems out of balance. As well, as the risks of self-injection, such as accidentally injecting air, there were concerns that peptides could interfere with other medicines people were already taking and have very highly observed impact and reaction with blood glucose.

'I felt horrendous'- Nick, MT-II user

Experts also warned that because the drug was not regulated there was a risk that peptides could be contaminated and people could suffer serious reactions.

The Therapeutic Goods Administration (TGA) has warned advertising or promoting unapproved peptides was likely to breach Australian therapeutic goods advertising laws.
The latest TGA data shows it requested 3,263 "wellness and beauty industries unapproved high risk therapeutic goods advertising" online and social media advertisements should be removed, which captures unlawful peptide advertising. This MT-II substance is not approved for sale or use as a tanning agent in Australia and therefor has not been assessed for safety or quality.

Supplements that are not regulated have issues with unknown health effects, purity concerns and inaccurate dosages. Another synthetic peptide available in similar markets is retatrutide, a 3mL vial of unapproved peptide retatrutide was tested by a Melbourne laboratory and had double the concentration indicated on the label. It was marketed as 10mg and found to have 19mg of retatrutide. The same sample was tested to have a 16.6% purity, so not only is there a double dose of the active ingredient, but there are also lots of other 'filler' or unknown ingredients, the laboratory has not been able to identify them all yet.

This information makes scientistic concerned if we 'are supplementing our health for supplements?' Bodybuilder Nick said at the time he took MT-II there was less awareness of the serious potential risks of using the substance. "I experienced nausea pretty hard, that was probably the worst (side effect)". He was also of the belief that it was safer than getting a tan by sunbaking, which is a common misconception amongst MT-II users. Nick said he now knows much more about the risks of using MT-II and would not recommend it or do it again.

"I would probably just get a spray tan, [because it's] much safer."

Doctors 'fighting the algorithm'

Melbourne dermatologist Katherine Armour has also seen an increase in patients using MT-II.
"Overall, it's just such a sign of the misinformation that is being propagated, the misinformation problem is getting bigger and bigger," she said. Dr Yip said social media was difficult to catch up with and

"Just because something's gone viral does not mean that it has any credible science."

Lisa Byrom says medical misinformation can be hard to fight. *(ABC News: Mark Leonardi)*
Dr Byrom believes social media influencers should be "held accountable" for the "dangerous" proliferation of medical or health advice without having appropriate qualifications. She said it was disturbing that people promoting peptides such as MT-II on social media were normalising side effects that should be red flags to people using them.

Dr Byrom said peptide users worried about their health should see a doctor, she said

"There isn't judgement here. It's better that you just get this checked out, get the right information and then you can move forward with that"