

CLIL-ACTIVITY zu KAPITEL 12

1.1 Read the article and look up words you do not know in an online dictionary.

Sunny side up?

As summer approaches, many people will start working on their suntan, trying to lose their winter pallor. But what do we really know about tanning and how does sunscreen work? When we are exposed to the sun, our skin darkens due to an increase in the production of a pigment called melanin. This pigment is produced to protect the skin by minimising the damaging effects of UV radiation. We must always be careful about how much time we spend in the sunlight, as exposure to the ultraviolet (UV) rays accelerates the effects of ageing and increases the risk of developing skin cancer. Health experts advise that we should avoid over-exposure to the sunlight and make sure to take precautions, including covering up with clothing, wearing sunglasses



Abb. 1

and a hat and, of course, using sunscreen, to reduce the amount of UV radiation that reaches our skin. The sun emits a great deal of light in the UV range of the spectrum, and both most commonly known types, UV-A and UV-B, can cause skin damage. UV-B triggers the production of both vitamin D3 and melanin, but it can also cause sunburn and

direct DNA damage, increasing the risk of developing skin cancer. UV-A penetrates the skin deeper than UV-B, causing wrinkles and premature ageing; it too can cause DNA damage and contribute to an increased skin cancer risk.

The first synthetic sunscreens were only produced in the 20th century. Sunscreens are comprised of a combination of inorganic and organic chemicals: titanium dioxide and zinc oxide are the main inorganic compounds. The active ingredients in sunscreen reduce exposure to UV light in two ways: they either form a physical barrier, reflecting or scattering light away so that it does not reach the skin, or they contain UV-filters that absorb photons of UV light, dissipating the energy harmlessly as heat away from the body (these are

often called chemical sunscreens). It is important to remember to reapply sunscreen frequently while spending time in the sun, because some organic chemical components are not photostable and gradually become degraded upon exposure to UV light.

1.2 Answer the following questions about the text.

1 There are two types of UV-rays from the sun that reach the earth. Which type causes DNA damage?

- A UV-A
- B UV-B
- C UV-A and UV-B

2 Which type of UV-radiation triggers the production of Vitamin D3 and melanin?

- A UV-A
- B UV-B
- C Both

3 UV-A can penetrate the skin deeper than UV-B.

- A true
- B false

4 How does a chemical sunscreen work?

- A It absorbs light.
- B It reflects light.
- C It reflects and absorbs light.