



Negative Ion Technology

For Prelims: Radioactivity, Negative ion technology.

For Mains: Concerns related to negative ion Technology.

Why in News

Recently, the **Authority for Nuclear Safety and Radiation Protection (ANVS), Netherlands** issued a statement **identifying various negative ion wearable products containing more Radioactivity than legally permitted.**

Key Points

▪ About:

- Negative ion technology **embeds negative ions in personal products** and is currently being advertised as a means to maintain health, balance energy, and improve well-being.
- This technology is used in certain silicone wristbands, quantum or scalar-energy pendants, and kinesthesiology tape.
 - Negative ions are also made **when sunlight, radiation, air, or water break down oxygen.**
- The minerals that produce these negative ions often include **naturally occurring radioactive substances such as uranium and thorium.**
- It is believed that negative ions create positive vibes and uplift the mood. They show the various mental and physical health benefits, such as stress reduction, better sleeping, respiration etc. whereas these ions **may also act on pollutants, make them negatively charged** and get them collected on surfaces.

▪ Related Concerns:

- The **radiation detected in some of these products has been higher than the background level and in some cases high enough** to require licensing.
- The minerals used in products contain varying levels of radioactivity, it **can be difficult for the consumer to know exactly how radioactive these items are.**
 - Radioactivity is the act of emitting radiation spontaneously.
- The products were found to contain radioactive materials and therefore continuously **emit ionizing radiation, thereby exposing the wearer.**
- Exposure **to ionizing radiation can cause adverse health effects and** wearing the products for extended periods could pose health risks that **include tissue and DNA damage.**
- Exposure can also cause **severe harmful effects such as:** Skin burns, Acute radiation sickness that causes cancer and hairfall, Temporary reduction in white blood cells, Possible chromosomal damage, Reduction in resistance to infection.
- [IAEA \(International Atomic Energy Agency\)](#) researchers found that the undergarment industry in Malaysia and elsewhere advertised that their **“negative ion undergarments” contain tourmaline, monazite and zircon, all known to contain uranium and thorium.**

▪ **Efforts:**

- In “Radiation Protection and Safety of radiation Sources: **International Basic Safety Standards” (2014)**, the IAEA considers that the frivolous use of radiation or radioactive substances in toys and personal jewelry or adornments, which result in an increase in activity, is unjustified.
- The IAEA published a specific safety guide titled “**Radiation Safety for Consumer Products (2016)**.”
- In **India, the Atomic Energy (Radiation Protection) Rules, 2004** contains provisions consistent with those of the IAEA.

[Source: TH](#)

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