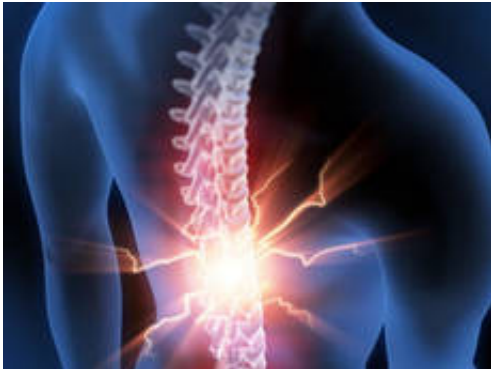


Pain is not one-dimensional, researchers say

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Pain is not one-dimensional but a combination of inflammatory reactions as well as of processes in the central nervous system and memory cells. This is the result of a current study by pain researchers at the MedUni Vienna led by Burkhard Gustorff, head of the university course in interdisciplinary pain medicine (ismed). The study has now been published in the leading journal *Pain*.

This was discovered with the aid of the so-called "sunburn model". In this it was proved that not only the sunburn itself causes pain but also that slight irritations of the peripheral skin tissue likewise cause pain.

With an "artificial sunburn" caused by [UVB radiation](#) a small area of skin was made sensitive to pain. After 24 hours the [pain intensity](#) at the site of the (slight) sunburn was at its highest, but the peripheral tissue

was demonstrably irritated and sensitive to pain, for example, with gentle pinpricks or slight heating.

"This is the proof," says Gustorff, "that in sunburn the hypersensitivity of the skin is not only triggered by the often painful inflammatory reaction but is also controlled by sensitization processes in the [central nervous system](#)."

The same phenomenon can be observed when a plaster is removed according to the MedUni researcher. "When you pull a plaster off, it hurts around the site of the wound, as you know, because that is precisely where the sensations of pain arise. This happens because the pain is reported to the spinal cord and there healthy [neural pathways](#) are sensitized and in turn report pain back to the healthy skin location."

The current study, which has now been published in the leading journal *Pain*, was conducted at the MedUni Vienna under the leadership of Burkhard Gustorff as well as in collaboration with the University of Mannheim-Heidelberg and the group around Rolf-Detlef Treede.

More information: Gustorff, B. et al. The pattern and time course of somatosensory changes in the human UVB sunburn model reveal the presence of peripheral and central sensitization, *Pain*, 2013 Apr;154(4):586-97. [doi: 10.1016/j.pain.2012.12.020](https://doi.org/10.1016/j.pain.2012.12.020). Epub 2013 Jan 2.

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