

Why does everything look gray when you feel blue?

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Regardless of culture, language, era, or individual artist, the arts consistently depict depression using darkness. Scientific findings now lend empirical support to this representation of depression that everything looks gray when you feel blue.

Researchers at the University of Freiburg in Germany showed previously that people with depression have difficulty detecting black-and-white contrast differences.

Publishing a new report in [Biological Psychiatry](#), these scientists combined neuropsychiatric and ophthalmologic investigations to focus on the response of the retina to varying black-and-white contrasts. Specifically, they measured the pattern electroretinogram, which is like an electrocardiogram (ECG) of the retina of the eye, in patients with depression and healthy individuals.

They found dramatically lower retinal contrast gain in the [depressed patients](#), regardless of whether or not they were receiving antidepressant medication. There was also a significant correlation between contrast gain and severity of depression, meaning those with the most severe symptoms of depression also had the lowest retinal responses. The electrophysiological signal of response was sufficiently consistent to distinguish most depressed patients from the healthy subjects.

"These data highlight the profound ways that depression alters one's experience of the world," commented Dr. John Krystal, Editor of

Biological Psychiatry. "The poet William Cowper said that 'variety's the very spice of life', yet when people are depressed, they are less able to perceive contrasts in the visual world. This loss would seem to make the world a less pleasurable place."

Lead author Dr. Ludger Tebartz van Elst noted that although these findings are strong, they still need to be replicated in further studies. However, "this method could turn out to be a valuable tool to objectively measure the subjective state of depression, having far-reaching implications for research as well as clinical diagnosis of and therapy for [depression](#)."

More information: The article is "Seeing Gray When Feeling Blue? Depression Can Be Measured in the Eye of the Diseased" by Emanuel Bubl, Elena Kern, Dieter Ebert, Michael Bach, and Ludger Tebartz van Elst. The authors are affiliated with the Department of Psychiatry and Psychotherapy, Albert-Ludwigs-University of Freiburg, Freiburg, Germany. Bach is also with Universitäts-Augenklinik Freiburg, Sektion Funktionelle Sehforschung, Freiburg, Germany. The article appears in *Biological Psychiatry*, Volume 68, Issue 2 (July 15, 2010).

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