

In the news

THE BIOLOGY OF DREAD

Many of us enjoy the mouth watering anticipation of a good meal and purposefully delay our gratification to achieve this. Equally, the reverse is true when waiting for something unpleasant. The anticipation of undergoing root canal, having an injection or sitting an exam makes us want to get it over with as soon as possible and cut short the dread. But what is the neurobiological basis of dread? Gregory Berns and colleagues at Emory University, Atlanta, USA, have been investigating just that.

Berns' team used functional MRI to measure the brain activity of volunteers while they awaited a painful event — an electric shock to the foot. Participants were first given shocks at different time delays to condition their anticipatory response, and were then presented with options between different time delays and different voltages. When there was the choice of having the same voltage after a short or long delay, the majority of volunteers opted, not surprisingly, for the shorter delay. However, almost a third of the participants opted for a shorter delay even when the voltage was higher. They chose more pain just to get it over with. Berns called these people “extreme dreaders”.

Imaging revealed that the brains of extreme dreaders showed higher activity in the pain processing regions that involve attention. “Extreme dreaders deploy more attention to their soon-to-be-shocked foot” says Berns (*New York Times*, 5 May 2006). He suggested that, compared with the other volunteers, extreme dreaders focused so much on the impending shock that the wait was as unpleasant as the shock itself (*ScienceNOW Daily News*, 4 May 2006).

The finding that attention centres of the brain are involved in dread gives a neurobiological basis for what people are commonly aware of — that, as Berns puts it, “distracting people before they have to undergo a medical procedure might lessen their feeling of dread” (*New Scientist*, 5 May 2006).

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