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Decreased food pleasure and disrupted satiety signals in chronic low back pain.

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Abstract

Chronic low back pain (CLBP) and obesity are interrelated, but the physiological mechanisms linking the 2 conditions remain to be determined. Functional brain imaging data from CLBP patients show functional and structural alterations in areas mediating the attribution of hedonic value to food. Accordingly, we hypothesized that CLBP patients would exhibit alteration in the hedonic perception of highly palatable, calorie-containing foods. CLBP patients and matched healthy controls initially rated their perception of highly palatable puddings of varying fat content and sugary drinks of varying sucrose content without ingesting significant amounts of either stimulus. In a subsequent intake test, hungry participants ingested their preferred pudding ad libitum. Compared to healthy controls, CLBP patients exhibited significantly lower ratings of food pleasure when sampling the fat puddings but not when sampling the sugary drinks. In contrast, the patients' sensory evaluation of these stimuli was not different from those of healthy controls. In addition, whereas in healthy controls caloric intake from pudding closely matched hedonic ratings and decreased hunger after ad libitum pudding intake, such effect was totally abolished in CLBP patients. Our data thus reveal a decoupling between hedonic perception and fat calorie intake in CLBP patients, suggesting altered hedonic perception of fat as a potential mechanism linking CLBP to overeating and obesity.

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KEYWORDS: Chronic back pain; Obesity; Pleasure; Satiety

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