

〈シンポジウム II〉

『コスメサイコロジー（心理・生活者行動学）の真髄』

脳が決める効果：プラセボ効果の要因解析からわかること

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How the Brain Acts: Factor Analysis of Placebo Effects

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Abstract

Recent clinical research utilizing noninvasive functional measurement techniques has indicated that placebo effects might be therapeutically useful, because clear responses to placebo administration have been observed in patients' brains. Both physiological and mental states are affected by placebo and a role of brain receptor(s) was suggested. Factors influencing the placebo effect are the Pavlov reaction, expectation, cognition, and conditioning. Further, the nocebo effect is a negative reaction caused by anxiety, which acts as a confounding factor. Different outcomes may be obtained depending upon whether the placebo effect is evaluated in terms of objective or subjective responses. Correlation analyses of outcomes from various clinical trials indicate that placebo improves subjective response more effectively than objective parameters. Psycho-social care of patients is an important aspect of welfare, and a better understanding of the mechanism of the placebo effect will be helpful in this regard. Cognitive therapy is well known to be as efficacious as antidepressant medication for treating depression. Therefore, we studied the relationship between activity in the cerebral prefrontal area and counseling intervention. Aromatherapy is known to be effective to improve mood. We thus evaluated the influence of counseling on the efficacy of aromatherapy in healthy young women. Participants in a room filled with the fragrance of bergamot completed both a self-reported questionnaire (motivation, feeling of drowsiness and general fatigue) and multi-dimensional fatigue inventory-20 (MFI-20). Further, as an objective measure of changes in stress, blood flow in the inferior frontal cortex was evaluated by near-infrared spectroscopy (NIRS). MFI-20 showed that the combination of aromatherapy with counseling significantly improved both brain activity and motivation, as compared to aromatherapy alone, though the self-reported questionnaire showed no significant difference. Regional blood flow in the inferior frontal cortex was significantly decreased by exposure to aromatherapy with counseling, compared to aromatherapy alone ($p < 0.05$). The value of the NIRS-derived laterality index (LI), which is considered to be a measure of stress, was decreased by aromatherapy with counseling. Thus, we confirmed that the combination of aromatherapy with counseling intervention significantly improved mood and stress. Our results also demonstrated that counseling intervention increased the effectiveness of aromatherapy.

Key words: placebo effect, nocebo effect, objective parameter, subjective response, counseling.