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## Cortical Gyrification Patterns Associated with Neuroticism in Panic Disorder and Healthy Individuals

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**Background:** Several studies have demonstrated an association between neuroticism and alterations in cortical folding. However, few studies have investigated the relation between neuroticism and gyrification in patients with panic disorder (PD) and healthy individuals. This study examined the relation between neuroticism and cortical gyrification patterns and their relation with symptomatology in patients with PD and healthy control (HC).

**Methods:** This study included 230 participants: 102 patients diagnosed with PD and 128 HC. Neuroticism, anxiety symptomatology, ways of coping strategies, and health-related quality of life was evaluated. Voxel-wise correlation analyses using FreeSurfer were conducted to determine the neural correlates of neuroticism related to cortical gyrification in patients with PD and HC.

**Results:** As neuroticism increased, cortical gyrification of the lingual gyrus decreased significantly in HC, whereas postcentral gyrus gyrification increased while lingual gyrus gyrification decreased in patients with PD. Although lingual gyrus gyrification in HC was significantly correlated with social phobia, interoception, and agoraphobia subscales, lingual gyrus gyrification in patients with PD revealed significant correlations with emotional coping, physical functioning, and the emotional role subscales. In addition, the local gyrification index in the postcentral gyrus was significantly correlated with excessive worry severity scale scores.

**Conclusions:** Our study suggests that increased neuroticism is associated with decreased cortical folding patterns in the lingual gyrus in both HC and patients with PD and increased postcentral gyrus gyrification only in patients with PD. These gyrification alterations may influence perceived quality of life as well as high levels of anxiety symptomatology in patients with PD.

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