

Variation of the serotonin transporter gene influences response to fear treatment

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An investigation published in the current issue of *Psychotherapy and Psychosomatics* suggests a link between genetic aspects and response to treatment for fear. Methodological problems of existing research, such as the application of unstandardized treatments in heterogeneous samples, has hampered clear conclusions about the extent and direction to which allelic variation of the serotonin transporter gene-linked polymorphic region (5-HTTLPR) is associated with a differential response to psychological treatment.

This study aimed to investigate the effects of the 5-HTTLPR genotype on [treatment](#) outcome under highly standardized environmental conditions. Authors treated 222 medication-free adults highly fearful of spiders, dental surgeries or blood, injuries and injections with a highly standardized exposure-based 1-session treatment and genotyped them for the 5-HTTLPR. Participants' subjective [fear](#) was assessed before, immediately after treatment and at 7 months of follow-up. Overall, there were no differences between 5-HTTLPR genotypes in treatment outcome effects at the immediate posttreatment assessment.

However, a highly significant genotype \times treatment effect ($p = 0.004$) was observed at the 7-month follow-up. Fear levels of homozygous S allele carriers differed from those heterozygous ($p = 0.026$) and homozygous ($p = 0.012$) for the L allele. Compared to posttreatment assessment, LL allele carriers exhibited a further fear decrease at the follow-up assessment. In contrast, SS allele carriers displayed a strong return of fear.

Results suggest that genetic variation of the [serotonin transporter](#) is associated with differential stability of inhibitory learning processes, potentially reflecting heightened susceptibility for context-related processes that facilitate a return of fear in S allele carriers. If replicated, 5-HTTLPR might represent a biomarker for the long-term outcome of brief exposure-based fear treatments and might inform genotype-based selection of psychotherapeutic interventions.

More information: André Wannemüller et al. The Return of Fear: Variation of the Serotonin Transporter Gene Predicts Outcome of a Highly Standardized Exposure-Based One-Session Fear Treatment, *Psychotherapy and Psychosomatics* (2018). [DOI: 10.1159/000486100](https://doi.org/10.1159/000486100)

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