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Genetic factors contributing to bipolar illness

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There is strong evidence from family, twin and adoption studies that heredity plays a major role in the pathogenesis of affective disorders. Family studies have verified previous empirical observations concerning the familial aggregation of affective illness by showing that affective and affective spectrum disorders are more frequently expressed in the relatives of affected individuals, than in the relatives of individuals from the general population. This elevated morbidity risk is even more higher in the case of early illness onset and comorbidity with other psychiatric disorders. Twin studies have added strong evidence for genetic influence in the expression of affective disorders with significantly higher concordance rates of the disease, mainly bipolar, in monozygotic than in dizygotic twin pairs (70% vs 20%), reared together or apart. The fact that concordance rates in monozygotic twins is less than 100% emphasises also the role of environmental factors in the manifestation of the disease. Adoption studies have demonstrated a significantly higher incidence of affective disorders among the biological relatives of affected adoptees, than either among their adoptive relatives of the biological relatives of non-affected adoptees. The results from genetic association and linkage studies, as well as from genome-wide scan studies have shown several susceptibility loci through the genome, but specific gene(s) for the vulnerability of the disease have not as yet definitively identified, due to the apparently non-mendelian mode of transmission of these disorders and the assumed complexity of their expression.