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Titel des Beitrags: No evidence for an involvement of variants in the cannabinoid receptor gene (CNR1) in obesity in German children and adolescents.

Abstract: Studies in rodent models demonstrated that the central cannabinoid receptor (Cnr1) mediates the orexigenic effects of cannabinoids. To analyze whether genetic variation in the cannabinoid receptor gene (CNR1) is implicated in human obesity, we initially genotyped 8 single nucleotide polymorphisms (SNPs) located in the 5' region (rs9353527, rs754387, rs6454676), intron 2 (rs806379, rs1535255), exon 3 (rs2023239), intron 3 (rs806370) and the coding region (rs1049353) in up to 364 German obesity trios (extremely obese child or adolescent and both parents). The transmission disequilibrium test (TDT) was negative for these SNPs (p>0.05). However, there was a slight trend towards preferential transmission of the A-allele of rs1049353 (p=0.12). We therefore genotyped this SNP in 235 independent German obesity families (at least two obese sibs and both parents) and in parallel screened the CNR1 coding region for sequence variations in 120 German extremely obese children and adolescents who mainly contributed to the initial trend observed for rs1049353. The trend for preferential transmission of the A-allele could not be substantiated (pedigree disequilibrium test, PDT p=0.15; A-allele less frequently transmitted). In the mutation screen we detected two rare variations, one...
novel non-conservative mutation (c.1256C>A; A419E) and the known variant 1419+1G>C. In addition, we confirmed the presence of rs1049353. As these variants could not explain the initial TDT, we conclude that there is no evidence for an association of CNR1 alleles with obesity in our study groups.