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Reduced cardiovascular fitness associated with exposure to clozapine in individuals with chronic schizophrenia

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Abstract:
Studies show that individuals with schizophrenia have impaired cardiovascular fitness (i.e., low peak aerobic power (VO_2peak)). It is speculated that antipsychotics with adverse cardiovascular and metabolic profiles, in particular clozapine, have a significant impact on VO_2peak. In this cross-sectional study, we examined whether exposure to clozapine was associated with further reduced VO_2peak compared with non-clozapine antipsychotics. Thirty participants with chronic schizophrenia or schizoaffective disorder were divided into clozapine and non-clozapine groups. Mean daily doses of antipsychotics were standardized to chlorpromazine equivalents and haloperidol equivalents for antagonism of $alpha_1$- and $alpha_2$-adrenergic receptors. Participants completed an incremental-to-maximal symptom-limited exercise test on a cycle ergometer for the assessment of VO_2peak. The clozapine group demonstrated significantly lower VO_2peak than the non-clozapine group. Haloperidol equivalents for alpha-adrenergic receptor antagonism, but not chlorpromazine equivalents, demonstrated significant inverse associations with VO_2peak.