

## Navigating Schizophrenia: Understanding the Metabolic Syndrome in Schizophrenia

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**Background:** Schizophrenia is a severe psychiatric disorder that affects nearly 1% of the world population[1]. It ranks among the top 10 global causes of disability, highlighting its significant impact on individuals and society [1]. However, a noteworthy concern arises due to the substantial risk associated with these medications—antipsychotic-induced metabolic syndrome[2]. Metabolic syndrome poses serious health complications, necessitating a comprehensive understanding of its prevalence, underlying mechanisms, and potential therapeutic approaches(3). **Objectives:** Evaluate the risk of metabolic effects when using antipsychotics. **Methodology:** This study was conducted by obtaining information from literature through a search of the PubMed dataset using the following keywords: Antipsychotics, Metabolic disturbances, Schizophrenia. **Results:** The prevalence of metabolic syndrome in patients treated with antipsychotics varies from 37%-63%[2]. The prevalence of obesity (BMI above 30 kg/m<sup>2</sup>) in individuals with schizophrenia varies between 42%-60%[2]. Weight gain is a well-known side effect of antipsychotic medications in patients with schizophrenia, affecting 15%-72% patients(4). Among first-generation antipsychotics, low potency such as chlorpromazine and thioridazine, are associated with a greater risk of weight gain compared to those of high potency, such as haloperidol[2]. Second-generation antipsychotics (SGAs) have different probabilities of causing weight gain with clozapine and olanzapine have the highest risk. Quetiapine, risperidone and paliperidone, an intermediate risk. Aripiprazole the lowest risk[2]. Additionally, non-pharmacological interventions, including aerobic exercise and dietary counselling, have shown efficacy in managing antipsychotic-induced metabolic syndrome[5]. **Conclusion:** The analysis indicates that, overall, SGAs pose a higher risk of metabolic disturbances compared to first-generation antipsychotics. Categorizing SGAs based on their weight gain potential underscores the significance of this variability. Clozapine and olanzapine emerge as the highest risk, followed by quetiapine, risperidone, and paliperidone, while aripiprazole is associated with the lowest risk of weight gain. Mental health professionals should encourage healthy lifestyle practices, including diet and physical activity programs.

**Key words:** Antipsychotics; Metabolic disturbances; Schizophrenia.

**Acknowledgments:** This research did not receive external funding

### References

1. Dieset, I.; Andreassen, O.A.; Haukvik, U.K. Somatic comorbidity in schizophrenia: some possible biological mechanisms across the life span. *Schizophrenia bulletin* 2016, 42, 1316-1319.
2. Chang, S.C.; Goh, K.K.; Lu, M.L. Metabolic disturbances associated with antipsychotic drug treatment in patients with schizophrenia: State-of-the-art and future perspectives. *World journal of psychiatry* 2021, 11, 696.
3. Yang, Y.; Xie, P.; Long, Y.; Huang, J.; Xiao, J.; Zhao, J.; Yue, W.; Wu, R. Previous exposure to antipsychotic drug treatment is an effective predictor of metabolic disturbances experienced with current antipsychotic drug treatments. *BMC psychiatry* 2022, 22, 1-3.
4. Pillinger, T.; McCutcheon, R.A.; Vano, L.; Mizuno, Y.; Arumuham, A.; Hindley, G.; Beck, K.; Natesan, S.; Efthimiou, O.; Cipriani, A.; Howes, O.D. Comparative effects of 18 antipsychotics on metabolic function in patients with schizophrenia, predictors of metabolic dysregulation, and association with psychopathology: a systematic review and network meta-analysis. *The Lancet Psychiatry* 2020, 7, 64-77.
5. Vancampfort, D.; Firth, J.; Correll, C.U.; Solmi, M.; Siskind, D.; De Hert, M.; Carney, R.; Koyanagi, A.; Carvalho, A.F.; Gaughran, F.; Stubbs, B. The impact of pharmacological and non-pharmacological interventions to improve physical health outcomes in people with schizophrenia: a meta-review of meta-analyses of randomized controlled trials. *World Psychiatry* 2019, 18, 53-66.