

11 - Quetiapine

Quetiapine

872 The Maudsley® Prescribing Guidelines in Psychiatry CHAPTER 11 further therapeutic benefit than lower levels.⁹⁴ Severe toxicity is uncommon but may be associated with levels above 100mcg/L, and death is occasionally seen at levels above 160mcg/L⁹⁵ (albeit when other drugs or physical factors are relevant). A target range for therapeutic use of 20–40mcg/L (12-hour post-dose sample) has been proposed⁹⁶ for schizophrenia; the range for mania is probably similar.⁹⁷ This target range was for a time widened to 20–80mcg/L^{98,99} but the reasons for this were not clear. A 2023 systematic review suggests a target range of 20–40mcg/L for 12-hour samples.¹⁰⁰ Significant weight gain seems most likely to occur in those with plasma levels above 20mcg/L.¹⁰¹ Constipation, dry mouth and tachycardia also seem to be related to plasma level.¹⁰² In practice, the dose of olanzapine should be largely governed by response and tolerability. However, a survey of UK sample assay results suggested that around 20% of patients on 20mg a day will have sub-therapeutic plasma levels and more than 40% have levels above 40mcg/L.¹⁰³ Plasma level determinations might then be useful for those suspected of non-adherence, those showing poor tolerability or those not responding to the maximum licensed dose. Where there is poor response and plasma levels are below 20mcg/L, dose may then be adjusted to give 12-hour plasma levels of 20–40mcg/L; where there is good response and poor tolerability, the dose should be tentatively reduced to give plasma levels below 40mcg/L. Changes in dose give proportionate changes in plasma levels.¹⁰⁴ A case might be made to increase the dose to give blood levels in the range 40–80mcg/L but only where no other options remain. Quetiapine Doses of quetiapine are weakly related to trough plasma samples.¹⁰⁵ Mean levels reported within the dose range 150–800mg/day vary from 27 to 387mcg/L,^{106–111} although the highest and lowest levels are not necessarily found at the lowest and highest doses. Age, gender and co-medication may contribute to the significant inter-individual variance observed in TDM studies, with female gender,^{111,112} older age^{110,111} and CYP3A4-inhibiting drugs^{106,110,111} likely to increase quetiapine concentration. Reports of these effects are conflicting¹¹² and not sufficient to support the routine use of plasma level monitoring based on these factors alone. Despite the substantial variation in plasma levels at each dose, there is insufficient evidence to suggest a target therapeutic range to aim for (although a target range of 100–500mcg/L has been proposed¹¹³), thus plasma level monitoring is likely to have little value. Moreover, the metabolites of quetiapine have major therapeutic effects and their concentrations are only loosely associated with parent drug levels.¹¹⁴ Most current reports of quetiapine concentration associations are derived from the analysis of trough samples. Because of the short half-life of quetiapine, trough levels tend to drop to within a relatively small range regardless of dose and previous peak level. Peak plasma levels may be more closely related to dose and clinical response,¹⁰⁵ although monitoring of such is not currently justified in the absence of an established peak plasma target range. Interestingly, a study of quetiapine in patients with

borderline personality disorder or drug-induced psychosis showed a linear relationship between response and 12-hour plasma levels.¹¹² Peak to trough variation is greater for immediate-release formulations (roughly a maximum of 4000mcg/L to zero) than for slow-release preparations (roughly a maximum of 3000mcg/L to around 100mcg/L).⁴⁵

Revision #1

Created 2026-01-04 20:18:08 UTC by Omar Ayman

Updated 2026-01-04 20:18:08 UTC by Omar Ayman