

# Dosing of Paxlovid in Renal Disease

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Please check [www.covid19-druginteractions.org](http://www.covid19-druginteractions.org) for updates.

Data are limited or absent; therefore, risk-benefit assessment for any individual patient rests with prescribers.

## Guidance for the use of nirmatrelvir/ritonavir in patients with advanced chronic kidney disease and patients on dialysis

Summarised from guidance initially produced by Ontario Health Renal Network.

### Background

- Paxlovid (nirmatrelvir/ritonavir, NMV/r) is a very effective therapy in the early management of high-risk patients, such as those with advanced chronic kidney disease or those on dialysis, however it is renally cleared and product labels do not currently recommended it for patients with eGFR <30 ml/min<sup>1,2</sup>.
- Compared to healthy controls with no renal impairment, C<sub>max</sub> and AUC of nirmatrelvir increased by 30% and 24% in patients with mild renal impairment, by 38% and 87% in patients with moderate renal impairment, and by 48% and 204% in patients with severe renal impairment<sup>1</sup>.
- On the basis of clinical, modelling and patient data<sup>3</sup>, an adjusted dose given at a lower frequency has been proposed for use in people with eGFR <30 ml/min and in those on dialysis after appropriate evaluation and discussion of risks and benefits with the patient.
- The adjusted dose of NMV/r was found to be safe and well tolerated in a small sample of 134 maintenance dialysis patients with most patients (128, 96%) able to complete the course of NMV/r<sup>4</sup>.

### Current and Proposed Dosing Recommendations

Renal Function	Current Label Recommendations	Proposed Dosing Guidance
eGFR >60 ml/min	300 mg nirmatrelvir + 100 mg ritonavir both twice daily for 5 days	300 mg nirmatrelvir + 100 mg ritonavir both twice daily for 5 days
eGFR 30-60 ml/min	150 mg nirmatrelvir + 100 mg ritonavir both twice daily for 5 days	150 mg nirmatrelvir + 100 mg ritonavir both twice daily for 5 days
eGFR <30 ml/min	Do not use	300 mg nirmatrelvir + 100 mg ritonavir both on day 1, followed by 150 mg nirmatrelvir + 100 mg ritonavir both once daily for 4 days
Dialysis	Do not use	<p><i>Patients ≥ 40 kg:</i> 300 mg nirmatrelvir + 100 mg ritonavir both on day 1, followed by 150 mg nirmatrelvir + 100 mg ritonavir both once daily for 4 days, given after dialysis</p> <p><i>Patients &lt;40 kg:</i> 150 mg nirmatrelvir + 100 mg ritonavir both on day 1, followed by 150 mg nirmatrelvir + 100 mg ritonavir both every 48 hours for 2 more doses, given after dialysis</p>

### References

1. Paxlovid [Summary of Product Characteristics](#), Pfizer Ltd.
2. Paxlovid [FDA Emergency Use Authorization](#), Pfizer Inc.
3. Prescribing nirmatrelvir/ritonavir for COVID-19 in advanced CKD. Hiremath S, McGuinty M, Argyropoulos C, et al. *Clin J Am Soc Nephrol.* 2022, 17(8): 1247-50.
4. Early experience with modified dose nirmatrelvir/ritonavir in dialysis patients with coronavirus disease 2019. Hiremath S, Blake PG, Yeung A, et al. *Clin J Am Soc Nephrol.* 2023, epub ahead of print.