

# ISRADIPINE

<b>Indication</b>	<ul style="list-style-type: none"> <li>Acute or chronic hypertension when oral therapy indicated<sup>1-4</sup></li> </ul>
<b>ORAL</b>	<b>Presentation</b> <ul style="list-style-type: none"> <li>Oral solution: 1 mg in 1 mL</li> <li>Not available from QH Central Pharmacy. Obtain commercial preparation</li> </ul>
	<b>Dosage</b> <sup>1-3,5,6</sup> <ul style="list-style-type: none"> <li>0.05 mg/kg every 6 to 8 hours <ul style="list-style-type: none"> <li>If required, increase daily by 0.05 mg/kg per dose</li> <li>Maximum dose 0.8 mg/kg/day</li> </ul> </li> </ul>
	<b>Preparation</b> <ul style="list-style-type: none"> <li>No dilution required</li> <li>Shake well</li> <li>Draw up prescribed dose into oral/enteral syringe</li> </ul>
	<b>Administration</b> <ul style="list-style-type: none"> <li>Oral/OGT/NGT irrespective of feed</li> </ul>
<b>Special considerations</b>	<ul style="list-style-type: none"> <li>Discuss with SMO before commencing. Not first line anti-hypertensive</li> <li>Capsule contents do not disperse in water and are not recommended as an alternative</li> </ul>
<b>Monitoring</b>	<ul style="list-style-type: none"> <li>Consider baseline creatinine, potassium, sodium, and calcium</li> <li>BP and HR 30 minutes before and after dose until stable <ul style="list-style-type: none"> <li>If BP MAP less than 40 mmHg (or BP MAP for current gestational age is less than 50th centile<sup>7</sup>) withhold dose</li> </ul> </li> </ul>
<b>Compatibility</b>	<ul style="list-style-type: none"> <li>Nil known</li> </ul>
<b>Incompatibility</b>	<ul style="list-style-type: none"> <li>Nil known</li> </ul>
<b>Interactions</b>	<ul style="list-style-type: none"> <li>Fluconazole<sup>1</sup>: increased serum isradipine concentration and risk of QT prolongation and cardiotoxicity</li> <li>Amiodarone<sup>1</sup>, chloral hydrate<sup>1</sup>, cotrimoxazole<sup>1</sup>, erythromycin<sup>1</sup>, flecainide<sup>1</sup>, octreotide<sup>1</sup>, sotalol<sup>1</sup>: increased risk of QT prolongation and cardiotoxicity</li> <li>Dantrolene<sup>1</sup>: severe hyperkalaemia and risk of cardiovascular collapse</li> <li>Digoxin<sup>1</sup>: increased risk of heart block</li> </ul>
<b>Stability</b>	<ul style="list-style-type: none"> <li>Refrigerate 2–8 °C</li> <li>Discard as per local policy or manufacturer's expiry date</li> </ul>
<b>Side effects</b>	<ul style="list-style-type: none"> <li>Circulatory: hypotension<sup>1</sup>, tachycardia<sup>1,6</sup>, peripheral oedema<sup>1</sup></li> <li>Integumentary: flushing<sup>1</sup></li> </ul>
<b>Actions</b>	<ul style="list-style-type: none"> <li>Short acting dihydropyridine calcium channel blocker with diuretic and antihypertensive properties that binds calcium and inhibits the flux of calcium into smooth cardiac muscles<sup>1</sup></li> <li>Predominant effects on arteriolar smooth muscle, the myocardium and cardiac conducting tissue<sup>1</sup></li> <li>Exhibits peripheral vasodilation resulting in increase in cardiac output and reduced systemic vascular resistance<sup>1,5</sup></li> <li>Rapid onset within 30 minutes of administration<sup>1</sup></li> </ul>
<b>Abbreviations</b>	BP: blood pressure, HR; heart rate, MAP; mean arterial pressure, NGT: nasogastric tube, OGT: orogastric tube, SMO: most senior medical officer
<b>Keywords</b>	antihypertensive, calcium channel blocker, hypertension, isradipine, neonatal medicine, neonatal monograph



The Queensland Clinical Guideline *Neonatal Medicines* is integral to and should be read in conjunction with this monograph. Refer to the disclaimer. Destroy all printed copies of this monograph after use.

## References

1. IBM Micromedex®Neofax®. Isradipine. Colorado USA: Truven Health Analytics; 2023 [cited 2023 April 24]. Available from: <https://micromedexsolutions.com/neofax>.
2. Starr MC, Flynn JT. Neonatal hypertension: cases, causes, and clinical approach. *Pediatric Nephrology* 2019;34(5):787-99.
3. Dionne JM, Abitbol CL, Flynn JT. Hypertension in infancy: diagnosis, management and outcome. *Pediatric Nephrology*. 2012 [cited Jan]; 27(1):17-32 DOI:10.1007/s00467-010-1755-z.
4. Hjorten R, Flynn JT. Neonatal Hypertension. *Clinics in Perinatology* 2022;49(1):27-42.
5. Flynn JT, Pasko DA. Calcium channel blockers: pharmacology and place in therapy of pediatric hypertension. *Pediatric Nephrology* 2000;15(3-4):302-16.
6. Harer MW, Kent AL. Neonatal hypertension: an educational review. *Pediatric Nephrology* 2019;34(6):1009-18.
7. Flynn JT. The hypertensive neonate. *Seminars in Fetal and Neonatal Medicine* 2020;25(5):101138.

## Document history

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