

# Exercise response to cardiac medications

The table below lists some common physiological responses to medications to consider when supervising an exercise program. These responses are specific to medications prescribed in isolation. Altered physiological responses may occur with combination therapy.

## General points:

- Heart rate (HR) and blood pressure (BP) should be assessed prior in all individuals prior to undertaking a supervised exercise programme

- Pre exercise values that differ significantly from the individual's norms may require modification of the exercise program or medical review prior to commencing
- Recent medication changes or up-titration may require modifications to the exercise program
- Monitor sitting and standing BP for those with suspected postural hypotension and avoid sudden postural changes or exercises that may exacerbate this in these patients

Medications	Heart Rate (HR)	Blood Pressure (BP)	Clinical relevance when exercising
β-Blockers	↓ at rest and with exercise	↓ at rest and with exercise	<ul style="list-style-type: none"> <li>• Monitor for symptoms of hypotension or bradycardia*</li> <li>• Intensity monitoring reliant on HR should be avoided</li> </ul>
Nitrates	↑ at rest ↑ or no change with exercise	↓ at rest ↓ or no change with exercise	<ul style="list-style-type: none"> <li>• For acute use, hypotension and reflex tachycardia are common. Monitor HR and BP. Exercise should be ceased.</li> <li>• Monitor symptoms of hypotension, tachycardia and angina</li> </ul>
Calcium channel blockers	No change at rest or with exercise (Dihydropyridines) or ↓ at rest and with exercise (Verapamil and Diltiazem)	↓ at rest and with exercise	<ul style="list-style-type: none"> <li>• Monitor for symptoms of hypotension (+/- bradycardia)</li> <li>• Dihydropyridines (e.g. amlodipine, felodipine, lercanidipine, nifedipine) have greatest effect peripherally and therefore work to lower BP. Tachycardia may occur as an infrequent adverse effect</li> <li>• Verapamil and diltiazem depress sinoatrial and atrioventricular node conduction as well as causing peripheral vasodilation and therefore affect both HR and BP</li> <li>• Intensity monitoring reliant on HR should be avoided</li> </ul>
Digoxin	↓ in patients with AF and possibly CHF	no change at rest or with exercise	<ul style="list-style-type: none"> <li>• Monitor for signs of bradycardia</li> </ul>
Diuretics	No change at rest or with exercise	No change or ↓ at rest or with exercise	<ul style="list-style-type: none"> <li>• Monitor for symptoms of hypotension and unexpected rapid weight changes</li> <li>• Over diuresis or fluid loss through vomiting or diarrhoea in the presence of diuretics, may exacerbate hypotension</li> </ul>
ACE inhibitor and ARB	No change at rest or with exercise	↓ at rest and exercise	Monitor for symptoms of hypotension

\*-Blockers with mixed beta and alpha blocking activity (e.g. carvedilol) influence peripheral arterioles as well as reducing HR. Hypotension may be more significant than when using other -Blockers which primarily affect HR alone. -Blockers with intrinsic sympathomimetic activity (pindolol, oxprenolol) lower resting heart rate only slightly, and are not often used in the management of heart failure

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