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# Dopamine Hydrochloride

National Cancer Institute

## Source

National Cancer Institute. *Dopamine Hydrochloride*. NCI Thesaurus. Code C455.

The hydrochloride salt form of dopamine, a monoamine compound with positive inotropic activity. Dopamine is a naturally occurring catecholamine formed by decarboxylation of dehydroxyphenylalanine and a precursor of norepinephrine and epinephrine. Dopamine binds to alpha-1- and beta-1- adrenergic receptors. Mediated through myocardial beta-1-adrenergic receptors, dopamine increase heart rate and force, thereby increasing cardiac output. Alpha-1-adrenergic receptor stimulation on vascular smooth muscle, leads to vasoconstriction and results in an increase in systemic vascular resistance. Stimulation of dopaminergic receptors in renal vasculature, leads to renal blood vessel dilation, and an increase in glomerular filtration rate, renal blood flow, sodium excretion, and urine output.