

# Late cardiac preconditioning by exercise in dogs is mediated by mitochondrial potassium channels

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We previously showed that exercise induces myocardial preconditioning in dogs and that early preconditioning is mediated through mitochondrial adenosine triphosphate-sensitive potassium channels. We decided to study if late preconditioning by exercise is also mediated through these channels. Forty-eight dogs, surgically instrumented and trained to run daily, were randomly assigned to 4 groups: (1) Nonpreconditioned dogs: under anesthesia, the coronary artery was occluded during 1 hour and then reperfused during 4.5 hours. (2) Late preconditioned dogs: similar to group 1, but the dogs run on the treadmill for 5 periods of 5 minutes each, 24 hours before the coronary occlusion. (3) Late preconditioned dogs plus 5-hydroxydecanoate (5HD): similar to group 2, but 5HD was administered before the coronary occlusion. (4) Nonpreconditioned dogs plus 5HD: similar to group 1, but 5HD was administered before the coronary occlusion. Infarct size (percent of the risk region) decreased by effect of e