Heart rate turbulence (HRT) denotes the baroreflex-mediated short-term oscillation of cardiac cycle lengths after spontaneous ventricular premature complexes. The physiological pattern of HRT consists of brief heart rate acceleration followed by more gradual heart rate deceleration before the heart rate returns to baseline. Physiological mechanisms of HRT are complex and require an intact interplay between both sympathetic and parasympathetic nervous systems. The strong and independent prognostic value of HRT in identifying postinfarction patients at high risk for death has been validated in six retrospective and three prospective studies together enrolling more than 8000 patients. This evidence qualifies HRT as a promising tool for selection of patients who might benefit from implantation of a cardioverter-defibrillator. Moreover, HRT predicts poor outcome in patients with heart failure. It is not only correlated with a patient’s clinical status, but also recovers when heart failure treatment, including beta-blockers, angiotensin-converting enzyme inhibitors, or cardiac resynchronization therapy, is effective. Therefore, HRT might also be used as a treatment target to guide pharmacotherapy of heart failure.