

Autonomic function tests as related to age and gender in normal man. Gautschy B, Weidmann P, Gnadinger MP. Klin Wochenschr. 1986 Jun 2;64(11):499-505.

To obtain a comparative assessment of 5 different clinical autonomic function tests as related to age and gender in normal man, the beat-to-beat variation during deep breathing (BBV), orthostatic 30/15 R-R ratio, heart rate response to the Valsalva manoeuvre, blood pressure response to sustained handgrip and orthostatic blood pressure response were evaluated in 120 healthy subjects (60 women and 60 men) aged 22 to 92 yrs. Each of the functional parameters depending on cardiac parasympathetic integrity, i.e. the beat-to-beat variation, orthostatic 30/15 R-R ratio and Valsalva ratio, decreased (P less than 0.0001) progressively with increasing age. The blood pressure response to handgrip, which depends on the efferent sympathetic function, was unchanged, while the orthostatic response of systolic blood pressure, which depends on the function of the entire reflex arch, was augmented only minimally (P less than 0.001) with increasing age. No significant dependence on gender was noted, although blood pressure responses to handgrip tended to be slightly greater in men than women. Beat-to-beat variation expressed as the standard deviation of the mean R-R interval correlated with mean heart rate (P less than 0.05), while the coefficient of variation and the expiration/inspiration ratio of beat-to-beat variation did not. The orthostatic 30/15 R-R ratio and beat-to-beat variation tended to be more closely interrelated ($r = 0.56$ to 0.63) than any of these tests with the Valsalva ratio ($r = 0.51$). The findings indicate that consideration of age may improve the diagnostic value of the orthostatic 30/15 R-R ratio.