Sleeping Heart Rate Variability Chart

Name: _____ **Age:** _____ **Gender:** _____

Contact information: _____ **Date:** _____

Average short-term HRV by age and gender

The data in the table below was gathered from a study by Voss et al. (2015) on 1,906 healthy individuals ranging from 25-74 years old using 5-minute ECG/EKG measurements.

Age range	Gender	rMSSD	SDNN	PNN50 (%)	LF/HF ratio
25-34	Male	39.7 ± 19.9	50.0 ± 20.9	20 ± 17	2.79 ± 3.20
	Female	900 ± 22.8	48.7 ± 19.0	23 ± 20	1.75 ± 1.78
35-44	Male	925 ± 16.5	44.6 ± 16.78	13 ± 15	3.62 ± 3.73
	Female	903 ± 18.5	45.4 ± 20.5	16 ± 17	2.21 ± 2.16
45-54	Male	923 ± 10.9	36.8 ± 14.6	6 ± 8	4.10 ± 3.48
	Female	903 ± 13.6	36.9 ± 13.8	8 ± 12	2.43 ± 1.99
55-64	Male	904 ± 11.1	32.8 ± 14.7	4 ± 7	4.17 ± 3.60
	Female	868 ± 11.9	30.6 ± 12.4	5 ± 8	2.87 ± 3.32
65-74	Male	906 ± 10.7	29.6 ± 13.2	4 ± 7	4.77 ± 5.34
	Female	873 ± 11.8	27.8 ± 11.8	4 ± 6	2.97 ± 3.18

Average HRV across sleep stages

The data in the table below is from a study by Kontos et. al (2020) involving children aged 3.1 to 13.2 years, analyzing average HRV in different sleep stages using measures like mean NN, SSDNN, rMSSD, and LF, HF, and LF/HF ratio. The study found no significant gender difference between boys and girls in the age groups.

Sleep stage	Mean NN	SDNN	rMSSD	LF	HF	LF/HF ratio
Pre-sleep	704.6 (9.4)	55.9 (3.7)	48.1 (4.6)	1440.8 (388.0)	944.6 (139.6)	1.83 (0.24)
SWS1	775.7 (10.3)	56.1 (4.1)	68.8 (5.5)	639.4 (94.7)	1768.5 (294.9)	0.68 (0.09)
SWS2	809.4 (11.5)	57.9 (4.0)	70.8 (5.9)	750.3 (91.5)	1974.8 (346.0)	0.69 (0.07
REM3	754.7 (11.1)	62.6 (4.3)	61.8 (5.9)	937.3 (170.8)	1483.1 (364.5)	1.16 (0.12)
SWS3	824.6 (13.0)	59.7 (4.5)	71.5 (6.7)	922.3 (148.9)	2059.8 (370.1)	1.06 (0.12)
REM2	772.9 (11.2)	71.66 (5.2)	74.0 (7.3)	1501.2 (243.2)	2299.4 (264.6)	1.82 (0.30)
REM1	763.7 (10.4)	68.2 (4.3)	67.1 (5.9)	1316.7 (235.4)	2020.5 (377.1)	1.91 (0.26)

Average HRV for healthy and post-myocardial infarction patients

The data in the table below is from a study by Vanoli et. al (1995) involving patients with no evidence of coronary artery disease and patients with recent myocardial infarction. The study only measured HRV in terms of low- to high-frequency ratio.

Sleep stage	Healthy individuals (LF/HF ratio)	Post-myocardial infarction patients (LF/HF ratio)
Awake	4.0	2.4
Non-REM sleep	1.22	5.11
REM Sleep	3.0	8.9

Table for recording HRV

Indicate which unit of measure you are using, as these units may vary for each kind of device or test.

Date	HRV (ms)	Notes

Interpretation

You can compare your gathered data to the tables displayed above. However, take note that setting a standardized average is difficult as HRV varies per individual and is affected by several factors. In general, however, these are what you should remember:

- A higher HRV indicates a more relaxed and adaptable heart.
- A lower HRV suggests a more stressed and less adaptable heart.

Kontos, A., Baumert, M., Lushington, K., Kennedy, D., Kohler, M., Cicua-Navarro, D., Pamula, Y., & Martin, J. (2020). The inconsistent nature of heart rate variability during sleep in normal children and adolescents. Frontiers in Cardiovascular Medicine, 7(19). https://doi.org/10.3389/fcvm.2020.00019

Vanoli, E., Adamson, P. B., Ba-Lin, Pinna, G. D., Lazzara, R., & Orr, W. C. (1995). Heart rate variability during specific sleep stages. *Circulation*, *91*(7), 1918–1922. https://doi.org/10.1161/01.cir.91.7.1918

Voss, A., Schroeder, R., Heitmann, A., Peters, A., & Perz, S. (2015). Short-Term heart rate variability—influence of gender and age in healthy subjects. PLOS ONE, 10(3), e0118308. https://doi.org/10.1371/journal.pone.0118308