# Chapter 42 Fatigue and Stress☆

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# References

1.[Sharpe M, Wilks D. Fatigue.](file:///D%3A%5C%5Cwomat-filecopy%5C%5CEd-Reference%5C%5C0002627058.html%22%20%5Cl%20%22rfLink1rf0010) *[BMJ](file:///D%3A%5C%5Cwomat-filecopy%5C%5CEd-Reference%5C%5C0002627058.html%22%20%5Cl%20%22rfLink1rf0010)*[. 2002;325(7362):480–483.](file:///D%3A%5C%5Cwomat-filecopy%5C%5CEd-Reference%5C%5C0002627058.html%22%20%5Cl%20%22rfLink1rf0010)

2.[Muscio B. Is a fatigue test possible?](file:///D%3A%5C%5Cwomat-filecopy%5C%5CEd-Reference%5C%5C0002627058.html%22%20%5Cl%20%22rfLink2rf0015) *[Br J Psychol](file:///D%3A%5C%5Cwomat-filecopy%5C%5CEd-Reference%5C%5C0002627058.html%22%20%5Cl%20%22rfLink2rf0015)*[. 1921;12:31–46.](file:///D%3A%5C%5Cwomat-filecopy%5C%5CEd-Reference%5C%5C0002627058.html%22%20%5Cl%20%22rfLink2rf0015)

3.[Hjollund NH, Andersen JH, Bech P. Assessment of fatigue in chronic disease: a bibliographic study of fatigue measurement scales.](file:///D%3A%5C%5Cwomat-filecopy%5C%5CEd-Reference%5C%5C0002627058.html%22%20%5Cl%20%22rfLink3rf0020) *[Health Qual Life Outcomes](file:///D%3A%5C%5Cwomat-filecopy%5C%5CEd-Reference%5C%5C0002627058.html%22%20%5Cl%20%22rfLink3rf0020)*[. 2007;5:12.](file:///D%3A%5C%5Cwomat-filecopy%5C%5CEd-Reference%5C%5C0002627058.html%22%20%5Cl%20%22rfLink3rf0020)

4.[Barsevick AM, Cleeland CS, Manning DC, et al. ASCPRO recommendations for the assessment of fatigue as an outcome in clinical trials.](file:///D%3A%5C%5Cwomat-filecopy%5C%5CEd-Reference%5C%5C0002627058.html%22%20%5Cl%20%22rfLink4rf0025) *[J Pain Symptom Manage](file:///D%3A%5C%5Cwomat-filecopy%5C%5CEd-Reference%5C%5C0002627058.html%22%20%5Cl%20%22rfLink4rf0025)*[. 2010;39(6):1086–1099.](file:///D%3A%5C%5Cwomat-filecopy%5C%5CEd-Reference%5C%5C0002627058.html%22%20%5Cl%20%22rfLink4rf0025)

5.[Tak LM, Riese H, de Bock GH, Manoharan A, Kok IC, Rosmalen JG. As good as it gets? A meta-analysis and systematic review of methodological quality of heart rate variability studies in functional somatic disorders. *Biol Psychol*. 2009;82(2):101–110.](file:///D%3A%5Cwomat-filecopy%5CEd-Reference%5C0002627058.html#rfLink5rf0030)

6.[Wessely S. Old wine in new bottles: neurasthenia and 'ME'.](file:///D%3A%5C%5Cwomat-filecopy%5C%5CEd-Reference%5C%5C0002627058.html%22%20%5Cl%20%22rfLink6rf0035) *[Psychol Med](file:///D%3A%5C%5Cwomat-filecopy%5C%5CEd-Reference%5C%5C0002627058.html%22%20%5Cl%20%22rfLink6rf0035)*[. 1990;20(1):35–53.](file:///D%3A%5C%5Cwomat-filecopy%5C%5CEd-Reference%5C%5C0002627058.html%22%20%5Cl%20%22rfLink6rf0035)

7.[Afari N, Ahumada SM, Wright LJ, et al. Psychological trauma and functional somatic syndromes: a systematic review and meta-analysis. *Psychosom Med*. 2014;76(1):2–11.](file:///D%3A%5Cwomat-filecopy%5CEd-Reference%5C0002627058.html#rfLink7rf0040)

8.[Skapinakis P, Lewis G, Mavreas V. Unexplained fatigue syndromes in a multinational primary care sample: specificity of definition and prevalence and distinctiveness from depression and generalized anxiety.](file:///D%3A%5C%5Cwomat-filecopy%5C%5CEd-Reference%5C%5C0002627058.html%22%20%5Cl%20%22rfLink8rf0045) *[Am J Psychiatry](file:///D%3A%5C%5Cwomat-filecopy%5C%5CEd-Reference%5C%5C0002627058.html%22%20%5Cl%20%22rfLink8rf0045)*[. 2003;160(4):785–787.](file:///D%3A%5C%5Cwomat-filecopy%5C%5CEd-Reference%5C%5C0002627058.html%22%20%5Cl%20%22rfLink8rf0045)

9.[American Psychiatric Association.](file:///D%3A%5C%5Cwomat-filecopy%5C%5CEd-Reference%5C%5C0002627058.html%22%20%5Cl%20%22rfLink9rf0050) *[Diagnostic and Statistical Manual of Mental Disorders.](file:///D%3A%5C%5Cwomat-filecopy%5C%5CEd-Reference%5C%5C0002627058.html%22%20%5Cl%20%22rfLink9rf0050)* [4th ed. Washington, DC: American Psychiatric Association; 1994.](file:///D%3A%5C%5Cwomat-filecopy%5C%5CEd-Reference%5C%5C0002627058.html%22%20%5Cl%20%22rfLink9rf0050)

10.[Appels A. Depression and coronary heart disease: observations and questions.](file:///D%3A%5C%5Cwomat-filecopy%5C%5CEd-Reference%5C%5C0002627058.html%22%20%5Cl%20%22rfLink10rf0055) *[J Psychosom Res](file:///D%3A%5C%5Cwomat-filecopy%5C%5CEd-Reference%5C%5C0002627058.html%22%20%5Cl%20%22rfLink10rf0055)*[. 1997;43(5):443–452.](file:///D%3A%5C%5Cwomat-filecopy%5C%5CEd-Reference%5C%5C0002627058.html%22%20%5Cl%20%22rfLink10rf0055)

11.[Kop WJ. Somatic depressive symptoms, vital exhaustion, and fatigue: divergent validity of overlapping constructs.](file:///D%3A%5C%5Cwomat-filecopy%5C%5CEd-Reference%5C%5C0002627058.html%22%20%5Cl%20%22rfLink11rf0060) *[Psychosom Med](file:///D%3A%5C%5Cwomat-filecopy%5C%5CEd-Reference%5C%5C0002627058.html%22%20%5Cl%20%22rfLink11rf0060)*[. 2012;74(5):442–445.](file:///D%3A%5C%5Cwomat-filecopy%5C%5CEd-Reference%5C%5C0002627058.html%22%20%5Cl%20%22rfLink11rf0060)

12.[Siegrist J. Contributions of sociology to the prediction of heart disease and their implications for public health.](file:///D%3A%5C%5Cwomat-filecopy%5C%5CEd-Reference%5C%5C0002627058.html%22%20%5Cl%20%22rfLink12rf0065) *[Eur J Publ Health](file:///D%3A%5C%5Cwomat-filecopy%5C%5CEd-Reference%5C%5C0002627058.html%22%20%5Cl%20%22rfLink12rf0065)*[. 1991;1(1):10–29.](file:///D%3A%5C%5Cwomat-filecopy%5C%5CEd-Reference%5C%5C0002627058.html%22%20%5Cl%20%22rfLink12rf0065)

13.[de Morree HM, Szabo BM, Rutten GJ, Kop WJ. Central nervous system involvement in the autonomic responses to psychological distress.](file:///D%3A%5C%5Cwomat-filecopy%5C%5CEd-Reference%5C%5C0002627058.html%22%20%5Cl%20%22rfLink13rf0070) *[Neth Heart J](file:///D%3A%5C%5Cwomat-filecopy%5C%5CEd-Reference%5C%5C0002627058.html%22%20%5Cl%20%22rfLink13rf0070)*[. 2013;21(2):64–69.](file:///D%3A%5C%5Cwomat-filecopy%5C%5CEd-Reference%5C%5C0002627058.html%22%20%5Cl%20%22rfLink13rf0070)

14.[Harrington ME. Neurobiological studies of fatigue.](file:///D%3A%5C%5Cwomat-filecopy%5C%5CEd-Reference%5C%5C0002627058.html%22%20%5Cl%20%22rfLink14rf0075) *[Prog Neurobiol](file:///D%3A%5C%5Cwomat-filecopy%5C%5CEd-Reference%5C%5C0002627058.html%22%20%5Cl%20%22rfLink14rf0075)*[. 2012;99(2):93–105.](file:///D%3A%5C%5Cwomat-filecopy%5C%5CEd-Reference%5C%5C0002627058.html%22%20%5Cl%20%22rfLink14rf0075)

15.[Klimas NG, Broderick G, Fletcher MA. Biomarkers for chronic fatigue.](file:///D%3A%5C%5Cwomat-filecopy%5C%5CEd-Reference%5C%5C0002627058.html%22%20%5Cl%20%22rfLink15rf0080) *[Brain Behav Immun](file:///D%3A%5C%5Cwomat-filecopy%5C%5CEd-Reference%5C%5C0002627058.html%22%20%5Cl%20%22rfLink15rf0080)*[. 2012;26(8):1202–1210.](file:///D%3A%5C%5Cwomat-filecopy%5C%5CEd-Reference%5C%5C0002627058.html%22%20%5Cl%20%22rfLink15rf0080)

16.[Tanaka M, Mizuno K, Yamaguti K, et al. Autonomic nervous alterations associated with daily level of fatigue. *Behav Brain Funct*. 2011;7:46.](file:///D%3A%5Cwomat-filecopy%5CEd-Reference%5C0002627058.html#rfLink16rf0085)

17.[Wolfram M, Bellingrath S, Feuerhahn N, Kudielka BM. Emotional exhaustion and overcommitment to work are differentially associated with hypothalamus-pituitary-adrenal (HPA) axis responses to a low-dose ACTH1-24 (Synacthen) and dexamethasone-CRH test in healthy school teachers.](file:///D%3A%5C%5Cwomat-filecopy%5C%5CEd-Reference%5C%5C0002627058.html%22%20%5Cl%20%22rfLink17rf0090) *[Stress](file:///D%3A%5C%5Cwomat-filecopy%5C%5CEd-Reference%5C%5C0002627058.html%22%20%5Cl%20%22rfLink17rf0090)*[. 2013;16(1):54–64.](file:///D%3A%5C%5Cwomat-filecopy%5C%5CEd-Reference%5C%5C0002627058.html%22%20%5Cl%20%22rfLink17rf0090)

18.[Powell DJ, Liossi C, Moss-Morris R, Schlotz W. Unstimulated cortisol secretory activity in everyday life and its relationship with fatigue and chronic fatigue syndrome: a systematic review and subset meta-analysis. *Psychoneuroendocrinology*. 2013;38(11):2405–2422.](file:///D%3A%5Cwomat-filecopy%5CEd-Reference%5C0002627058.html#rfLink18rf0095)

19.[Chrousos GP. The hypothalamic-pituitary-adrenal axis and immune-mediated inflammation.](file:///D%3A%5C%5Cwomat-filecopy%5C%5CEd-Reference%5C%5C0002627058.html%22%20%5Cl%20%22rfLink19rf0100) *[N Engl J Med](file:///D%3A%5C%5Cwomat-filecopy%5C%5CEd-Reference%5C%5C0002627058.html%22%20%5Cl%20%22rfLink19rf0100)*[. 1995;332 (20):1351–1362.](file:///D%3A%5C%5Cwomat-filecopy%5C%5CEd-Reference%5C%5C0002627058.html%22%20%5Cl%20%22rfLink19rf0100)

20.[Kop WJ. The integration of cardiovascular behavioral medicine and psychoneuroimmunology: new developments based on converging research fields.](file:///D%3A%5C%5Cwomat-filecopy%5C%5CEd-Reference%5C%5C0002627058.html%22%20%5Cl%20%22rfLink20rf0105) *[Brain Behav Immun](file:///D%3A%5C%5Cwomat-filecopy%5C%5CEd-Reference%5C%5C0002627058.html%22%20%5Cl%20%22rfLink20rf0105)*[. 2003;17(4):233–237.](file:///D%3A%5C%5Cwomat-filecopy%5C%5CEd-Reference%5C%5C0002627058.html%22%20%5Cl%20%22rfLink20rf0105)

21.[Maslach C, Jackson SE.](file:///D%3A%5C%5Cwomat-filecopy%5C%5CEd-Reference%5C%5C0002627058.html%22%20%5Cl%20%22rfLink21rf0110) *[Maslach Burnout Inventory.](file:///D%3A%5C%5Cwomat-filecopy%5C%5CEd-Reference%5C%5C0002627058.html%22%20%5Cl%20%22rfLink21rf0110)* [Palo Alto, CA: Consulting Psychologists Press; 1986.](file:///D%3A%5C%5Cwomat-filecopy%5C%5CEd-Reference%5C%5C0002627058.html%22%20%5Cl%20%22rfLink21rf0110)

22.[Leone SS, Wessely S, Huibers MJ, Knottnerus JA, Kant I. Two sides of the same coin? On the history and phenomenology of chronic fatigue and burnout.](file:///D%3A%5C%5Cwomat-filecopy%5C%5CEd-Reference%5C%5C0002627058.html%22%20%5Cl%20%22rfLink22rf0115) *[Psychol Health](file:///D%3A%5C%5Cwomat-filecopy%5C%5CEd-Reference%5C%5C0002627058.html%22%20%5Cl%20%22rfLink22rf0115)*[. 2011;26(4):449–464.](file:///D%3A%5C%5Cwomat-filecopy%5C%5CEd-Reference%5C%5C0002627058.html%22%20%5Cl%20%22rfLink22rf0115)

23.[Danhof-Pont MB, van Veen T, Zitman FG. Biomarkers in burnout: a systematic review.](file:///D%3A%5C%5Cwomat-filecopy%5C%5CEd-Reference%5C%5C0002627058.html%22%20%5Cl%20%22rfLink23rf0120) *[J Psychosom Res](file:///D%3A%5C%5Cwomat-filecopy%5C%5CEd-Reference%5C%5C0002627058.html%22%20%5Cl%20%22rfLink23rf0120)*[. 2011;70 (6):505–524.](file:///D%3A%5C%5Cwomat-filecopy%5C%5CEd-Reference%5C%5C0002627058.html%22%20%5Cl%20%22rfLink23rf0120)

24.[Wagner LI, Cella D. Fatigue and cancer: causes, prevalence and treatment approaches.](file:///D%3A%5C%5Cwomat-filecopy%5C%5CEd-Reference%5C%5C0002627058.html%22%20%5Cl%20%22rfLink24rf0125) *[Br J Cancer](file:///D%3A%5C%5Cwomat-filecopy%5C%5CEd-Reference%5C%5C0002627058.html%22%20%5Cl%20%22rfLink24rf0125)*[. 2004;91 (5):822–828.](file:///D%3A%5C%5Cwomat-filecopy%5C%5CEd-Reference%5C%5C0002627058.html%22%20%5Cl%20%22rfLink24rf0125)

25.[Bower JE, Lamkin DM. Inflammation and cancer-related fatigue: mechanisms, contributing factors, and treatment implications.](file:///D%3A%5C%5Cwomat-filecopy%5C%5CEd-Reference%5C%5C0002627058.html%22%20%5Cl%20%22rfLink25rf0130) *[Brain Behav Immun](file:///D%3A%5C%5Cwomat-filecopy%5C%5CEd-Reference%5C%5C0002627058.html%22%20%5Cl%20%22rfLink25rf0130)*[. 2013;30(Suppl):S48–S57.](file:///D%3A%5C%5Cwomat-filecopy%5C%5CEd-Reference%5C%5C0002627058.html%22%20%5Cl%20%22rfLink25rf0130)

26.[Appels A. Mental precursors of myocardial infarction.](file:///D%3A%5C%5Cwomat-filecopy%5C%5CEd-Reference%5C%5C0002627058.html%22%20%5Cl%20%22rfLink26rf0135) *[Br J Psychiatry](file:///D%3A%5C%5Cwomat-filecopy%5C%5CEd-Reference%5C%5C0002627058.html%22%20%5Cl%20%22rfLink26rf0135)*[. 1990;156:465–471.](file:///D%3A%5C%5Cwomat-filecopy%5C%5CEd-Reference%5C%5C0002627058.html%22%20%5Cl%20%22rfLink26rf0135)

27.[Wu S, Barugh A, Macleod M, Mead G. Psychological associations of poststroke fatigue: a systematic review and meta-analysis. *Stroke*. 2014;45(6):1778–1783.](file:///D%3A%5Cwomat-filecopy%5CEd-Reference%5C0002627058.html#rfLink27rf0140)

28.[Krupp LB. Fatigue in multiple sclerosis: definition, pathophysiology and treatment.](file:///D%3A%5C%5Cwomat-filecopy%5C%5CEd-Reference%5C%5C0002627058.html%22%20%5Cl%20%22rfLink28rf0145) *[CNS Drugs](file:///D%3A%5C%5Cwomat-filecopy%5C%5CEd-Reference%5C%5C0002627058.html%22%20%5Cl%20%22rfLink28rf0145)*[. 2003;17 (4):225–234.](file:///D%3A%5C%5Cwomat-filecopy%5C%5CEd-Reference%5C%5C0002627058.html%22%20%5Cl%20%22rfLink28rf0145)

29.[Berkman LF, Blumenthal J, Burg M, et al. Effects of treating depression and low perceived social support on clinical events after myocardial infarction: the enhancing recovery in coronary heart disease patients (ENRICHD) randomized trial.](file:///D%3A%5C%5Cwomat-filecopy%5C%5CEd-Reference%5C%5C0002627058.html%22%20%5Cl%20%22rfLink29rf0150) *[JAMA](file:///D%3A%5C%5Cwomat-filecopy%5C%5CEd-Reference%5C%5C0002627058.html%22%20%5Cl%20%22rfLink29rf0150)*[. 2003;289(23):3106–3116.](file:///D%3A%5C%5Cwomat-filecopy%5C%5CEd-Reference%5C%5C0002627058.html%22%20%5Cl%20%22rfLink29rf0150)

30.[Appels A, Bar F, van der Pol G, et al. Effects of treating exhaustion in angioplasty patients on new coronary events: results of the randomized exhaustion intervention trial (EXIT).](file:///D%3A%5C%5Cwomat-filecopy%5C%5CEd-Reference%5C%5C0002627058.html%22%20%5Cl%20%22rfLink30rf0155) *[Psychosom Med](file:///D%3A%5C%5Cwomat-filecopy%5C%5CEd-Reference%5C%5C0002627058.html%22%20%5Cl%20%22rfLink30rf0155)*[. 2005;67(2):217–223.](file:///D%3A%5C%5Cwomat-filecopy%5C%5CEd-Reference%5C%5C0002627058.html%22%20%5Cl%20%22rfLink30rf0155)

31.[Rutledge T, Redwine LS, Linke SE, Mills PJ. A meta-analysis of mental health treatments and cardiac rehabilitation for improving clinical outcomes and depression among patients with coronary heart disease.](file:///D%3A%5C%5Cwomat-filecopy%5C%5CEd-Reference%5C%5C0002627058.html%22%20%5Cl%20%22rfLink31rf0160) *[Psychosom Med](file:///D%3A%5C%5Cwomat-filecopy%5C%5CEd-Reference%5C%5C0002627058.html%22%20%5Cl%20%22rfLink31rf0160)*[. 2013;75(4):335–349.](file:///D%3A%5C%5Cwomat-filecopy%5C%5CEd-Reference%5C%5C0002627058.html%22%20%5Cl%20%22rfLink31rf0160)