

## Are you too B.U.S.Y. – Brain-Heart health

<https://www.youtube.com/watch?v=RW2iwJ05-5o&feature=youtu.be>

Currently, Hypertension Society guidelines do not acknowledge emotional stress as probable cause for hypertension. The odds that a busy stressful life and taxing environmental factors might increase hypervigilance or defensiveness and disturb blood pressure control by the brain, are thus largely ignored.<sup>1-21</sup> Stress responses and behavioural factors are instrumental in coping with a taxing environment.<sup>1-23</sup> Indeed, evidence-based research showed that we are working longer hours<sup>24</sup> with fewer real-life supportive relationships.<sup>1-21,25-27</sup> A taxing environment or emotional distress also relates to increased preferences for addictive substances, highly palatable foods, drug/food craving and intake.<sup>28</sup> Changed dietary patterns may thus not be aligned with the intake of essential food substances necessary to synthesize chemical substances in the brain. These essential food substances are needed to improve physical and emotional well-being.<sup>29-33</sup> Being too busy and having less time to reflect, will impair effective coping and to recognize healthy boundaries.<sup>34-40</sup> Ultimately, ineffective coping, less tolerance and more conflict may exhaust our physical and emotional resources.<sup>35-40</sup> Indeed, chronic neural or emotional fatigue was related to poorer health as well as stroke risk.<sup>3</sup>

Therefore, chronic defensiveness and ineffective coping in an over demanding life needs to be considered as probable cause for cardiometabolic diseases.<sup>1-21</sup> Everyone needs to reflect on their health and on how to prioritize in a too busy and conflict-ridden environment,<sup>1</sup> as a positive outlook on life will increase effective coping and give us hope.<sup>35-41</sup>

### REFERENCES

1. Malan L, Hamer M, Frasur-Smith N, Steyn HS, Malan NT. Cohort profile: Sympathetic activity and Ambulatory Blood Pressure in Africans (SABPA) Prospective Cohort Study. *Int J Epidem* 2015;6:1814-22.
2. Malan L, Hamer M, von Känel R, Schlaich MP, Reimann M, Frasur-Smith-N, Lambert GW, Vilser W, Harvey B, Steyn HS, Malan NT. Chronic depression symptoms and salivary NOx associated with retinal vascular dysregulation: the SABPA study. *Nitric Oxide* 2016; (55-56):10-17.
3. Scheepers JD, Malan L, von Känel R, De Kock A, Cockeran M, Malan NT. Hypercoagulation and hyperkinetic blood pressure indicative of physiological loss-of-control despite behavioural control in Africans: The SABPA study. *Blood pressure*, in press.
4. Malan L, Hamer M, Frasur-Smith N, Steyn HS, Malan NT. Cohort profile: Sympathetic activity and Ambulatory Blood Pressure in Africans (SABPA) Prospective Cohort Study. *Int J Epidem* 2015;6:1814-22.
5. De Kock A, Malan L, Hamer M, Cockeran M, Malan NT. Defensive coping and renovascular disease risk – Adrenal fatigue in a cohort of Africans and Caucasians: the SABPA study. *Phys Behav* 2015; 147(8):213-219
6. Scheepers JD, Malan L, De Kock A, Malan NT, Cockeran M, Von Känel R. Ethnic disparity in defensive coping endothelial responses: The SABPA study. *Phys Behav* 2015; 147(8):306-312.
7. Venter PC, Malan L, Schutte AE. Psychosocial Stress but not Hypertensive status associated with Angiogenesis in Africans. *Blood Pressure* 2014, 23(5):307-14
8. Malan NT, Stalder T, Schlaich MP, Lambert GW, Hamer M, Schutte AE, Huisman HW, Schutte R, Smith W, Mels CM, Van Rooyen JM, Malan L. Chronic distress and acute vascular stress responses associated with ambulatory blood pressure in low testosterone African men: The SABPA study. *J Hum Hypertens*, 2014, 28:393–398
9. Willers M, Potgieter JC, Khumalo IP, Malan L, Mentz PJ (Kobus), Ellis S. Coping and Cultural Context: Implications for Psychological Health and Well-Being, pp251-272. In: *Well-Being Research in South Africa Series: Cross-Cultural Advancements in Positive Psychology*. Wissing MP (Ed.). 2013. Vol. 4(XIII). ISBN 978-94-007-6368-5. 639p.
10. Malan L, Hamer M, Schlaich MP, Lambert GW, Ziemssen T, Reimann M, Steyn HS, Schutte R, Smith W, Van Rooyen JM, Fourie CMT, Malan NT. Defensive active coping facilitates chronic hyperglycemia and endothelial dysfunction in African men: the SABPA study. *Int J Cardiol*, 2013, 168:999-1005.
11. Mashele N, Malan L, Van Rooyen JM, Harvey BH, Potgieter JC, Hamer M. Depression, Cardiometabolic function and Left Ventricular Hypertrophy in African Men and Women: The SABPA Study. *J Clin Exp Hypertens*, 2013, 35(3):213-219

12. Harvey BH, Van der Westhuizen FH, Hamer M, Louw R, Malan L. Metabolic and glutathione redox markers associated with brain-derived neurotrophic factor in depressed African men and women. Evidence for counter-regulation? *Neuropsychobiology*, 2013, 67:33-40
13. De Kock A, Malan L, Hamer M, Malan NT. Defensive coping and subclinical vascular disease risk - associations with autonomic exhaustion in Africans and Caucasians: the SABPA study. *Atherosclerosis*, 2012; 225:438-443.
14. Hamer M, Frasura-Smith N, Lespérance F, Harvey BH, Malan NT, Malan L. Depressive symptoms and 24h blood pressure in Africans: The SABPA study. *Int J Hypertens* 2012, 2012:426803:1-6.
15. Malan L, Hamer M, Schlaich MP, Lambert GL, Harvey BH, Reimann M, Ziemssen T, De Geus JCN, Huisman HW, Van Rooyen JM, Schutte R, Schutte AE, Fourie CMT, NT Malan. Facilitated defensive coping, silent ischaemia and ECG left-ventricular hypertrophy: the SABPA study, *J Hypertens*, 2012; 30(3): 543-550.
16. Malan L, Hamer M, Reimann M, Huisman HW, Van Rooyen JM, Schutte R, Schutte AE, Potgieter JC, Wissing MP, Seedat YK, Malan NT. Defensive coping, urbanization and neuroendocrine function in black Africans: the THUSA study. *Psychophysiology* 2012; 49(6):807-814.
17. Hamer M & Malan L. Psychophysiological risk markers of cardiovascular disease. In: *Psychophysiological Biomarkers of Health. Special Edition: Neurosci Biobehav Rev* 2010;35:76-83.
18. Du Plessis A, Malan L, Malan NT. Coping and the Metabolic syndrome in urban black South African men: the SABPA study. *Cardiovasc J Afr* 2010; 21(5):268-73.
19. Malan L, Malan NT, Wissing MP, Seedat YK. Coping with urbanization: A Cardiometabolic Risk? *Biol Psych* 2008; 79:323-328.
20. Malan L, Schutte AE, Malan NT; Wissing MP, Vorster HH, Steyn HS, van Rooyen JM, Huisman HW. Coping mechanisms, perception of health and cardiovascular dysfunction in Africans. *Int J Psychophys* 2006; 61(2):158-166.
21. Malan L, Schutte AE, Malan NT; Wissing MP, Vorster HH, Steyn HS, van Rooyen JM, Huisman HW. Specific coping strategies of Africans during urbanization: comparing cardiovascular responses and perception of health data. *Biol Psych* 2006; 72(3):305-310.
22. Hamer M, Von Känel R, Reimann, Malan NT, Schutte AE, Huisman HW, Malan L. Progression of cardiovascular risk factors in Black Africans: 3 year follow up of the SABPA cohort study. *Atherosclerosis* 2015; 238(1):52-4.
23. von Känel R, Hamer M, Malan NT, Malan L. Comparison of telomere length in Black and White teachers from South Africa: The SABPA study. *Psychosom Med* 2015; 77:26Y32
24. Kivimäki M, Jokela M, Nyberg ST, Singh-Manoux A, Fransson E, Alfredsson L et al. for the IPD-Work Consortium. Long working hours and risk of coronary heart disease and stroke: a systematic review and meta-analysis of published and unpublished data for 603 838 individuals. *Lancet* 2015; 386: 1739-4.
25. Ozbay F, Johnson DC, Dimoulas E, Morgan CA, Charney D, Southwick S. Social Support and Resilience to Stress: From Neurobiology to Clinical Practice. *Psychiatry (Edgmont)* 2007;4(5):35-40.
26. Holahan CJ & Moos RH. Social Support and Psychological Distress: A Longitudinal Analysis. *J Abnorm Psych* 1981; 90(4):365-370.
27. Matthews RA, Winkel DE, Wayne JH. A longitudinal examination of role overload and work-family conflict: The mediating role of interdomain transitions. *J Organ Behav* 2014; 35:72-91.
28. Tyrka AR, Walters OC, Price LH, Anderson GM, Carpenter LL. Altered response to neuroendocrine challenge linked to indices of the metabolic syndrome in healthy adults. *Horm Metab Res* 2012;44:543-49.
29. Oosthuizen W, Malan L, Scheepers JD, Cockeran M, Malan NT. The defence response and alcohol intake: a coronary artery disease risk? *J Clin Exp Hypertens* 2016;38(6):526-32.
30. Möller M, Malan L, Magnusson M, Harvey BH, Mels CMC; Malan NT. Defensive coping and essential amino acid markers as possible predictors for structural vascular disease in an African and Caucasian male cohort: The SABPA study. Accepted for publication.
31. Sarris J, Logan AC, Akbaraly TN, Amminger GP, Balanzá-Martínez V, Freeman MP et al. Nutritional medicine as mainstream in psychiatry. *Lancet Psychiatry* 2015; 2(3):271.
32. Van Deventer CA, Lindeque JZ, Jansen van Rensburg PJ, Malan L, Van der Westhuizen FH, Louw R. Use of metabolomics to elucidate the metabolic perturbation associated with hypertension in a black South African male cohort: The SABPA Study. *J Am Soc Hypertens* 2015; 9(2):104-14.
33. Lambert G, Johansson M, Agren H Friberg P. Evidence of reduced central nervous system norepinephrine and dopamine turnover in patients with depressive illness. *Arch Gen Psychiatry* 2000;57:787-93.
34. Ammons SK. Work-family boundary strategies: Stability and alignment between preferred and enacted boundaries. *J Voc Beh.* 2013; 82(1):49-58.
35. Cloud H, Townsend J. Boundaries: When to say yes and how to say no. *Zondervan* 2011; ASIN: B000FC2K9W. 314p.
36. Koenig HG. Religion, Spirituality, and Health: The Research and Clinical Implications," *ISRN Psychiatry*, 2012; 2012:278730.
37. Wood AM, Maltby J, Gillett R, Linley PA, Joseph S. The role of gratitude in the development of social support, stress, and depression: two longitudinal studies. *J Res Pers* 2008; 42(4):854-871.
38. Malan NT, Brits JS, Eloff FC, Huisman HW, Kruger A, Laubscher PJ et al. The influence of acculturation on endocrine reactivity during acute stress in urban black males. *Stress Med* 1996; 12:55-63.
39. Malan NT, Van der Merwe JS, Eloff FC, Huisman HW, Kruger A, Eloff FC et al. A comparison of cardiovascular reactivity of rural Blacks, Urban Blacks and Whites. *Stress Med* 1992; 8:214-46.
40. Bourdillon MFC. Christianity and wealth in rural communities in Zimbabwe. *Zambezia* 1983; 11(1):38-53.
41. Silberberg D, Anand NP, Michels K, Kalaria RN. Brain and other nervous system disorders across the lifespan - global challenges and opportunities. *Nature* 2015; 527(7578):S151-4.