



Performing under Pressure; on the Biology, Psychology and Sociology of stress in high-performance professions

I - INTRODUCTION



Course: Performing under Pressure

- ▶ Faculty of Sports Studies

- ▶ Schedule

- ▶ ***Tuesdays (09:00-10:40)***

- ▶ Lecturer

- ▶ David William Mac Gillavry

- ▶ 404280@immuni.cz

- ▶ Office hours – upon request

Who am I?

- ▶ Religious studies (UvA / MUNI)
 - ▶ Cognitive science of religion
 - ▶ Western esotericism
 - ▶ Secrecy dynamics
- ▶ Military Management (UNOB)
 - ▶ Stress & PTSD
 - ▶ Leadership
 - ▶ Nutrition
 - ▶ Social conformity & in-group dynamics



My current research University of Defence

- ▶ Stress resilience under extreme conditions
- ▶ Leadership & combat leadership
- ▶ In-group dynamics & moral behaviour under extreme conditions
- ▶ Preparation for high-stress experiences



Course specifics

- ▶ The course aims to provide a comprehensive introduction into stress-science with a focus on high-performance professions. The course will investigate the effects of stress on the individual as well as the collective and interactions within said collective. After the course students will have a basic understanding of the function of stress under extreme conditions, how to utilise it effectively, how to manage it and how to recognise when it becomes overwhelming in both oneself and others

Syllabus

Lecture	Topic	Seminar
1	Introduction to the course and stress science	Observable measures & perception of stress
2	On the physiology of stress	
3	On the psychology of stress	
4	On the social psychology of stress	
5	Stress related disorders and what they can teach us about performance	Stress management
6	Stress management	
7	Performance under stress	Performance enhancement under pressure
8	Team-performance under stress	
9	Nutrition, stress and performance	Lifestyle, stress and performance
10	Relax, on the importance rest	

Course requirements

- ▶ Be here, be active & be prepared

- ▶ **A term paper**

- ▶ Min 8 pages (2.0 spacing)

- ▶ Proper bibliography and referencing (preferably APA)

- ▶ Subject of your choosing as long as it relates to stress and peak performance

The point of this course is **NOT** [sic!] to eliminate stress! If you are in a situation that requires a functional, focused and quick response, you had better get stressed like any other mammal!

- ▶ Peak performance and physical exercise in general depend on the stress response
 - ▶ Explosive physiological output
 - ▶ Heightened task related focus
- ▶ Stress management and optimisation

How we differ from most other animals

- ▶ Anticipation
 - ▶ Hyperactive Agency Detection
 - ▶ Theory of Mind
- ▶ Duration
- ▶ Projection



Bering, J. M. (2002). The existential theory of mind. *Review of General Psychology*, 6(1), 3–24. <https://doi.org/10.1037//1089-2680.6.1.3>
Mahy, C. E. V., Moses, L. J., & Pfeifer, J. H. (2014). How and where: Theory-of-mind in the brain. *Developmental Cognitive Neuroscience*, 9, 68–81. <https://doi.org/10.1016/j.dcn.2014.01.002>
Valdesolo, P., & Graham, J. (2014). Awe, Uncertainty, and Agency Detection. <https://doi.org/10.1177/0956797613501884>

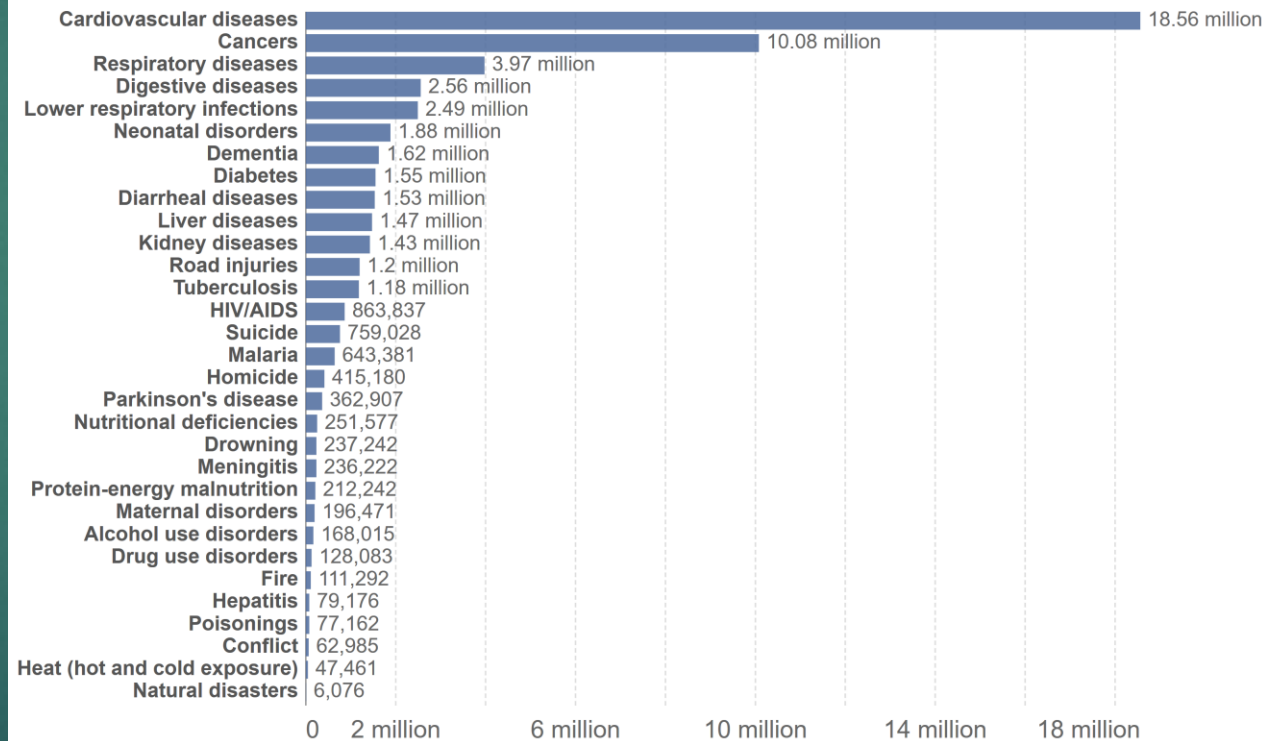
The "luxury" of stress related illnesses

▶ Throughout history people died of parasites, infectious diseases, violence, hunger, giving birth, etc.

▶ The major killers today:

Number of deaths by cause, World, 2019

Our World
in Data

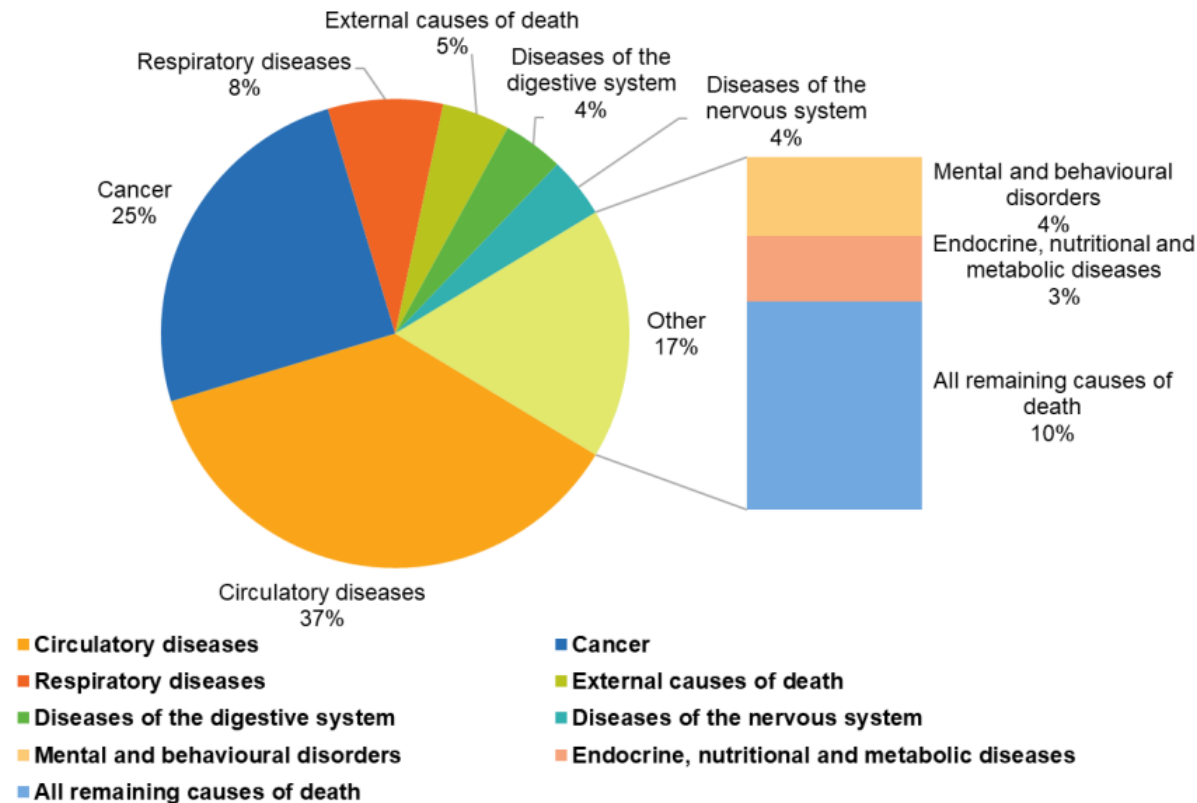


Source: IHME, Global Burden of Disease (2019)

OurWorldInData.org/causes-of-death • CC BY

And in the EU (where few die of traditional infectious diseases)

Causes of death by frequency, EU, 2017
(%)



Source: Eurostat (online data code: hlth_cd_aro)

What happened here?





Stress is a matter of perception but
its based a shared evolutionary
framework and physiology

Perceived stressors and reality

- ▶ We have a strong tendency to stress over perceived inadequacies rather than real ones
 - ▶ Beauty ideals
 - ▶ Happiness & success

Frank, R. H. (2016). *Success and luck: good fortune and the myth of meritocracy*. Princeton, Oxford: Princeton University Press.

Lin, R., & Utz, S. (2015). The emotional responses of browsing Facebook: Happiness, envy, and the role of tie strength. *Computers in Human Behavior*, 52, 29–38. <https://doi.org/10.1016/j.chb.2015.04.064>

de Lima Bastos, P. A., & Pessoa, R. R. (2019). A discussion on english language students' body image: Beauty standards and fatness. *Profile: Issues in Teachers' Professional Development*, 21(1), 13–26. <https://doi.org/10.15446/profile.v21n1.69603>

Retrospective perception: did we win?



Life-threatening and social stress

- ▶ Acute life threatening stress
 - ▶ Fight or flight response

▶ Social stress

- ▶ Social standing and position in the hierarchy
- ▶ Challenges to reproductive success



Good stress

▶ Limited duration

▶ Positive outcome

▶ Not too threatening

▶ No anticipated long term negative consequences after its over

Sapolsky, R. M. (2004). Why zebras don't get ulcers: A guide to stress, stress related diseases, and coping. In *Natural History*.
<https://doi.org/10.1002/cir.3880060119>