

Electronic supplementary material

Time-lag of urinary and salivary cortisol response after a psychological stressor in bonobos (*Pan paniscus*)

Jonas Verspeek^{1,2*}, Verena Behringer^{3,4}, Daan W. Laméris^{1,2}, Róisín Murtagh³, Marina Salas², Nicky Staes^{1,2}, Tobias Deschner³, Jeroen M. G. Stevens^{1,6}

1 Behavioural Ecology and Ecophysiology Group, Department of Biology, University of Antwerp, Antwerp, Belgium.

2 Antwerp ZOO Centre for Research & Conservation (CRC), Royal Zoological Society of Antwerp (RZSA), Antwerp, Belgium.

3 Max Planck Institute for Evolutionary Anthropology, Interim Group Primatology, Leipzig, Germany

4 Endocrinology Laboratory, German Primate Center, Leibniz Institute for Primate Research, Göttingen, Germany

5 SALTO, Agro- and Biotechnology, Odisee University College, Belgium

*Corresponding author's e-mail address: jonas.verspeek@uantwerpen.be

Supplementary Table S1: Extraction efficiencies of the spiked pool samples of men and women (n = 5)

Sex	Spike conc.	Extraction efficiency (%)	Standard deviation
Men	Low	101.02	3.98
	High	100.45	6.68
Women	Low	105.34	5.35
	High	98.20	4.64

Supplementary Table S2: Coefficient of variation of the extracts (n=5)

	Spike conc.	Cortisol
Internal std	Low	1
Internal std	High	6
Male pool	<i>Not spiked</i>	6
Female pool	<i>Not spiked</i>	2
Male pool	Low	1
Male pool	High	3
Female pool	Low	4
Female pool	High	1

Supplementary Table S3: Internal standard deviation of the extracts (n = 5)

	Spike	Cortisol-d4
Male	<i>None</i>	-43.7
Male	<i>None</i>	-52.4
Male	<i>None</i>	-52.7
Male	<i>None</i>	-54.1
Male	<i>None</i>	-47.1
Female	<i>None</i>	-49
Female	<i>None</i>	-52.3
Female	<i>None</i>	-45.3
Female	<i>None</i>	-52.8
Female	<i>None</i>	-50.1
Male	Low	-52.3
Male	Low	-47.9
Male	Low	-47.5
Male	Low	-51.3
Male	Low	-48.5
Male	High	-51.6
Male	High	-51.4
Male	High	-44.3
Male	High	-48.1
Male	High	-44.6
Female	Low	-49.6
Female	Low	-51.2
Female	Low	-52.3
Female	Low	-51.2
Female	Low	-42.2
Female	High	-44.5
Female	High	-44.3
Female	High	-51.1
Female	High	-53.3
Female	High	-43.6