

Cardiovascular Collapse in Three-Toed Drongos After Exposure to Atonal Acoustics

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Summary

This study demonstrates that prolonged exposure of drongos to repetitive auditory stimuli causes sustained increased levels of hypertension, which may explain observations in the local habitat.

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Introduction

The three toed drongo [*Drongus bollockus*] is a small marsupial widely distributed throughout Oceania. It has adapted well to the gradual invasion of habitat by humans, but a worrisome trend over the past few years is increased mortality due to accidental exposure to music favored by adolescents [audicus horribilus]. We show here that exposure to even relatively low decibel volumes causes a sustained rise in blood pressure and heart rate in these animals.

Materials and Methods

Wild drongo were captured by dart gun using an A105B helicopter [Agusta, Rome, Italy]. Animals were heperinized and sedated with flucosium, fentaylum and midazolam [300mg/kg/day/month/year]. Animals were washed in sheep dip [Wally's rural supplies, Bongo, New South Wales] and then cannulated and perfused with Krebs-Henseleit solution

containing NaCl, CaCl₂, KH₂PO₄, glucose, and pyruvate at a constant pressure of 100mm Hg. Left ventricular pressure was monitored by balloon insertion set at 4-8mm Hg using a Pharma Lab 3.0 [Astra Zeneca] transonic flow meter, placed proximal to the aortic cannula. Heart rate was determined by pressure registration.

Results

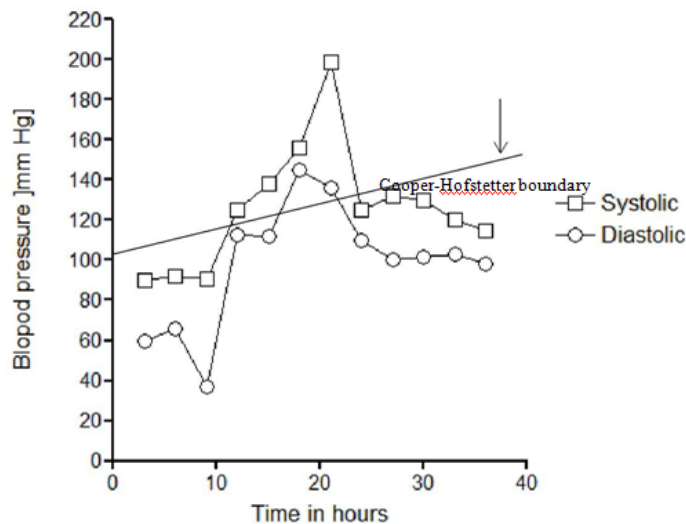
As an initial acclimation animals were exposed to short, low decibel passages with familiar sounds [Tie me kangaroo down sport [R. Harris, Crysalis Records]]. At 3h this was replaced with continuous 12h exposure to various tracks from the latest One Direction CD. This resulted in considerable agitation [Table 1].

Table 1: Adverse behavior indices after prolonged exposure

Adverse behavior	Activity coefficient	P*
Pointing Percy at Porcelain	0.53+0.233	<0.99
Chundering	0.78+0.112	<0.98
Straining potatoes	0.45+0.072	<0.97
Crack open tinnies	0.23+0.056	<0.96

*Messi-Ronaldo minimum pairs test [unbiased]

At this point blood pressure changes were measured using an Acme whole body Mark VI plethysmograph [John Deere Lawnmowers, Dayton, IL] as shown in Figure 1.



Discussion

Expanding human habitation has had a marked effect on marsupial distribution in many areas of Oceania. However, to date, this has had little apparent influence on the epidemiology of drongo species [1]. Sudden acute exposure to intense auditory signals has unfortunate effects on most mammals in general [2] but more chronic exposure to lower levels [range 23-78 Db m⁻¹ ft⁻¹ sec⁻¹] has not been studied.

Effects on blood pressure and other cardiovascular events mediated by auditory inputs is well understood, but the

nature of the exposure has not been studied in marsupials. In humans it has been observed [3] that exposure to boy band music induces both delight and hysteria in female adolescents [14±3.56 yr⁻¹] but intense agony in older specimens [>20±231 yr⁻¹].

It is not known if the standardized conditions used here relate to the field. However, a correlation [R=0.9997637] has been observed between the proximity of adolescent dwellings and drongo carcass distribution, with many such specimens presenting with both front limbs pushed into their auditory canals. Further research here is clearly warranted.

Acknowledgements

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References

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