

README:

Data Summary

DATA TITLE: Overwintering physiology in the checkered garter snake (*Thamnophis marcianus*)

PROJECT TITLE: "Surviving winter: Physiological regulation of energy balance in a temperate ectotherm entering and exiting brumation"

DATA ABSTRACT: These data include information on 2-year old lab-reared checkered garter snakes (*Thamnophis marcianus*). Animals were used to study the influence of temperature on physiology before, during, and after a simulated brumation. Specifically, the relative effect of immediate temperature and physiological context (entering or exiting brumation) on hormones regulating energy balance, indicators of energy availability, and resting metabolic rate (VO₂). Variables measures include: VO₂, plasma corticosterone, glucose, and insulin, as well as whole blood immune cell heterophil: lymphocyte ratios.

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COLLECTION INFORMATION:

Time period: Data collected between December 2015 and May 2016, uploaded to repository in January of 2021

Location:

FILE DIRECTORY

```
Overwintering Physiology
|-> VO2Data.csv
|-> CortData.csv
|-> GlucoseData.csv
|-> InsulinData.csv
|-> HLData.csv
|-> DataCodebook.xlsx
|-> README.pdf
```

FILE LIST

- `README.pdf` : README file.
- `VO2Data.csv` : Comma-separated file containing information on experimental animals and measures of whole-animal respiration.
- `CortData.csv` : Comma-separated file containing information on experimental animals and measures of plasma corticosterone
- `GlucoseData.csv` : Comma-separated file containing information on experimental animals and measures of plasma glucose
- `InsulinData.csv` : Comma-separated file containing information on pooled samples and measures of plasma insulin
- `HLData.csv` : Comma-separated file containing information on experimental animals and measures of whole-animal respiration.
- `DataCodebook.csv` : Codebook containing explanation of variables found in data files.

METHODS AND MATERIALS

DATA COLLECTION METHODS

These data were collected from a laboratory colony of garter snakes (*Thamnophis marcianus*). Measures of whole-animal respiration, corticosterone, glucose, insulin, and heterophil-to-lymphocyte ratios were measured at discrete temperatures (5, 10, 15, 20°C) going into and coming out of brumation to assess temperature dependence and seasonal variation. All data were collected under Iowa State University IACUC protocol 3-2-5125-J under Dr. Anne Bronikowski.

DATA PROCESSING METHODS

`VO2Subset.csv` : Measures of oxygen consumption were corrected for barometric pressure and the change in instantaneous gas concentrations integrated over the period of time for which respirometry chambers were sealed to calculate VO_2 (mL/hour) using ExpeData software (sable systems).

SOFTWARE

Name: R

Version: Macintosh 4.0.2

URL: <https://www.r-project.org/>

Developer: The R Foundation for Statistical Computing

Name: Expedata

URL: <https://www.sablesys.com/products/classic-line/expedata-p-data-analysis-software/>

Developer: Sable Systems

Licensing

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