Applied Health Faculty Research, Scholarship, and Creative Activity

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[Dataset] Comparison of Intermittent Fasting and Voluntary Wheel Running on Physical and Cognitive Abilities in High-Fat Diet-induced Obese Rats

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```
data normal;
infile "~/Table S1 - Weekly Dataset.csv" dlm="," firstobs=2
lrecl=1500; *Note directories will need to be changed.
length Group$15 AnimalID$10 Diet$5 wkkeep$10;
input Group$ AnimalID$ Diet$ no_response Day Wt glucose ketone wk
minday wkkeep$ wkwt wkglucose wkketone distance mean_speed
line_crossings  freezing_episodes       time_freezing
middle_distance wall_dist       middle_time     wall_time
time_A_habituation      time_A_0hr      time_A_24hr     time_A_48hr
        time_A_72hr     time_X_0hr      time_X_24hr     time_X_48hr
        time_X_72hr     food_consumed   calories_consumed;
run;

/*Data Cleaning*/
proc print data=normal (obs=10);
run;

/*Removal of no-response observations*/
data normal;
set normal;
if no_response = 1 then delete;
run;

/*Removal of outlying observations*/
data weekly;
set normal;
if wkkeep = "Delete" then delete;
if animalid="H35" then delete;
run;


/*Weight*/
proc mixed data=weekly;
class group animalid diet wk;
model wt = diet wk diet*wk;
repeated wk / subject=animalid type=un;
lsmeans diet*wk / pdiff;
run;

/*Glucose*/
proc mixed data=weekly;
class group animalid diet wk;
model glucose = diet wk diet*wk;
repeated wk / subject=animalid type=un;
lsmeans diet*wk / pdiff;
run;

/*Ketones*/
proc mixed data=weekly;
class group animalid diet wk;
```

```
model ketone = diet wk diet*wk;
repeated wk / subject=animalid type=un;
lsmeans diet*wk / pdiff;
run;

data openfield;
set normal;
if distance = "." then delete; *Delete missing observations;
run;

proc print data=openfield (obs=15);
run;

/*Open Field Code for Distance*/
proc mixed data=openfield;
class animalid diet day;
model distance = diet day diet*day;
repeated day / subject = animalid type=un;
lsmeans diet*day / pdiff;
run;




data nor;
infile "~/Table S2 - NOR Data.csv" dlm="," firstobs=2 lrecl=1500;
length AnimalID$10 Diet$5;
input AnimalID$ time ObjectA ObjectX Habituation Diet$;
run;

proc print data=nor (obs=10);
run;

/*Create new variable ratio to examine relative amount of time
individual spent with novel object vs "old" object*/
data nor;
set nor;
ratio = objecta/objectx;
run;

/*Model for NOR*/
proc mixed data=nor;
class animalid diet time;
model objecta= diet time diet*time habituation/s;
repeated time / subject=animalid type=un;
lsmeans diet*time / pdiff;
run;

proc mixed data=nor;
class animalid diet time;
model objectx= diet time habituation/s;
```

```
repeated time / subject=animalid type=un;
lsmeans diet / pdiff;
run;

/*Initial analysis indicated violation of assumptions of ANOVA and
transformation needed. LN transformation used, plus a constant of 1/6
to account for 0's and other small values.*/
data nor;
set nor;
trans=log(ratio+1/6);
run;
proc mixed data=nor;
class animalid diet time;
model trans= diet time diet*time;
repeated time / subject=animalid type=un;
lsmeans diet*time / pdiff;
run;

/*Additional test to see if there was a difference between habituation
on day 0 of the NOR tests.*/
data nor0;
set nor;
if time ~= 0 then delete;
run;
proc ttest data=nor0;
class diet;
var habituation;
run;



data vwr;
infile "~/Table S3 – VWR Data.csv" dlm="," firstobs=2 lrecl=1500;
length Group$10 AnimalID$10 Diet$10 Trt$10;
input Group$ AnimalID$ Diet$ Trt$ No_Response Day calories VWR;
run;

/*Focusing on just the VWR treatment group for initial analyses.
Cleaning data to remove no-response outcomes and missing VWR values.*/
data vwr;
set vwr;
if vwr="." then delete;
if no_response=1 then delete;
if trt ~="VWR" then delete;
run;

proc mixed data=vwr0;
class animalid diet trt day;
model vwr = diet|day / outpred=resids;
repeated day / subject=animalid type=ar(1);
```

```
run;
proc univariate data=resids normal plot;
var resid;
run;
```