

Does captivity make me look fat? Obesity in the Common Marmoset (*Callithrix jacchus*)



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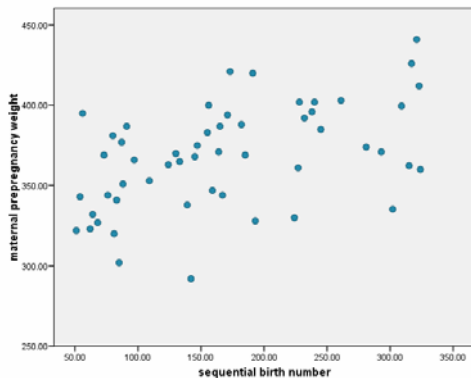
Value of long-term data collection

- Consistent data collection on all animals since colony was started (1994)
- Prepregnancy maternal weight recorded, as well as weight throughout pregnancy and lactation
- Infants weighed within 48 hrs of birth; and then weekly for first year and monthly until age 2
- Allows retrospective analyses

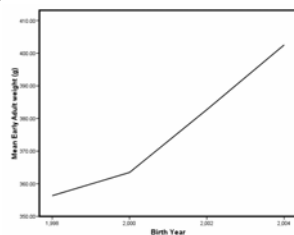
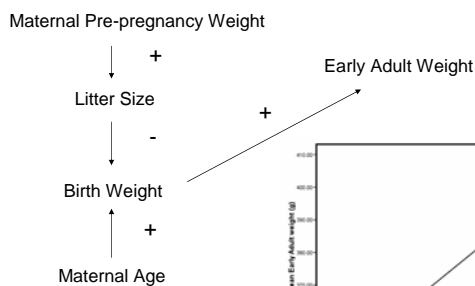
Power R, Power M, Layne D, Jaquish C, Oftedal O, Tardif S. Relations among measures of body composition, age and sex in the common marmoset monkey (*Callithrix jacchus*). *Comp Med*. 2001; 51:218-223.

- No difference between males and females in body mass and in lean or fat mass
- Relatively lean population

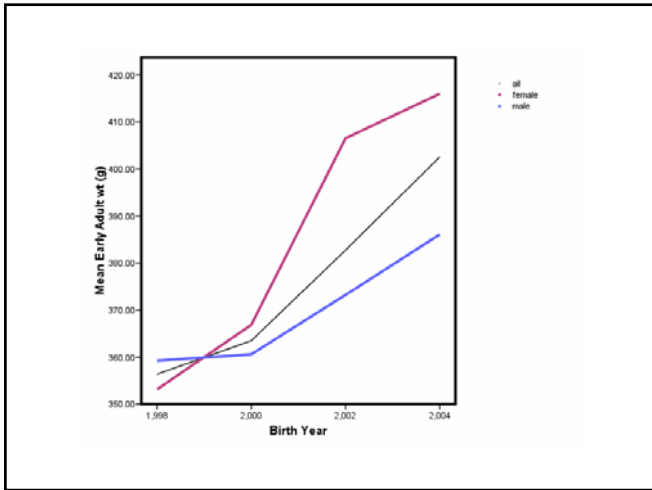
Maternal weight increasing over time

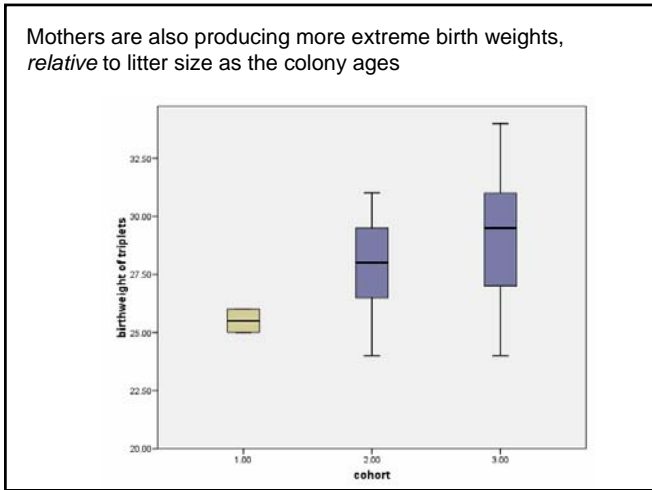


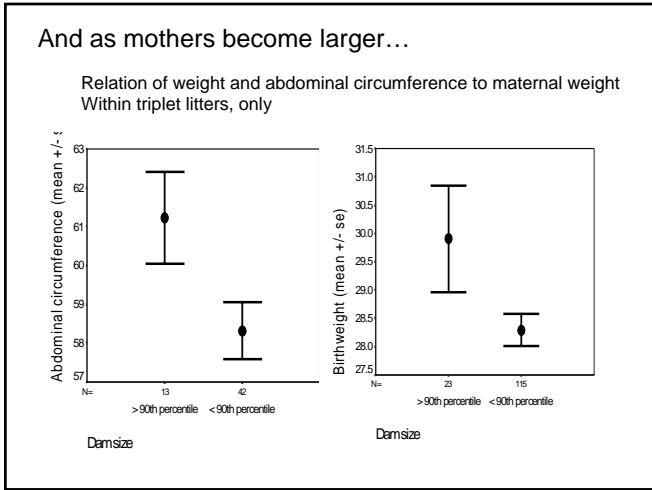
Retrospective Analyses of Factors Associated with Adult Weight



Tardif & Bales, *Amer J Primatol.*, 2004



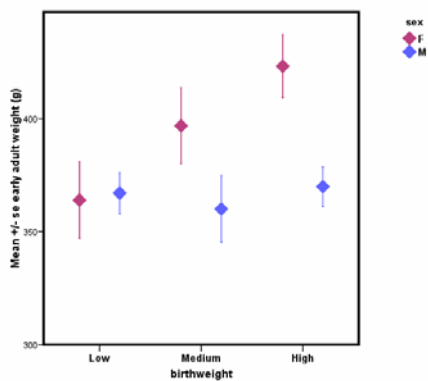




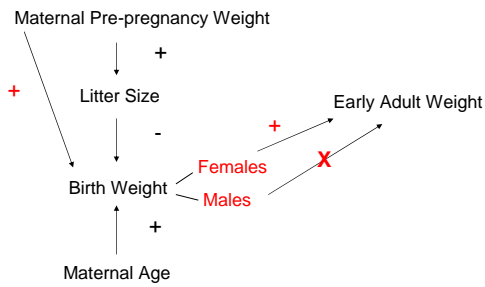
Females higher body weights are the result of higher fat mass, not higher lean mass

| | Female Total sample (n=32) | Male Total sample (n=32) | Female 3.5-5.5 years (n=19) | Male 3.5-5.5 years (n=5) |
|-----------------|----------------------------------|--------------------------------|-----------------------------------|--------------------------------|
| Age (years) | 4.8 +/- 1.1 | 3.1 +/- 1.4 | 4.5 +/- 0.5 | 4.2 +/- 0.7 |
| Body Wt (g) | 411.9 +/- 52.5 | 386.0 +/- 47.6 | 415.4 +/- 54.4 | 374 +/- 31.6 |
| Lean wt (g) | 282.9 +/- 36.9 | 274.1 +/- 29.8 | 281.5 +/- 38.4 | 267.8 +/- 17.2 |
| Fat wt (g) | 55.5 +/- 21.7 | 39.3 +/- 23.2 | 57.5 +/- 22.6 | 33.4 +/- 14.8 |
| Fat wt/ body wt | 0.132 +/- 0.04 | 0.097 +/- 0.05 | 0.136 +/- 0.05 | 0.087 +/- 0.03 |

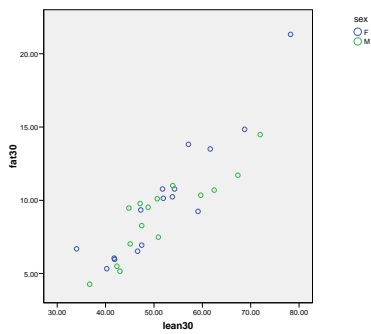
Over time marmosets in our colony have gotten fatter; and it is all the females' fault.



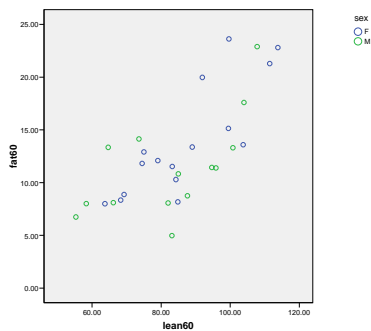
Retrospective Analyses of Factors Associated with Adult Weight - Updated



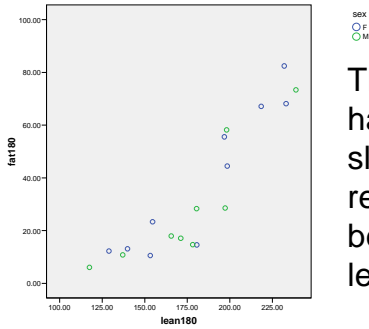
At 30 days of age there is a consistent relationship between lean and fat mass



By 60 days of age there still is a relationship; but it is less consistent



By 6 months of age juveniles have separated into two groups: lean and fat.



The fat juveniles have a greater slope for their relationship between fat and lean mass

Birth weight had no relation to fat mass in lean juveniles; but was positively associated in fat juveniles

