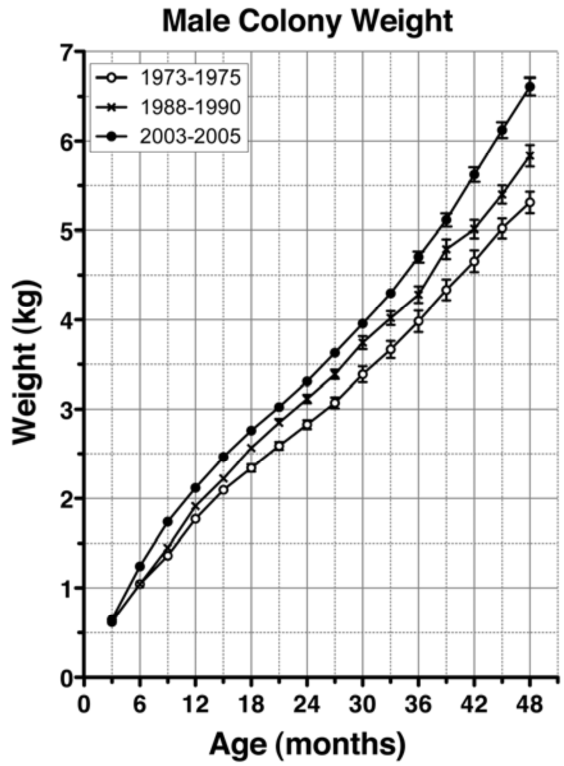
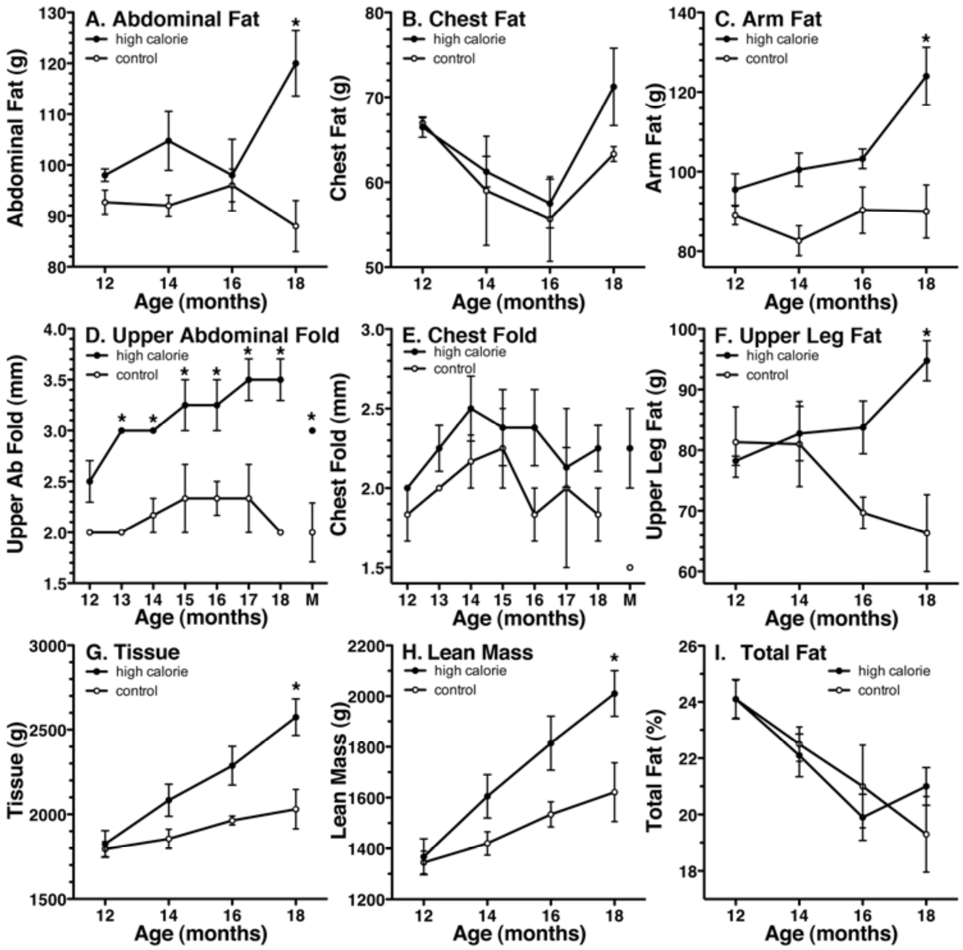
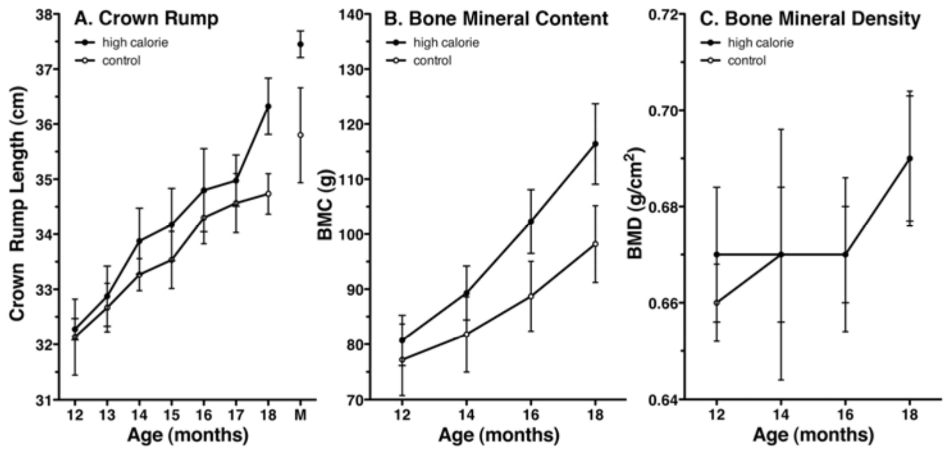
Supplemental Data:



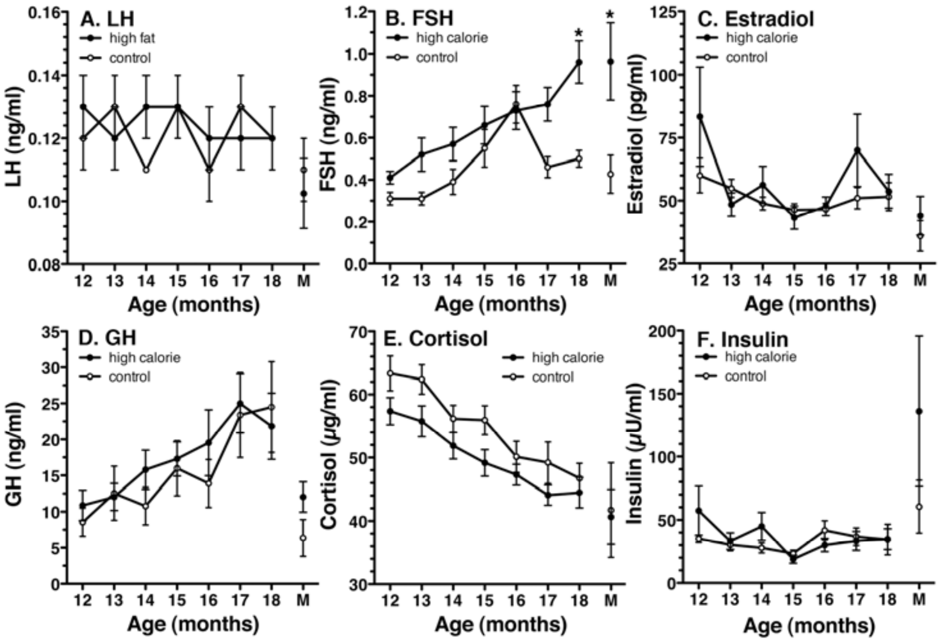
Supplemental Figure 1: Accelerated growth among WNPRC colony males over the past 30 years. Body weight growth curves of male rhesus monkeys born between 1973 and 2005 at the WNPRC. Each line represents the average (±SEM) growth curve of males during three-year periods at 15-yr intervals, i.e., 1973 to1975 (n=83), 1988 to1990 (n=67), and 2003 to 2005 (n=63). While body weights at 3 months of age were not different, the rate of body weight growth of males gradually accelerated over 30 yr. Two-way ANOVA indicated that differences in growth curves in males born between 1973-1975 and 1988-1990 and between 1988-1990 and 2003-2005 were both highly significant ($p<0.0001$).



Supplemental Figure 2: Skin fold and dual-energy x-ray absorptiometry measurements of body fat. Fat deposition and skin fold measurements exhibited distinct developmental and group differences. High calorie fed animals had more abdominal (A, $p<0.01$), arm (C, $p<0.001$), upper leg (F, $p<0.01$) fat across the study compared to control diet fed animals while no group difference was found for chest fat (B). Similarly, upper abdominal (D) and chest (E) skin fold measurements were larger (both $p<0.001$) for high calorie diet fed animals. Total tissue weight (G), lean mass (H), and % total fat (I) assessed by DXA are also shown. Differences across age were found for chest fat ($p<0.05$), arm fat ($p<0.05$), upper abdominal skin fold ($p<0.05$), total tissue ($p<0.001$), lean mass ($p<0.001$), and % total fat ($p<0.001$) measurements. Total tissue weight ($p<0.001$) and lean mass ($p<0.001$), but not % total fat, in high calorie diet monkeys as compared to control diet monkeys were significant. Data shown are mean±SEM with high calorie n=4 and control n=3. P-values for these graphs represent group or age differences across the entire study (2-way ANOVA) while * represents differences ($p<0.05$) at individual points based on Bonferroni *post hoc* analyses. M: indicates the average age of menarche (19.8±1.1 months of age) of the 4 high fat diet animals. Measurements were taken from both animals of each pair on the day of first menstruation, although only high fat diet animals reached menarche.



Supplemental Figure 3: Body length and bone mineral measurements by dual-energy x-ray absorptiometry. Animals fed a high calorie diet grew faster and had higher BMC than animals fed a control diet while BMD was similar between the groups. While Crown Rump (A) lengths increased in both groups across the study ($p<0.01$), high calorie fed animals grew faster ($p<0.05$). BMC (B) also increased in both groups across the study ($p<0.05$), with the rate of increase greater in high calorie fed animals ($p<0.01$). BMD did not significantly change over the course of the study in either group. Data shown are mean±SEM with high calorie n=4 and control n=3. P-values for these graphs represent group or age differences across the entire study (2-way ANOVA). M: indicates the average age of menarche (19.8±1.1 months of age) of the 4 high fat diet animals. Measurements were taken from both animals of each pair on the day of first menstruation, although only high fat diet animals reached menarche.



Supplemental Figure 4: Changes in circulating hormone levels in high calorie and control diet fed animals. Average monthly hormone levels across weekly morning (0900 h) serum samples indicate few group differences between high calorie and control fed animals, though clear developmental differences were found for most hormones. Luteinizing Hormone (LH) levels were not different between groups or across time (A). Serum levels of follicle stimulating hormone (FSH; B, $p<0.001$), estradiol (C, $p<0.05$), growth hormone (GH; D, $p<0.001$), cortisol (E, $p<0.001$) and insulin (F, $p<0.05$) all changed with age in both groups, while FSH (B, $p<0.001$) levels were higher and cortisol (E, $p<0.01$) levels were lower in high calorie fed animals. Data shown are mean±SEM with high calorie n=4 and control n=3. P-values for these graphs represent group or age differences across the entire study (2-way ANOVA) while * represents differences ($p<0.05$) at individual points based on Bonferroni *post hoc* analyses. M: indicates the average age of menarche (19.8±1.1 months of age) of the 4 high fat diet animals. Measurements were taken from both animals of each pair on the day of first menstruation, although only high fat diet animals reached menarche.