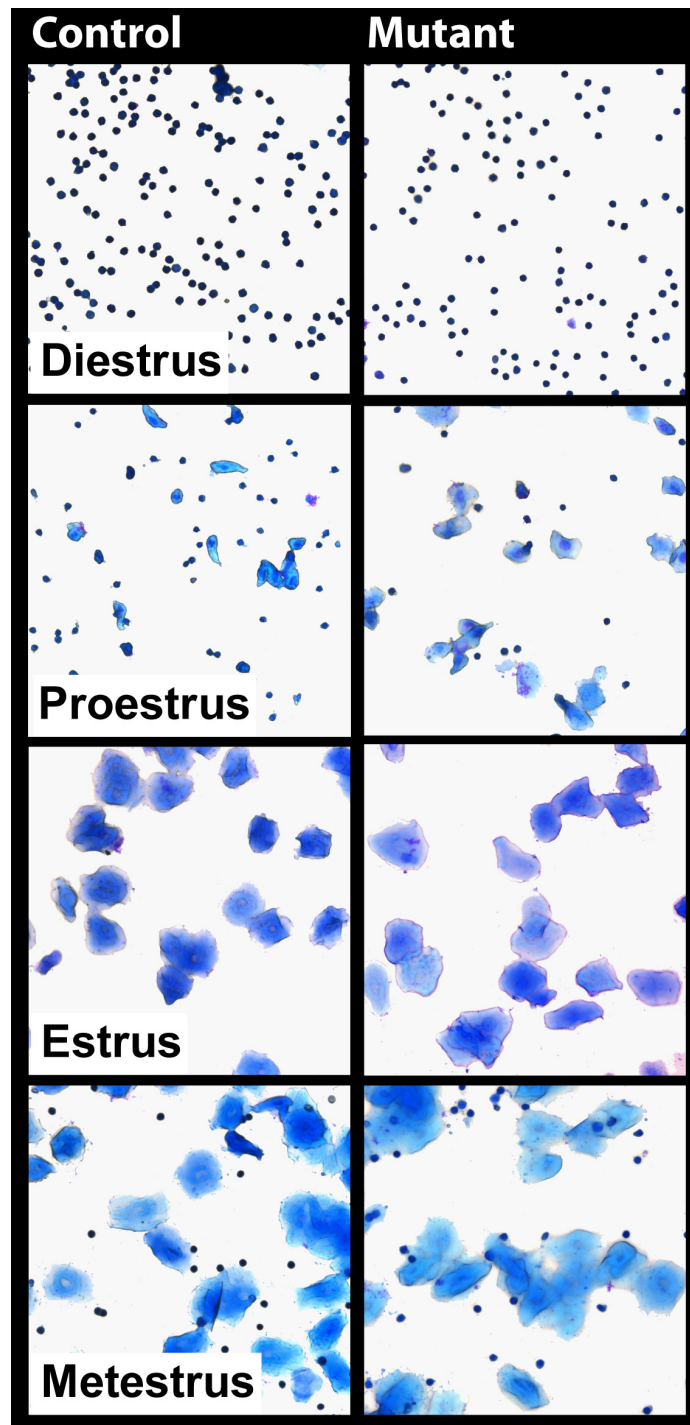
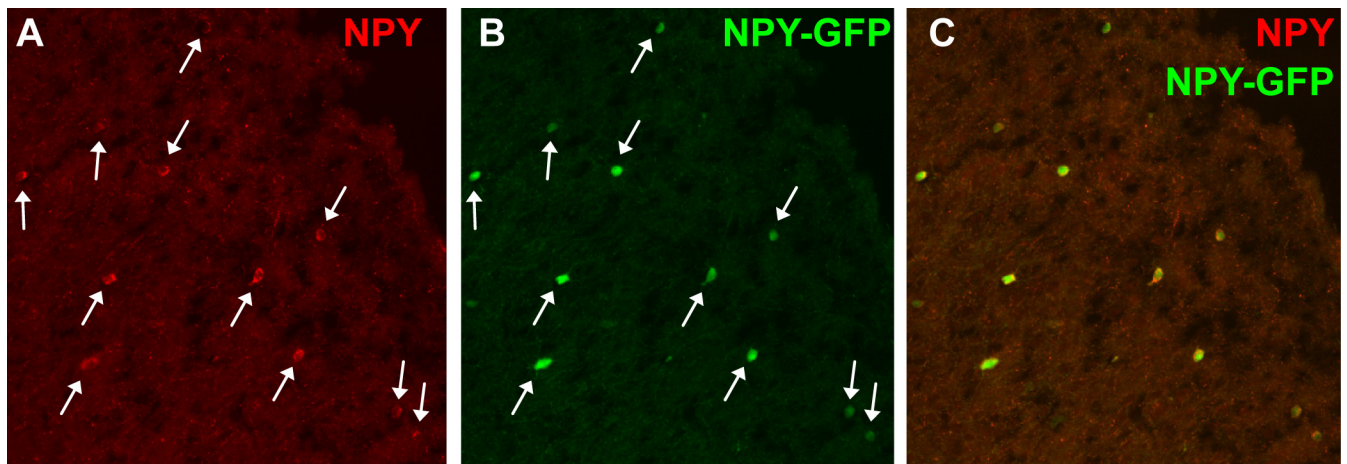


# Supporting Information

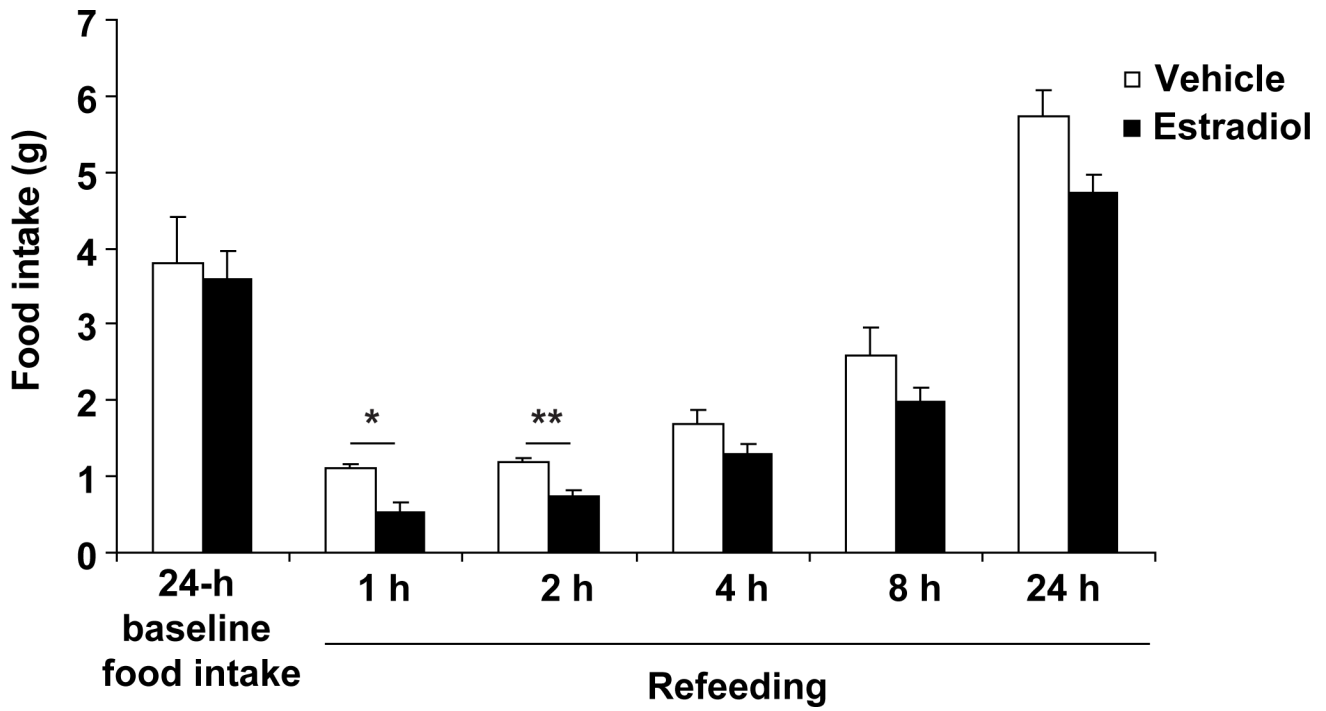
Olofsson et al. 10.1073/pnas.0904747106



**Fig. S1.** Cycling female *Agrp-Tfam* mutants exhibited typical morphologic change of vaginal smears in different phases of estrous cycle. The different phases of the estrous cycle were defined using the following criteria; Diestrus was defined as the phase when the vaginal smear predominantly contained leucocytes. This phase was followed by proestrus, in which the vaginal smear contained both leucocytes and nucleated epithelial cells. In the estrus, the vaginal smear predominantly contained large epithelial cell without nuclei and in metestrus the vaginal smear contained both large epithelial cells without nuclei and leucocytes.



**Fig. S2.** The GFP expression in transgenic NPY-hrGFP mice was completely colocalized with NPY immunoreactivity in the cortex. Intense direct fluorescence signals were observed in the ARC of the hypothalamus and other regions of the brain. The GFP expression is found to be completely colocalized with NPY immunoreactivity in the brains of colchicine-injected animals [van den Pol AN, et al. (2009) *J Neurosci* 29:4622–4639]. (A–C) GFP signals were also found to be colocalized with NPY immunostaining in the cortex confirming the previous finding. Arrows show colocalization of GFP and NPY positive cells.



**Fig. S3.** E2 inhibits fasting-induced refeeding. Female mice were fasted for 25 h (9 AM to 10 AM) and injected with either vehicle (saline) or E2 (150  $\mu$ g water soluble E2) at three time points during this period (9 AM, 6 PM on day 1 and 9 AM on day 2). Food was returned 1 h after the last injection and food intake was monitored during the next 24 h of refeeding. Figure shows cumulative food intake after 1, 2, 4, 8, and 24 h of refeeding. Twenty-four-hour baseline food intake is shown for comparison.  $n = 3$  mice per treatment group.