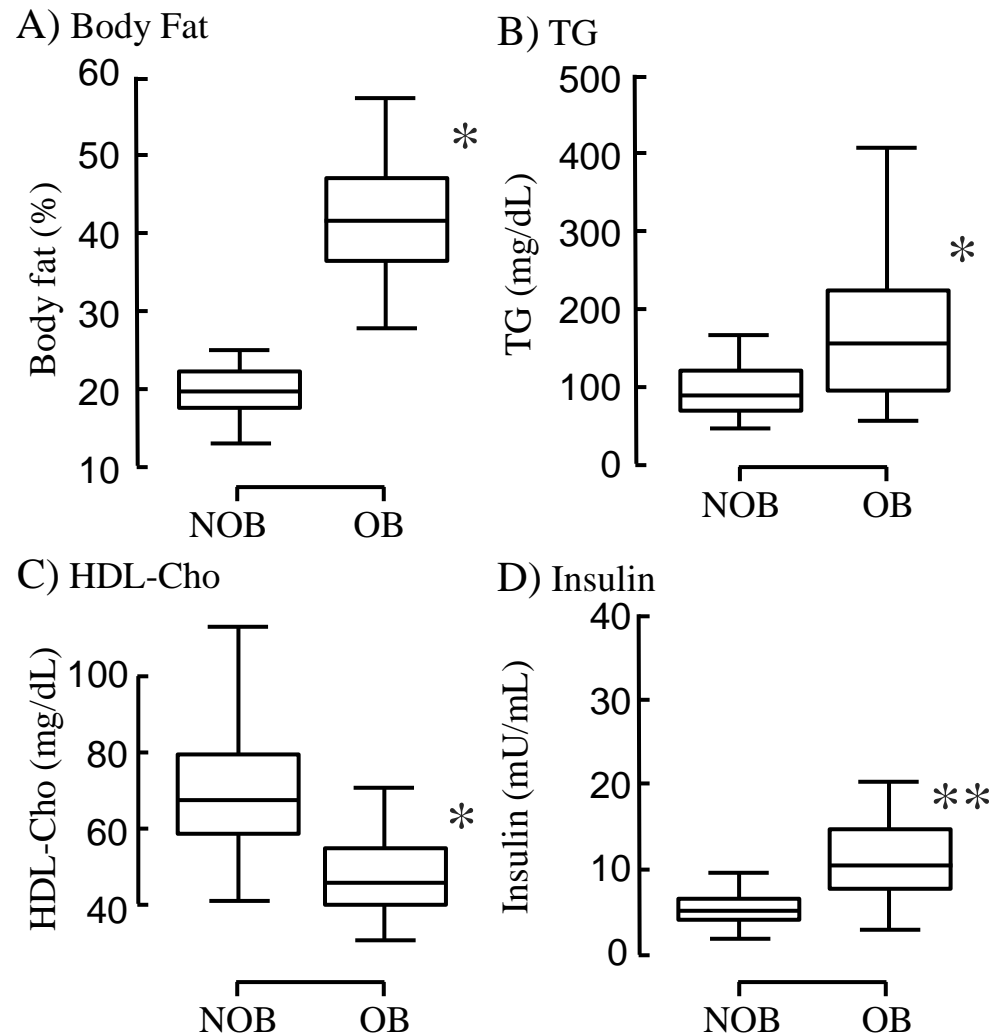


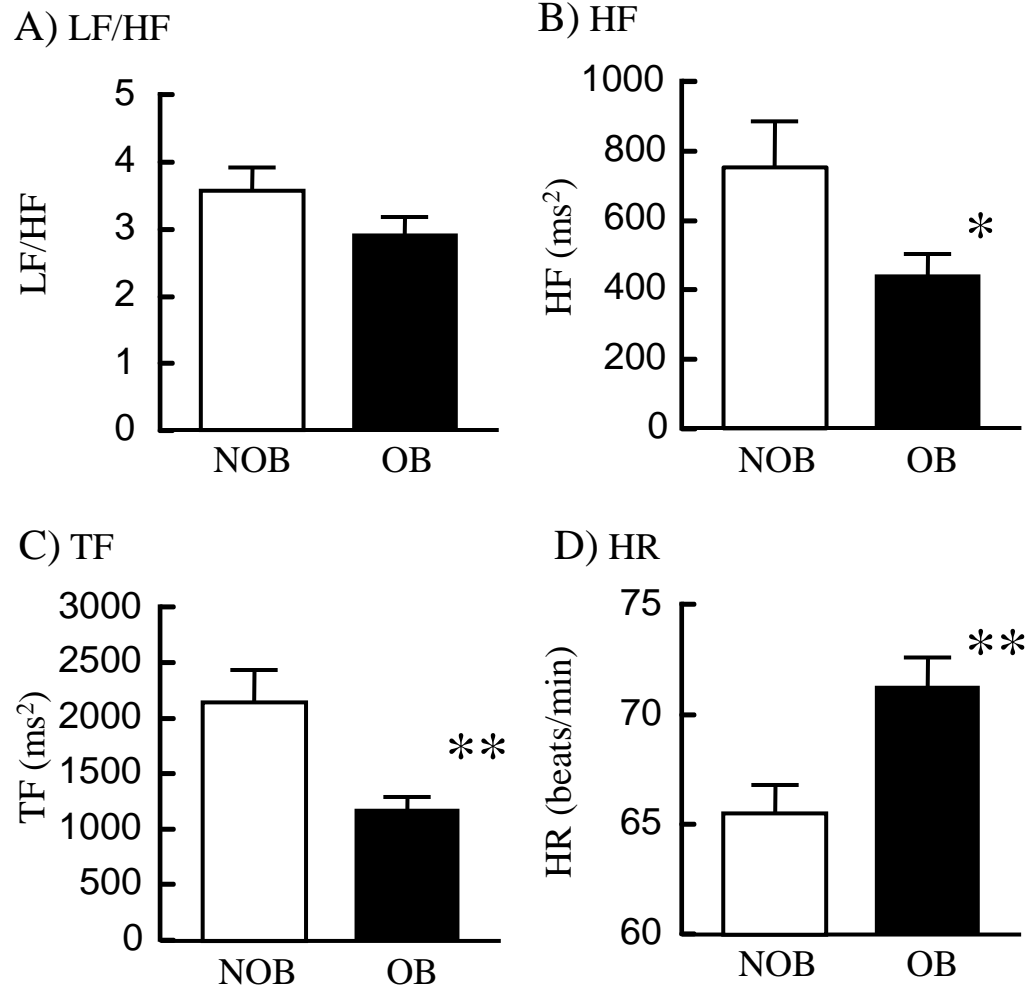
Fig.S1



**Figure S1. Body fat and systemic metabolism**

Values in the non-obesity group (NOB) and the obesity group (OB) were presented by box-plot for body fat (A), serum TG (B), serum HDL-Cho (C) and serum insulin (D). \*:  $p < 0.05$ , \*\*:  $p < 0.01$ , compared between mean values in two groups.

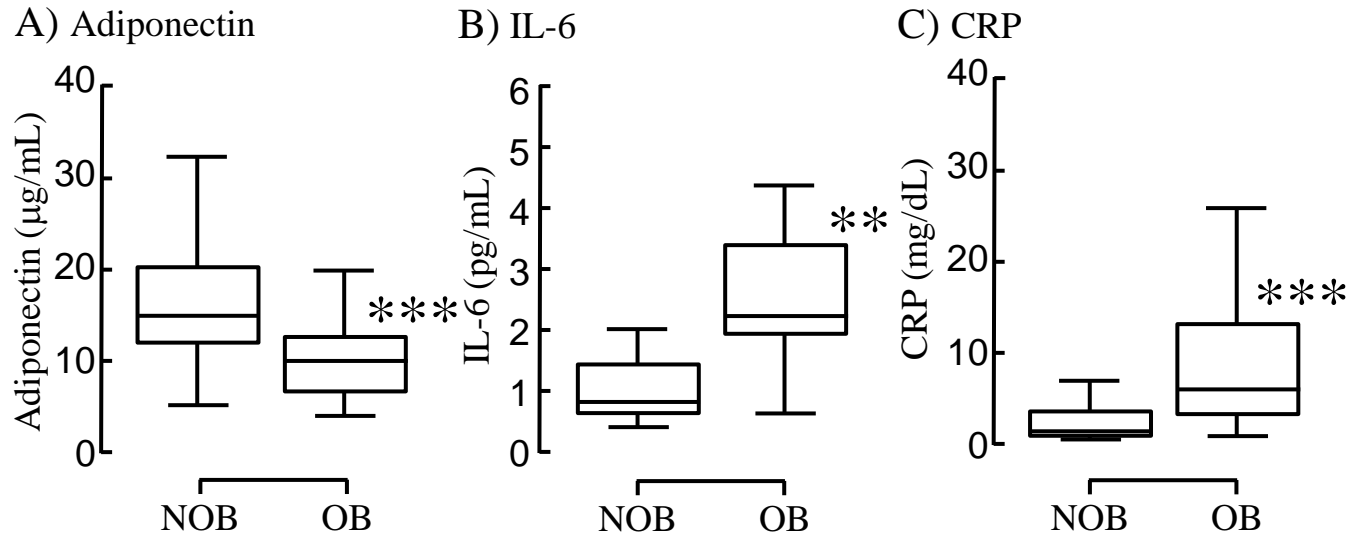
Fig.S2



**Figure S2. Autonomic nerve activity**

Electroradiogram was obtained by a heart rate monitor and analyzed to evaluate autonomic nerve activity. Values in the NOB and the OB were presented as the mean  $\pm$  S.E.M. for LF/HF as a parameter for sympathetic nerve activity (A), HF as a parameter for parasympathetic nerve activity (B), TF as a parameter for total activity (C) and heart rate (D). \*:  $p < 0.05$ , \*\*:  $p < 0.01$ , compared between mean values in two groups.

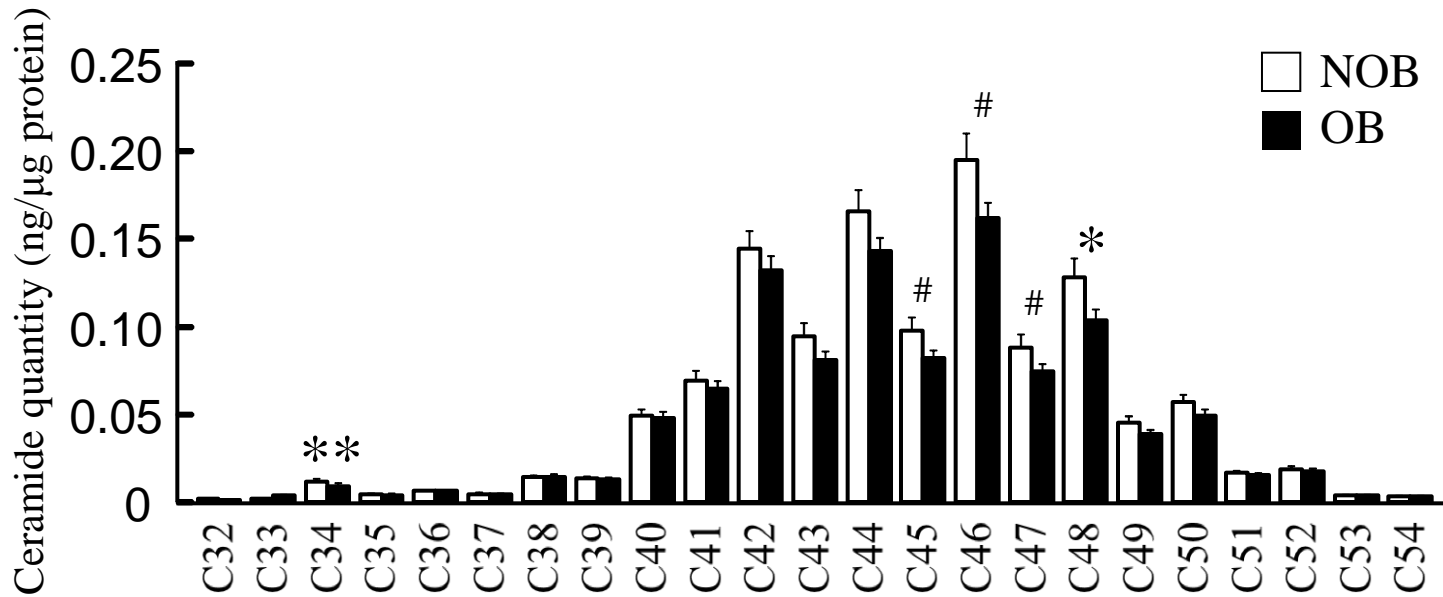
Fig. S3



**Figure S3. Adipokines and inflammatory markers**

Blood analyses were performed by immunoassay, and inflammation-related factors in the NOB and the OB were presented for adiponectin (A), IL-6 (B) and CRP (C) by box-plot. \*\*: p<0.01, \*\*\*: p<0.001, compared between mean values in two groups.

Fig. S4



**Figure S4. Profile of ceramide [NP]**

Profiles of carbon number of ceramide [NP] in the NOB and the OB were presented as the mean  $\pm$  S.E.M. #:  $p < 0.10$ , \*:  $p < 0.05$ , \*\*:  $p < 0.01$ , compared between mean values in two groups.