

Supplementary Materials:

Figure S1. A representative trace of telemetry ECG shows possible seizure prior to death. A similar pattern was observed in all ECG recorded deaths (n=6 of 14 mice).

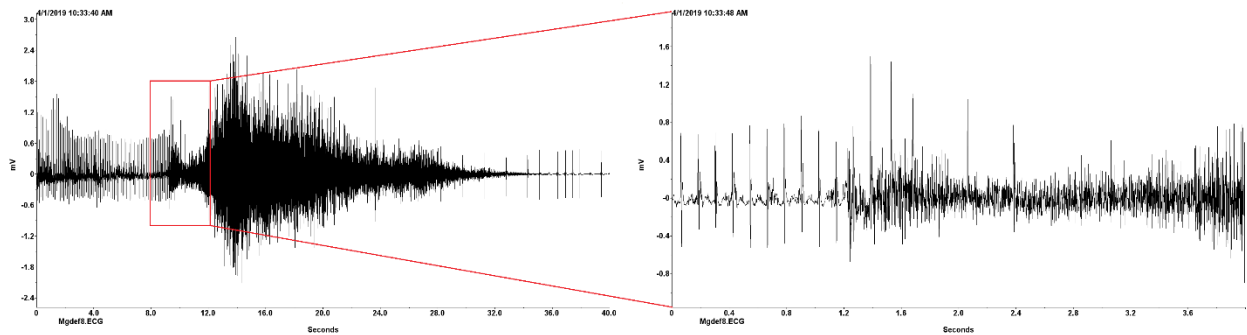
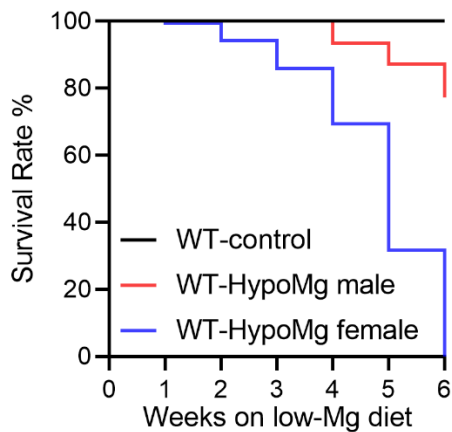


Figure S2. The Kaplan Meier survival curves of the WT mice on normal (WT-control) and low Mg diet (WT-HypoMg male and WT-HypoMg female). The Log-rank (Mantel-Cox) test gave a $P=0.0007$ when comparing WT-control and WT-HypoMg male, $P<0.0001$ when comparing WT-control and WT-HypoMg female, and $P<0.0001$ when comparing WT-HypoMg male and WT-HypoMg female. The number of mice are 25 for WT-control on the normal diet (12 males and 13 females), 40 for WT-HypoMg males and 48 for WT-HypoMg females on the low-Mg diet. Data are from our previous work¹⁰.



Supplementary Video-1. Representative video clips confirm seizure activity immediately prior to death, indicating prolonged status epilepticus and sudden death of WT mice under the low Mg diet (15-30 mg/kg Mg, ddH₂O, for up to 6 weeks, starting at 10 weeks old, the cage on the right side). We recorded seizure and death of two male mice and one female mouse out of 7 mice (3 males and 4 female). There were variable amounts of time between the start of tonus and death, with some as short as 15 s (as in the third video clip) and with some having a period of status epilepticus as long as 12 min (as in the first video clip, video showed 1:30 min, longer video is available under request). Control mice with normal diet (2 g/kg Mg, the cage on the left side) were recorded at the same time for comparison.