

Supplementary information:

Results of the linear model with the following parameters:

Dependent variables: Cu, Zn, Fe, CuIso (Cu isotope ratios)

Independent variables: time (30, 60, 90, 120) and state (SOD1 and WT)

Time was treated as a continuous variable.

*stateWT* is the indicator variable for difference between states, with *stateSOD1* being the reference.

Results:

## Cu

### Cu Brain

Coefficients:					
	Estimate	Std. Error	t value	Pr(> t )	
(Intercept)	16.88036	2.62173	6.439	6.96e-08	***
stateWT	-0.10929	2.00551	-0.054	0.95678	
time	0.08835	0.02940	3.005	0.00434	**

### Cu Spinal cord

Coefficients:					
	Estimate	Std. Error	t value	Pr(> t )	
(Intercept)	12.82288	2.35142	5.453	2.01e-06	***
stateWT	-1.89467	1.79873	-1.053	0.298	
time	0.04401	0.02637	1.669	0.102	

### Cu Muscle

Coefficients:					
	Estimate	Std. Error	t value	Pr(> t )	
(Intercept)	12.75008	2.15083	5.928	4.31e-07	***
stateWT	-10.00600	1.64097	-6.098	2.43e-07	***
time	0.03469	0.02425	1.430	0.16	

### Cu blood

Coefficients:					
	Estimate	Std. Error	t value	Pr(> t )	
(Intercept)	4.202613	0.512487	8.200	3.62e-11	***
stateWT	-0.674357	0.375417	-1.796	0.0778	.
time	-0.003440	0.005556	-0.619	0.5383	

## Zn

### Zn Brain

Coefficients:					
	Estimate	Std. Error	t value	Pr(> t )	
(Intercept)	98.20885	11.56640	8.491	6.73e-11	***
stateWT	-7.97077	8.84776	-0.901	0.372	
time	0.02585	0.12972	0.199	0.843	

### Zn Spinal cord

Coefficients:					
	Estimate	Std. Error	t value	Pr(> t )	
(Intercept)	60.0657	10.9858	5.468	2.03e-06	***
stateWT	-13.4311	8.3714	-1.604	0.1158	
time	0.2311	0.1240	1.864	0.0691	.

### Zn Muscle

Coefficients:					
	Estimate	Std. Error	t value	Pr(> t )	
(Intercept)	72.8489	10.7452	6.780	2.68e-08	***
stateWT	-39.3087	8.2716	-4.752	2.27e-05	***
time	0.2055	0.1212	1.695	0.0973	.

### Zn blood

Coefficients:					
	Estimate	Std. Error	t value	Pr(> t )	
(Intercept)	26.34043	3.48919	7.549	3.5e-10	***
stateWT	-2.50953	2.62022	-0.958	0.342	
time	0.06186	0.03827	1.617	0.111	

## Fe Fe Brain

Coefficients:					
	Estimate	Std. Error	t value	Pr(> t )	
(Intercept)	107.82885	21.05521	5.121	1.52e-05	***
stateWT	5.84396	13.38300	0.437	0.665	
time	0.01305	0.23155	0.056	0.955	

## Fe Spinal cord

Coefficients:					
	Estimate	Std. Error	t value	Pr(> t )	
(Intercept)	79.4316	15.0040	5.294	3.63e-06	***
stateWT	-1.9171	11.4334	-0.168	0.868	
time	0.1296	0.1693	0.766	0.448	

## Fe Muscle

Coefficients:					
	Estimate	Std. Error	t value	Pr(> t )	
(Intercept)	62.3861	12.2794	5.081	7.77e-06	***
stateWT	-35.3730	9.4527	-3.742	0.000536	***
time	0.4231	0.1385	3.054	0.003871	**

## Fe blood

Coefficients:					
	Estimate	Std. Error	t value	Pr(> t )	
(Intercept)	1478.196	360.696	4.098	0.000129	***
stateWT	152.990	269.184	0.568	0.571956	
time	7.907	3.954	2.000	0.050130	.

## CuIso CuIso Brain

Coefficients:					
	Estimate	Std. Error	t value	Pr(> t )	
(Intercept)	1.939807	0.198597	9.768	8.55e-13	***
stateWT	-0.078462	0.150649	-0.521	0.6047	
time	-0.005942	0.002227	-2.669	0.0105	*

## CuIso Spinal cord

Coefficients:					
	Estimate	Std. Error	t value	Pr(> t )	
(Intercept)	1.81947	0.18462	9.855	6.46e-13	***
stateWT	0.01631	0.13995	0.117	0.908	
time	-0.00291	0.00207	-1.406	0.167	**

## CuIso Muscle

Coefficients:					
	Estimate	Std. Error	t value	Pr(> t )	
(Intercept)	2.327292	0.303983	7.656	1.10e-09	***
stateWT	0.287917	0.229790	1.253	0.217	
time	-0.016758	0.003426	-4.892	1.32e-05	***

## CuIso blood

Coefficients:					
	Estimate	Std. Error	t value	Pr(> t )	
(Intercept)	0.8819047	0.2003504	4.402	4.4e-05	***
stateWT	-0.0017195	0.1488245	-0.012	0.991	
time	0.0008823	0.0022175	0.398	0.692	