



Soybean and Health 3

-Advantages of relatively low S-Amino Acids-





High animal protein

→ high sulfuric amino acids (Met + Cys)

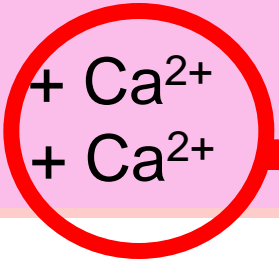
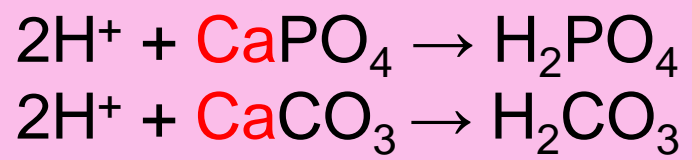
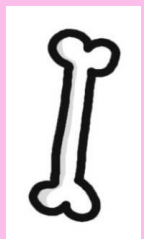
- Extra S of sulfuric amino acids becomes sulfuric compounds.
- Body pH decreases

How does our body prevent the decrease in body pH caused by high S-AAs?

To maintain the normal body pH,

1st) Na_2CO_3 and K_2CO_3 are used.

2nd) Bone CaPO_4 and CaCO_3 are also used.



Urine Ca

Study design

- **Subjects: University students (dormitory residents).**
- **Total 34 subjects were divided into matched two groups.**
- **Cross over design (*Female subjects started on the same days of the cycle*)**



- **Urine collection: last 3 days in each period**

Patties made from soybean protein (left) and egg white protein (right)



Soybean protein patty



Egg white protein patty

- Ca was adjusted to the same level as soybean patty by Ca_2CO_3
- soybean isoflavone was added to the same level as soybean patty

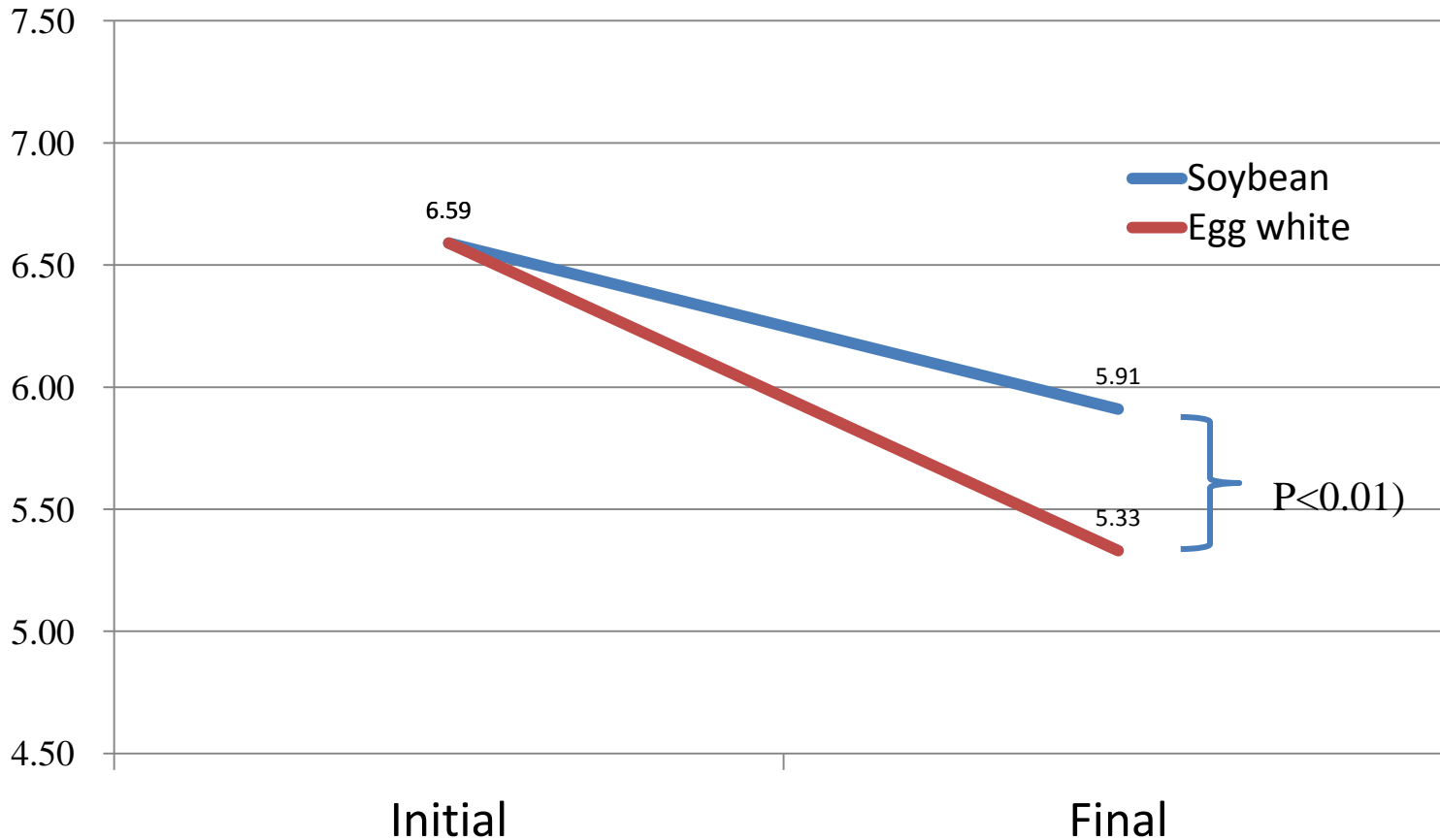


Energy and nutrients in patties

	Soybean	Egg white
Energy (kcal)	867	864
Protein (g)	34.9	35.3
Met + Cys (mg)	1140	2398
Lipids (g)	37.7	37.6
Carbohydrate (g)	92.4	90.9
Vitamin D (μg)	0.3	0.3
Ca (mg)	132	132
Isoflavone (mg)	113	113



Urine pH of egg white group became significantly lower than that of soybean group ($p < 0.01$)





Urinary Ca excretion of egg white group became significantly higher than that of soybean group ($p < 0.01$)

