



Soybean and Health 2

-As a Ca source-



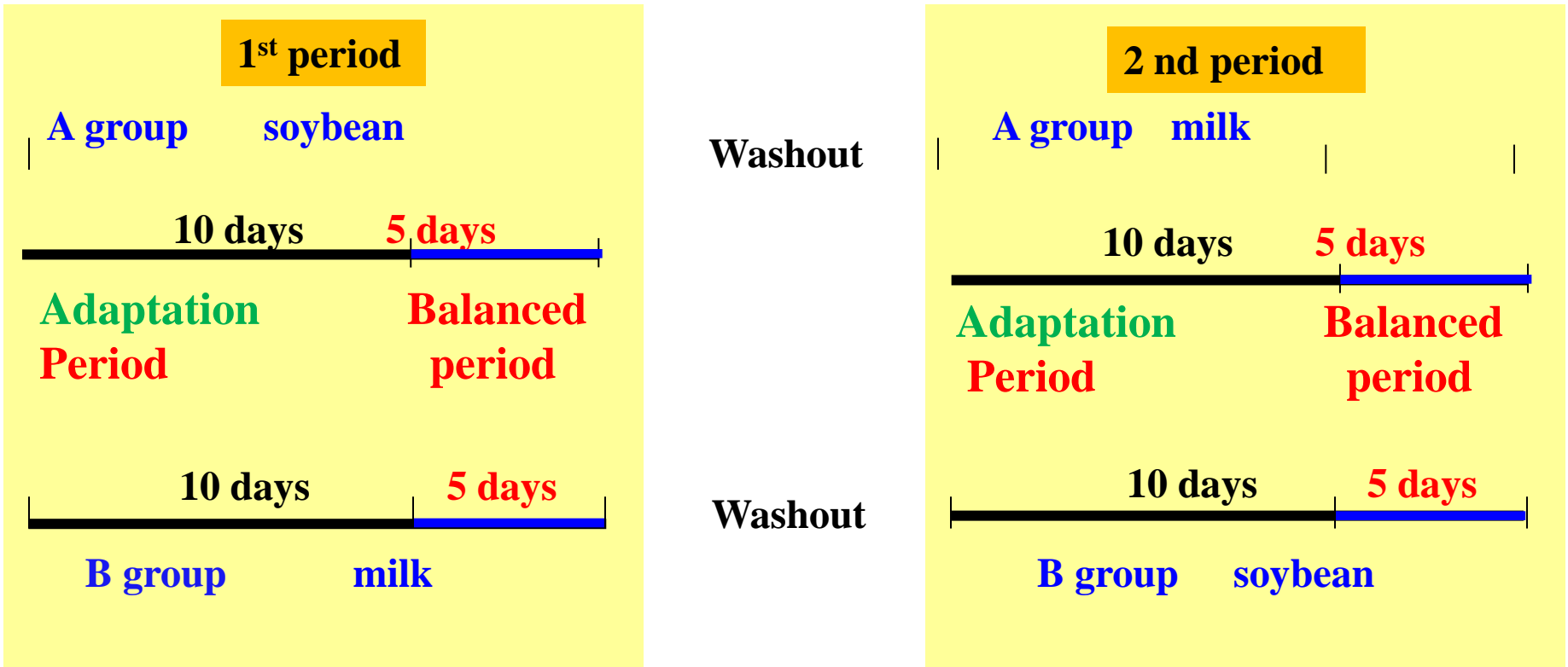


Studies of the absorption rate and requirement for soybean Ca in young and elderly women

TOFU is a good Ca source. Ca concentration of TOFU is as high as that of cow's milk, while bioavailability of the former is believed to be lower than that of the latter.

	Ca (mg/100g)
Milk	110
Tofu	120

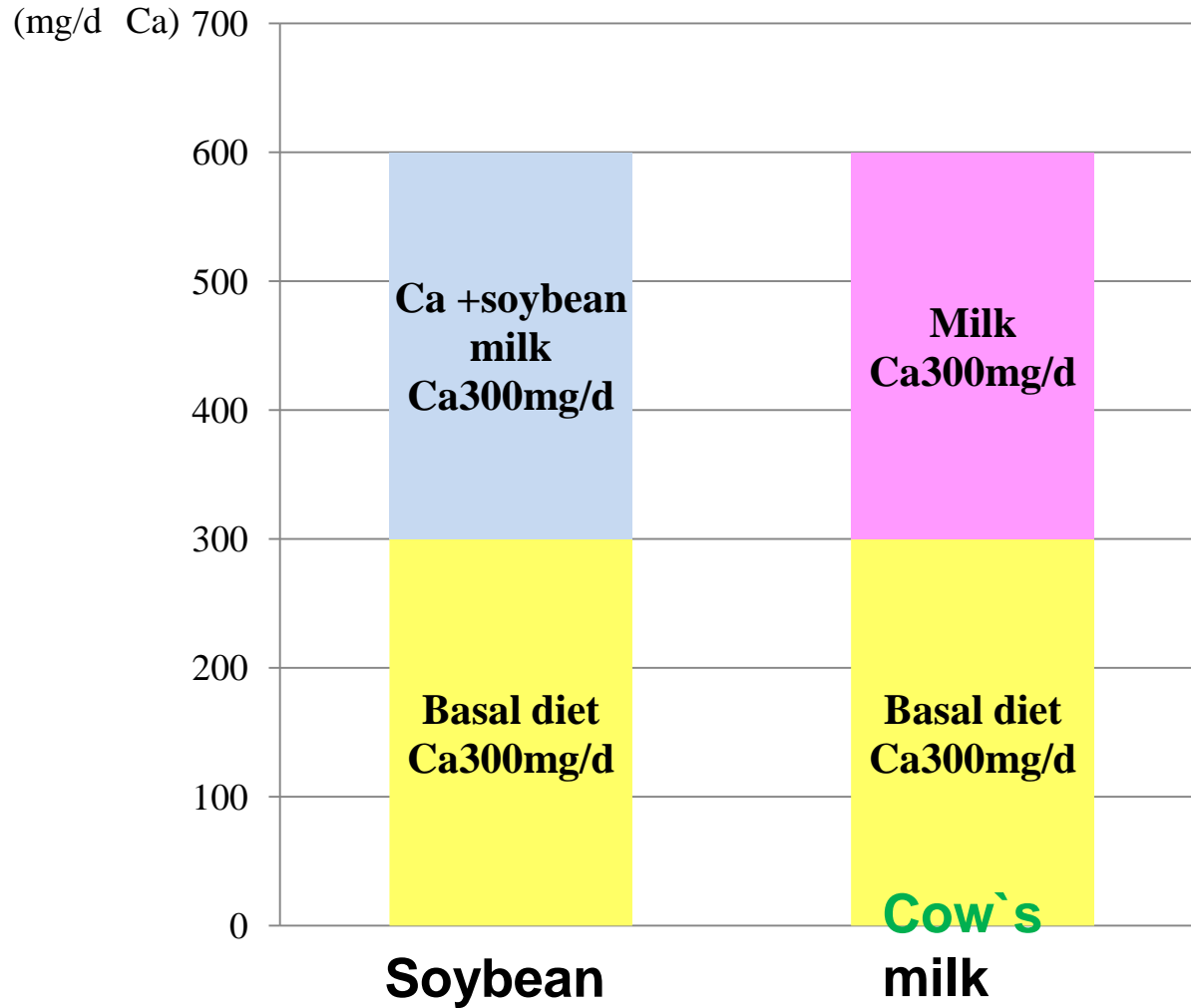
Absorption rate for soybean Ca in young and post-menopausal women (Randomized Cross-over Design)



- ・ 試験は月経周期を考慮し個別に対応した。
- ・ 開始日は各自の月経開始から数えて8~10日目とした。



Ca in test meals





	I	II	III
Breakfast	Noodles with lean Pork	Rice noodles with tomato	Sticky rice with lean Pork
Lunch	Cooked rice Pork medium fat Winter melon soup Fruit	Cooked rice Fried fish with liquid fish sauce Mustard green soup Fruit	Cooked rice Fried Pork, medium fat Boiled cabbage
Dinner	Cooked rice Fried fish with tomato Boiled Kohlrabi Fruit	Cooked rice Pork, medium fat Pumpkin soup Fried Squash Fruit	Cooked rice Boiled chicken Winter melon soup Fruit
Energy (kcal)	1954	1859	2179
Protein(g)	81.2	73.4	84
Fat(g)	41.6	41.9	64.9
Carbohydrate(g)	315	298	316
Ca(mg)	301	302	302

※ その他、VitD、P、Mg、食物繊維などベトナムRDAを満たすように設定

Results of young female subjects (Mean±SD)

	Test meal	
	Soy milk diet	Cow's milk diet
Intake (mg/d)	578±4	578±4
Feces (mg/d)	469±207	466±166
Urine (mg/d)	99±46	101±46
Balance (mg/d) ¹⁾	9±201	10±168
Retention rate (%) ²⁾	1.7±24.7	1.8±29.0
Apparent absorption (mg/d) ³⁾	109±206	112±165
Apparent absorption rate (%) ⁴⁾	18.8±35.6	19.4±28.5

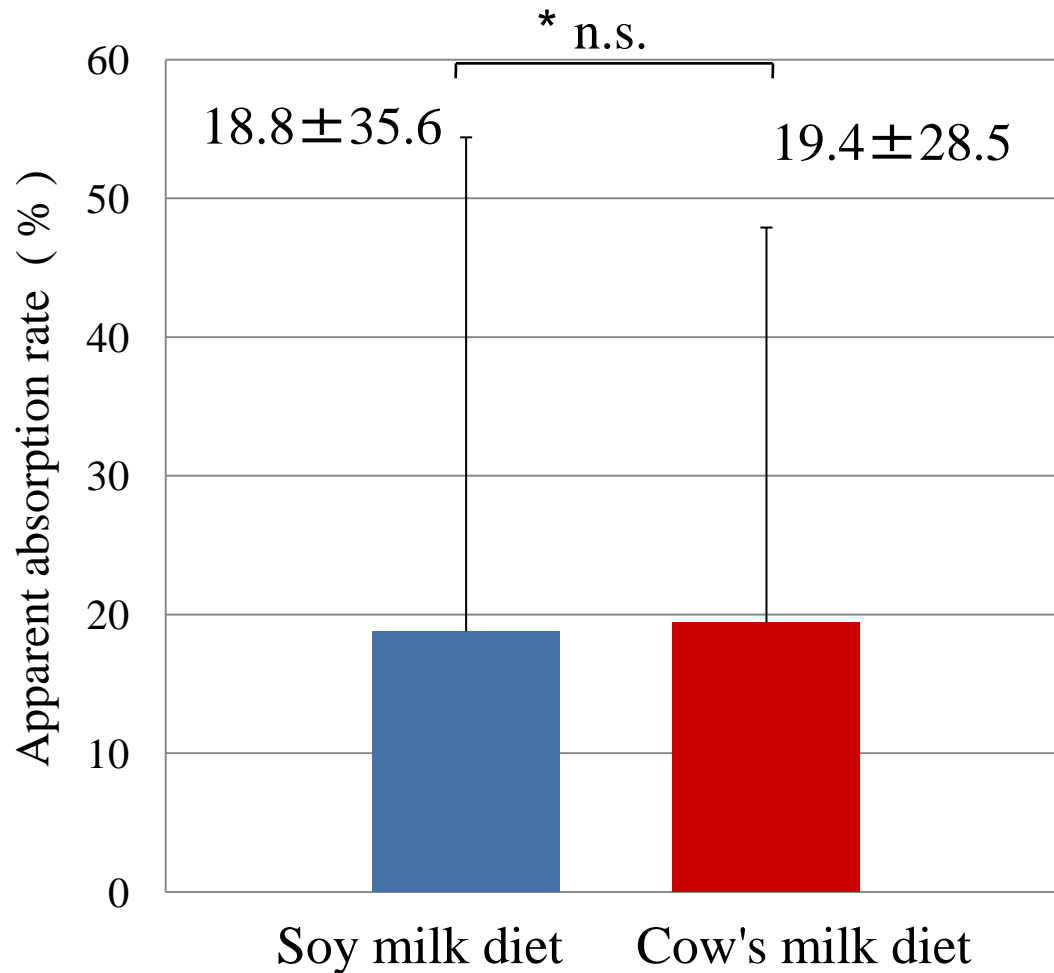
1) Balance (mg/day) = Intake – (Feces + Urine)

2) Retention rate (%) = Balance / Intake × 100

3) Apparent absorption (mg/day) = Intake – Feces

4) Apparent absorption rate (%) = Apparent absorption / Intake × 100

* Mean±SD (n=12). Significant differences were not observed between the two groups by Wilcoxon Signed Ranks Test.



Similar
absorption
rates

* Mean \pm SD (n=12). Significant differences were not observed between the two groups by Wilcoxon Signed Ranks Test.

Apparent absorption rates in young women (%)



Results in post-menopausal women (Mean±SD)

	Test meal		
	Tofu diet	Skimmed milk diet	basal diet
Intake (mg/d)	634 ± 10	634 ± 10	323 ± 8
Feces (mg/d)	426 ± 200 ^a	498 ± 193 ^a	310 ± 95
Urine (mg/d)	145 ± 42	146 ± 54	150 ± 37
Balance (mg/d) ¹⁾	64 ± 210 ^b	-10 ± 203 ^b	-130 ± 102
Retention rate (%) ²⁾	10.0 ± 33.1 ^c	-1.6 ± 32.0 ^c	-39.4 ± 30.8
Apparent absorption (mg/d) ³⁾	208 ± 200 ^d	136 ± 193 ^d	20 ± 95
Apparent absorption rate (%) ⁴⁾	32.8 ± 31.6 ^e	21.4 ± 30.5 ^e	6.1 ± 28.8

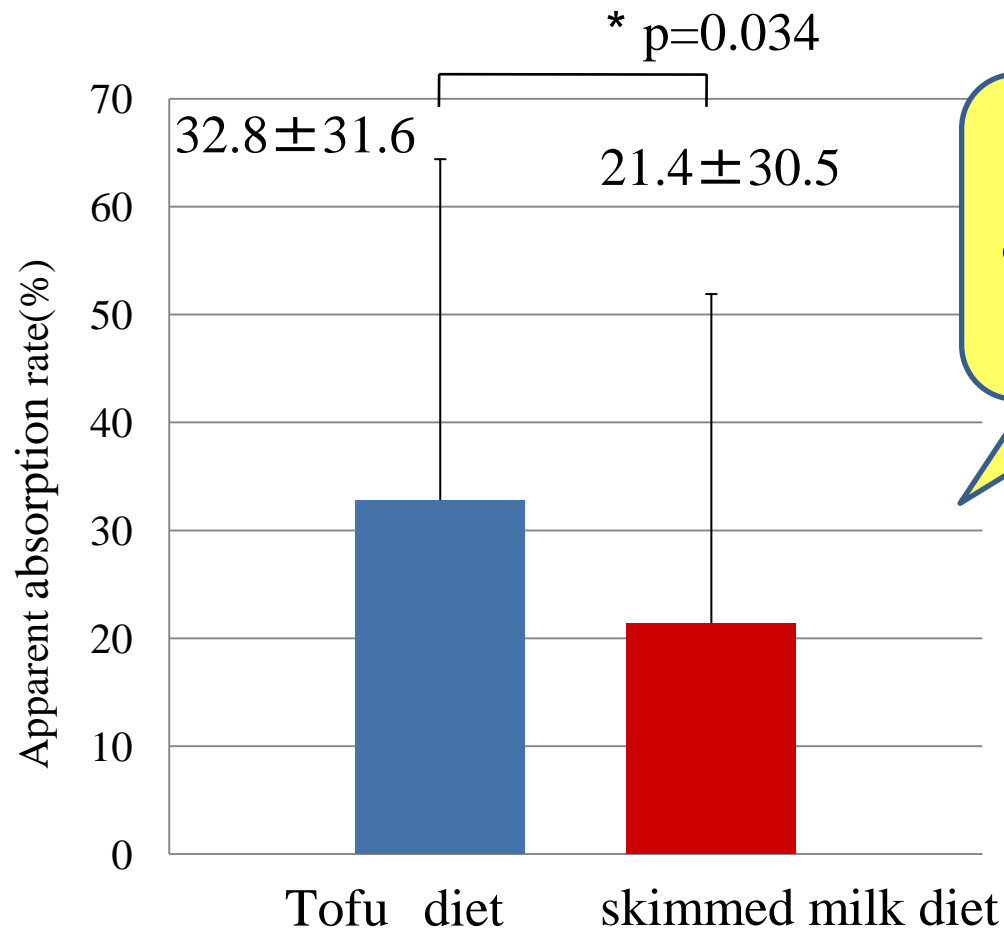
1) Balance (mg/day) = Intake – (Feces + Urine)

2) Retention rate (%) = Balance / Intake × 100

3) Apparent absorption (mg/day) = Intake – Feces

4) Apparent absorption rate (%) = Apparent absorption / Intake × 100

* Mean±SD (n=12). Significant differences were observed in values between the same alphabets by Wilcoxon Signed Ranks Test (p<0.05).



Similar absorption rates



*Mean±SD (n=12). Significant differences were observed in values between the two groups by Wilcoxon's Signed Ranks Test (P<0.05).

Apparent absorption rate in older women (%)