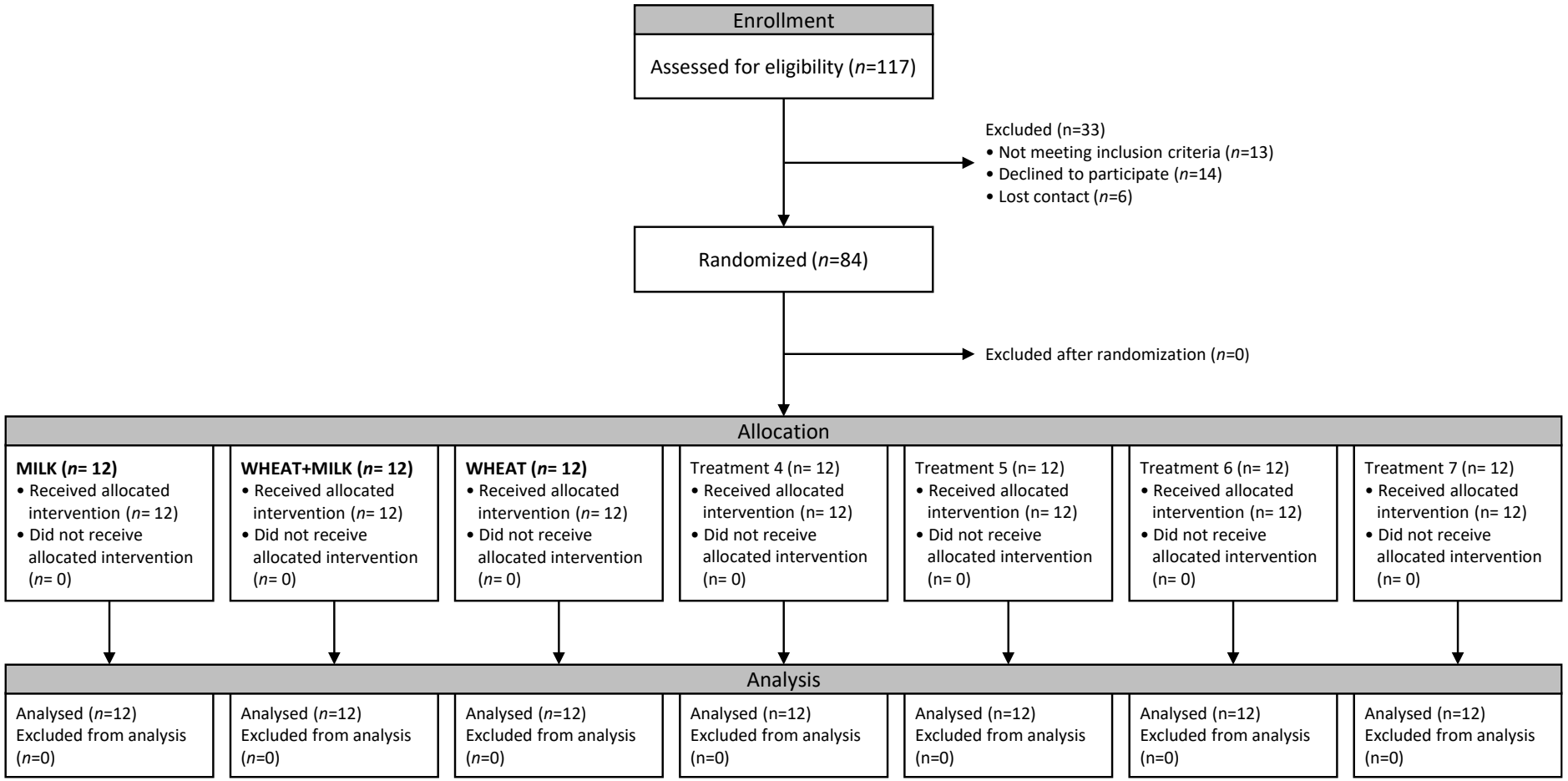
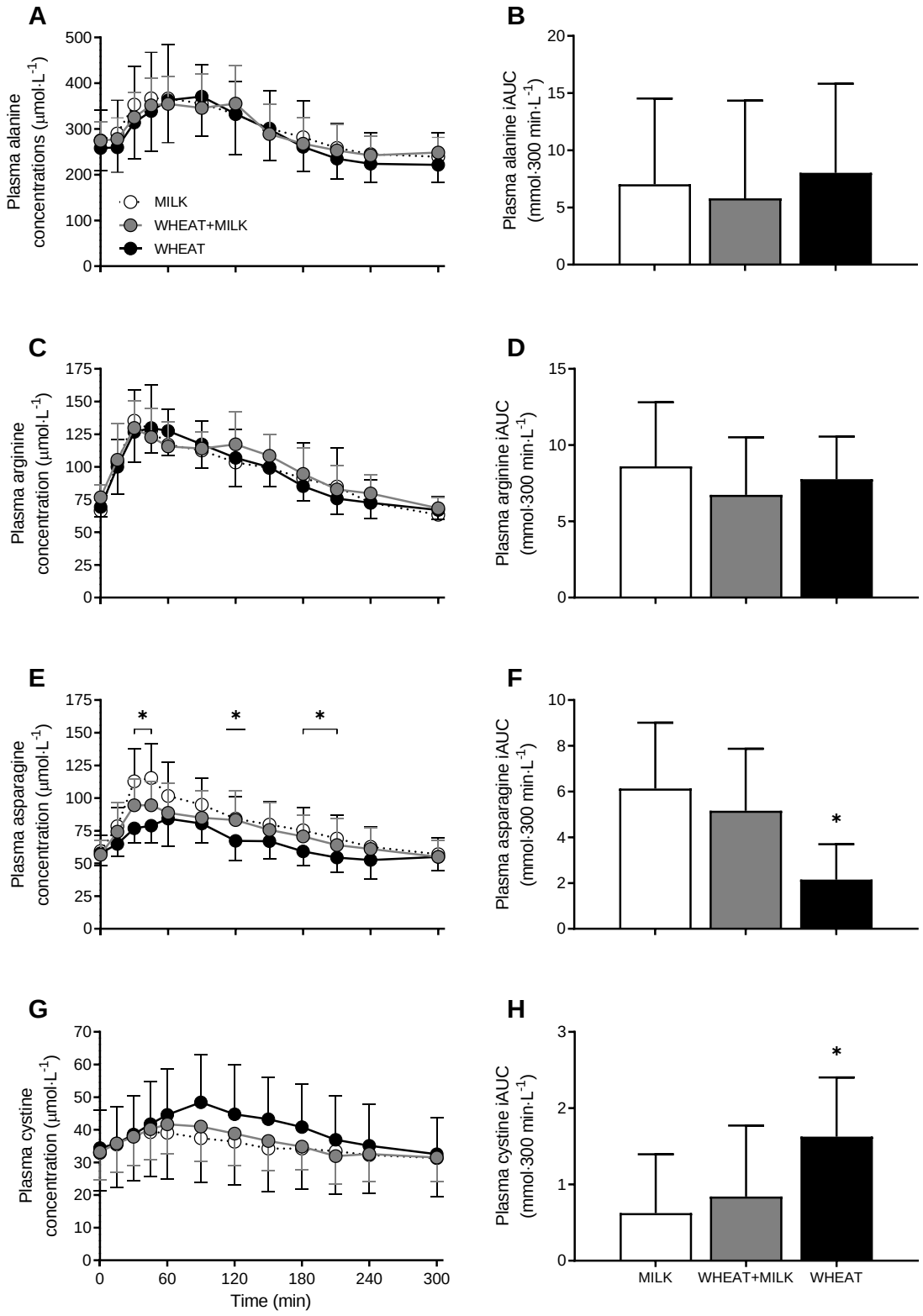
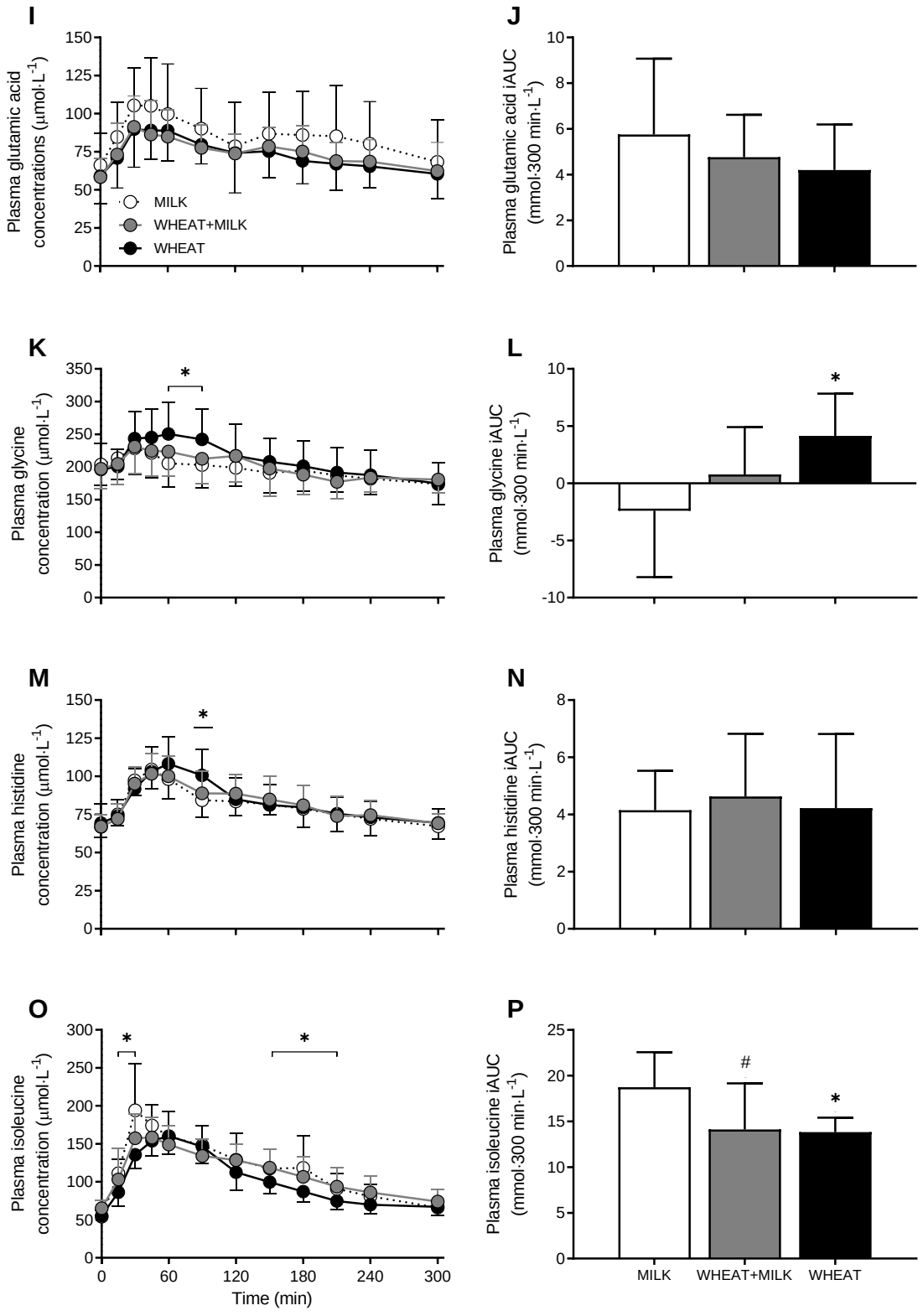


Supplemental figure 1: CONSORT flow diagram. CONSORT, Consolidated Standards of Reporting Trials. The current study was part of a larger trial with a total of 7 parallel groups (*n* = 12 per group) as indicated in the flow diagram. MILK (30 g milk protein), WHEAT (30 g wheat protein), WHEAT+MILK (15 g wheat protein + 15 g milk protein)



Supplemental figure 2: Figure to be continued on next page



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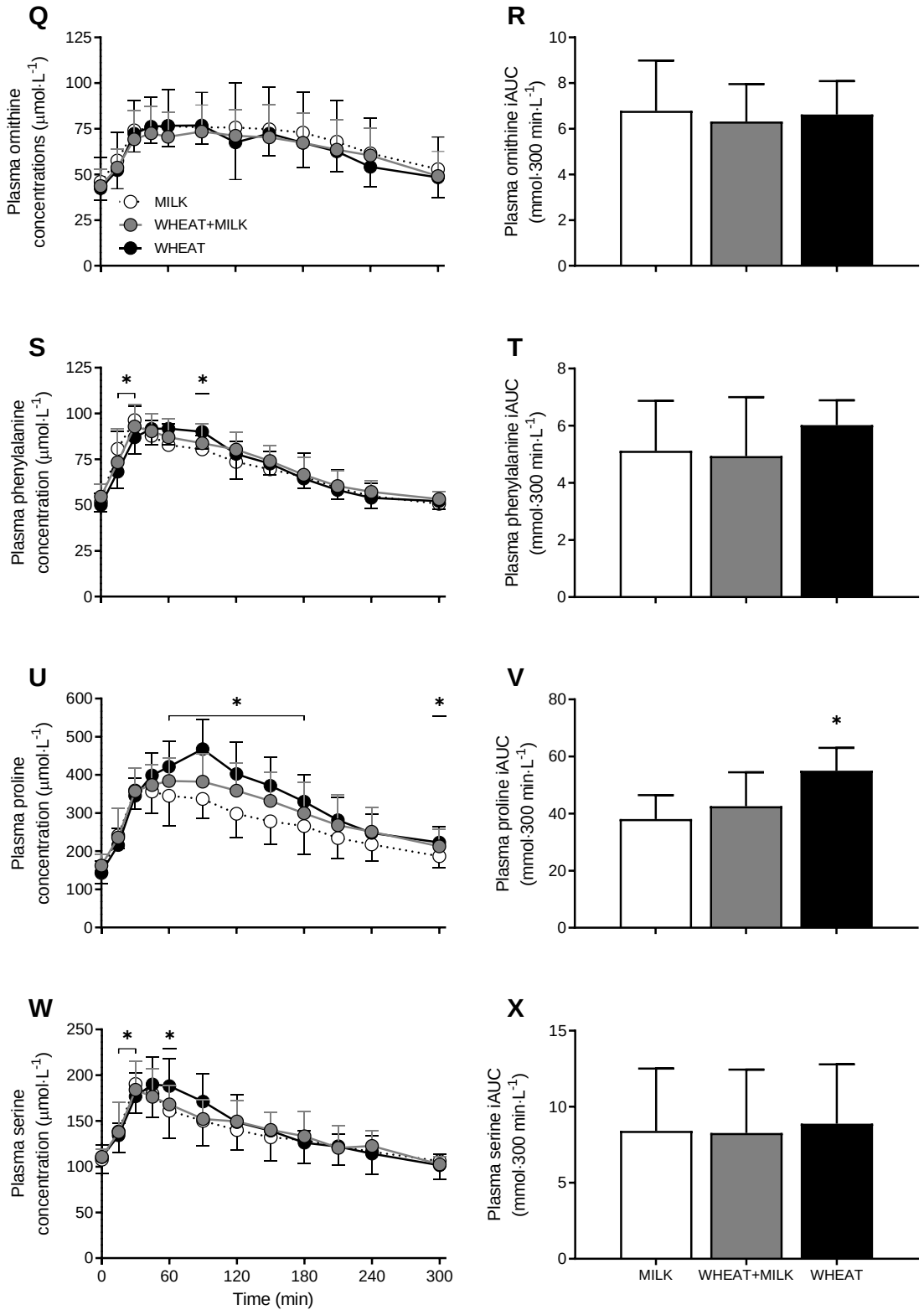

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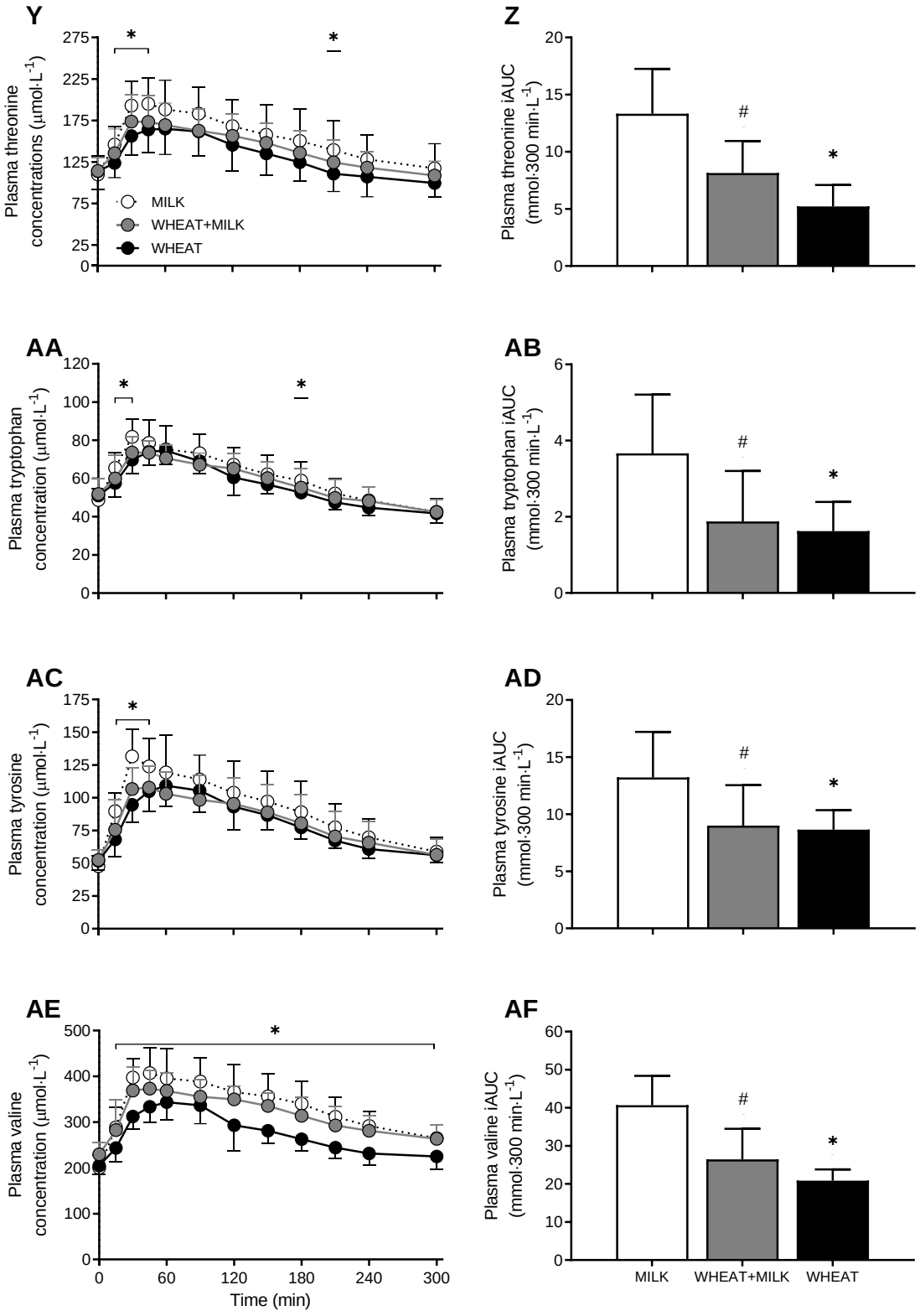

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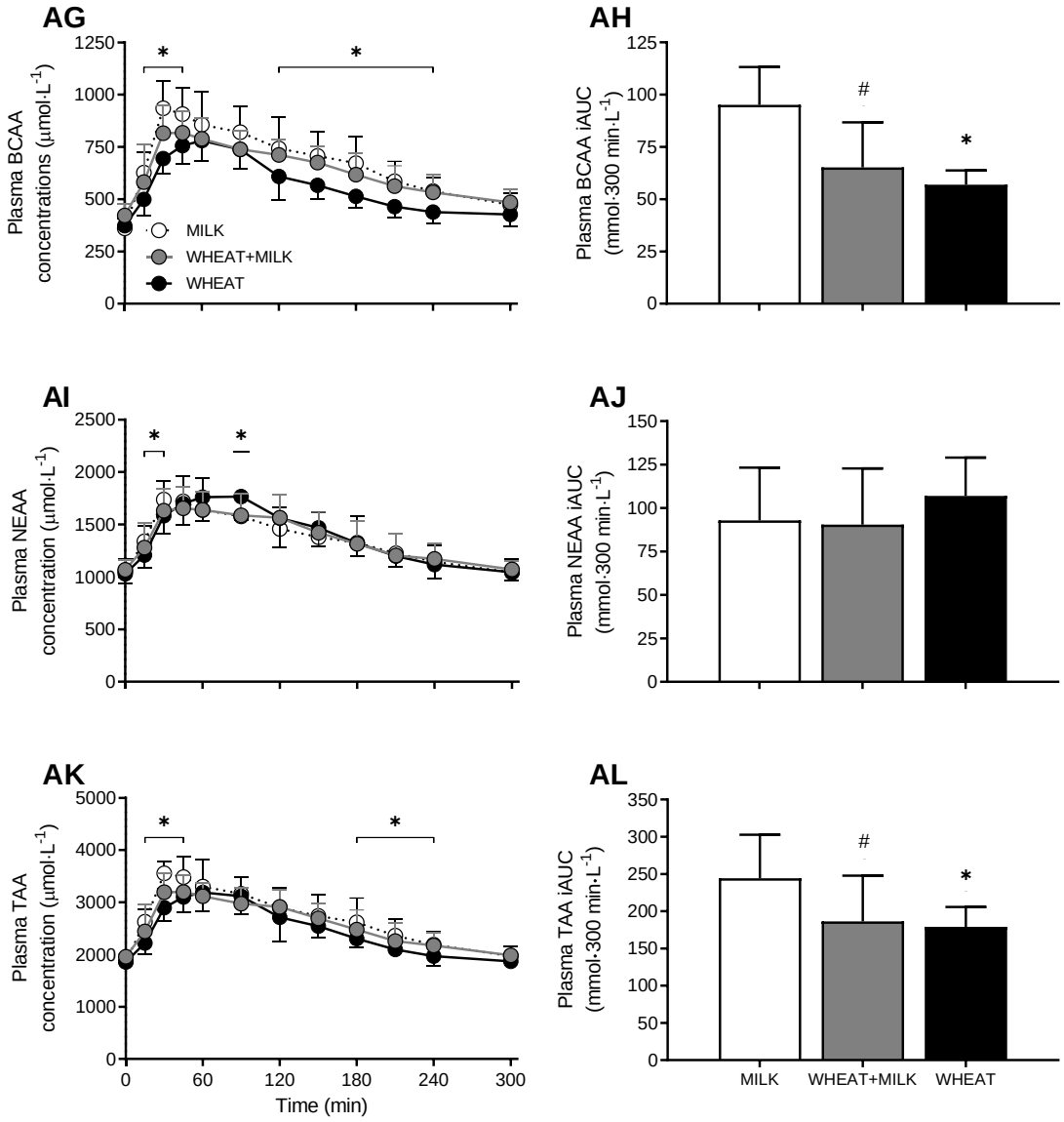
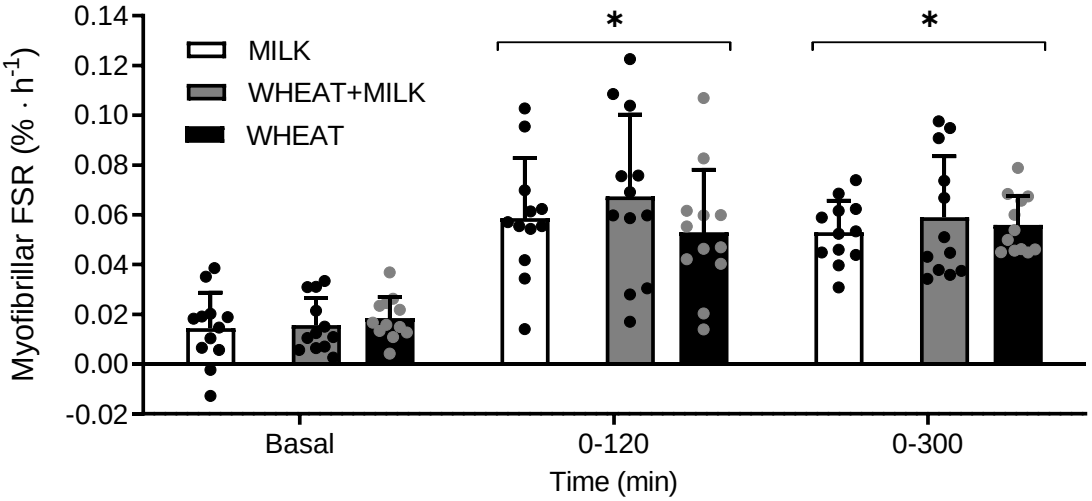


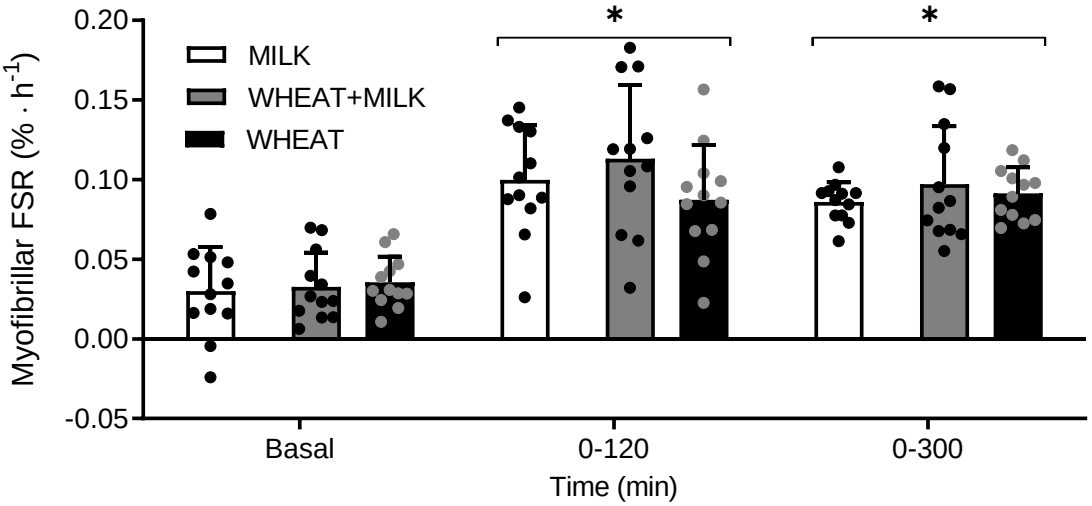
Supplemental figure 2: Figure to be continued on next page

Supplemental figure 2: Post-prandial plasma amino concentrations during the 300 min post-prandial period following the ingestion of MILK *vs* WHEAT and MILK *vs* WHEAT+MILK. Time 0 min represents time of beverage intake. Panels B, D, F, H, J, L, N, P, R, T, V, X, Z, AB, AD, AF, AH, AJ, AL represent the 0-5 h incremental area under curve (iAUC) following protein ingestion. MILK (30 g milk protein), WHEAT (30 g wheat protein), WHEAT+MILK (15 g wheat protein + 15 g milk protein). Values represent means ± standard deviation; * significantly different for MILK *vs* WHEAT ($P<0.05$), # significantly different for MILK *vs* WHEAT+MILK ($P<0.05$). Repeated measures ANOVA with time as within-subject variable and interventional drink (treatment) as between-subject variable, and independent samples *t*-test were used to determine differences between groups. Values displayed below represent the *P*-values for the different panels.

Amino acid	**2-factor repeated measures ANOVA**		**Independent samples *t*-test**	
	MILK *vs* WHEAT	MILK *vs* WHEAT+MILK	MILK *vs* WHEAT	MILK *vs* WHEAT+MILK
Alanine	A: 0.27	A: 0.42	B: 0.75	B: 0.71
Arginine	C: 0.32	C: 0.32	D: 0.57	D: 0.27
Asparagine	E: <0.001	E: 0.14	F: <0.001	F: 0.40
Cystine	G: <0.001	G: 0.09	H: <0.01	H: 0.54
Glutamic acid	I: 0.23	I: 0.37	J: 0.18	J: 0.37
Glycine	K: <0.001	K: 0.08	L: <0.01	L: 0.14
Histidine	M: <0.01	M: 0.68	N: 0.93	N: 0.53
Isoleucine	O: 0.01	O: 0.13	P: <0.001	P: 0.02
Ornithine	Q: 0.36	Q: 0.92	R: 0.83	R: 0.56
Phenylalanine	S: <0.001	S: 0.29	T: 0.12	T: 0.82
Proline	U: <0.001	U: 0.27	V: <0.001	V: 0.29
Serine	W: <0.01	W: 0.70	X: 0.77	X: 0.94
Threonine	Y: 0.02	Y: 0.32	Z: <0.001	Z: 0.001
Tryptophane	AA: 0.04	AA: 0.14	AB: <0.001	AB: <0.01
Tyrosine	AC: <0.01	AC: 0.11	AD: 0.001	AD: 0.01
Valine	AE: 0.001	AE: 0.1	AF: <0.001	AF: <0.001
BCAA	AG: <0.01	AG: 0.12	AH: <0.001	AH: 0.001
NEAA	AI: <0.01	AI: 0.36	AJ: 0.21	AJ: 0.85
TAA	AK: <0.01	AK: 0.22	AL: <0.01	AL: 0.03



Supplemental figure 3: Myofibrillar fractional synthetic rate (FSR) at different time points following ingestion of MILK *vs* WHEAT and MILK *vs* WHEAT+MILK in healthy, young males (*n*=12 per group). MILK: 30 g milk protein, WHEAT: 30 g wheat protein, WHEAT+MILK: 15 g wheat protein + 15 g milk protein. Bars represent means ± standard deviation, dots represent individual values. *significantly different from basal; *P*<0.05. Independent samples *t*-test: MILK *vs* WHEAT *P*=0.41, *P*=0.58, and *P*=0.56 for basal, 0-120, and 0-300 min, respectively. MILK *vs* WHEAT+MILK *P*=0.81, *P*=0.47, and *P*=0.46 for basal, 0-120, and 0-300 min, respectively.



Supplemental figure 4: Myofibrillar fractional synthetic rate (FSR) determined with intra-cellular enrichments as precursor pool at different time points following ingestion of MILK *vs* WHEAT and MILK *vs* WHEAT+MILK in healthy, young males (*n*=12 per group). MILK: 30 g milk protein, WHEAT: 30 g wheat protein, WHEAT+MILK: 15 g wheat protein + 15 g milk protein. Bars represent means ± standard deviation, dots represent individual values. *significantly different from basal; *P*<0.05. Independent samples *t*-test: MILK *vs* WHEAT *P*=0.55, *P*=0.38, and *P*=0.38 for basal, 0-120, and 0-300 min, respectively. MILK *vs* WHEAT+MILK *P*=0.78, *P*=0.43, and *P*=0.33 for basal, 0-120, and 0-300 min, respectively.

Supplemental Table 1: Average 3 day dietary intake of study participants

	MILK		WHEAT+MILK		WHEAT	
	Mean	*SD*	*Mean*	*SD*	*Mean*	*SD*
Energy ($MJ \cdot d^{-1}$)	9.3*	2.2	9.2	2.2	7.4	2.0
Carbohydrate ($g \cdot d^{-1}$)	267*	63	274	70	220	46
Fat ($g \cdot d^{-1}$)	78	27	79	29	65	29
Protein ($g \cdot d^{-1}$)	97*	29	87	30	72	25
Energy ($kJ \cdot kg^{-1} \cdot d^{-1}$)	131	26	127	33	109	39
Carbohydrate ($g \cdot kg^{-1} \cdot d^{-1}$)	3.8	0.9	3.8	1.0	3.2	0.9
Fat ($g \cdot kg^{-1} \cdot d^{-1}$)	1.1	0.3	1.1	0.4	1.0	0.5
Protein ($g \cdot kg^{-1} \cdot d^{-1}$)	1.3	0.4	1.2	0.4	1.0	0.4
Carbohydrate (% total energy)	50	7	51	9	52	6
Fat (% total energy)	33	8	33	8	32	6
Protein (% total energy)	18	3	16	3	16	4

Values represent mean ± standard deviation. *n*=12 per nutritional intervention group. MILK: 30 g milk protein, WHEAT+MILK: 15 g wheat protein plus 15 g milk protein, WHEAT: 30 g wheat protein. Independent samples *t*-test for MILK *vs* WHEAT and MILK *vs* WHEAT+MILK. *significantly different for MILK *vs* WHEAT ($P<0.05$). 3 Day food records were analyzed using "Mijn Eetmeter" (https://mijn.voedingscentrum.nl/nl/eetmeter/), online software available from the Netherlands Nutrition Centre.