

Supplementary Information

1 **SI Table 1:**

2 Incremental areas under the glucose response curves for 4 potato selections treated in different
3 ways prior to consumption.

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Test Meal	Experiment 1		Experiment 2	Experiment 3
	Group A	Group B		
Selection 1 – Fresh Boiled	159±28			228±32
Selection 1 – Cold	130±21			140±14
Selection 1 – Reheated	178±26			
Selection 2 – Fresh Boiled	140±13		87±12	
Selection 2 – Cold	133±24		98±13	
Selection 2 – Reheated	164±26			
Selection 3 – Fresh Boiled		231±3	168±14	178±14
Selection 3 – Cold		114±18	113±14	123±13
Selection 3 – Reheated		217±27		
Selection 4 – Fresh Boiled		200±32		
Selection 4 – Cold		115±23		
Selection 4 – Reheated		167±28		
Baked Potato Chips	170±22	218±34		
White Bread*	165±14	198±23		175±23
White Bread plus Lactulose				190±19

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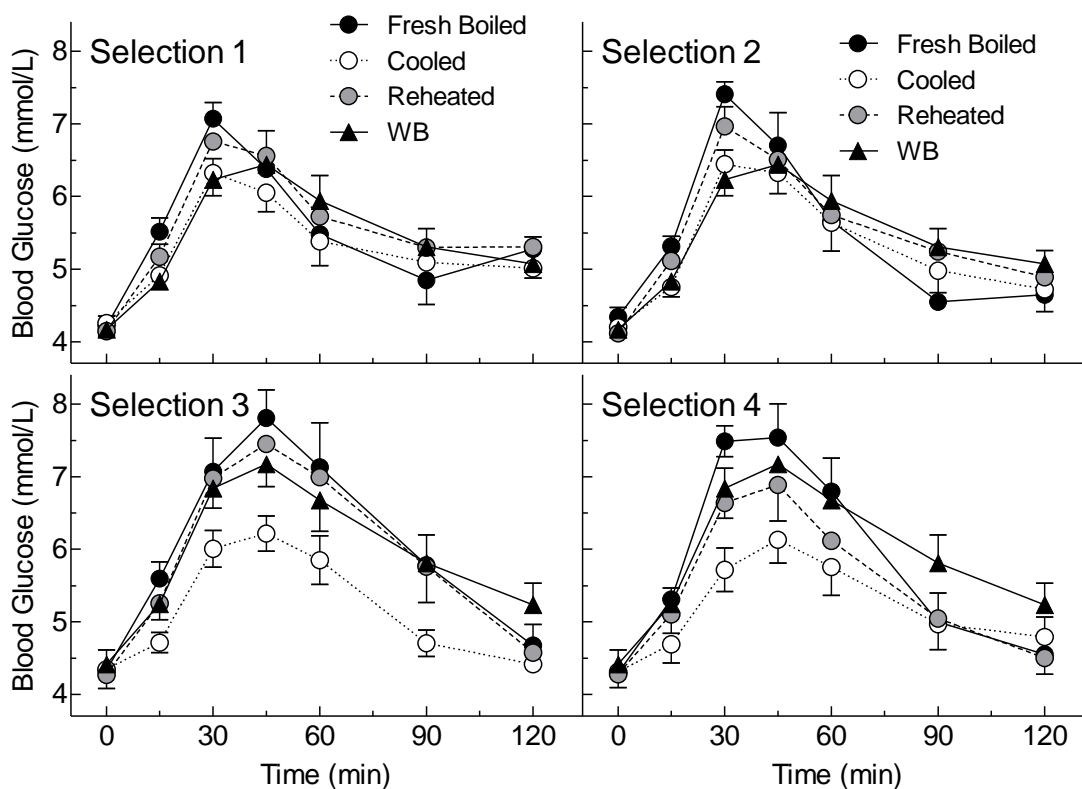
6 Values are means±SEM for n=10 subjects per column.

7 * In experiment 1, subjects took white bread 3 times each, in experiment 2 they took white bread
8 2 times each, while in experiment 3 each subject tested white bread alone once and white bread
9 plus lactulose once. Lactulose had no significant effect on the glycemic response.

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13 Figure 1:

14 Experiment 1: blood glucose responses elicited by 4 selections of potatoes served either freshly

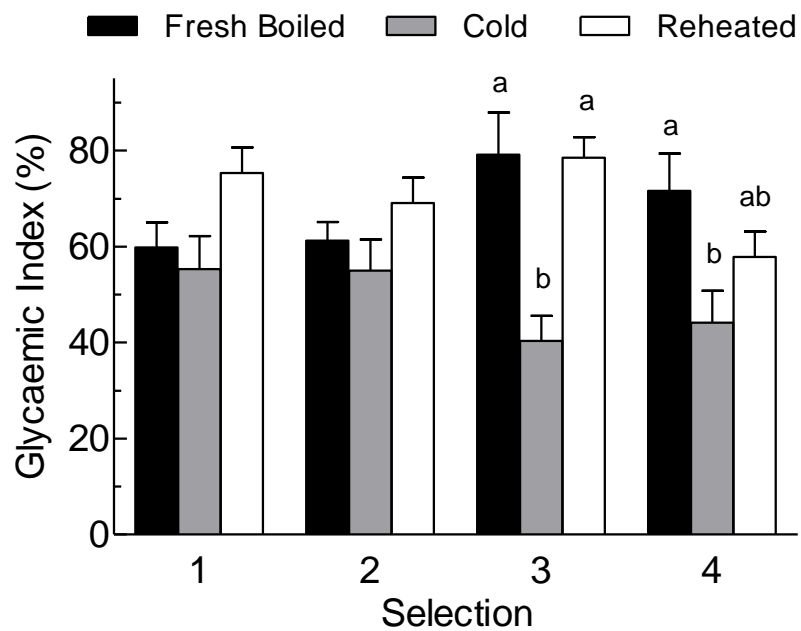
15 boiled, cold, or cooled and reheated. Values are means \pm SEM for n=10 subjects. One group of

16 10 subjects tested Selections 1 and 2, and a different group of subjects tested Selections 3 and 4.

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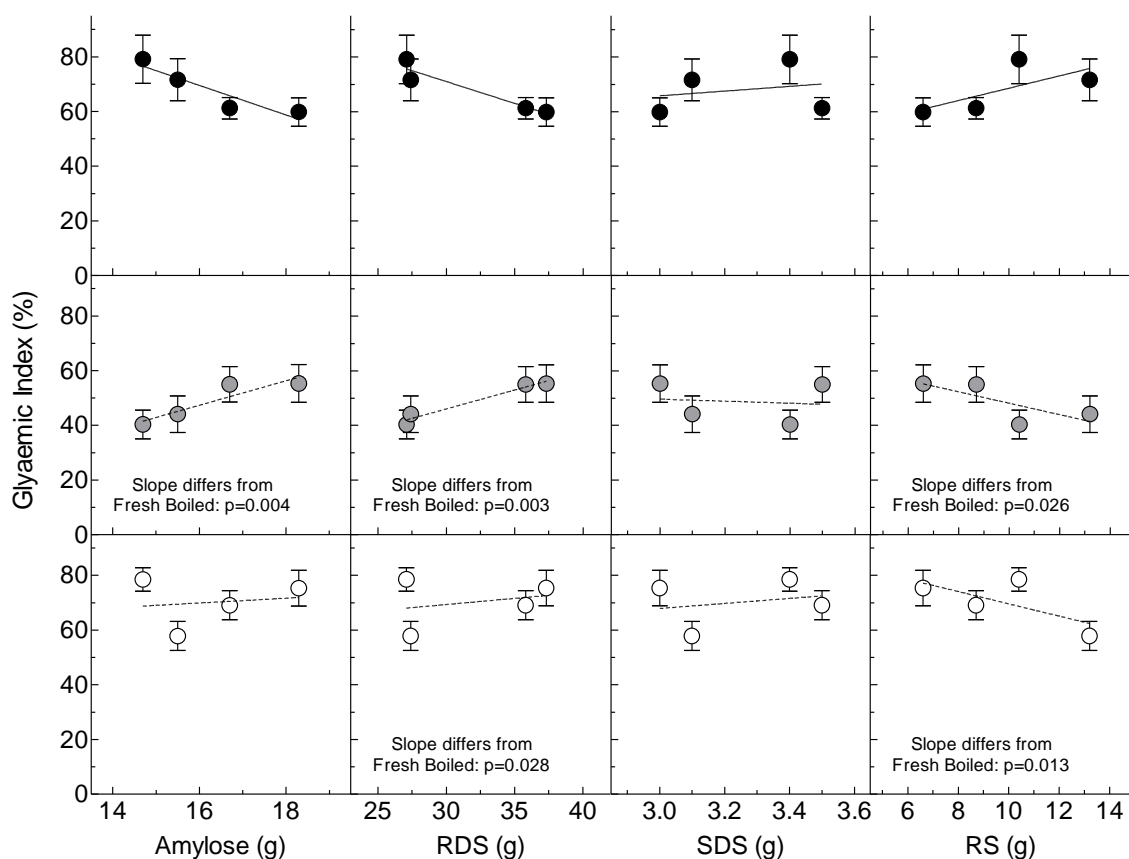
20 Figure 2:

21 Experiment 1: GI of fresh boiled, cold and reheated potatoes for Selections 1,2,3, and 4. Values
22 are means±SEM (n=10). A significant selection×treatment interaction existed (P<0.05). Bars
23 with different letters, within each selection differ significantly (P<0.05).

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27 Figure 3:

28 Relationships between GI values of freshly boiled potatoes (●), cold potatoes (●) and cooled and

29 reheated potatoes (○) and intakes of amylose, RDS, SDS and RS. Amylose, RDS, SDS and RS

30 were measured in fresh boiled potatoes and expressed as grams per 50g available carbohydrate

31 portion. Values are means±SEM. Significant correlations ($p < 0.1$, $n = 40$) for freshly boiled

32 potatoes between GI and amylose ($r = -0.341$, $p = 0.031$) and GI and RDS ($r = -0.349$, $p = 0.028$); for

33 cold potatoes between GI and amylose ($r = 0.298$, $p = 0.062$) and RDS ($r = 0.320$, $p = 0.045$); for

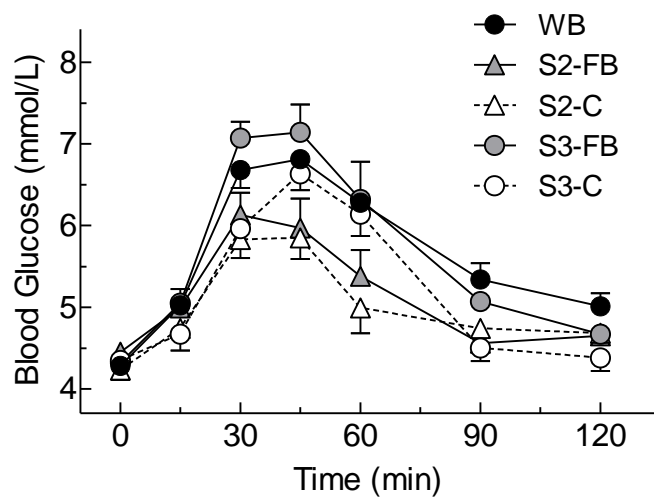
34 reheated potatoes between GI and RS ($r = -0.314$, $p = 0.048$). The slopes of the lines differ

35 significantly between freshly boiled and cold potatoes and between freshly boiled and reheated

36 potatoes as indicated on each panel.

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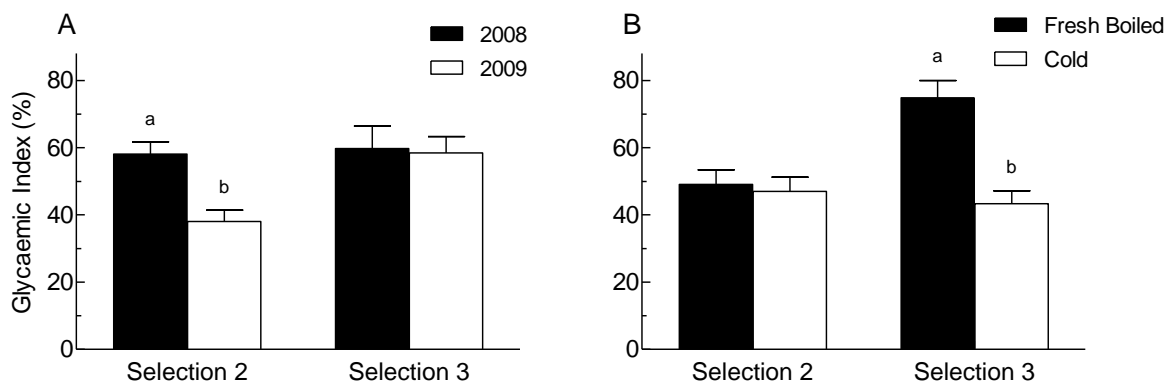
39 Figure 4:

40 Experiment 2: blood glucose responses elicited by white bread (WB) and Selection 2 (S2) and
41 Selection 3 (S3) potatoes served either freshly boiled (FB) or cold (C). Values are means \pm SEM
42 for n=10 subjects.

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46 Figure 5:

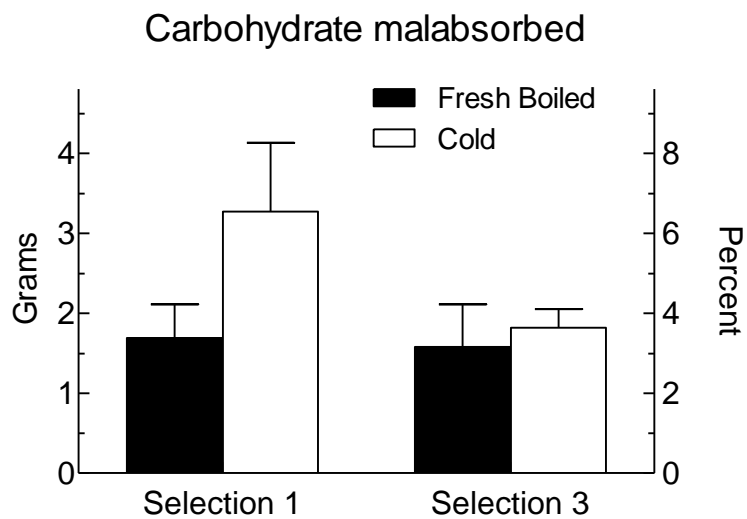
47 GI results for Selections 2 and 3 from Experiments 1 and 2. Panel A shows the significant year-
48 of-harvest×selection interaction ($P=0.027$); each bar represents the average GI of the fresh boiled
49 and cold potatoes for that year (2008 or 2009) and that Selection (2 or 3). The GI of Selection 2
50 differed significantly between years but no difference in GI between years for Selection 3. Panel
51 B shows the significant selection×treatment interaction ($P=0.001$); each bar represents the
52 average GI of the 2008 and 2009 potatoes for that treatment (fresh boiled or cold) and that
53 Selection (2 or 3). Cooling significantly reduced the GI of Selection 3, but had no effect on
54 Selection 2. Values expressed as mean±SEM ($n=20$). Bars with different letters, within each
55 graph differ significantly ($P<0.05$).

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60 Figure 6:

61 Carbohydrate malabsorbed after consuming potato Selections 1 and 3 freshly boiled or cold.

62 Values are means±SEM for n=10 subjects. Carbohydrate malabsorption was estimated from

63 breath hydrogen excretion. The mean for freshly boiled potatoes, $1.6\pm0.3\text{g}$, was significantly

64 less than that for cold potatoes, $2.5\pm0.4\text{g}$.