**Supplemental Material**

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| **Table S1.** Continuous glucose monitoring data. |
|  | **Fructose****(n=14)** | **Water****(n=14)** | **Paired difference** **[95% CI]****(n=14)** | **p value** |
| 48 hours pre-exerciseMean glucose (mmol/L)CV of glucose concentration (%)Time below range (<3.9 mmol/L) (%)Time in range (3.9-10 mmol/L) (%)Time above range (>10 mmol/L) (%) | 8.8 ± 2.031.9 ± 8.83.5 ± 3.568.7 ± 21.127.8 ± 22.1 | 8.5 ± 1.535.0 ± 6.44.2 ± 3.464.8 ± 13.831.0 ± 16.1 | 0.3 [-0.8; 1.5]-3.1 [-9.0; 2.9]-0.6 [-3.0; 1.9]4.2 [-8.8; 17.3]-3.7 [-17.2; 9.8] | 0.550.280.630.490.56 |
| 24 hours post-exerciseMean glucose (mmol/L)CV of glucose concentration (%)Time below range (<3.9 mmol/L) (%)Time in range (3.9-10 mmol/L) (%)Time above range (>10 mmol/L) (%) | 8.6 ± 2.532.7 ± 11.76.5 ± 14.263.0 ± 23.230.5 ± 25.4 | 8.6 ± 1.631.5 ± 10.94.6 ± 9.965.1 ± 19.330.3 ± 20.2 | 0.2 [-1.2; 1.6]0.1 [-7.3; 7.6]0.5 [-8.9; 9.7]-1.9 [-19.9; 16.2]1.4 [-16.9; 19.6] | 0.790.970.900.830.88 |
| Data are presented as mean±SD, or mean [95% CI]. CV, coefficient of variation. |
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| **Table S2.** Cardiorespiratory measures.  |
|  | **Fructose****(n=14)** | **Water****(n=14)** | **Paired difference** **[95% CI]****(n=14)** | **p value** |
| Power (Watts) | 138.2 ± 40.7 | 138.2 ± 40.7 | 0 | - |
| VO2 (mL/min/kg) | 26.4 ± 5.1 | 26.0 ± 5.3 | 0.4 [-0.7; 1.5] | 0.43 |
| Heart rate♯ (bpm) | 141.3 ± 13.7 | 141.8 ± 13.6 | 0.0 [-3.8; 3.9] | 0.98 |
| Borg visual analogue scale† | 13.1 ± 2.1 | 12.6 ± 1.5 | 0.6 [-0.4; 1.6] | 0.22 |
| Substrate oxidation at restCHO oxidation (g/min)CHO oxidation (%)Fat oxidation (g/min)Fat oxidation (%) | 0.30 ± 0.0964.4 ± 16.20.07 ± 0.0335.6 ± 16.3 | 0.19 ± 0.1043.4 ± 19.90.11 ± 0.0356.6 ± 19.4 | 0.12 [0.08; 0.16]22.2 [15.4; 29.0]-0.04 [-0.05; -0.02]-22.3 [-29.1; -15.4] | <0.001<0.001<0.001<0.001 |
| Substrate oxidation during exercise CHO oxidation (g/min)CHO oxidation (%)Fat oxidation (g/min)Fat oxidation (%) | 2.26 ± 0.4981.7 ± 13.60.24 ± 0.1918.3 ± 13.6 | 2.23 ± 0.5883.9 ± 16.40.20 ± 0.2316.1 ± 16.4 | 0.05 [-0.24; 0.33]-1.5 [-7.8; 4.8]0.03 [-0.06; 0.12]1.5 [-4.8; 7.8] | 0.730.610.480.61 |
| Data are presented as mean±SD, or mean [95% CI]. ♯n=13, as the heart rate monitor was defective during one visit. †The mean Borg visual analogue scale was assessed after 20 minutes of exercise. bpm, beats per minute; CHO, carbohydrate. |
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# **Figure S1.** CONSORT diagram.



One patient was excluded from the analysis due to interruption of the second visit.

**Figure S2.** Scatter plot illustrating the delta in sensor glucose (Fructose-Water) (y-axis) over the course of exercise (x-axis). A positive value indicates a higher sensor glucose value in the fructose versus the water condition. Values after a hypoglycaemic event in one of the two conditions are not displayed. In one participant, sensor data were not available during exercise due to connectivity issues.

