




## Correction to: Modeling the acute effects of exercise on glucose dynamics in healthy nondiabetic subjects

Spencer Frank<sup>1,2</sup>  · Abdulrahman Jbaily<sup>1,2</sup> · Ling Hinshaw<sup>3</sup> · Rita Basu<sup>4</sup> · Ananda Basu<sup>4</sup> · Andrew J. Szeri<sup>1,5</sup>

Published online: 1 June 2021

© Springer Science+Business Media, LLC, part of Springer Nature 2021

### Correction to:

**Journal of Pharmacokinetics  
and Pharmacodynamics (2021) 48:225–239**  
<https://doi.org/10.1007/s10928-020-09726-9>

The original version of this article contained a typo in table 1. In table 1, the units in three parameters read as mL/kg, instead they should read dL/kg. The units were reported correctly elsewhere in the manuscript and the results are not affected by the typo. Please find below the corrected Table 1:

---

The original article can be found online at <https://doi.org/10.1007/s10928-020-09726-9>.

---

✉ Spencer Frank  
spencerfrank@berkeley.edu

- <sup>1</sup> Department of Mechanical Engineering at the University of California Berkeley, Berkeley, USA
- <sup>2</sup> Present Address: Dexcom in San Diego, San Diego, CA, USA
- <sup>3</sup> Division of Endocrinology at Mayo Clinic, Rochester, USA
- <sup>4</sup> Present Address: Division of Endocrinology at the University of Virginia School of Medicine, Charlottesville, USA
- <sup>5</sup> Present Address: Department of Mechanical Engineering at the University of British Columbia, Vancouver, USA

**Table 1** Parameters used in glucose dynamics model for healthy nondiabetic subjects

Parameter	Description	Unit	Value	Source
$r_{brain}^G$	Metabolic clearance rate of glucose in the brain	mg/min	71	[32, p. 219]
$r_{heart}^G$	Metabolic clearance rate of glucose in the heart	mg/min	3.7	[32, p. 219]
$r_{kidney}^G$	Metabolic clearance rate of glucose in the kidneys	mg/min	3.7	[32, p. 219]
$r_{gut}^G$	Metabolic clearance rate of glucose in the gut	mg/min	16.6 <sup>b</sup>	[32, p. 219]
$r_{peri}^G$	Basal metabolic clearance rate of glucose in the peripheral tissue	mg/min	45.2	[32, p. 219]
$r_{liv}^G$	Basal metabolic clearance rate of glucose in the liver	mg/min	14.8 <sup>b</sup>	[32, p. 219]
$r_{SM_{ins}}^G$	Insulin sensitivity of glucose clearance in skeletal muscle	mg/min per $\mu\text{U/mL}$	5	[34]
$r_{SM_{exr}}^G$	Exercise sensitivity of glucose clearance in skeletal muscle	mg/min per $E$	860	[2, 16, 17, 35, 36] <sup>c</sup>
$V_{CS_N}^G$	Normalized volume of distribution of glucose in circulatory system	dL/kg <sup>a</sup>	0.7	[7]
$V_{SM_N}^G$	Normalized volume of distribution of glucose in skeletal muscle	dL/kg <sup>a</sup>	0.96	[7]
$V_{SM_N}^{tiss}$	Normalized volume of tissue in skeletal muscle	mL/kg <sup>a</sup>	540	[41]
$\tau_{liv}$	Time lag of insulin action of liver glucose uptake	min	25	[7]
$Q_{d_{rest}}$	Tissue perfusion rate in skeletal muscle tissue at rest	$\text{mL}_b/\text{mL}_{tiss}/\text{min}$	0.038	[41]
$PS_{d_{rest}}^G$	Capillary permeability surface area to glucose during rest	$\text{mL}_b/\text{mL}_{tiss}/\text{min}$	0.01	[38–40]
$R_d$	Capillary recruitment factor in delivering (SM) tissue	1	1.46	[19, 56, 57] <sup>c</sup>
$\gamma$	Capillary recruitment saturation rate	1	10	[19, 56, 57] <sup>c</sup>
$\lambda_d$	Sensitivity of tissue perfusion rate to exercise	$\text{mL}_b/\text{mL}_{tiss}/\text{min}$ per $E$	1.1	[37]
$\tau_{EGP}$	Time lag of exercise action on endogenous glucose production	min	20	[16, 17] <sup>c</sup>
$\eta$	Maximum exercise action on endogenous glucose production	1	4	[16, 17] <sup>c</sup>
$V_{SM_N}^I$	Normalized volume of distribution of insulin in skeletal muscle	dL/kg <sup>a</sup>	1.2	[7, 42]
$r_{SM_N}^I$	Normalized metabolic clearance rate of insulin in skeletal muscle	l/min	0.02	[58–60] <sup>c</sup>
$PS_{d_{rest}}^I$	Capillary permeability surface area to insulin during rest	$\text{mL}_b/\text{mL}_{tiss}/\text{min}$	0.005	[39, 40]
$h$	Hematocrit percentage in blood	1	0.4	[43]

<sup>a</sup>Multiplied by body weight (BW) prior to being used in model. See demographics for BW

<sup>b</sup>Adjusted to ensure that total liver uptake is approx 50% of ingested glucose [33, 46]

<sup>c</sup>Parameter is derived from data taken from specified sources

**Publisher's Note** Springer Nature remains neutral with regard to jurisdictional claims in published maps and institutional affiliations.