

CORRECTION

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# Correction: An updated “norepinephrine equivalent” score in intensive care as a marker of shock severity

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## Correction: *Critical Care* (2023) 27:29

<https://doi.org/10.1186/s13054-023-04322-y>

Following publication of the original article [1], the authors would like to correct the correction rate for metaraminol which is 1/8 under the heading Proposed updated norepinephrine equivalent score, Figure 1 and Table 1.

The sentences currently reads:

A randomized trial compared metaraminol and norepinephrine in septic shock [38]. Based on the findings of this trial suggesting 2.5 µg/kg/min of metaraminol

corresponded to 0.3 µg/kg/min of norepinephrine, we defined a correction factor of 8 to metaraminol dose in µg/kg/min.

The sentences should read:

A randomized trial compared metaraminol and norepinephrine in septic shock [38]. Based on the findings of this trial suggesting 2.5 µg/kg/min of metaraminol corresponded to 0.3 µg/kg/min of norepinephrine, we defined a correction factor of 1/8 to metaraminol dose in µg/kg/min.

The original article can be found online at <https://doi.org/10.1186/s13054-023-04322-y>.

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The incorrect Figure 1:

### An updated “Norepinephrine Equivalent” score in intensive care as a marker of shock severity

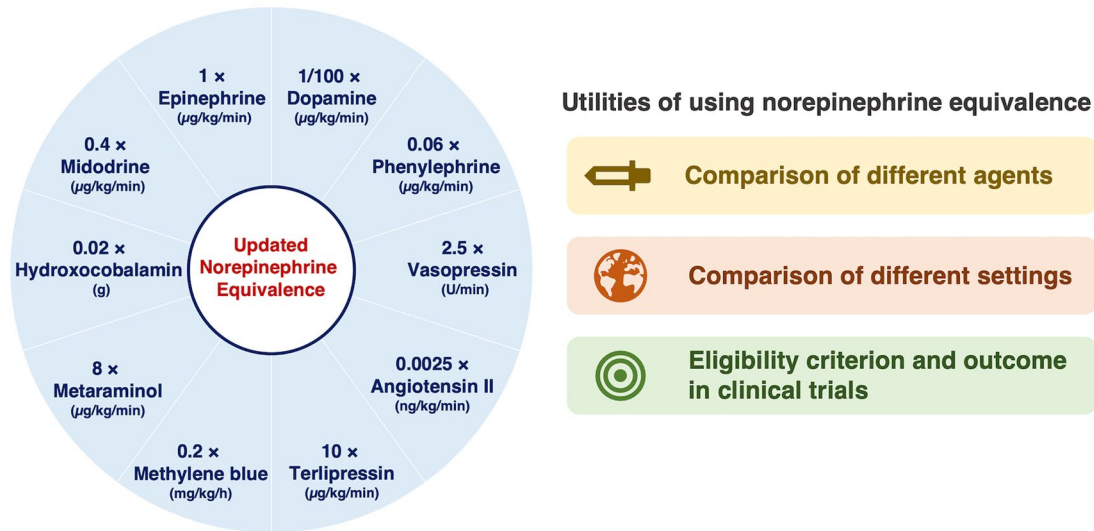


Fig. 1 Visual summary of an updated norepinephrine equivalent score and need for using norepinephrine equivalence

The correct Figure 1:

### An updated “Norepinephrine Equivalent” score in intensive care as a marker of shock severity

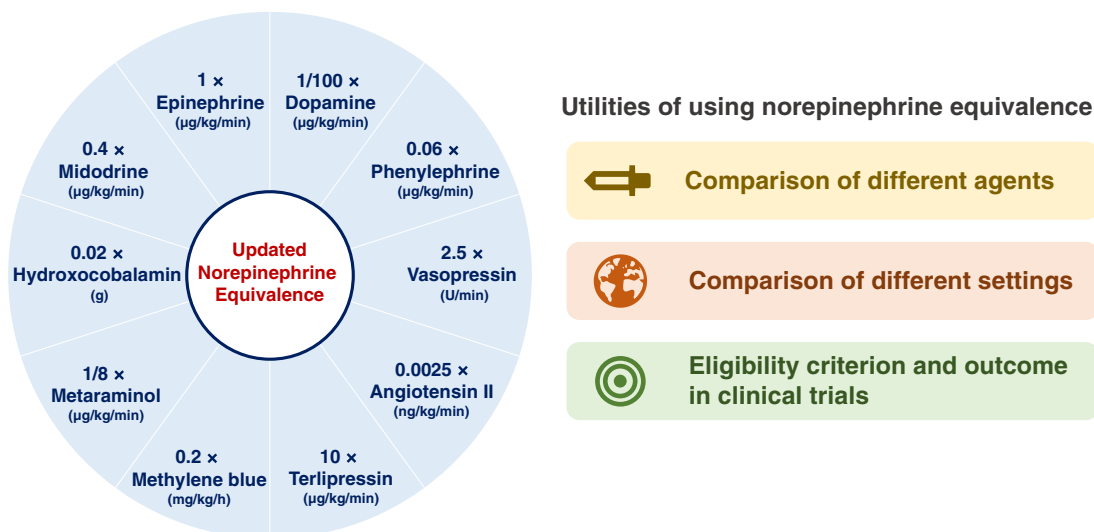


Fig. 1 Visual summary of an updated norepinephrine equivalent score and need for using norepinephrine equivalence

## The incorrect Table 1:

**Table 1** Summary of norepinephrine equivalent formulas

Author	Year	Journal	Calculation
Patel et al. [22]	2002	Anesthesiology	Norepinephrine dose ( $\mu\text{g}/\text{min}$ ) + epinephrine dose ( $\mu\text{g}/\text{min}$ ) + $1/4 \times$ dopamine dose ( $\mu\text{g}/\text{kg}/\text{min}$ )
Russell et al. [13] (VASST)	2008	New England Journal of Medicine	Norepinephrine dose ( $\mu\text{g}/\text{min}$ ) + $1/2 \times$ dopamine dose ( $\mu\text{g}/\text{kg}/\text{min}$ ) + epinephrine dose ( $\mu\text{g}/\text{min}$ ) + $1/10 \times$ phenylephrine dose ( $\mu\text{g}/\text{min}$ )
Brown et al. [12]	2013	Chest	Norepinephrine dose ( $\mu\text{g}/\text{kg}/\text{min}$ ) + epinephrine dose ( $\mu\text{g}/\text{kg}/\text{min}$ ) + $1/100 \times$ dopamine dose ( $\mu\text{g}/\text{kg}/\text{min}$ ) + $5 \times$ vasopressin dose (U/min) + $0.45 \times$ phenylephrine dose ( $\mu\text{g}/\text{kg}/\text{min}$ )
Ralib et al. [23]	2013	Clinical Nephrology	Norepinephrine dose ( $\mu\text{g}/\text{min}$ ) + $500 \times$ vasopressin dose (U/min) + epinephrine dose ( $\mu\text{g}/\text{min}$ ) + $1/3 \times$ phenylephrine dose ( $\mu\text{g}/\text{min}$ ) + $1/100 \times$ dopamine dose ( $\mu\text{g}/\text{min}$ )
Gutsche et al. [21]	2017	Anesthesia & Analgesia	Norepinephrine dose ( $\mu\text{g}/\text{min}$ ) + $1/2 \times$ dopamine dose ( $\mu\text{g}/\text{kg}/\text{min}$ ) + epinephrine dose ( $\mu\text{g}/\text{min}$ ) + $1/10 \times$ phenylephrine dose ( $\mu\text{g}/\text{min}$ ) + $200 \times$ vasopressin dose (U/min)
Khanna et al. [15] (ATHOS-3)	2017	New England Journal of Medicine	Norepinephrine dose ( $\mu\text{g}/\text{kg}/\text{min}$ ) + epinephrine dose ( $\mu\text{g}/\text{kg}/\text{min}$ ) + $1/150 \times$ dopamine dose ( $\mu\text{g}/\text{kg}/\text{min}$ ) + $1/10 \times$ phenylephrine dose ( $\mu\text{g}/\text{kg}/\text{min}$ ) + $2.5 \times$ vasopressin dose (U/min)
Laterre et al. [16] (SEPSIS-ACT)	2019	JAMA	Norepinephrine dose ( $\mu\text{g}/\text{min}$ ) + epinephrine dose ( $\mu\text{g}/\text{min}$ ) + $1/100 \times$ dopamine dose ( $\mu\text{g}/\text{min}$ ) + $1/2.2 \times$ phenylephrine dose ( $\mu\text{g}/\text{kg}/\text{min}$ )
Goradia et al. [20]	2021	Journal of Critical Care	Norepinephrine dose ( $\mu\text{g}/\text{kg}/\text{min}$ ) + epinephrine dose ( $\mu\text{g}/\text{kg}/\text{min}$ ) + $1/10 \times$ phenylephrine dose ( $\mu\text{g}/\text{kg}/\text{min}$ ) + $1/100 \times$ dopamine dose ( $\mu\text{g}/\text{kg}/\text{min}$ ) + $1/8 \times$ metaraminol ( $\mu\text{g}/\text{kg}/\text{min}$ ) + $2.5 \times$ vasopressin dose (U/min) + $10 \times$ angiotensin II dose ( $\mu\text{g}/\text{kg}/\text{min}$ )
Our manuscript	2022		Norepinephrine dose ( $\mu\text{g}/\text{kg}/\text{min}$ ) + epinephrine dose ( $\mu\text{g}/\text{kg}/\text{min}$ ) + $1/100 \times$ dopamine dose ( $\mu\text{g}/\text{kg}/\text{min}$ ) + $0.06 \times$ phenylephrine dose ( $\mu\text{g}/\text{kg}/\text{min}$ ) + $2.5 \times$ vasopressin dose (U/min) + $0.0025 \times$ angiotensin II dose (ng/kg/min) + $10 \times$ terlipressin dose ( $\mu\text{g}/\text{kg}/\text{min}$ ) + $0.2 \times$ methylene blue dose (mg/kg/h) + $8 \times$ metaraminol dose ( $\mu\text{g}/\text{kg}/\text{min}$ ) + $0.02 \times$ hydroxocobalamin dose (g) + $0.4 \times$ midodrine dose ( $\mu\text{g}/\text{kg}/\text{min}$ )

The correct Table 1:

**Table 1** Summary of norepinephrine equivalent formulas

Author	Year	Journal	Calculation
Patel et al. [22]	2002	Anesthesiology	Norepinephrine dose ( $\mu\text{g}/\text{min}$ ) + epinephrine dose ( $\mu\text{g}/\text{min}$ ) + $1/4 \times$ dopamine dose ( $\mu\text{g}/\text{kg}/\text{min}$ )
Russell et al. [13] (VASST)	2008	New England Journal of Medicine	Norepinephrine dose ( $\mu\text{g}/\text{min}$ ) + $1/2 \times$ dopamine dose ( $\mu\text{g}/\text{kg}/\text{min}$ ) + epinephrine dose ( $\mu\text{g}/\text{min}$ ) + $1/10 \times$ phenylephrine dose ( $\mu\text{g}/\text{min}$ )
Brown et al. [12]	2013	Chest	Norepinephrine dose ( $\mu\text{g}/\text{kg}/\text{min}$ ) + epinephrine dose ( $\mu\text{g}/\text{kg}/\text{min}$ ) + $1/100 \times$ dopamine dose ( $\mu\text{g}/\text{kg}/\text{min}$ ) + $5 \times$ vasopressin dose (U/min) + $0.45 \times$ phenylephrine dose ( $\mu\text{g}/\text{kg}/\text{min}$ )
Ralib et al. [23]	2013	Clinical Nephrology	Norepinephrine dose ( $\mu\text{g}/\text{min}$ ) + $500 \times$ vasopressin dose (U/min) + epinephrine dose ( $\mu\text{g}/\text{min}$ ) + $1/3 \times$ phenylephrine dose ( $\mu\text{g}/\text{min}$ ) + $1/100 \times$ dopamine dose ( $\mu\text{g}/\text{min}$ )
Gutsche et al. [21]	2017	Anesthesia & Analgesia	Norepinephrine dose ( $\mu\text{g}/\text{min}$ ) + $1/2 \times$ dopamine dose ( $\mu\text{g}/\text{kg}/\text{min}$ ) + epinephrine dose ( $\mu\text{g}/\text{min}$ ) + $1/10 \times$ phenylephrine dose ( $\mu\text{g}/\text{min}$ ) + $200 \times$ vasopressin dose (U/min)
Khanna et al. [15] (ATHOS-3)	2017	New England Journal of Medicine	Norepinephrine dose ( $\mu\text{g}/\text{kg}/\text{min}$ ) + epinephrine dose ( $\mu\text{g}/\text{kg}/\text{min}$ ) + $1/150 \times$ dopamine dose ( $\mu\text{g}/\text{kg}/\text{min}$ ) + $1/10 \times$ phenylephrine dose ( $\mu\text{g}/\text{kg}/\text{min}$ ) + $2.5 \times$ vasopressin dose (U/min)
Laterre et al. [16] (SEPSIS-ACT)	2019	JAMA	Norepinephrine dose ( $\mu\text{g}/\text{min}$ ) + epinephrine dose ( $\mu\text{g}/\text{min}$ ) + $1/100 \times$ dopamine dose ( $\mu\text{g}/\text{min}$ ) + $1/2.2 \times$ phenylephrine dose ( $\mu\text{g}/\text{kg}/\text{min}$ )
Goradia et al. [20]	2021	Journal of Critical Care	Norepinephrine dose ( $\mu\text{g}/\text{kg}/\text{min}$ ) + epinephrine dose ( $\mu\text{g}/\text{kg}/\text{min}$ ) + $1/10 \times$ phenylephrine dose ( $\mu\text{g}/\text{kg}/\text{min}$ ) + $1/100 \times$ dopamine dose ( $\mu\text{g}/\text{kg}/\text{min}$ ) + $1/8 \times$ metaraminol ( $\mu\text{g}/\text{kg}/\text{min}$ ) + $2.5 \times$ vasopressin dose (U/min) + $10 \times$ angiotensin II dose ( $\mu\text{g}/\text{kg}/\text{min}$ )
Our manuscript	2022		Norepinephrine dose ( $\mu\text{g}/\text{kg}/\text{min}$ ) + epinephrine dose ( $\mu\text{g}/\text{kg}/\text{min}$ ) + $1/100 \times$ dopamine dose ( $\mu\text{g}/\text{kg}/\text{min}$ ) + $0.06 \times$ phenylephrine dose ( $\mu\text{g}/\text{kg}/\text{min}$ ) + $2.5 \times$ vasopressin dose (U/min) + $0.0025 \times$ angiotensin II dose (ng/kg/min) + $10 \times$ terlipressin dose ( $\mu\text{g}/\text{kg}/\text{min}$ ) + $0.2 \times$ methylene blue dose (mg/kg/h) + $1/8 \times$ metaraminol dose ( $\mu\text{g}/\text{kg}/\text{min}$ ) + $0.02 \times$ hydroxocobalamin dose (g) + $0.4 \times$ midodrine dose ( $\mu\text{g}/\text{kg}/\text{min}$ )

The given sentences under the heading Proposed updated norepinephrine equivalent score, Figure 1 and Table 1 have been updated in this correction article and the original article [1] has been corrected.

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#### Reference

1. Kotani Y, Di Gioia A, Landoni G, et al. An updated "norepinephrine equivalent" score in intensive care as a marker of shock severity. *Crit Care*. 2023;27:29. <https://doi.org/10.1186/s13054-023-04322-y>.

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