

Peer Review

Review of: "Surface Area Values for the Human Stomach Including Changes in Length and Diameter or Width with Meal Volume"

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Major Concerns

1. Oversimplification of Gastric Geometry

The study assumes that the stomach can be approximated as a cylinder, despite acknowledging that most stomachs are J-shaped.

This introduces several physiological limitations:

Gastric curvature variability is not uniform.

Regional distensibility differs significantly between the fundus, corpus, and antrum.

Gastric motility produces transient non-cylindrical geometries.

Suggested Revision

Provide justification for:

Why cylindrical modeling is sufficient for macroscopic SA estimation.

Comparison with ellipsoid or hybrid geometric models.

Discussion of regional compliance differences.

2. Extension Beyond Original MRI Dataset

The equations extrapolate data obtained at approximately 500 cm³ meal volume to 2000 cm³.

This is a substantial assumption because:

Gastric accommodation is nonlinear.

Gastric emptying and adaptive relaxation may alter geometry beyond observed ranges.

Suggested Revision

Clarify:

Statistical justification for extrapolation.

Sensitivity analysis demonstrating the robustness of extrapolated values.

Physiological plausibility of stomach volumes approaching 2000 cm³.

Declarations

Potential competing interests: No potential competing interests to declare.