

## Sex Differences in SOFA Score of Sepsis Patients



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Sepsis is a life-threatening condition caused by a dysregulated host response to infection. The Sepsis-related Organ Failure Assessment (SOFA) score, developed in 1996, quantifies organ dysfunction across six systems: neurological, cardiovascular, respiratory, renal, liver, and coagulation. Initially specific to sepsis, the SOFA score is widely used in ICUs for daily patient monitoring and as an outcome measure in clinical studies.

At the SOFA score's inception, knowledge about sex and gender differences in medical outcomes was limited. Sex refers to biological differences, while gender encompasses sociocultural roles. Over the last decade, gender medicine has gained traction in critical care research, highlighting sex and gender differences in physiology, disease pathogenesis, ICU resource use, and outcomes. Differences in immune responses and the influence of sex steroids are discussed as factors contributing to increased susceptibility to infection and sepsis.

Despite calls for personalised risk assessment in clinical practice, most ICU illness severity scores lack sex-specific thresholds, potentially limiting their accuracy. Research on sex differences in SOFA scores is limited, focusing on small, specific patient groups. The SOFA score is currently being updated to include contemporary organ support techniques, but the importance of considering biological sex remains unclear.

A recent study aimed to investigate sex-specific differences in organ dysfunction measured by the SOFA score in sepsis or septic shock patients and to explore associations between SOFA scores and ICU outcomes like mortality and length of stay.

The study is a retrospective analysis of sex-specific differences in the SOFA score among ICU patients with sepsis or septic shock. Study patients were enrolled and admitted to one of 85 certified Swiss ICUs between January 2021 and December 2022.

Out of 125,782 patients, 5,947 (5%) were admitted with sepsis (2,244, 38%) or septic shock (3,703, 62%). Among these, 5,078 (37% women) were eligible for analysis. Women had a statistically significant lower total SOFA score on admission than men, driven by differences in the coagulation, liver, and renal components. These differences were more pronounced in younger patients under 52 years old. There were no sex-specific differences in ICU length of stay (women median 2.6 days vs men 2.7 days) or ICU mortality (women 14% vs men 15%).

Sex-specific differences were observed in the SOFA scores of patients admitted to Swiss ICUs with sepsis or septic shock, especially in laboratory-based components. While the clinical significance of these differences is unclear, reevaluating sex-specific thresholds for SOFA score components is needed to achieve more accurate and individualised classifications.

Source: [Critical Care](#)

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