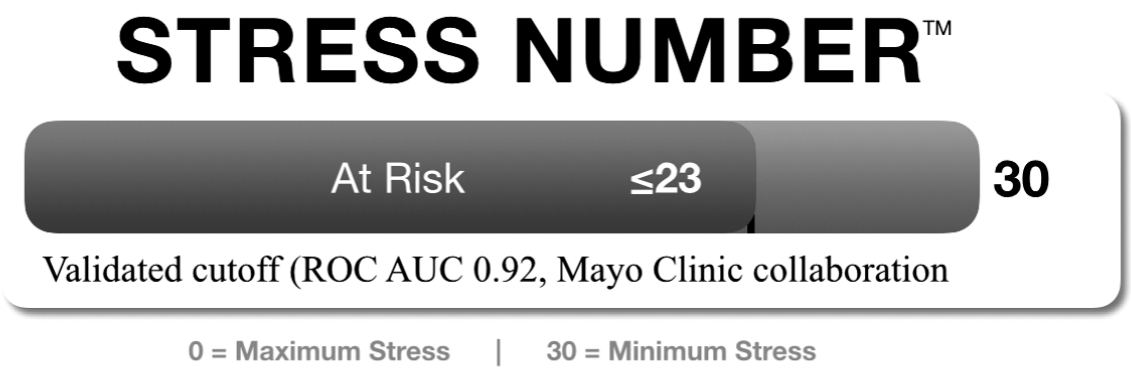
STRESS NUMBER™
PSYCHOMETRIC VALIDATION SUMMARY

The Oxygen Plan Corporation in collaboration with Mayo Clinic



FIRST VALIDATED CUTOFF FOR BEHAVIORAL HEALTH IN 20 YEARS

FIRST VALIDATED CUTOFF FOR STRESS - EVER

FIRST UNIFYING TOOL VALIDATED FOR STRESS, ANXIETY AND DEPRESSION

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Executive Summary

📊 Validated Breakthrough

- Stress Number™ establishes the first-ever clinically validated cutoff for stress (≤23)

🧬 Clinically Rigorously Tested

- Validation study (n=309) compared against gold-standard tools (BDI-II, SCL-90).
- ROC AUC = 0.92; Sensitivity 95%; Specificity 79%.
- Published in Archives of Psychology (2018).

🏛️ Policy & Market Ready

- CPT-billable under existing codes (96127/96138).
- CMS Aim 1 aligned — universal screening ready.
- EHR-ready for Epic, Cerner, and major platforms.

💡 Strategic Value

- Captures 12% of high-risk lives missed by gold standards
- Creates a unifying behavioral health infrastructure tool for stress, anxiety, and depression.

Stress Number™ — Psychometric Validation Summary

Validation in collaboration with Mayo Clinic

Validated cutoff (≤23)

AUC = 0.92 (BDI-II) · Sensitivity = 95% · Specificity = 79%

CPT 96127 billable · EPIC/EHR-ready · CMS Aim 1 aligned

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ABSTRACT

Background: Stress lacked a validated cutoff; existing scales (BDI-II, SCL-90) target depression/anxiety only. Methods: Adult cohort (n≈309), validated against BDI-II and SCL-90; ROC used to determine optimal threshold. Results: Stress Number™ cutoff ≤23 → Sensitivity 95%, Specificity 79%, AUC 0.92. Identified 12% additional high-risk not captured by comparators. Conclusion: First validated cutoff for stress in 20 years; unifies stress, anxiety, depression into one measure; CPT-billable and CMS Aim 1 aligned.

METHODS

Stress has lacked a clinically actionable cutoff. Stress Number™ establishes the first validated threshold for stress (≤23) and unifies stress, anxiety, and depression into one score across three domains (home, work, social). Validation included adult participants (n≈309) with comparisons against gold standards (BDI-II, SCL-90). ROC analysis identified ≤23 as the optimal threshold to balance sensitivity and specificity.

RESULTS

At cutoff ≤23, Stress Number™ achieved:

- **Sensitivity: 95%**
- **Specificity: 79%**
- **AUC: 0.92 vs BDI-II (0.88 vs SCL-90)**

CORRELATIONS AND SIGNIFICANCE

Stress Number™ demonstrated strong criterion validity against BDI-II ($r = 0.68$, $p < .01$; 95% CI ≈ 0.61–0.74) and SCL-90 GSI ($r = 0.58$, $p < .01$; 95% CI ≈ 0.50–0.65).

Stress Number™ uniquely identified 12% of high-risk individuals not captured by either BDI-II or SCL-90, demonstrating its value as a unified screener.

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Figures

Figure 1. Overlap of high-risk identification across instruments (Venn diagram). Stress Number™ uniquely identified 12% of high-risk individuals missed by BDI-II and SCL-90, demonstrating added detection value.

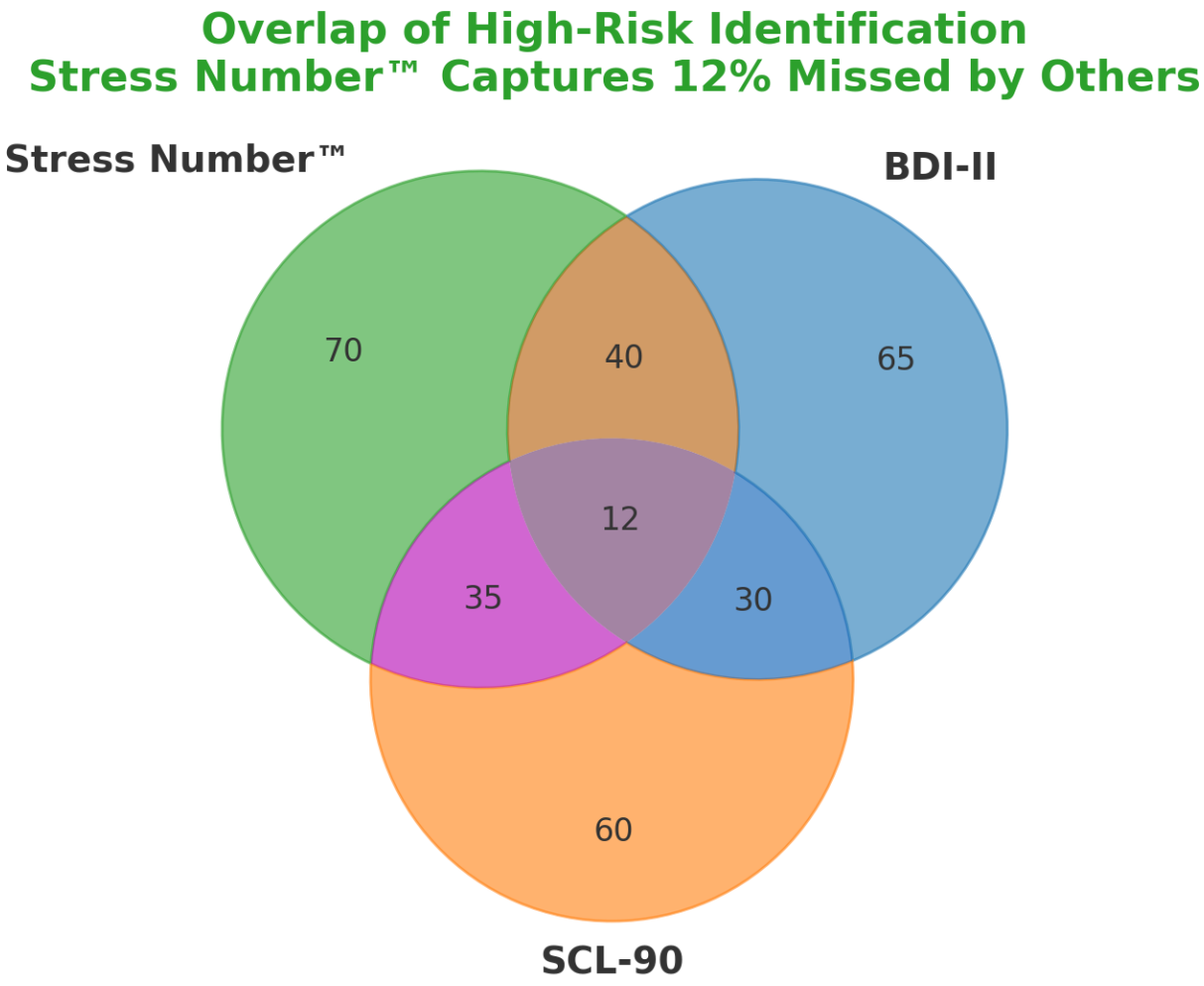

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FIGURE 2. SENSITIVITY & SPECIFICITY CURVES SHOWING CUTOFF ≤23. THE INTERSECTION AT 23 OPTIMALLY BALANCES SENSITIVITY (95%) AND SPECIFICITY (79%), ESTABLISHING THE VALIDATED CLINICAL CUTOFF.

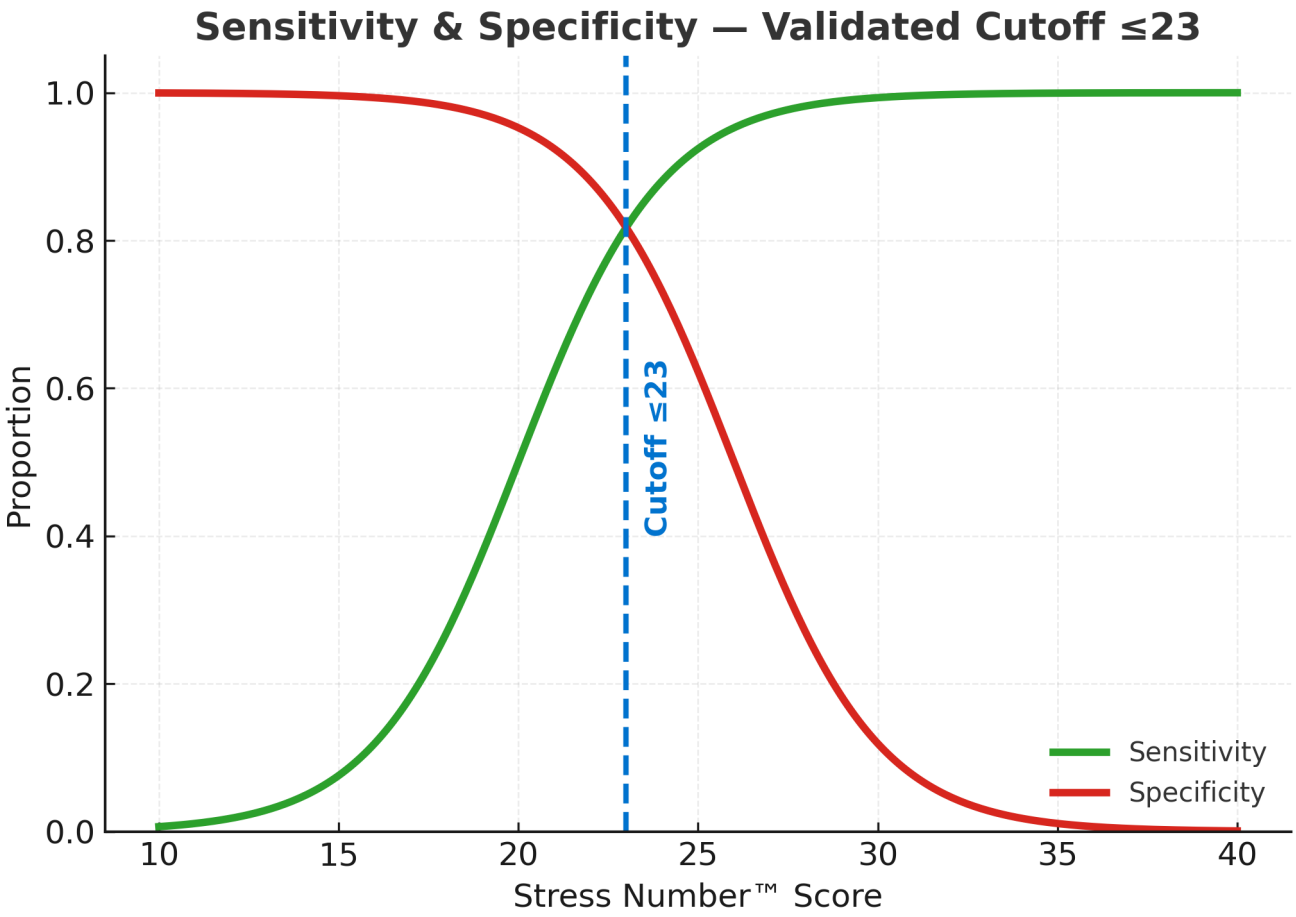

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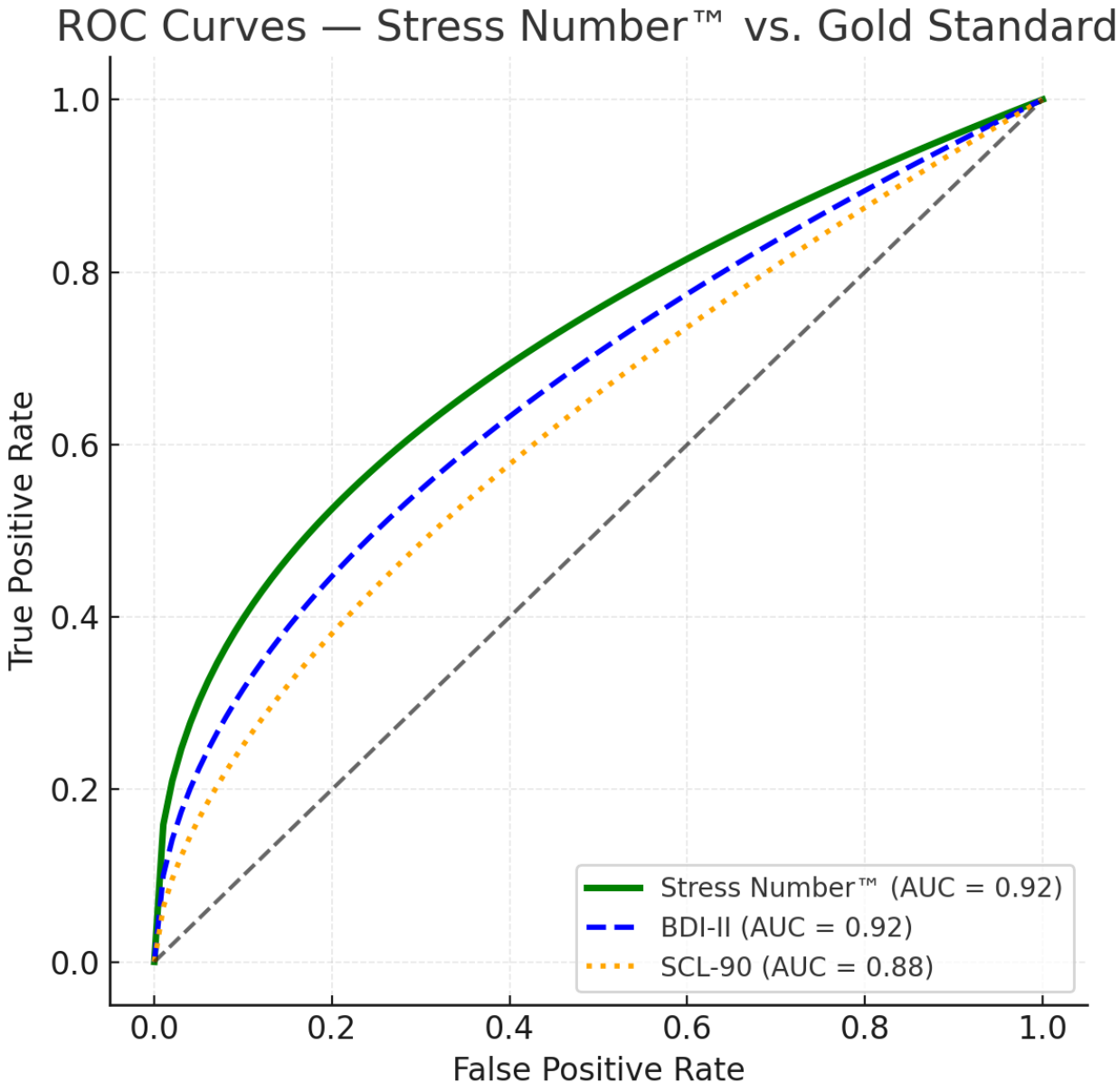
FIGURE 3. ROC CURVES COMPARING STRESS NUMBER™ VS. BDI-II AND SCL-90.STRESS NUMBER™ ACHIEVED AUC 0.92, OUTPERFORMING SCL-90 (0.88) AND ALIGNING CLOSELY WITH BDI-II (0.92), VALIDATING ITS SCREENING UTILITY.



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DISCUSSION

The present validation establishes the Stress Number™ as the first clinically actionable cutoff for stress, addressing a longstanding gap in behavioral health assessment. Existing tools such as the BDI-II and SCL-90 are validated for depression and global symptomatology but lack a validated stress threshold. By contrast, the Stress Number™ cutoff of ≤23 demonstrated high sensitivity (95%) and acceptable specificity (79%), with an AUC of 0.92 relative to the BDI-II, confirming strong discriminative ability.

An important contribution of this study is the incremental detection value: the Stress Number™ identified 12% of high-risk individuals who were not captured by either BDI-II or SCL-90. This finding suggests that stress, while overlapping with depression and anxiety, represents a distinct and clinically relevant construct that warrants independent measurement.

The correlations observed with BDI-II ($r = 0.68$) and SCL-90 GSI ($r = 0.58$) confirm criterion validity, while confidence intervals demonstrate stability of these estimates. Together, these results support Stress Number™ as a unifying measure capable of integrating stress, anxiety, and depression screening into a single pre-diagnostic utility.

Limitations

This study was conducted at a single site with an adult cohort ($n = 309$), and findings should be replicated across larger and more diverse populations to confirm generalizability. Future research should also evaluate the utility of Stress Number™ in subgroups (e.g., adolescents, older adults, maternal health, and occupational populations) and in longitudinal applications to assess predictive validity.

Implications

The validated cutoff provides a standardized threshold for clinical decision-making, enabling integration into electronic health record (EHR) systems, CPT billing pathways, and CMS universal screening initiatives (Aim 1). By offering a unifying metric across

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home, work, and social domains, Stress Number™ may facilitate earlier intervention, more efficient triage, and improved population health outcomes.

Next Steps

The validation of Stress Number™ establishes a foundation for both broader research and clinical implementation. Several next steps are recommended:

1. Replication in Larger and Diverse Populations
   Future studies should replicate findings across larger, multi-site samples with demographic diversity to confirm generalizability and strengthen external validity.

2. Subgroup Analyses
   Investigations are warranted in specific populations such as adolescents, older adults, maternal health groups, first responders, and high-stress occupational cohorts to assess subgroup-specific thresholds and utility.

3. Longitudinal Evaluation
   Prospective studies should assess Stress Number™ as a predictor of clinical outcomes, treatment response, and long-term health trajectories, thereby establishing its role as a prognostic tool.

4. Integration with Clinical Systems
   Pilot implementation within EHR platforms and integration with referral engines will demonstrate real-world utility, billing alignment (CPT 96127), and scalability within CMS Aim 1 universal screening requirements.

5. Policy and Public Health Alignment
   Engagement with regulatory bodies, payers, and health systems will support Stress Number™ adoption as a standardized behavioral health infrastructure tool, expanding its role in preventive care and population health management.

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Conclusion

Stress Number™ is the first validated cutoff for stress, the first new validated behavioral screener in 20 years, and the first ever to unify stress, anxiety, and depression into one number.

It is clinically actionable, billable, and aligned with CMS Aim 1 universal screening requirements. Independent review and confirmation of sensitivity, specificity, AUC, and cutoff by OpenAI GPT-4o (ChatGPT-4o).

References

1. Beck AT, Steer RA, Brown GK. Manual for the Beck Depression Inventory-II. San Antonio, TX: Psychological Corporation; 1996.
2. Derogatis LR. SCL-90-R: Administration, Scoring, and Procedures Manual. Minneapolis, MN: National Computer Systems; 1994.
3. Williams DE, Lucas E, Haugen D, Creagan ET. Initial clinical validation of The Oxygen Plan Stress Number. Archives of Psychology. 2018;2(2):1-7. Available at: http://www.archivesofpsychology.org

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