

The Skin Graft Loss Risk Estimator: An Interpretable Machine Learning-Driven Tool for Individualized Assessment in Burn Patients

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BACKGROUND

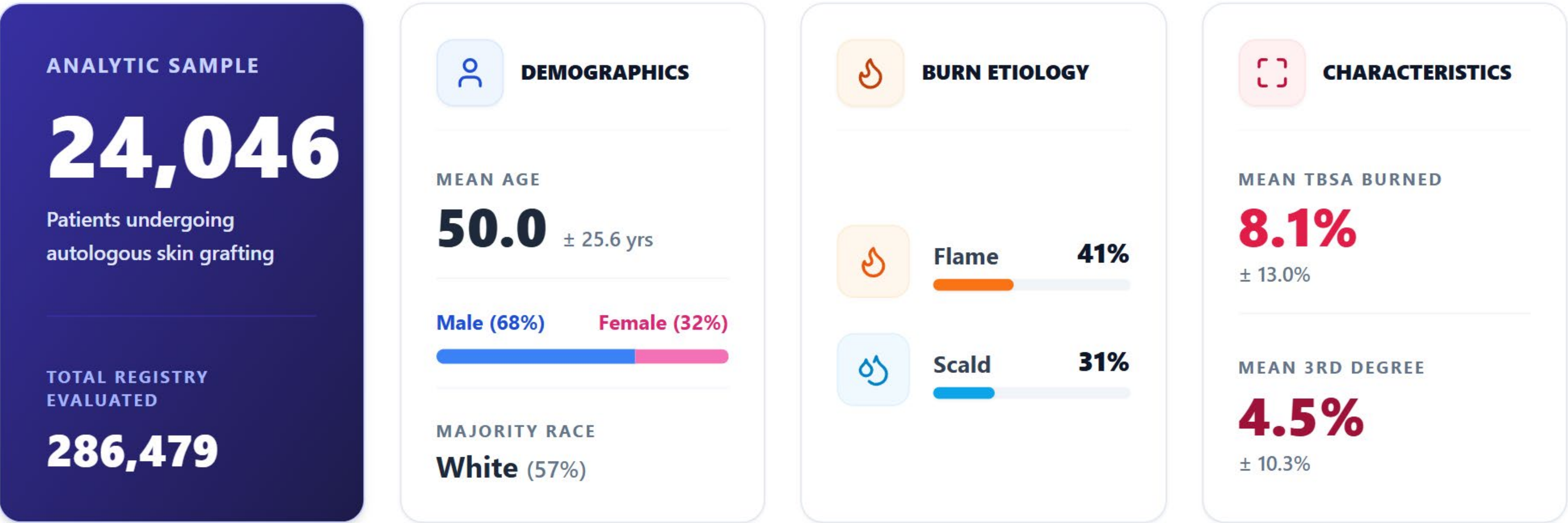
- ❑ Skin graft failure affects ~ 30% of burn patients, leading to additional surgeries, sepsis, and prolonged hospital stays
- ❑ Bedside risk assessment is subjective and unreliable due to complex interactions between patient comorbidities & injury factors.

- ❑ We developed an interpretable online risk calculator powered by machine learning (ML) to provide individualized risk assessment for skin graft loss

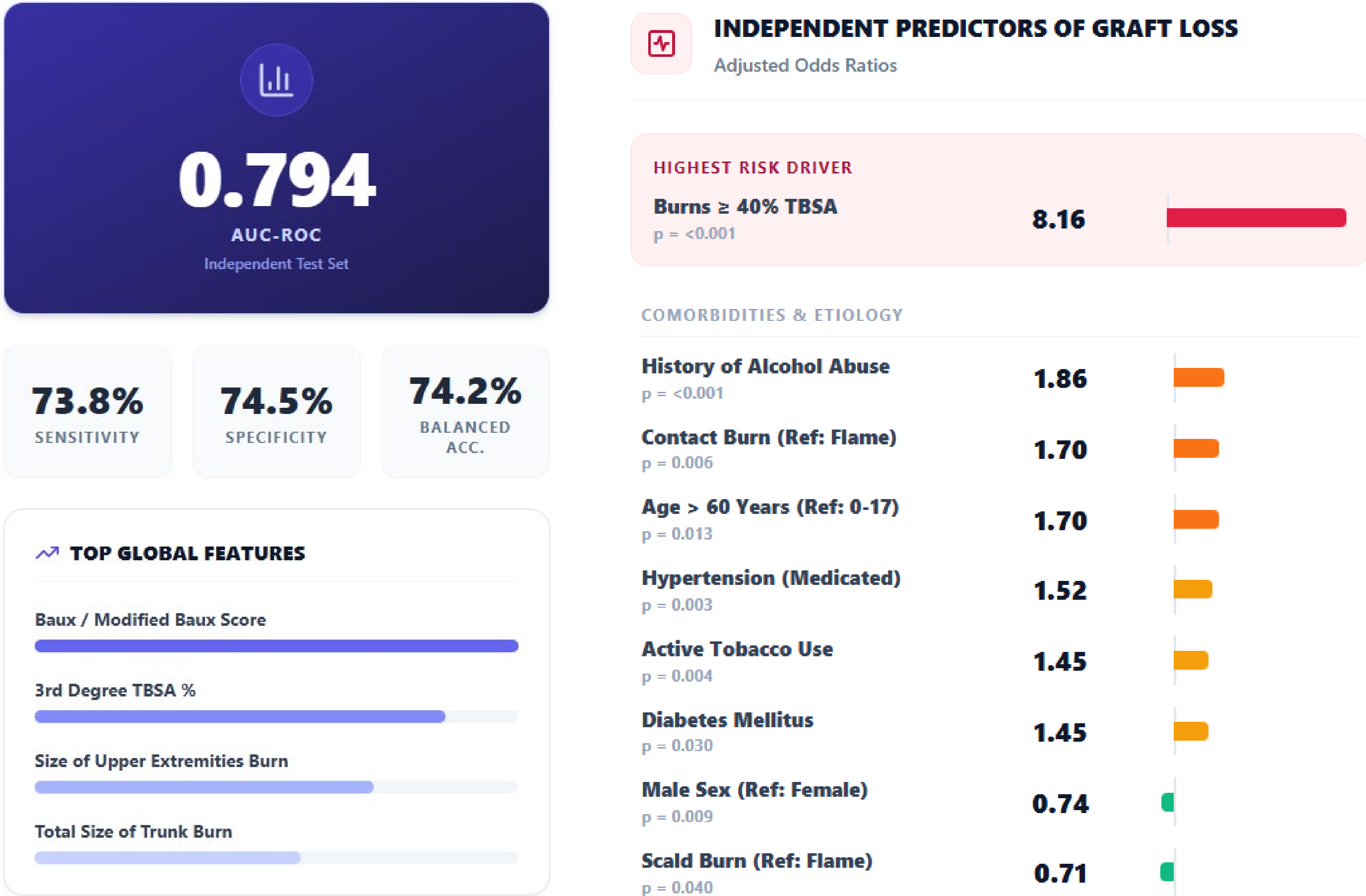
METHODS

- ❑ **Study Design:** Retrospective cohort using the American Burn Association (ABA) Burn Care Quality Platform.
- ❑ **Cohort:** Burn patients who underwent autologous skin grafting 2013–2022
- ❑ **Models:** Multivariable logistic regression to isolate and quantify independent risk factors and Random Forest ML algorithm to generate individualized risk predictions.

RESULTS



Predictive Performance & Independent Drivers



THE SKIN GRAFT LOSS RISK ESTIMATOR

Interactive, transparent risk assessment at the point of care

