

***Integrating Electrical Impedance Score
into Decision to Biopsy Increases
Biopsy Efficiency***

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Conflict of Interest Disclosures: Dr. Rigel is a consultant for Scibase.

Background

- Number needed to biopsy (NNB) =
$$\frac{\text{measure of diagnostic accuracy}}{\text{number of lesions biopsied}}$$

$$\text{number of lesions that are positive for a disease outcome}$$
- Electrical impedance spectroscopy (EIS) can be used to increase biopsy efficiency
- EIS device yields a positive (higher suspicion for malignancy) or negative (very likely to be benign) score
- *Objective:*
 - *Determine if NNB for skin cancer and melanoma is significantly impacted by the addition of EIS score.*

Methods

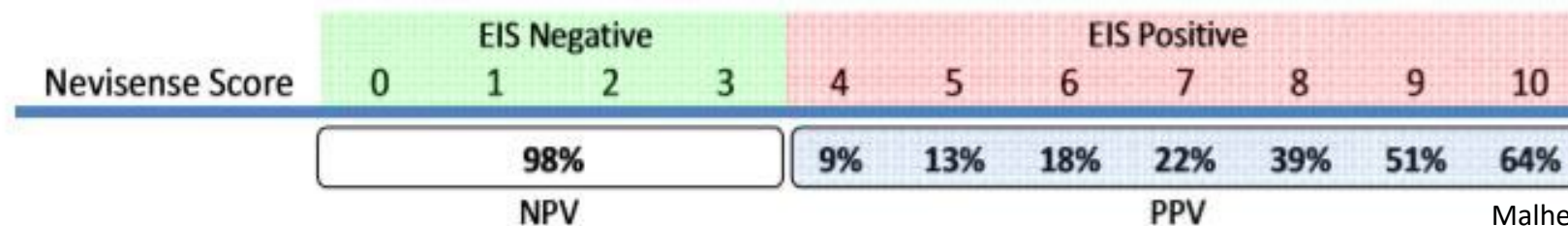
- Post-hoc analysis of data of over 1,900 patients with suspicious pigmented lesions who underwent evaluation with EIS and biopsy

- NNB w/o EIS:

$$\frac{\text{total number of lesions biopsied}}{\text{number of histopathologically proven skin cancers and melanomas}}$$

- NNB w/ EIS:

$$\frac{\text{number of lesions biopsied w/ positive EIS}}{\text{number of histopathologically proven skin cancers and melanomas in this cohort}}$$



Results

- N=1943, EIS positive=1407

	Without EIS	With EIS	% Change	p- value
All Skin Cancer	5.91	4.41	↓25%	<0.001
Melanoma	7.33	5.50	↓25%	<0.001

Conclusions

- Prior studies have found NNB for melanoma from 11.9-39.
- The low baseline NNB for melanoma found in this study may be due to inclusion of a lesions cohort with a higher prevalence of melanoma.
- *Conclusion:*
 - *EIS score significantly reduced NNB for skin cancer and melanoma overall.*
 - *EIS score can be used as an adjunct to augment diagnostic accuracy, increase biopsy efficiency, and reduce associated costs.*