Resolution 2026-05
Submitted For Consideration to the Arizona Osteopathic Medical Association House of Delegates

Subject: ACKNOWLEDGING EMERGING EVIDENCE ON E-CIGARETTE USE AND CANCER-RELEVANT RISK PATHWAYS AND ENCOURAGING INTEGRATION INTO OSTEOPATHIC MEDICAL EDUCATION

Submiited by

Pradyuth Thonse, OMS I- Midwestern University, Arizona College of Osteopathic Medicine
Mohammed Alshemery, OMS I- Midwestern University, Arizona College of Osteopathic Medicine
Elias Khal, OMS I- Midwestern University, Arizona College of Osteopathic Medicine
Josue Vega, OMS I- Midwestern University, Arizona College of Osteopathic Medicine

Check one:

☐ Resolution is intended for Arizona Osteopathic Medical Association

☐ Resolution is intended to be submitted by the Arizona Osteopathic Medical Association for consideration of the American Osteopathic Association House of Delegates

✓ Resolution is intended for both the Arizona Osteopathic Medical Association and for consideration of the American Osteopathic Association House of Delegates

---

WHEREAS, data from the 2024 National Youth Tobacco Survey (NYTS) demonstrate that e-cigarettes remain the most commonly used tobacco product among U.S. middle and high school students, reinforcing the clinical relevance of vaping exposure in current and future patient populations[5] ; and

WHEREAS, 2024 surveillance data report that 5.9% of middle and high school students used e-cigarettes currently, including frequent and daily use patterns among current users[8]; and

WHEREAS, contemporary peer-reviewed research continues to document patterns of co-use of e-cigarettes with other nicotine products among U.S. youth, which may complicate clinical counseling and preventive care strategies[3]; and

WHEREAS, peer-reviewed evidence updates and systematic reviews evaluating vaping and cancer-related outcomes conclude that the overall evidence linking e-cigarette use to cancer risk remains limited and evolving, requiring further rigorous longitudinal research[6,7]; and

WHEREAS, a scoping review of peer-reviewed research on food insecurity in US college students identified persistent gaps and emphasized that prevalence data are used by institutions to advocate for services and programs[3]; and

WHEREAS, a 2025 systematic review suggests a potential association between e-cigarette use and increased lung cancer risk, particularly among dual users, while emphasizing that causality cannot be established due to limited longitudinal evidence and study heterogeneity[7]; and

WHEREAS, a 2025 evidence update reports substantial evidence that e-cigarette exposure is associated with biomarkers reflective of cancer disease risk, while also concluding that overall evidence on cancer risk remains limited and should be further investigated by future population-based research and clinical studies[6]; and

WHEREAS, a 2025 meta-analysis reported that e-cigarette exposure is associated with alterations in biomarkers relevant to cancer risk pathways, supporting continued clinician awareness while long-term outcomes evidence develops[1]; and

WHEREAS, peer-reviewed experimental evidence indicates that exposure to e-cigarette aerosols can induce DNA damage and other cellular changes relevant to carcinogenesis, reinforcing the importance of cautious preventive counseling and ongoing research[2,4]; and

WHEREAS, osteopathic physicians are trained to deliver whole-person, preventive, and patient-centered care, and should be equipped to counsel patients using current evidence regarding evolving nicotine delivery products and associated long-term health concerns; and

WHEREAS, accurate and up-to-date education on e-cigarette use trends and emerging cancer-relevant evidence may strengthen preventive counseling by supporting appropriate interpretation of evolving data and its limitations [1,6,7]; now, therefore, be it

RESOLVED, that the Arizona Osteopathic Medicine Association (AOMA) acknowledges e-cigarette use as a significant and evolving public health issue relevant to preventive care and future patient health outcomes; and be it further

RESOLVED, that AOMA acknowledges the emerging peer-reviewed evidence describing cancer-relevant risk pathways and potential associations related to e-cigarette exposure, while recognizing that definitive causal evidence remains limited and continues to develop; and be it further

RESOLVED, that AOMA advocates to the American Osteopathic Association (AOA) to acknowledge the increasing clinical relevance of e-cigarette use trends, including dual use patterns, in the context of cancer prevention and nicotine-related health risks; and be it further

RESOLVED, that AOMA advocates to AOA to recognize the need for colleges of osteopathic medicine to integrate up-to-date surveillance statistics and emerging evidence on e-cigarette-associated adverse health risks, including cancer-relevant findings and limitations of current data, into appropriate didactic and case-based instruction where relevant to preventive care counseling.

Explanatory Statement:

E-cigarette use remains prevalent in the United States, including among adolescents and young adults, and continues to represent an evolving public health issue. Contemporary peer-reviewed evidence has increasingly explored vaping exposure through cancer-relevant biomarkers, epigenetic changes, and cellular damage pathways, while also emphasizing that the overall evidence establishing definitive causal cancer outcomes remains limited and requires further rigorous longitudinal research. As the scientific understanding of vaping-related harms continues to develop, osteopathic physicians-in-training benefit from timely, accurate, and appropriately framed education regarding current use trends and emerging health risks. This resolution seeks to have AOMA and AOA acknowledge these evolving findings and encourage osteopathic medical schools to incorporate updated statistics and evidence trends into relevant didactic and case-based learning to strengthen preventive care counseling and risk reduction education in alignment with osteopathic principles.

Fiscal Impact: none

References

1. Abdulrahman, K. A. B., Abdulrahman, A. K. B., & Anwer, R. (2025). Inflammatory and carcinogenic biomarker signatures in e-cigarette users: A comprehensive meta-analysis of ~24,000 adults. International Journal of Public Health, 70, 1608885. https://doi.org/10.3389/ijph.2025.1608885

2. Guo, J., & Hecht, S. S. (2022). DNA damage in human oral cells induced by use of e-cigarettes. Drug Testing and Analysis, 15(1), 30–41. https://doi.org/10.1002/dta.3375

3. Han, D. H., Harlow, A. F., Miech, R. A., et al. (2025). Nicotine pouch and e-cigarette use and co-use among US youths in 2023 and 2024. JAMA Network Open, 8(4), e256739. https://doi.org/10.1001/jamanetworkopen.2025.6739

4. Herzog, C., Jones, A., Evans, I., et al. (2024). Cigarette smoking and e-cigarette use induce shared DNA methylation changes linked to carcinogenesis. Cancer Research, 84(11), 1898–1914. https://doi.org/10.1158/0008-5472.CAN-23-2957

5. Jamal, A., et al. (2024). Tobacco product use among middle and high school students—United States, 2024. MMWR. Morbidity and Mortality Weekly Report, 73(41), 1–7.

6. Kundu, A., et al. (2025). Evidence update on the cancer risk of vaping e-cigarettes. [Journal information not provided]. https://pubmed.ncbi.nlm.nih.gov/39877383/

7. Mohapatra, S., et al. (2025). The risk of lung cancer from vaping or e-cigarette usage: A systematic review. ESMO Open, 10(12), 105910. https://doi.org/10.1016/j.esmoop.2025.105910

8. Park-Lee, E., et al. (2024). Notes from the field: E-cigarette and nicotine pouch use among middle and high school students—United States, 2024. MMWR. Morbidity and Mortality Weekly Report, 73(35), 1–2.