

Review of: "Evaluation of the Tobacco Heating System (THS) During Closed Lower Limb Fracture Healing in Trauma Smokers' Patients"

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Potential competing interests: No potential competing interests to declare.

The present study aims to determine whether transitioning to a tobacco heating system (THS) after orthopedic surgery improves fracture healing outcomes for smokers with tibia or femur fractures over a six-month period. The authors hypothesize that switching to THS prior to orthopedic intervention may enhance clinical outcomes in smokers with closed tibia or femur fractures by reducing the rate of bone resorption, likely through diminished osteoclast activity otherwise activated by cigarette smoke.

This manuscript is well-conceived and effectively written. The introduction thoroughly elucidates the link between cigarette smoke (CS) and bone fracture nonunion, positing that THS, which heats tobacco only to 350°C rather than combusting it at 800°C, may exert a less detrimental impact on cell viability, function, and oxidative stress compared to CS. The methodology is comprehensive, with a clearly defined study design, inclusion and exclusion criteria, and detailed pre- and postoperative follow-up metrics.

Several suggestions could strengthen the discussion section:

Reduce Repetition: Phrases such as "cigarette smoking" and "smoking cessation" recur frequently and could be streamlined for clarity.

Connect Socio-Economic Impact and Health Outcomes More Tightly: The link between economic costs and health impacts could be made more concise.

Tighten Language on Secondary Outcomes: Rather than listing each secondary parameter, specifying their relevance to the study's goals would enhance rigor and flow.

Refine Descriptions of Limitations: Clear and precise language in the limitations section can highlight potential study impacts without overstatement.

Use Transitional Phrasing for Improved Flow: Transitional language at certain points in the discussion could enhance logical flow.

Adjust Circadian Mention for Clarity: Since CICP has a circadian variation with peak concentrations in the early morning,

briefly clarifying its potential impact on findings would enhance reader comprehension.

Overall, I believe this manuscript makes a valuable contribution to the literature on orthopedic outcomes in smoking patients.