On Consumers…

Health and Comfort:

- Reduced risk of oral issues like gingivitis
    - Which can occur in regular aligners that are not cleaned properly or consistently
- Maintained transparency and comfort that consumers desire
    - Material choice promotes this
- Reduced frequency of dental visits
    - Antimicrobial coating proactively reduces risk of oral hygiene issues, resulting in a lower cost footprint

On the Environment…

Long-lasting with minimal waste:

- UV-crosslinked coating minimizes waste
    - Durable coating ensures aligners are not prematurely discarded due to durability issues

Pollutants: Low concentration of thiols.

- This is something we need to keep an eye on over time
- Watch for health and environmental issues from thiol inclusion

On Manufacturing…

Dip-coating:

- Can be applied directly after the current manufacturing process without intense capital reinvestment
    - It is worth assessing the life-cycle of the aligners, and using gathered data to quantify changes in net energy consumption or the generation of harmful chemical byproducts

Potential Hurdles and Areas for Future Research

Regulatory Frameworks: Nanoparticle-coated dental appliances may require robust long-term data

Adhesion: Acrylics and TPU may pose an issue

- It is possible the adhesion between the acrylics and TPU would pose an issue, warranting further study

Next Steps:

- Optimizing nanoparticle size if needed
- Long-term clinical trials
- Keep a keen eye on the thiol-modified AuDAPT component