**Human Microbiome Action**

Unveiling Causality in Microbiome Research

Demonstrating causality between microbiome modifications and statuses of health or disease is crucial for evaluating data and the clinical application of microbiome research. However, the complexity of microbiome interactions necessitates robust methodologies.

Therefore, the Human Microbiome Action project focuses on preclinical studies and clinical research aiming to unravel causal relationships between microbial communities and health outcomes.
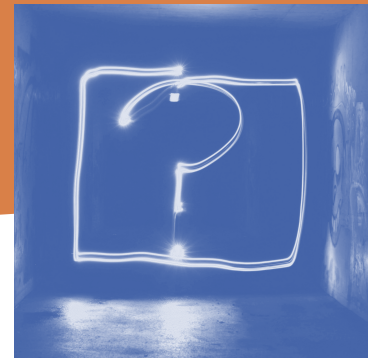
FINDINGS:

- A Delphi survey involving 100 scientific researchers and clinicians.

- Consensus of causality was reached for all diseases examined except Autism.

- Development of different models to address various research questions.

- Continued importance of animal models as an essential step before human studies.

IMPACT:

- Work on criteria to advance preclinical models beyond the current status quo, paving the way for more accurate predictions of human responses.

- Improved understanding of causal relationships between microbiomes and diseases, guiding the development of targeted interventions.

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CONCLUSION

As our understanding of causal relationships in microbiome research progresses, it becomes increasingly vital to bridge the gap between preclinical and human studies. This entails defining clear criteria for transitioning and aligning with international standards to ensure the translation of findings into tangible benefits for human health. Driving proof of causality and consensus among stakeholders is paramount in propelling microbiome research towards clinical application. Through fostering collaboration and embracing interdisciplinary approaches, we can implement these criteria and accelerate the translation of microbiome research findings to address health challenges more effectively.

Motivated to address the obstacles of establishing causal relationships in microbiome research and fostering its integration into clinical application?

Join our Stakeholder Advisory Board to provide strategic advice from an external point of view or engage with the European Microbiome Centres Consortium to foster interdisciplinary collaboration.

For further information, please visit our website humanmicrobiomeaction.eu. Follow the @SciFoodHealth Twitter/X and LinkedIn accounts or connect through the Sustainable Food Systems Network Microbiome Subgroup.

Visit our *zenodo.org* community for all published and upcoming scientific publications.

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