

# The composition of the collection of oral antimicrobial resistance genes is influenced by host genetics, the environment and potentially the genes found in our mother's mouth.

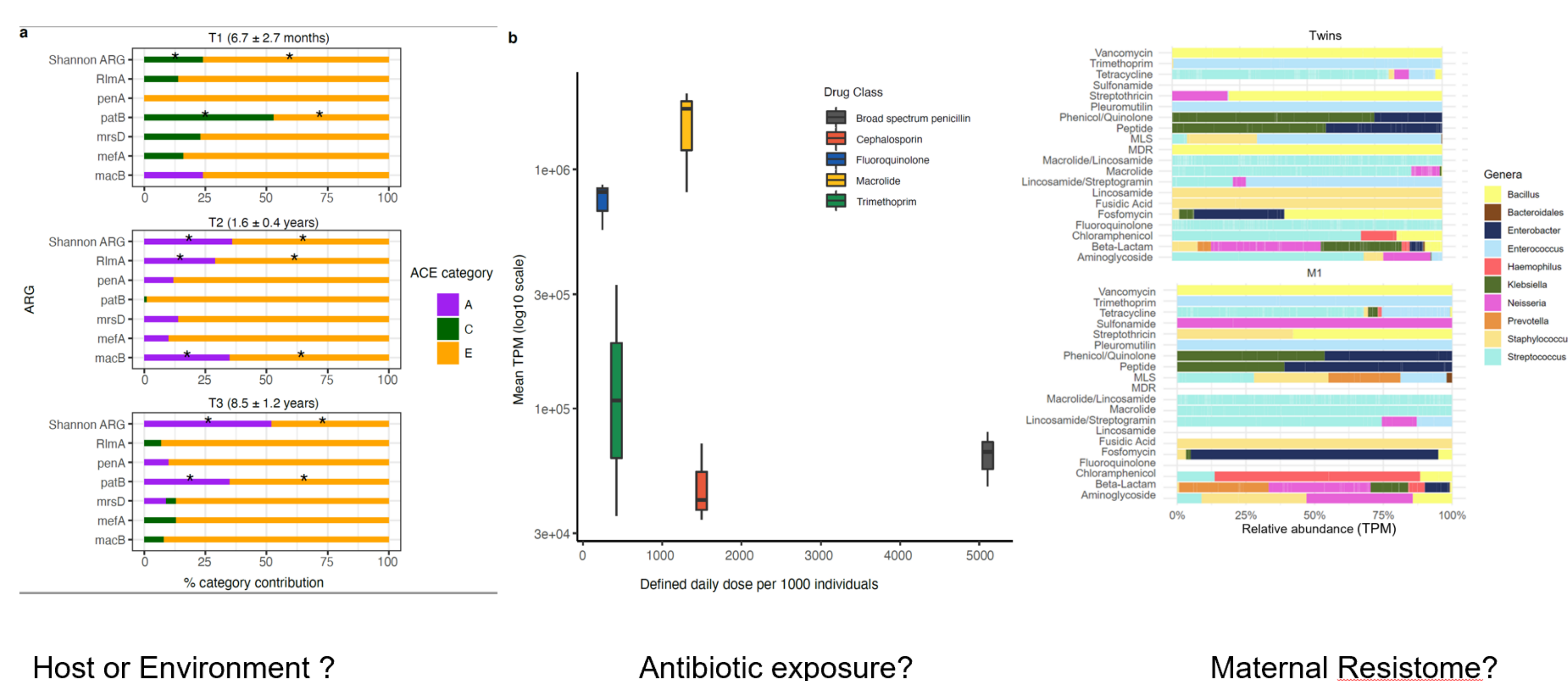
## INTRODUCTION

- Antimicrobial resistance (AMR) is a worldwide health and economic issue.
- Collections of antimicrobial resistance genes (ARGs) are known as resistomes.
- Surveillance of resistomes are necessary to combat AMR.
- The human oral resistome is a known site for acquisition and transfer of resistance.

## METHODS

1. N = 221 children (twins) who provided 530 plaque biofilm samples plus 30 maternal samples.
2. Collected this over the first decade of life.
3. Analysed using short read metagenomics.

## What Factors Shape Resistome Composition?




Host or Environment ?

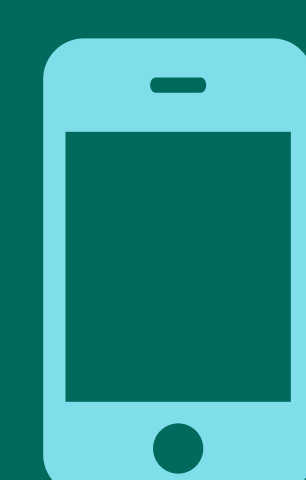
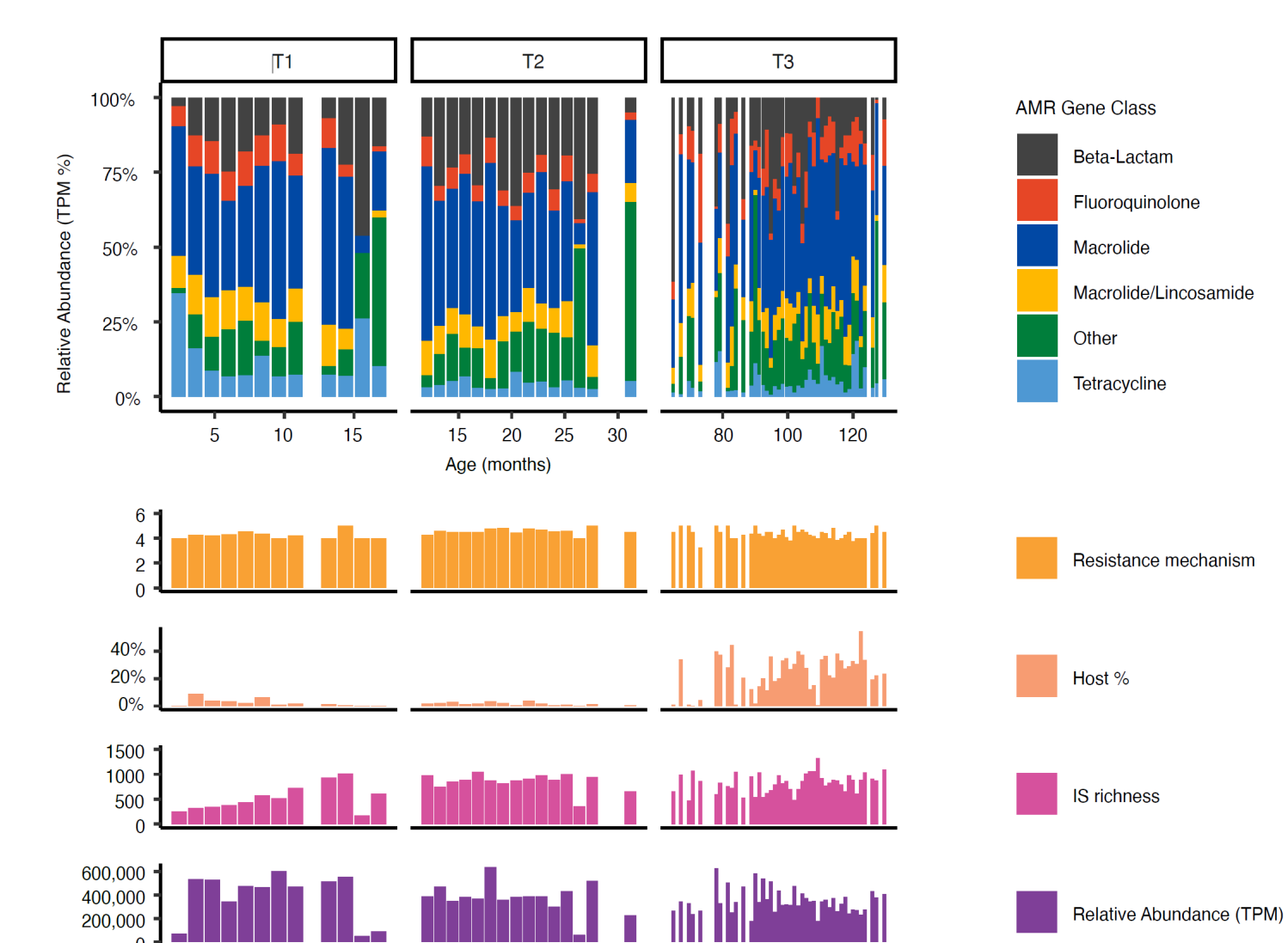
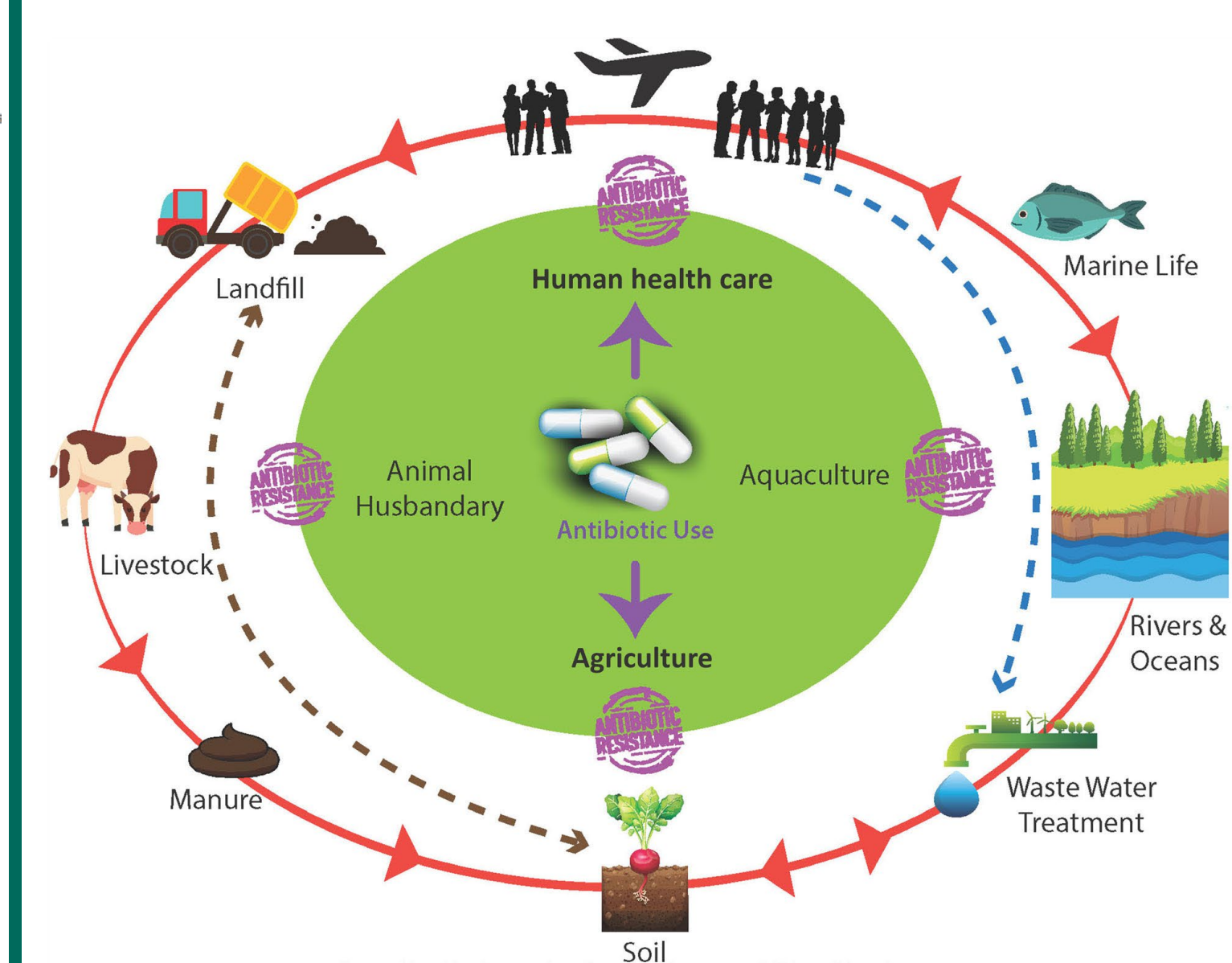
Antibiotic exposure?

Maternal Resistome?

## DISCUSSION

- Our results show increasing host genetic influences the composition of the oral resistome in the twins.
- Maternal/twin triads confirm the maternal resistome is a plausible source of ARGs in their offspring due to shared ARG membership.
- Reiterates the focus on maternal oral microbiome health.
- Maternal oral microbiome health may facilitate the development of a healthy infant oral microbiome, including the resistome.

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