

other bacteria, allowing them to survive in the presence of these drugs. But scientists hadn't studied whether treating the garbage through incineration or landfilling releases these bacteria and genes into the air, where people or animals could breathe them in. So Yi Luo, Xiangdong Li and colleagues wanted to investigate the bacterial community and associated antibiotic-resistance genes in the municipal solid waste treatment system of Changzhou, a city in eastern China.

The researchers collected [air samples](#) surrounding a landfill site, a municipal solid waste incinerator and two transfer stations (where garbage is delivered and processed). Air from both the municipal incinerator and the [landfill site](#) had higher levels of particulate matter and bacteria than upwind locations. The team identified 16 antibiotic-resistance genes in the air samples and tracked their source to municipal solid waste and leachate in the system. The genes were much more abundant in air downwind from the facilities than upwind. These results suggest that municipal solid waste treatment systems could be a reservoir of antibiotic-resistance genes that can be transmitted to nearby residents who breathe the air, the researchers say.

More information: Linyun Li et al. Municipal Solid Waste Treatment System Increases Ambient Airborne Bacteria and Antibiotic Resistance Genes, *Environmental Science & Technology* (2020). [DOI: 10.1021/acs.est.9b07641](#)

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