

# Private renting is associated with faster epigenetic ageing

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## Main findings

- Living in a privately rented home is associated with faster biological ageing
- The impact of renting in the private sector, as opposed to outright ownership (with no mortgage), was almost double that of being out of work rather than being employed
- It was also 50% greater than having been a former smoker as opposed to never having smoked
- Repeated housing arrears, and exposure to pollution/environmental problems, are also associated with faster biological ageing
- Living in social housing, with its lower cost and greater security of tenure, has no impact on biological ageing
- These effects are reversible – showing policy change can make a difference

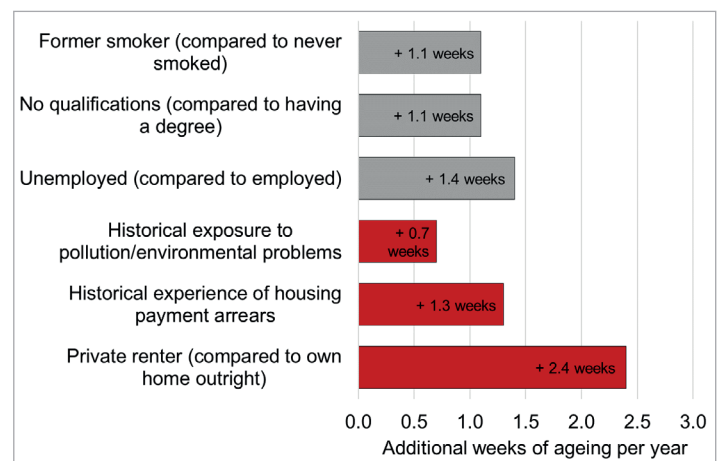
## Background to this research

Housing has long been established as an important social determinant, and a wide range of housing factors have been linked to our health – the physical conditions such as cold and safety hazards, as well as the non-tangible aspects such as affordability and security. It makes sense that this should be the case. Homes are a basic need, they're somewhere we spend a lot of time, and are fundamental in accessing other services and achieving other important needs. However, we are still learning about the mechanisms through which housing affects health, particularly in relation to the non-tangible aspects of housing.

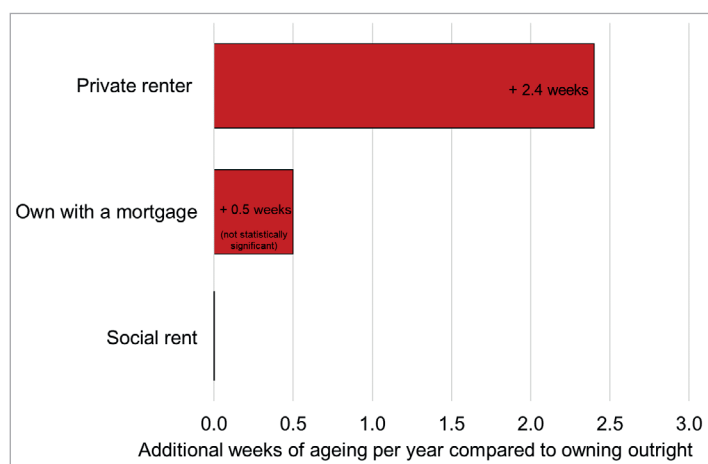
## Evidence that housing circumstances 'get under the skin'

We explore whether biological ageing is one mechanism that may help us to understand the effect of housing on health. Biological ageing relates to the idea that some people age faster than others – two people may have the same chronological age, but very different biological ages. DNA methylation is thought to be the best way of measuring biological age. DNA methylation is an epigenetic (i.e. relating to how the environment affects gene expression without changes in DNA structure) process that has been described as 'a fundamental mechanism that drives human ageing'. By studying DNA methylation sites, researchers have developed estimates of biological age and pace of ageing. Faster pace of ageing is associated with both mortality and disease.

**Figure 1 Additional weeks of aging per year**



**Figure 2 Additional weeks of aging per year compared with owning outright**



We explore whether people's housing experiences are associated with different speeds of biological ageing using the UK Household Longitudinal Study. The data allowed us to explore a wide range of housing experiences, both current and historical. We explored tenure, building type, presence of central heating, housing affordability, and historical experiences of poor conditions. Our analysis finds that, even after adjusting for related things like income and applying strict statistical adjustment to take into account the range of housing experiences included in our models, private renting is associated with faster epigenetic ageing, with private renters ageing an additional 2.4 weeks per year on average, which compares to an additional 1.4 weeks for being unemployed.

## What does this finding mean?

This finding likely reflects a number of things. Firstly, we were not able to take into account current housing conditions. Housing conditions are, on average, worst in the private rented sector – nearly a quarter of privately rented homes in England do not meet the Decent Homes Standard, for example. These poorer conditions may go some way to explaining our result, but other characteristics of private renting also likely explain this finding. Private renting is the most insecure tenure (the data used in our analysis was collected before Scotland and Wales introduced greater protections for private tenants). Tenancy agreements are short, with no guarantee of renewal (aka no-fault eviction). Private rental costs are also high – the private rented sector is the most expensive tenure. This combination of high cost and low security in such an important area of people's lives creates conditions for chronic stress which can be hugely detrimental to health and has been linked with faster epigenetic ageing in previous research.

Supporting the theory that insecurity and poor affordability play a role in our finding, we note that no effect on ageing was found for living in the social rented sector, where costs are lower and security greater, suggesting that the issue is not inherent to renting, but the characteristics of the private rental sector. However, we acknowledge that findings may be different if the analysis

was to be repeated when more data becomes available given the high-profile quality issues experienced in the social rented sector since regulations and oversight were reduced.

Nonetheless, that private, but not social, renting was found to be associated with faster epigenetic ageing demonstrates that this is not some inherent characteristic of renting, but that the policy choices we make create conditions that are detrimental to health. The government has recognised this to some degree. A Renters (Reform) Bill which included provision to end to no-fault evictions was promised in 2019 but has still not made it through parliament. Action to improve the conditions, security, and affordability of privately rented homes has the potential to improve health for a significant proportion of the population.

## Policy recommendations

- Introduce more secure private sector tenancies, such as the open-ended tenancy agreements introduced in Scotland, as well as ending no-fault eviction
- Raise the minimum quality standards for privately rented homes, including energy efficiency standards
- Ensure that local authorities have the resources to enforce protections for renters

Clair, A., Baker, E., Kumari, M., (2023) 'Are housing circumstances associated with faster epigenetic ageing?' *Journal of Epidemiology & Community Health* October 2023. DOI 10.1136/jech-2023-220523

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