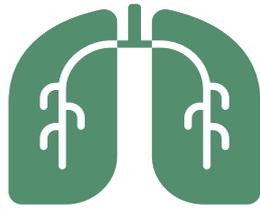


# European Indoor Environment has impact on Health and Performance

## Europeans living in damp or mouldy dwellings

In some European countries,  
**more than 30%**  
of the population  
live in damp or wet dwellings



People are **40% more likely to have asthma** when living in a damp and mouldy building<sup>1</sup>



Nearly 84 million Europeans live in damp or wet dwellings. **As we spend up to 90% of our time indoors this is alarming**

## Impact on human health

**2.2 million Europeans have asthma**  
because of living in damp and mouldy dwellings<sup>1,3</sup>



Respiratory diseases cause **loss of productivity, allergies, disabilities and premature deaths**<sup>4</sup>

## Socio-economic impact

European Governments spend **82 billion Euros each year** on asthma and chronic obstructive pulmonary disease<sup>5</sup>.

42 billion is spent each year on direct cost, such as medicine and care<sup>5</sup>



**82,000,000,000 €**

Indirect costs, such as loss of productivity, cost governments 40 billion Euros each year<sup>5</sup>

## How to improve

If the number of Europeans living in damp and mouldy dwellings can be reduced by 50% after renovation, the number of people with associated respiratory illnesses would be **reduced by 25% in 2050**

**25%**  
**2050**



**In the same sense, 550,000 fewer Europeans could suffer from asthma**



Appropriate design structure and building fabrics, especially their joints, are keys to sufficient renovation and construction of buildings



Enabling easy natural, automated or mechanical demand related ventilation in buildings helps prevent development of damp and mould

<sup>1</sup> Grün, G.; Urlaub, S.: Towards an identification of European indoor environments' impact on health and performance – mould and dampness, Fraunhofer-Institut für Bauphysik (October 2016).

<sup>2</sup> Eurostat: EU statistics on Income and Living conditions, 2009-2013

<sup>3</sup> Mendell, M.J., Mirer, A.G., Cheung, K., Tong, M., Douwes, J.: Respiratory and allergic health effects of dampness, mold and dampness-related agents: a review of the epidemiologic evidence. Environmental Health Perspectives, 119 (2011), p. 748-756.

<sup>4</sup> European Respiratory Society: European Lung White Book, accessed at: <http://www.erswhitebook.org>, 2.4.2016.

<sup>5</sup> European Respiratory Society: The economic burden of lung disease. In: European Respiratory Society: The European Lung White book – Respiratory Health and Disease in Europe., pp. 16-27

<sup>6</sup> European Respiratory Society: European Lung White Book, accessed at: <http://www.erswhitebook.org>, 2.4.2016.

Infographic based on the White Paper: Grün, G.; Urlaub, S.: Towards an identification of European indoor environments' impact on health and performance – mould and dampness, Fraunhofer-Institut für Bauphysik (October 2016).