

Sick Building Syndrome

SBS what is it?

SBS – ‘a group of symptoms of unclear aetiology’ (Burge, 2004) divided into:

- Mucous membrane symptoms related to eyes, nose & throat;
- Dry skin;

- General symptoms of headache and lethargy.
- Common in general population – what makes them part of SBS is temporal relation with work in particular building.
- Most should improve within hours of leaving the problem building.

SBS – where does it happen?

- Most clearly recognised in office environment.
- Similar problems could occur in schools, hospitals, care homes.

- Indoor air problems in domestic dwellings, esp. associated with water damage (Nordic countries’ definition).

SBS symptom questionnaire

In the past 12 months have you had >2 episodes of:

- Itchy or watery eyes;
- Blocked or stuffy nose;

- Runny nose;
- Dry throat;
- Lethargy and/or tiredness;

- Headache;
- Dry, itchy or irritated skin.
- If ‘yes’, was it better on days away from office?

Factors related to increased prevalence of SBS

Personal factors:

- Female gender; Lower status in organisation/mental job.

Individual factors:

- Paper dust; cigarette smoke; office dust; more use of computers.

Building factors:

- High indoor temp.; low fresh air ventilation; poor individual control of temp. and lighting; air conditioning; poor maintenance; poor cleaning; water damage.

Factors and causes of mould exposure in buildings

- Food – construction materials, furnishings.
- Water – high humidity (>60% RH).
- Warmth.

Exacerbated by:

- Not just based on numbers, but predominant taxa.

Prevention measures to reduce potential for mould in new buildings

- Temperature, humidity, air movement.
- Visible mould, mould odours.
- Hidden mould (intrusive inspection behind wallpaper/panels, under carpets, in ceiling or wall cavities).

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- ❑ Inadequate ventilation; poor maintenance; water intrusion; HVAC systems.

Guidelines for reducing mould exposure in building – when to act?

- ❑ US OSHA - >1,000 cfu/m³ = probable contamination source.
- ❑ EC - >500 cfu/m³ = intermediate; >2,000 cfu/m³ = high.
- ❑ Investigation & remediation >500 cfu/m³ and health complaints.

- ❑ Minimise exposure of interior building products to exterior.
- ❑ Monitor & maintain integrity of building impermeable envelope.
- ❑ Check material delivered clean & dry – reject wet or mouldy material.
- ❑ Protect stored material from moisture; prevent spillage of water; minimise moisture accumulation; balance control of thermal comfort & humidity.

Remediation of mould problems in existing buildings – assessing the problem

- ❑ Walk-through inspection – premises including HVAC system.
- ❑ History of water damage.

- ❑ Air, surface sampling

Actions to remediate mould problems in buildings

- ❑ Remove people from exposure.
- ❑ Identify and fix the underlying problem.
- ❑ Remove affected material – protect remediation workers from exposure and minimise spread of contamination.
- ❑ Chemically treat remaining materials if possible.