

Occupational Health Risk Management

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Engineers, scientists, chemists, occupational hygienists, health and safety practitioners and ex-factory inspectors

- Occupational hygiene
- Health and safety
- Expert witness
- Training



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Rosie McKay LFOH CertOH

- Golder/WSP
 - Contaminated land/site remediation and occupational hygiene consultant
- Pragma and Associates
 - Occupational hygiene lead



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What we will cover

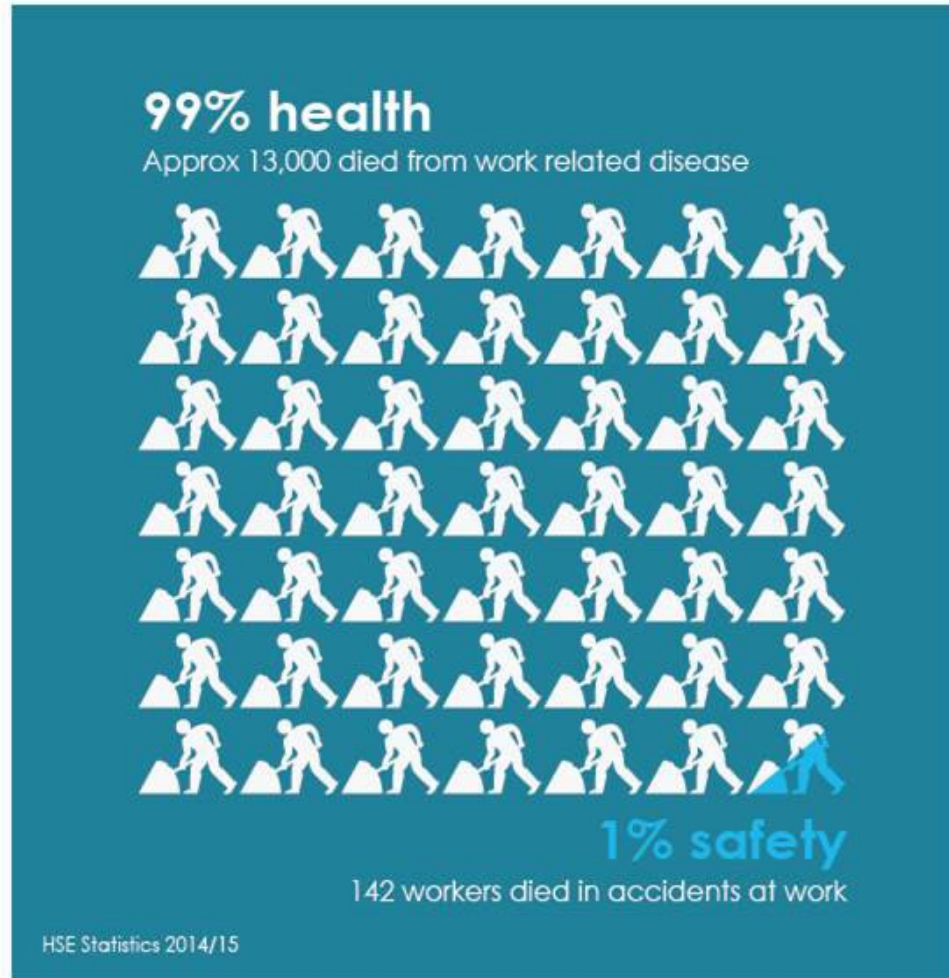
1. What are occupational health risks?
2. What are the **negative impacts** of poor control?
3. What are the **positive impacts** of good control?
4. What **guidance** should we comply with?
5. How can we ensure **compliance**?
6. Scenarios

A question to start us off...

- What do you think is the ratio of workers that die from **ill-health** caused by their work, verses **accidents** at work?
 - a) 50:50
 - b) 1:100
 - c) 100:1

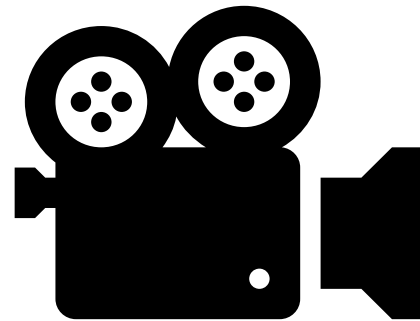
Why the focus on health risks?

- a) 50:50
- b) 1:100
- c) **100:1**



We need to re-focus on occupational health – there are a lot of people still dying because of their work

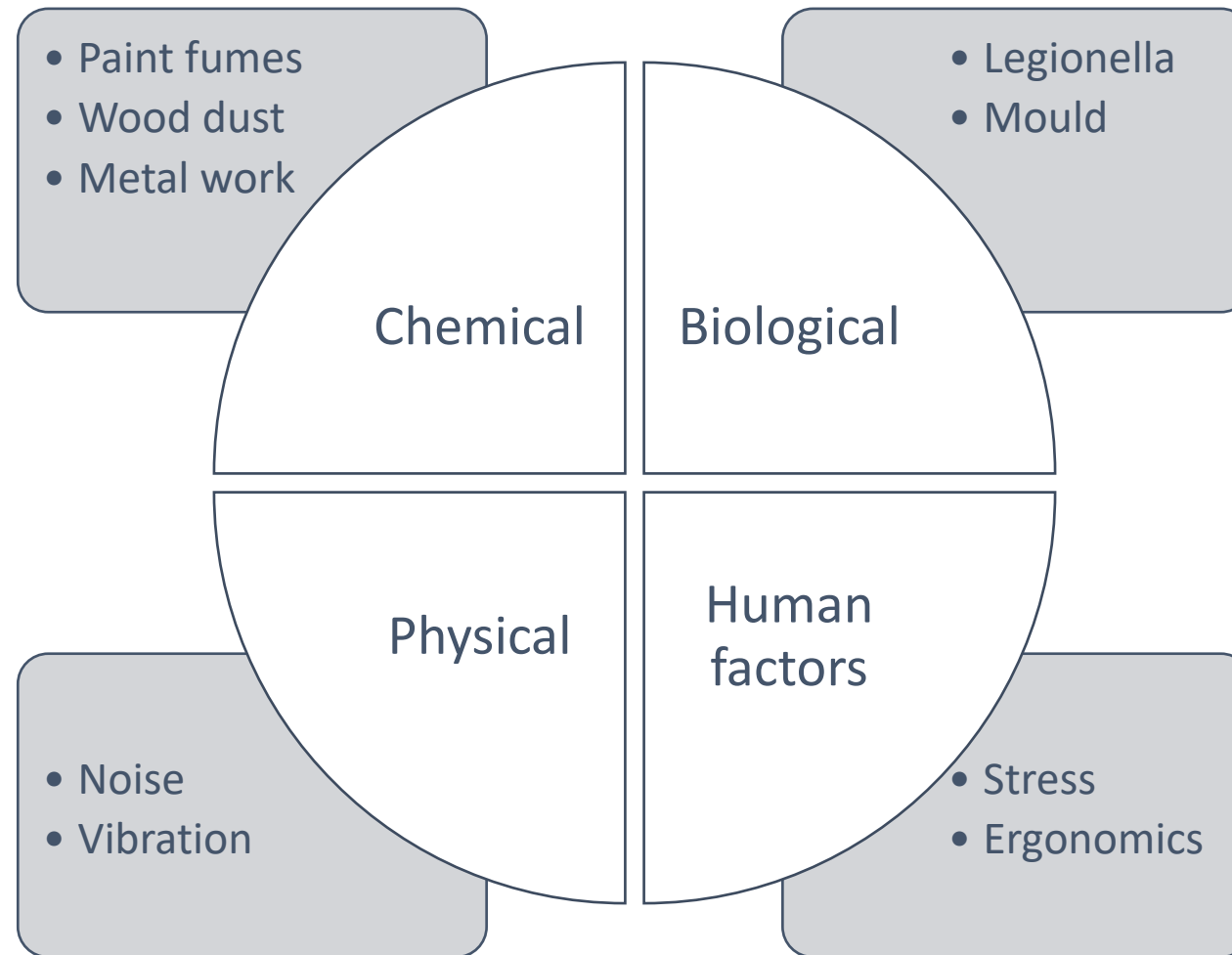
Video of Simon Clark



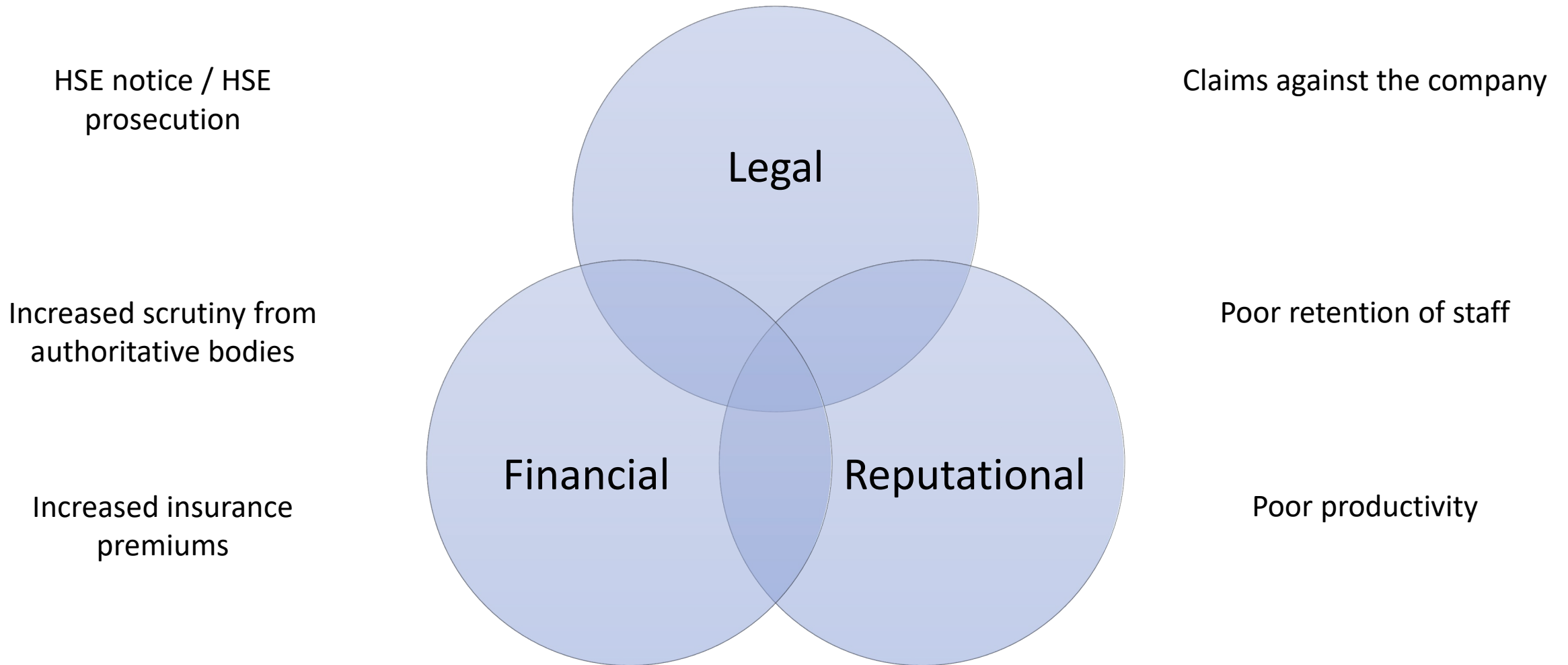
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What do we mean by occupational health risks?



What are the negative impacts of poor control?

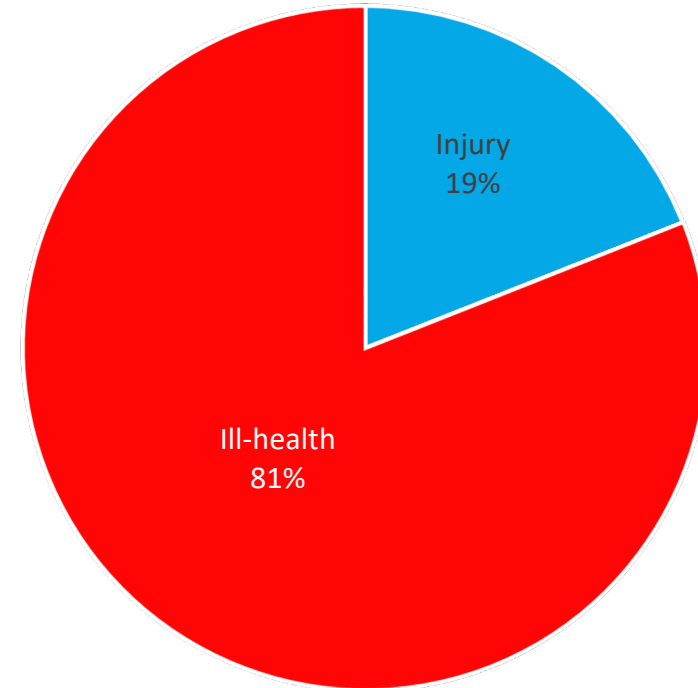


Lost time

In the construction industry
around **2 million working days**
were lost each year

(between 2016/17 and 2018/19)

~1.6 million working days to ill-
health



What are the positive impacts of good control?

- **Morally**, it is the right thing to do
- **Legally**, also the right thing to do
- **Financially**, can have many positive impacts
 - No fines for non-compliance with legislation
 - No loss of revenue due to reputational damage
 - Stand out amongst competitors as a leader
 - Healthy staff are more productive
 - Staff that feel looked after will be more loyal to the company

How can we ensure compliance?

Step 1	Identify the standards you should be complying with
Step 2	Commit to those standards
Step 3	Make a plan to reach the required level
Step 4	Implement the plan
Step 5	Demonstrate compliance
Step 6	Audit compliance periodically
Step 7	Continuously improve

Step 1: what guidance should we comply with?

Some examples:

Legislation	Approved code of practice
The Control of Substances Hazardous to Health Regulations 2002 (COSHH)	L5, sixth edition
The Control of Noise at Work Regulations 2005	L108, third edition
The Control of Vibration at Work Regulations 2005	L140, second edition (HAVS) L141, first edition (whole body vibration)
The Manual Handling Operations Regulations 1992	L123, fourth edition

Step 1: what guidance should we comply with?

Some examples:

Process	Guidance
Control of exposure to grain dust	INDG140
Consulting employees on health and safety	INDG232
Solder fume and you: an employee's guide	INDG248
Diesel engine exhaust emissions	INDG286

COSHH



- Assess the risks and inform appropriate people (Regulation 6)
- Prevent, or where not reasonably practicable, adequately control exposure (Regulations 7 & 8)
- Maintain and check controls (Regulation 9)
- Check efficacy of control for example through workplace monitoring and health surveillance where necessary (Regulations 10 & 11)
- Information, instruction and training (Regulation 12)
- Make plans for accidents and emergencies (Regulation 13)

Prevent/control exposure (COSHH Regulations 7 & 8)

COSHH Regulation 7(7):

“...control of that exposure shall only be treated as adequate if:

*(a) the **principles of good practice** for the control of exposure to substances hazardous to health set out in Schedule 2A are applied;*

*(b) any **workplace exposure limit approved for that substance is not exceeded; and***

*(c) for a substance which carries the risk phrase R45 (H350), R46 (H340) or R49 (H350i), or for substance which is identified or has shown to be a potential cause of occupational asthma, exposure is reduced to **as low a level as is reasonably practicable.**”*

Schedule 2a

Schedule 2a Principles

Design and operate processes and activities to **minimise emission, release and spread**

Consider **all routes** of exposure (inhalation, skin and ingestion)

Control exposure by measures that are **proportionate** to the health risk

Choose the **most effective and reliable** control options (hierarchy of control)

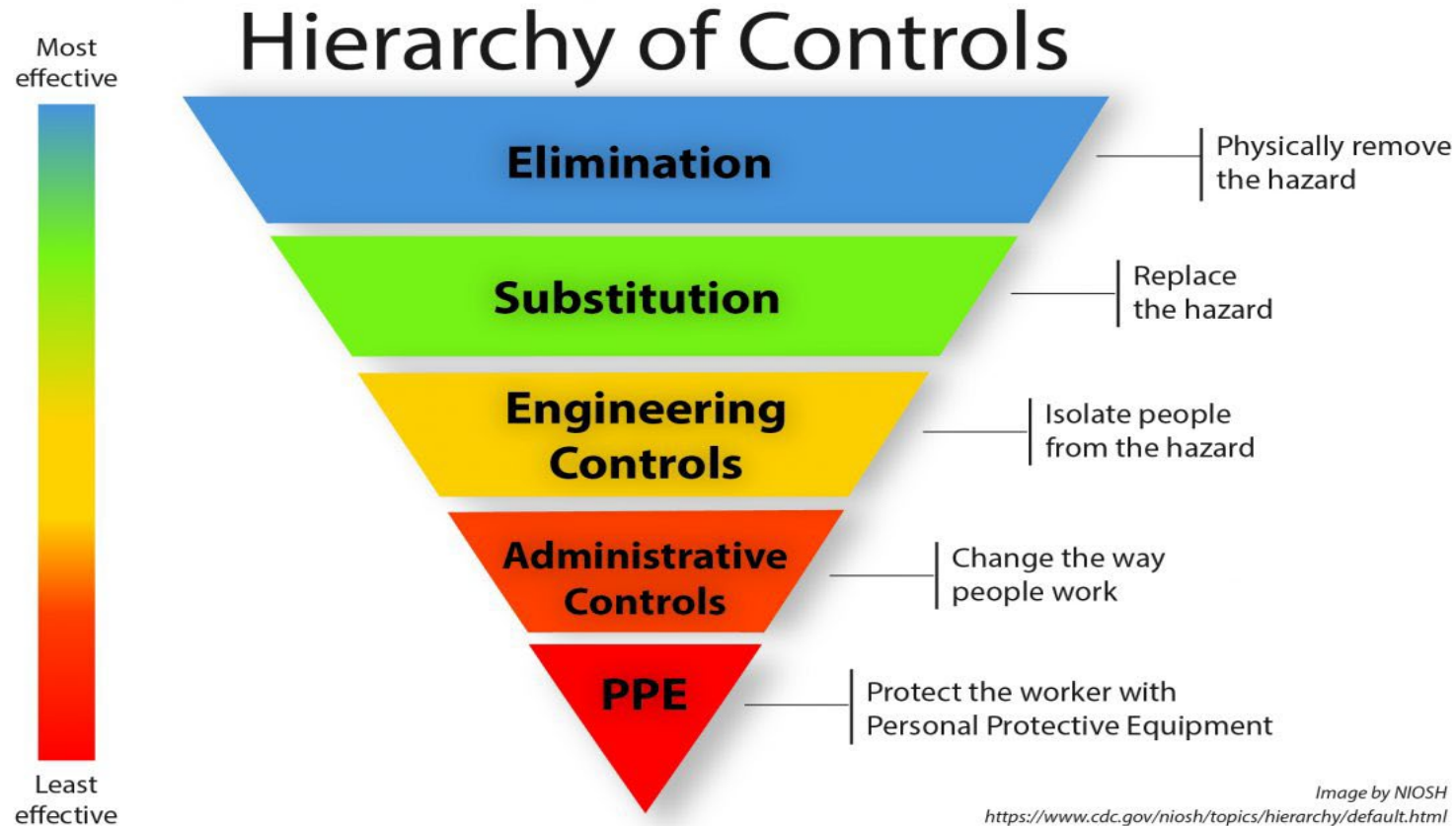
Where adequate control of exposure cannot be achieved by other means, provide, **in combination** with other control measures, suitable **personal protective equipment**

Check and review regularly all elements of control measures

Inform and **train** all employees on the hazards and risks from substances with which they work, and the use of control measures developed to minimise the risks

Ensure that the introduction of measures to control exposure does not increase the overall risk to health and safety

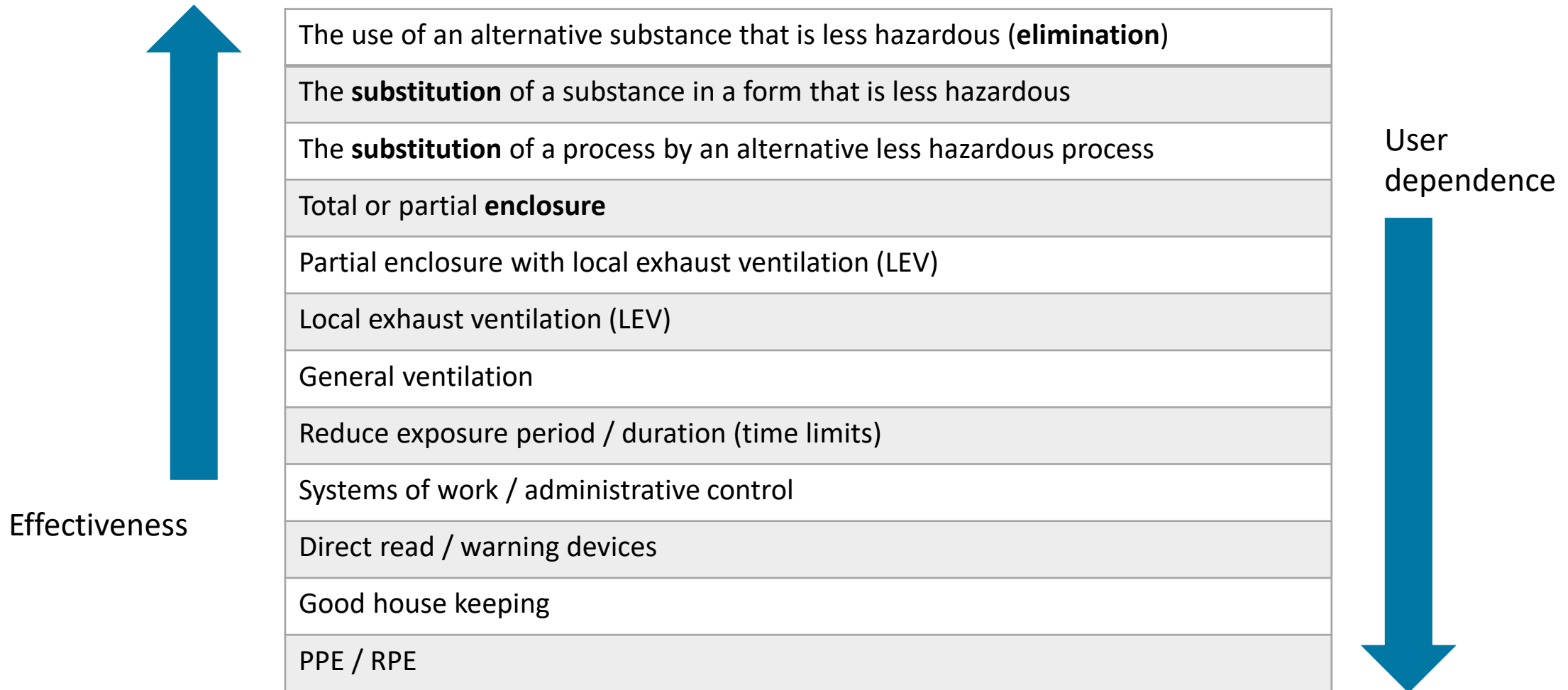
COSHH – hierarchy of control



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COSHH – hierarchy of control (Reg 7)

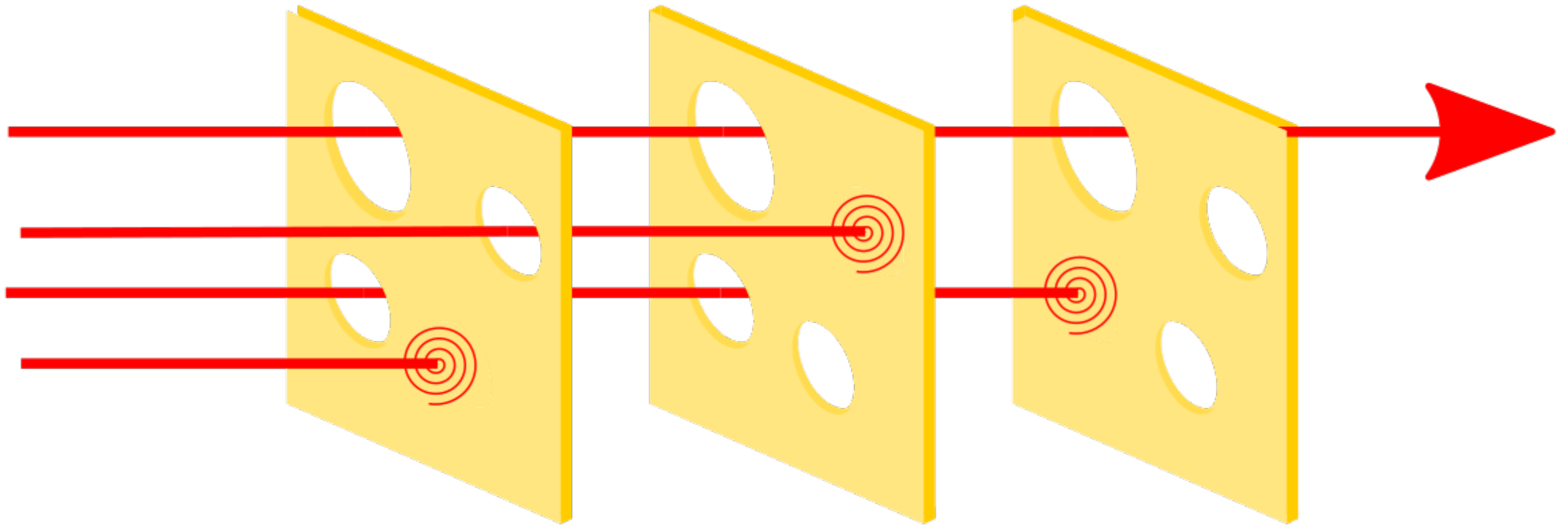


Provision of Information, instruction and training (COSHH Regulation 12)



- Can make a substantial difference
- Empower the workforce
- Encourages ownership
- Early recognition of issues and/or improvements which can present cost savings
- Including for use of control measures e.g. LEV and PPE/RPE

Swiss cheese model



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How can we demonstrate compliance?

- Record keeping
 - In relation to decision making
 - Maintenance and servicing records
 - TExT (thorough examination and testing) of LEV by a competent person
- Workplace auditing
- Personal air monitoring / occupational hygiene surveys
 - Considering the requirements of COSHH
 - Can help to identify lack of control, or confirm efficacy of control
- Biological monitoring and health surveillance



Record Keeping

- COSHH Regulations require that records of any inspection or checks are kept and retained for 5 years
- COSHH also required that employee health records and records of personal exposure are retained for 40 years

Assess risk (COSHH Regulation 6) – Common issues

- No reference to the **relevant guidance** you are trying to comply with (HSE, British Standards, trade bodies)
- No consideration of the **task as a whole**, may be purely substance based or a non specific regurgitation of the safety data sheet
- No consideration of the whole process from raw material handling to storage to housekeeping tasks etc.



Assess risk (COSHH Regulation 6) – Common issues

- Does not consider all hazardous substances (including by-products, waste products, biological agents, etc.) and routes of exposure
- Does not consider all levels of the hierarchy of control **and** explain why a particular control measure is deemed to be not reasonably practicable at the point of assessment
- Is not carried out by a competent person with worker involvement
- Is not reviewed by the stated date



Reflection

- What is your biggest health protection concern in your workplace?
- Is it adequately controlled?
- What do you think your next steps are?



Scenarios

Welding mild steel

- HSE guidance recommends that LEV is provided for all regular/high intensity welding
 - RPE can then also be used if control is not deemed adequate with LEV alone
- Extraction will protect the welder and others in the workshop

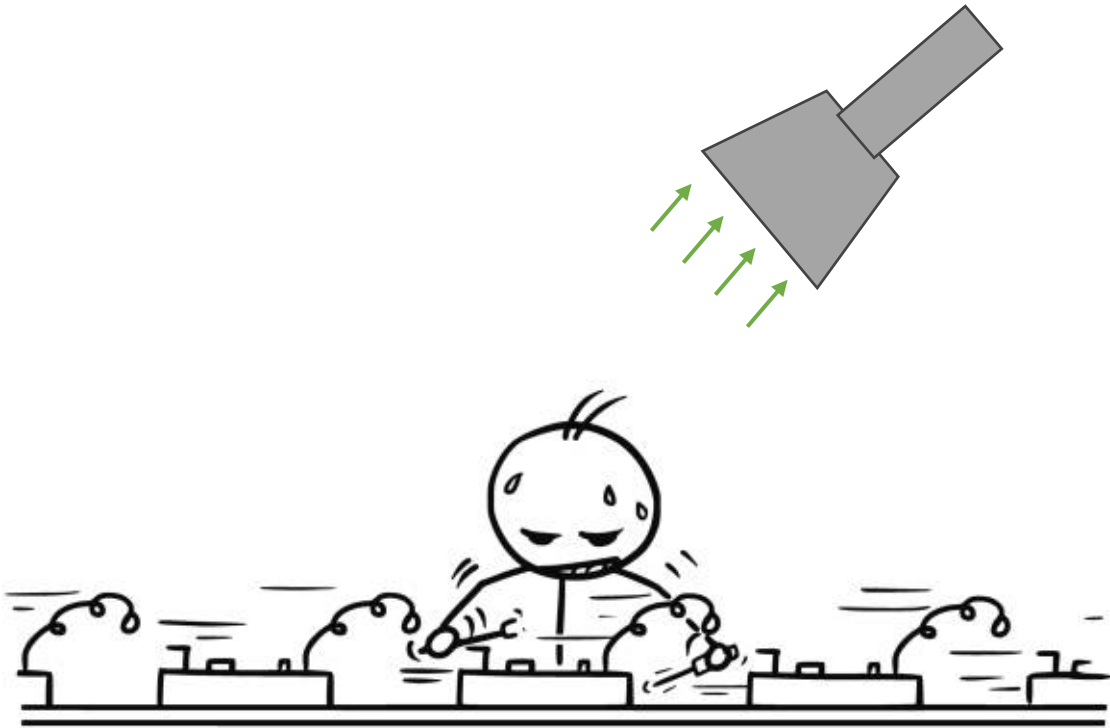
Scenarios

Application of paint by hand to parts at a bench



Scenarios

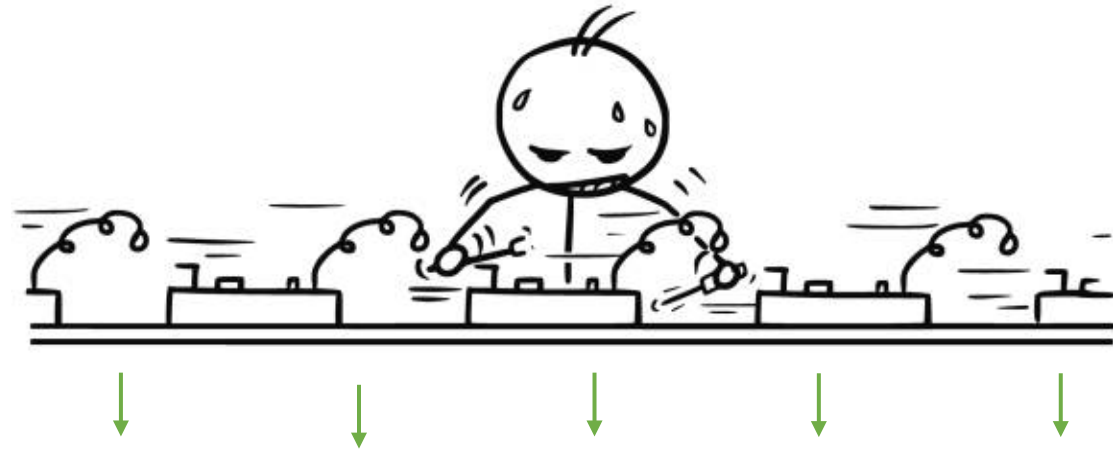
Application of paint by hand to parts at a bench



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Scenarios

Application of paint by hand to parts at a bench



Scenarios

Nitric acid dip

- Nitric acid can degrade to produce nitrogen dioxide (NO₂)
- NO₂ is an irritant to the mucous membranes



Scenarios

Nitric acid dip

- Interim control measure before other controls can be put in place?

Scenarios

Nitric acid dip

- Interim control measure before other controls can be put in place?
- P3 mask  (would need breathing apparatus)
- Restrict access 
- Is LEV working properly?