OCCUPATIONAL Medicine

Slide Deck

Dr. Faraz Tak

DipOccMed / LFOM / MFOM (Part 1)

Occupational Medicine Revision • 2026

som
Supporting occupational health and wellbeing professionals

OCCUPATIONAL HAZARDS

Physical • Chemical • Biological • Ergonomic • Psychosocial

NOISE — Exposure Action Values & Limits

Supporting occupational health and wellbeing professionals

80 dB(A)
Lower EAV (LEP,d)

85 dB(A)
Upper EAV

87 dB(A)
ELV — Must NOT Exceed

135 dB(C)
Lower EAV — Peak

137 dB(C)
Upper EAV — Peak

140 dB(C)
ELV Peak — Must NOT Exceed

Weighting & Formula

A-weighting: mimics human ear response
C-weighting: peak sound pressure
SPL = 20 × Log_{10}(P/Pr)
Pr = 0.00002 Pa (reference)
Law: Control of Noise at Work Regs 2005

Instruments

SLM — Sound Level Meter (handheld)
Dosimeter — personal, worn by worker
Calibrator — for instrument accuracy
Octave band analyser — frequency analysis

Actions Required

Lower EAV: RA + info/training + offer HPE
Upper EAV: RA + provide & enforce HPE
Upper EAV: Health surveillance mandatory
ELV: Reduce exposure — must not be exceeded

VIBRATION — Whole-Body (WBV)

Supporting occupational health and wellbeing professionals

0.5 m/s² A(8)
Exposure Action Value (EAV)

1.15 m/s² A(8)
Exposure Limit Value (ELV)

Sources

Tractors and agricultural vehicles
Forklifts and platform trucks
Heavy construction plant
Fast boats / maritime vessels
Quarrying and mining equipment

Health Effects

LBP — Low Back Pain (main risk)
Intervertebral disc degeneration
Motion sickness (nausea, dizziness)
Fatigue and discomfort

Law: Control of Vibration at Work Regulations 2005

Diagram: WBV Risk Pyramid

ELV (1.15) → Exposure MUST be reduced | EAV (0.5) → Action required | Below 0.5 → Low risk zone

VIBRATION — Hand-Transmitted (HAV / HAVS)

Supporting occupational health and wellbeing professionals

2.5 m/s² A(8)
Exposure Action Value (EAV)

5.0 m/s² A(8)
Exposure Limit Value (ELV)

A(8) Formula: $a_{hv} \times \sqrt{(T/T_o)}$ where $T_o = 8$ hours

Sources

- Concrete breakers & demolition tools
- Chainsaws & forestry equipment
- Angle grinders
- Hammer drills & road breakers
- Pneumatic tools

HAVS Conditions

- Vibration-White Finger (Raynaud's phenomenon)
- Sensorineural hearing impairment
- Carpal Tunnel Syndrome (CTS)
- Dead fingers, numb hands
- 1.2 million at risk in Britain

STOCKHOLM CLASSIFICATION — Vascular: Stage 0 (no symptoms) → 1 (mild) → 2 (moderate) → 3 (severe) → 4 (very severe blanching) | Sensorineural: 0 → 1 (mild tingling) → 2 (reduced sensory) → 3 (impaired dexterity)

LIGHTING — Illuminance Requirements (Lux)

Supporting occupational health and wellbeing professionals

Illuminance	Task / Area
1500 lux	Fine/precision assembly
1000 lux	Inspection, electronics assembly
750 lux	Drawing offices, meat inspection
500 lux	General offices, laboratories
300 lux	Libraries, lecture theatres
150 lux	Loading bays
100 lux	Corridors, stores, stairways

⚠ Lighting Hazards

Glare: disability (reduces visibility) vs discomfort
Flicker: epilepsy risk, eye strain
Stroboscopic effect: rotating machinery danger
Veiling reflections: on screens

Blue Light Hazard

Photochemical risk to retina
Photomaculopathy — retinal damage
Peak wavelength: ~440 nm
Sources: LEDs, welding arcs

Standard

CIBSE/SLL Lighting Handbook

IONIZING RADIATION — Types & Units

Supporting occupational health and wellbeing professionals

Radiation Types

Alpha (α): stopped by paper/skin — high local tissue damage
Beta (β): stopped by glass or thin metal
Neutrons: variable energy, similar range to gamma
Gamma/X-rays: no charge; penetrating; attenuated by lead/concrete

Units & Measures

Activity: Becquerel (Bq) = 1 transformation/sec
Absorbed dose: Gray (Gy) = 1 J/kg
Dose equivalent: Sievert (Sv) = Gy × Quality Factor
β, γ, X-rays: Q=1 | Alpha: Q=20 | Neutrons: Q=10
Effective dose = sum of tissue-weighted equivalent doses

Stochastic Effects

No threshold — even tiny doses carry risk
Cancer and genetic mutations
Risk: ~4% per Sievert
Carcinogens, mutagens

Deterministic Effects

Threshold-dependent — dose must exceed threshold
Acute Radiation Syndrome (ARS)
Cataracts, skin burns
Dose-response above threshold is predictable

IONIZING RADIATION — UK Annual Dose Limits (IRR 2017)

Supporting occupational health and wellbeing professionals

Group	Whole Body	Skin	Lens of Eye
Classified workers	20 mSv	500 mSv	20 mSv
Trainees <18 yrs	6 mSv	150 mSv	15 mSv
Public / Others	1 mSv	50 mSv	15 mSv
Foetus (declared)	1 mSv total	—	—

3 Principles of Radiation Protection

1. Justification — benefit must outweigh risk
2. Optimisation — ALARA (As Low As Reasonably Achievable)
3. Dose Limits — must not be exceeded

Work Areas Classification

Supervised Area: < 7.5 µSv/h
Controlled Area: > 7.5 µSv/h
Controlled area: requires RPA (Radiation Protection Advisor)
Health surveillance for classified workers

NON-IONIZING RADIATION — EMF & Optical

Supporting occupational health and wellbeing professionals

EMF (ELF — Extremely Low Frequency)

Sources: power lines, MRI scanners, welding
IARC 2B: childhood leukaemia (ELF)
IARC 2B: glioma risk with RF exposure
Law: Control of EMF at Work Regs 2016

Optical Radiation — UV Types

UV-A: 315–400 nm (near UV, tanning)
UV-B: 280–315 nm (sunburn, skin cancer)
UV-C: 100–280 nm (germicidal, most dangerous)
Effects: photokeratitis, photodermatitis, cataracts, skin cancer
Law: Control of Artificial Optical Radiation at Work Regs 2010

Class	Risk Level	PPE Needed?
1 / 1M	Safe — no hazard under normal use	✕ No
2 / 2M	Safe (short exposure < 0.25 sec)	✕ No
3R	Low risk — small hazard	⚠ Maybe
3B	Eye & skin hazard from direct beam	☑ Yes
4	Eye, skin, AND fire hazard	☑ Yes — strict controls

THERMAL ENVIRONMENT — Heat & Cold

Supporting occupational health and wellbeing professionals

Heat Balance Equation

M = ±K ± C ± R – E
M = Metabolism | K = Conduction | C = Convection
R = Radiation | E = Evaporation (sweat)

Heat Stroke Risk

Core temperature > 38°C sustained
Medical emergency!
Requires immediate cooling

WBGT Index (Wet Bulb Globe Temperature)

Most widely used heat stress index
Indoor: WBGT = 0.7 WB + 0.3 GT
Outdoor: WBGT = 0.7 WB + 0.2 GT + 0.1 DB
WB = Wet Bulb | GT = Globe Temp | DB = Dry Bulb

Heat Disorders (Severity ↓)

1. Heat Stroke
2. Heat Exhaustion
3. Heat Syncope
4. Heat Fatigue
5. Prickly Heat

Cold Hazards

Hypothermia = core body temperature < 35°C
Continuous exposure NOT permitted if wind chill ≤ -32°C
Frostbite, trench foot, Raynaud's exacerbation

Law

Management of H&S at Work Regulations 1999 (general duty)
No specific min/max temp law but codes of practice apply

CHEMICAL HAZARDS — Key OELs / WELs (8hr TWA)

Supporting occupational health and wellbeing professionals

Substance	OEL (TWA)	Key Health Effect
Benzene	**1 ppm**	Leukaemia (AML)
Vinyl chloride	**1 ppm**	Angiosarcoma of liver
Asbestos	**0.1 f/mL**	Mesothelioma, asbestosis
Silica (quartz)	**0.1 mg/m³**	Silicosis, lung cancer
Lead (inorganic)	**0.15 mg/m³**	Neurotoxicity, anaemia
Carbon monoxide	**20 ppm**	Carboxyhaemoglobinaemia
Isocyanates	**0.02 mg/m³**	Occupational asthma
Formaldehyde	**2 ppm**	URT irritant, carcinogen
Welding fume (all)	**No specific WEL**	NEW IARC Group 1 carcinogen (2018); all mild steel fume = lung cancer risk

CHEMICAL — Dust Types & CLP Classification

Supporting occupational health and wellbeing professionals

Dust Types

Inhalable: enters nose/mouth (0–100 µm)
→ All particles that enter the body
Thoracic: penetrates larynx into trachea/bronchi
Respirable: reaches alveoli (<10 µm)
→ RCS = Respirable Crystalline Silica (most dangerous)

Cotton dust → Byssinosis (Monday chest tightness)
Wood dust → Sinonasal cancer (IARC 1)
Flour/grain dust → Occupational asthma

CLP/GHS Hazard Categories (Key for Exam)

Carc. 1A/1B: known/presumed human carcinogen
Repr. 1A/1B: reproductive toxicant
Resp. Sens. 1: respiratory sensitizer
Acute Tox. 1–4: oral, dermal, inhalation routes
Skin Sens. 1: skin sensitizer
SVHC: Substance of Very High Concern (under REACH)
REACH: Registration, Evaluation, Auth., Restriction of Chemicals

COSHH Regulations 2002 — 8-Step Framework

1. Assess the risk | 2. Prevent/control exposure (Hierarchy: Elimination → Substitution → Engineering → Admin → PPE) | 3. Ensure controls used/maintained | 4. Monitor exposure | 5. Health surveillance where appropriate | 6. Information, instruction and training | 7. Plan for accidents/emergencies | 8. Review assessment regularly

☣ BIOLOGICAL HAZARDS — ACDP Containment Levels

Supporting occupational health and wellbeing professionals

Key Concepts

Bio-aerosols: airborne particles with bacteria, fungi, mites
BBVs: HBV, HCV, HIV (blood-borne viruses)
Zoonoses: infections from animals (leptospirosis, Q fever, anthrax)
Governed by: Advisory Committee on Dangerous Pathogens (ACDP)

Level	Risk	Examples
Level 1	Low risk	E. coli K12, Saccharomyces cerevisiae
Level 2	Moderate risk	HBV, HCV, Salmonella, Influenza A
Level 3	High risk	TB, HIV, Anthrax, Rabies
Level 4	HIGHEST risk	VHF, Ebola, Marburg, Lassa fever

Containment Measures (increase with level)

Lab design, access control, PPE, air filtration (HEPA), autoclaves, negative pressure, full HAZMAT suits at Level 4

ERGONOMICS & MANUAL HANDLING

Supporting occupational health and wellbeing professionals

Ergonomics = Fitting the task to the human

Manual Handling Regs 1992

1. Avoid hazardous manual handling (if reasonably practicable)
2. Assess risk of operations that cannot be avoided
3. Reduce risk of injury so far as reasonably practicable

MSD Risk Factors (HAVS excluded)

Repetition, Force, Awkward posture
Vibration, Static load
Contact stress, Duration
Psychosocial factors

Risk Assessment Tools (HSE)

MAC (Manual Handling Assessment Charts): lifting/carry/team | RAPP: push/pull | ART: upper limb repetitive tasks | RULA: rapid upper limb assessment | REBA: rapid entire body assessment | QEC: quick exposure check

DSE — Regs 1992

Screen distance ~500mm | Chair adjustable | Lighting adequate | Workstation assessments for 'users'

Bradford Hill Criteria

9 criteria for causal attribution of work-related disease — see Epidemiology section

PSYCHOSOCIAL HAZARDS — Stress Models

Supporting occupational health and wellbeing professionals

Karasek: Job Demand-Control-Support Model

HIGH DEMAND **LOW CONTROL** ⚠ **HIGH STRAIN**	HIGH DEMAND HIGH CONTROL Active Learning
LOW DEMAND LOW CONTROL Passive	LOW DEMAND HIGH CONTROL ☑ Low Strain

↑ *High Support reduces risk in all quadrants*

HSE Management Standards (6 Domains)

1. Demands — workload, work patterns, environment
2. Control — how much say worker has
3. Support — encouragement from org/manager/colleagues
4. Relationships — positive working / no bullying
5. Role — clarity of role, no role conflict
6. Change — how org change is managed/communicated

Karoshi & Long Hours

Karoshi = death from overwork (Japan)
Also: Korea (gwarosa), China (guolaosi)
>11 hrs/day or >60 hrs/week → increased AMI risk
ILO 2018: 45% Eastern Asia workers >48 hrs/week
Japan guidance: max 45 hrs overtime/month

Night & Lone Working

Night work: 11pm–6am (legal definition)
Health risks: CVD, GI disorders, sleep disturbance, cancer
Pregnant night workers: right to transfer to day work
Lone working: risk assessment required
Communication plan essential for lone workers

OCCUPATIONAL DISEASES

Infections • Respiratory • Skin • MSDs • Neurological • Psychiatric

OCCUPATIONAL INFECTIONS — Key Summary

Supporting occupational health and wellbeing professionals

Infection	Key Occupation	Key Points
Hepatitis B (HBV)	Healthcare workers	Vaccine available; HBIG for PEP; most infectious BBV
Hepatitis C (HCV)	Healthcare workers	No vaccine; DAAs highly effective; monitor 6 months
HIV	Healthcare workers	PEP within 72hrs (28-day triple therapy); 0.3% needlestick risk
TB	Healthcare, lab	BCG vaccine; LTBI screening; M. tuberculosis (Containment 3)
Leptospirosis	Sewer workers, farmers	Weil's disease; penicillin treatment; spirochete
Anthrax	Agricultural, wool	Inhalational most severe; B. anthracis; bioterrorism risk
Q Fever	Vets, farmers	Coxiella burnetii; tetracycline treatment
Legionella	Cooling towers, plumbers	Notifiable; Pontiac fever vs Legionnaire's disease
COVID-19	All sectors	SARS-CoV-2; PPE, vaccination, risk assessment

NEEDLESTICK INJURY — Protocol & Risks

Supporting occupational health and wellbeing professionals

IMMEDIATE ACTION PROTOCOL

1. Encourage bleeding (don't suck!)
2. Wash under running water
3. Report to occupational health/A&E
4. Risk assess the source patient
5. PEP if indicated

Virus	Transmission Risk (per needlestick)
HBV (HBeAg positive)	20–30%
HCV	1–3%
HIV	0.3%

PEP Guidelines

HBV: HBIG + vaccine within 24 hrs if non-immune
HIV: PEP (triple therapy) within 72 hrs; 28-day course
HCV: no PEP available; monitor for 6 months (serology)
Source: test for HBV, HCV, HIV with consent

PNEUMOCONIOSES — Dust Lung Diseases

Supporting occupational health and wellbeing professionals

Disease	Causative Dust	Key Features
Silicosis	**RCS (quartz)**	Progressive massive fibrosis (PMF); eggshell calcification; IARC Group 1 carcinogen; accelerated form with high exposure
CWP	**Coal dust**	Simple → PMF; Caplan's syndrome (+ Rheumatoid Arthritis); 'black lung'
Asbestosis	**Asbestos fibres**	Diffuse fibrosis; basal crackles; clubbing; HRCT; dose-related; latency 20+ yrs
Berylliosis	**Beryllium**	Granulomatous disease; BeLPT test (diagnostic); mimics sarcoidosis
Byssinosis	**Cotton dust**	Monday morning chest tightness; progressive with exposure

⚠ ASBESTOS-RELATED DISEASES

Supporting occupational health and wellbeing professionals

Asbestosis

Diffuse interstitial fibrosis
Dose-related: cumulative exposure
Basal crackles, clubbing, restrictive lung function
HRCT: ground glass opacity, honeycombing

Pleural Plaques

Benign — no functional impairment
Marker of asbestos exposure (not disease)
Bilateral, calcified, usually parietal pleura
Latency 20–30 years

Mesothelioma

Malignant tumour — pleura (mainly) or peritoneum
Latency: 30–40 years after exposure
Asbestos main cause (90%)
Poor prognosis; median survival <12 months
Compensation via Industrial Injuries scheme

Lung Cancer

Synergistic with smoking: 5× from asbestos alone, 5× from smoking, 50× for both combined!
Dose-response relationship
All fibre types implicated
Adenocarcinoma most common

⚖ CAR 2012 — Control of Asbestos Regulations 2012 | Non-licensed work vs licensed work (>high-risk activities)

Diagnosis Tools

CXR: pleural plaques, bilateral basal fibrosis | HRCT: more sensitive for early disease | BAL: asbestos bodies | FEV1/FVC: restrictive pattern | Mesothelioma: biopsy (VATS) required

OCCUPATIONAL ASTHMA

Supporting occupational health and wellbeing professionals

Key Causal Agents (HIGH MOLECULAR WEIGHT & LOW MOLECULAR WEIGHT)

HMW: Flour (bakers), Latex, Animals (vets), Grain, Enzymes — IgE mediated
LMW: Isocyanates (TDI/MDI), Colophony (solder fume), Wood dust (western red cedar), Persulphate salts (hairdressers), Formaldehyde, Stainless steel fume (chromium/nickel — hexavalent Cr)

OASYS — Serial PEF Monitoring

Peak Expiratory Flow (PEF) 4x daily
Record: work days vs days off/holidays
Pattern: fall at work, improve at rest
OASYS score >2.5 = significant
Serial monitoring: gold standard for OA

Key Clinical Points

Latency before sensitization: weeks to years
Once sensitized: tiny exposure triggers attacks
Management: complete avoidance of cause
Steroids help symptoms but NOT curative if exposure continues
Surveillance: SWORD system (UK)

Pathophysiology

1. Sensitization phase: first exposure → immunological response (no symptoms yet) → 2. Elicitation: re-exposure → bronchospasm → Variable airflow obstruction → Characteristically worse at work, better on holidays/weekends

OCCUPATIONAL SKIN DISORDERS

Condition	Mechanism	Causative Agents	Key Note
Irritant Contact Dermatitis (ICD)	Non-immunological; toxic direct damage	Solvents, detergents, cutting oils, wet work	Most common OSD (80%)
Allergic Contact Dermatitis (ACD)	Type IV (delayed) hypersensitivity; requires sensitization	Nickel, chromate, rubber chemicals, epoxy resins	Patch test = gold standard
Contact Urticaria	Immediate Type I IgE-mediated reaction	Latex, flour, animal products	Can progress to anaphylaxis
Photodermatitis	UV + sensitizing chemical	Tar, psoralens, plants (phytophotodermatitis)	Linear pattern from plant contact
Chloracne	Chlorinated compound toxicity	Dioxins, PCBs	Comedones, cysts — systemic marker

Key Points

Patch testing = gold standard for ACD | Skin absorption: phenol, organophosphates, aniline | Latex: Type I (urticaria/anaphylaxis) OR Type IV (contact) | COSHH applies to skin sensitizers | Prick test for Type I (urticaria)

MUSCULOSKELETAL DISORDERS (MSDs) — Upper Limb

Condition	Key Features / Test	Associated Work
Carpal Tunnel Syndrome (CTS)	Wrist pain/tingling at night; Phalen's + Tinel's positive; thenar wasting	VDU use, vibration, repetitive wrist flexion
De Quervain's Tenosynovitis	Radial wrist pain; Finkelstein test positive	Repetitive thumb use, pinching
Lateral Epicondylitis	Tennis elbow; pain on resisted wrist extension	Repetitive forearm use
Medial Epicondylitis	Golfer's elbow; medial epicondyle pain	Repetitive gripping/throwing
Rotator Cuff Syndrome	Shoulder pain; painful arc 60–120°	Overhead work
HAVS	White finger + sensorineural loss; Stockholm classification	Vibrating hand tools

Low Back Pain (LBP) — Most Common Occupational MSD

Strong association with WBV (NIOSH: 15/19 studies support link) | Management: active rehabilitation; avoid prolonged bed rest | Biopsychosocial model important | Yellow flags: fear-avoidance beliefs, catastrophising

GI & URINARY TRACT DISORDERS

Agent	Disease
Vinyl chloride (PVC)	Hepatic angiosarcoma
Aflatoxin (Aspergillus)	Hepatocellular carcinoma
Carbon tetrachloride	Hepatic cirrhosis, hepatotoxicity
Arsenic	Liver angiosarcoma,

Renal Effects

Lead, cadmium, mercury → proximal tubular dysfunction
Silica → renal disease (glomerulonephritis)
β_2-microglobulin — early tubular damage marker
AKI from crush injuries (rhabdomyolysis) in workplace accidents

Bladder Cancer

Aromatic amines: 2-naphthylamine, benzidine
Industries: rubber, dye, leather (aniline dye)
Latency: 15–40 years!
Key symptom: PAINLESS haematuria
Surveillance: urine cytology
RIDDOR reportable occupational cancer

Biological Monitoring

Cadmium: urine cadmium + β_2-microglobulin
Lead: blood lead levels (BLL)
Mercury: urine inorganic mercury
Arsenic: urine arsenic (speciated)

EYE DISORDERS — Occupational Causes

Cause	Effect / Key Points
UV Radiation	Photokeratitis (arc eye), pterygium, cataracts, skin cancer around eye
Infrared (IR) Radiation	Infrared/glass-blower's cataract — posterior subcapsular
Lasers Class 3B/4	Retinal burn — permanent, immediate, painless
Chemical Splash	Corneal injury; alkali worse than acid (penetrates deeper)
Blue Light (~440nm)	Photomaculopathy — photochemical retinal damage
Penetrating Injury	Endophthalmitis; requires urgent ophthalmology
Ionizing Radiation	Radiation cataract (posterior subcapsular); latency years

Cataracts by Type

Infrared: glassblowers, furnace workers (posterior subcapsular) | Radiation: ionizing radiation workers | UV: outdoor workers, welders | Electric: lightning, electrical injury

NEUROLOGICAL DISORDERS — Peripheral Neuropathy

Supporting occupational health and wellbeing professionals

Agent	Features
Lead	Wrist drop, foot drop; motor > sensory; slow nerve conduction
n-Hexane / CS_2	Distal axonopathy; glue sniffer's neuropathy (n-hexane)
Organophosphates	OPIDN (delayed neuropathy after acute poisoning); acute cholinergic crisis
Acrylamide	Sensorimotor neuropathy; skin peeling, sweating
Mercury (organic)	Cerebellar ataxia + sensory loss; Minamata disease
Thallium	Ascending painful neuropathy; alopecia pathognomonic

Other CNS Effects

Manganese → Parkinsonism
Carbon disulphide → CVD + polyneuropathy
Organic solvents → dementia, cerebellar

NIHL Pattern

4 kHz notch — FIRST affected
Then spreads to 3 kHz and 6 kHz
TTS → PTS with continued exposure

Stockholm Classification

Vascular: 0-4V (blanching extent)
Sensorineural: 0-3SN
Stage 3V+ or 2SN+ = stop vibration work

PSYCHIATRIC & MENTAL HEALTH DISORDERS

Supporting occupational health and wellbeing professionals

Main Conditions

Work-related stress (most common)
Adjustment disorders
Anxiety disorders
Depression
PTSD — flashbacks, avoidance, hyperarousal
Burnout: exhaustion + depersonalisation + reduced efficacy

Assessment Tools

PHQ-9: depression screening (score 0–27)
GAD-7: generalised anxiety (score 0–21)
HADS: Hospital Anxiety and Depression Scale
Davidson Trauma Scale (DTS): PTSD
GWBQ: General Wellbeing Questionnaire (workplace stress)

Management

CBT: first-line for anxiety, depression, PTSD
EMDR: gold standard for PTSD
EAP (Employee Assistance Programme): counselling
Graded return to work
Reasonable adjustments (Equality Act 2010)

Workplace Risk Factors

Long hours, job insecurity, bullying/harassment
Lack of control (Karasek model)
Role ambiguity or conflict
Trauma exposure (emergency workers, healthcare)
Night shift work

REPRODUCTIVE & DEVELOPMENTAL DISORDERS

Supporting occupational health and wellbeing professionals

Agent	Effect on Reproduction
Lead	↓ Fertility (both sexes), miscarriage, CNS damage in foetus
Mercury (organic)	Miscarriage, CNS damage (Minamata), teratogenic
Ionizing radiation	Miscarriage, teratogenicity; foetal dose limit: 1 mSv whole pregnancy
Pesticides	↓ Sperm count, miscarriage, endocrine disruption
Heat stress	↓ Male fertility (↓ spermatogenesis), heat-sensitive to testis
Night shift work	Miscarriage, preterm birth, menstrual irregularities
Organic solvents	Spontaneous abortion (glycol ethers, benzene)

Legal Duty — Pregnancy at Work

New/expectant mothers risk assessment MANDATORY | Night work: right to transfer to day work | Foetal dose limit: 1 mSv for whole pregnancy (ionizing radiation) | Maternity Regulations — must remove risk or reassign

HAEMATOLOGICAL DISORDERS

Supporting occupational health and wellbeing professionals

Agent	Haematological Effect
Benzene	AML, ALL, aplastic anaemia; IARC Group 1 carcinogen; WEL 1 ppm
Lead	Inhibits haem synthesis; basophilic stippling of RBCs; anaemia; raised ZPP
Arsenic	Aplastic anaemia; pancytopenia
Phenylhydrazine	Haemolytic anaemia; oxidative damage to RBCs
Nitrates / Nitrites	Methaemoglobinaemia (chocolate brown blood)
Carbon monoxide	Carboxyhaemoglobinaemia; cherry red skin; tissue hypoxia

Monitoring Markers

Blood lead (BLL) | Zinc protoporphyrin (ZPP) — lead | FBC — benzene/arsenic | COHb — CO exposure | Methaemoglobin level — nitrate exposure | Reticulocyte count

MEDICALLY UNEXPLAINED OCCUPATIONAL DISORDERS

Supporting occupational health and wellbeing professionals

Sick Building Syndrome (SBS)

Symptoms: headaches, eye/throat irritation, fatigue, dizziness, dry skin
Improve on leaving the building
No identifiable cause in building
Causes: poor ventilation, humidity extremes, VOCs, bio-aerosols, psychosocial factors
Management: optimize environment, address stress
NOT the same as Building-Related Illness (BRI)

Karoshi (Death from Overwork)

Japan: karoshi (過労死) — stroke and AMI from overwork
Korea: gwarosa | China: guolaosi
>11 hrs/day → significantly increased AMI risk
Prevention: max 45 hrs overtime/month (Japan guidance)
WHO/ILO 2021: 745,000 deaths/year from long working hours

Chronic Fatigue Syndrome (CFS/ME)

Unexplained fatigue persisting >6 months
Cognitive dysfunction ('brain fog')
GET (Graded Exercise Therapy) — controversial; NICE updated guidelines 2021 changed approach
CBT: psychological support
Work adjustment and phased return

Key Distinctions

SBS: symptoms improve away from building
BRI: building is definitive cause (e.g. legionella)
MCS: multiple chemical sensitivity — contested diagnosis
IEI: idiopathic environmental intolerance

OH PRACTICE

Operational • Ethics • Policies • Sickness Absence • Risk Assessment • Surveillance

OH SERVICES — Principles & Team Structure

Supporting occupational health and wellbeing professionals

Core Principles

Preventative medicine: proactive > reactive
Serves 4 groups: workforce, individual workers, employer's customers, local population
OH professional is impartial (not primarily treating)
Effect of work ON health + Effect of health ON work

Models of Service

Single OHP/OHN: autonomy but hard to maintain competence
In-house OH service: knows org, but can become insular
Group/contracted: critical mass, but profit pressure
Multidisciplinary: BEST MODEL — hard for SMEs to access

Occupational Physician	Sickness absence, health surveillance, risk assessment, policy
OH Nurse	Pre-employment screening, audiometry, drug testing, counselling
OH Hygienist	Monitoring and controlling workplace exposures (AREC model)
Ergonomist	Fitting task to human; workstation assessments
Case Manager	Managing return to work; liaison between worker and employer

OH RECORDS, IT SECURITY & GDPR

Supporting occupational health and wellbeing professionals

GDPR 2018 Requirements

Medical info = SPECIAL CATEGORY DATA under GDPR 2018
Lawful basis: consent OR public task OR vital interests
Encrypted emails for all medical info
Daily backups; password protection
Staff must sign confidentiality agreements
Right to be forgotten; data minimisation principle

Subject Access Requests (SARs)

Patient has right to access their OH records
Must respond within 1 MONTH
No charge (usually)
Cannot withhold unless: serious harm to third parties
Provide in intelligible format
Cannot delete or alter records before response

Key Legislation for Records

GDPR 2018 & Data Protection Act 2018
Access to Medical Reports Act 1988 — employee right to see reports sent to employer
Access to Health Records Act 1990 — access to deceased records
Freedom of Information Act 2000 — public bodies only (NOT OH medical records)

Practical IT Security

Encrypted storage for all clinical records
Role-based access: only authorized staff
Separate clinical and administrative records
Retention periods: adults 8 years post last entry
Destroy securely (cross-cut shredding)
Incident reporting for data breaches (72hr to ICO)

ETHICS IN OCCUPATIONAL HEALTH

Supporting occupational health and wellbeing professionals

1. Beneficence

Do good — act in worker's best interest

2. Non-maleficence

Do no harm — avoid harm from action/inaction

3. Autonomy

Respect patient's right to decide; informed consent

4. Justice

Fairness — equal treatment; resource allocation

OH-Specific Ethics

Dual obligation: to employer AND employee
Confidentiality paramount
Disclose only with consent
Exceptions: RIDDOR, public health risk
Informed consent for health surveillance

Regulatory Framework

FOM (Faculty of Occupational Medicine) Ethics Guidance
GMC Good Medical Practice applies to all physicians
GDPR for data protection
Caldicott Principles for NHS/health data
Consent must be informed, voluntary, and ongoing

WORKPLACE HEALTH POLICIES

Supporting occupational health and wellbeing professionals

Absence Management Policy	Bradford Index trigger points; RTW interviews; management escalation
Substance Abuse Policy	Alcohol & drugs; testing protocols; support vs discipline
Mental Health & Wellbeing	EAP; stress risk assessment; reasonable adjustments; anti-stigma
Health Promotion Policy	Smoking cessation; healthy eating; physical activity; mental health
Needle/Sharps Policy	Safe disposal; reporting protocol; PEP pathway
Return to Work Policy	Phased return; adjusted duties; case management; Fit Note
Night Workers Policy	Health surveillance; transfer rights; fatigue management

Health Promotion Framework

Healthy Workplace Initiative | NICE guidelines on workplace health | Cycle: Health Needs Assessment → Plan → Implement → Evaluate

SICKNESS ABSENCE, REHABILITATION & FIT NOTE

Supporting occupational health and wellbeing professionals

Bradford Index

Formula: $B = S^2 \times D$
S = number of separate absence spells
D = total days absent in rolling period
Example: 3 spells × 3 days each = $3^2 \times 9 = 81$
Higher score = more disruptive pattern (frequent short absences)
Used as trigger for HR intervention

Fit Note Options (since 2010; expanded 2024)

Option 1: NOT fit for work
Option 2: MAY be fit for work with support:

- Phased return to work
- Amended duties
- Altered hours
- Workplace adaptations

NEW **2024: Fit note issuers expanded to:**
Nurses • OTs • Pharmacists • Physiotherapists (+ GPs)

Return to Work Pathway

Short-term: trigger points; RTW interview
4–6 weeks: OH referral recommended
Functional capacity assessment (not diagnosis)
Phased return; adjusted duties; reasonable adjustments
Equality Act 2010: reasonable adjustments for disability
NEW Flexible working: day-one right to request (Apr 2024)

Ill-Health Retirement (IHR)

LAST RESORT after all adjustments explored
Requires: permanent incapacity
Cannot perform ANY work for that employer
Non-medical factors (pension, redundancy) can be considered
Occupational physician provides prognosis, not decision

Rehabilitation Principles

Early intervention is KEY (first 4–6 weeks critical) | Biopsychosocial model | Address: fear-avoidance, low self-efficacy, poor workplace support | Vocational rehab: retrain, redeploy, modify work

⚠ RISK ASSESSMENT — 5-Step HSE Framework

Supporting occupational health and wellbeing professionals

1	**IDENTIFY HAZARDS**	Look for things that can cause harm: physical, chemical, biological, ergonomic, psychosocial
2	**DECIDE WHO MIGHT BE HARMED**	Employees, contractors, visitors, vulnerable groups (pregnant, young, disabled)
3	**EVALUATE RISKS**	Consider likelihood × severity; compare to existing controls; decide on precautions
4	**RECORD & IMPLEMENT**	Document findings; implement control measures; communicate to workers
5	**REVIEW & UPDATE**	Review when: significant change, accident/near miss, new evidence, periodically

▲ ERIC-PD Hierarchy

Elimination → Reduction/Substitution → Isolation/Engineering → Control (Admin) → PPE → Discipline

📐 Bradford Hill Criteria (9)

Strength, Consistency, Specificity, Temporality, Biological gradient, Plausibility, Coherence, Experiment, Analogy

BRADFORD HILL CRITERIA — Causal Attribution

Supporting occupational health and wellbeing professionals

1. Strength

Strong association (high RR/OR) more likely causal

2. Consistency

Replicated in different populations and settings

3. Specificity

Exposure → specific disease (not universal cause)

4. Temporality

Exposure MUST precede the disease (essential criterion)

5. Dose-Response

Greater exposure = more disease (biological gradient)

6. Plausibility

Biologically plausible mechanism exists

7. Coherence

Consistent with natural history of disease

8. Experiment

Does removing exposure reduce disease?

9. Analogy

Similar exposure/disease relationship exists elsewhere

☆ **Temporality is the ONLY essential/necessary criterion**

HEALTH SURVEILLANCE — Indications & Principles

Supporting occupational health and wellbeing professionals

Indication	Method	Notes
Occupational Asthma	Serial PEF monitoring, spirometry (before/after shift)	OASYS analysis
HAVS	Stockholm questionnaire, cold provocation test	Annually from HAV EAV reached
NIHL	Pure tone audiometry (PTA) — 4 kHz notch	Baseline + annual
Lead exposure	Blood lead levels (BLL) — suspend if >60 µg/dL	Frequency depends on BLL
Ionizing radiation	Dose records (dosimetry); classified workers	IRR 2017
Silica exposure	CXR + spirometry	Periodically based on exposure
Night workers	If they request it — not mandatory	Working Time Regs 1998

✓ Principles of Valid Health Surveillance

Must be linked to identifiable risk | Must benefit the worker | Must have medical/nursing input | Results communicated confidentially to individual | Group results to employer (anonymised only)

FITNESS FOR WORK

Generic Issues • Specific Work • DVLA • Aviation • Diving • Seafarers

Supporting occupational health and wellbeing professionals

FITNESS FOR WORK — Generic Issues

Supporting occupational health and wellbeing professionals

Condition	Key Threshold / Standard	Notes
Epilepsy (Group 1 — car)	1 year seizure-free	Notify DVLA; avoid heights, machinery, water
Epilepsy (Group 2 — LGV/PCV)	10 years seizure-free	Stricter DVLA standard
Diabetes (insulin)	Awareness of hypos; no Group 2 initially	ETT; pilot licence restrictions
Post-MI	Gradual return; ETT may be required	DVLA Group 1: 4 wks; Group 2: 6 wks
Hypertension	Control BP before return to high-demand	SBP < 180; DBP < 100 before driving
Depression/Anxiety	Insight; medication side effects; suicide risk	Return to work usually therapeutic
HAVS Stage 3V+/2SN+	Stop vibration work	No cure — avoid further vibration

Visual Standards (Driving)

Group 1: 6/12 in better eye (Snellen) | Group 2: 6/7.5 each eye; 6/60 other

Equality Act 2010

Assess functional capacity, not diagnosis | Reasonable adjustments required | Long-term + substantial impairment = disability

FITNESS FOR SPECIFIC WORK

Supporting occupational health and wellbeing professionals

Healthcare Workers

Exposure-prone procedures (EPPs): HBV, HCV, HIV restrictions
Pre-employment screening for BBVs mandatory
Immunisation required: HBV, MMR, varicella, influenza
Annual flu vaccination recommended
Latex allergy screening

Aircrew / Aviation (CAA)

Class 1: professional pilot (commercial)
Class 2: private pilots
LAPL: Light Aircraft Pilot Licence
Strict: colour vision, visual acuity, cardiac, psychological
Sleep apnoea — increasing concern in aviation

Divers (Commercial)

AMED: Approved Medical Examiner of Divers
Hazards: barotrauma, nitrogen narcosis, DCS
Asthma: relative contraindication (air trapping risk)
Pneumothorax: absolute contraindication
Annual medical certificate required

Drivers (LGV/PCV — Group 2)

Stricter cardiovascular, visual, neurological standards
Medical every 5 years from age 45+
Annual medicals from age 65+
DVLA notifiable: epilepsy, syncope, cardiac arrhythmia, diabetes on insulin

Seafarers

MCA (Maritime & Coastguard Agency): ENG1 certificate | Remote/isolated environment fitness

Offshore Workers

Offshore Medical Certificate | Remote/confined conditions fitness | Rapid deterioration access

OCCUPATIONAL HEALTH LAW

H&S Legislation • Employment Law • Records Law • Environment

som
Supporting occupational health and wellbeing professionals

KEY UK H&S LEGISLATION

Supporting occupational health and wellbeing professionals

Regulation	Key Points
HSWA 1974	Employer's general duty; employee duty; HSE enforcement powers
Management of H&S Regs 1999	Formal risk assessment; competent person; emergency arrangements
COSHH 2002	Control of substances hazardous to health; 8-step framework
RIDDOR 2013	Reportable injuries, diseases, dangerous occurrences to HSE
Manual Handling Ops Regs 1992	Avoid, assess, reduce manual handling risk
PPE Regs 1992	Last resort; suitable PPE; training; maintenance
Control of Noise at Work Regs 2005	EAVs 80/85 dB; ELV 87 dB; hearing protection zones
Control of Vibration Regs 2005	HAV: EAV 2.5, ELV 5.0 m/s^2; WBV: EAV 0.5, ELV 1.15 m/s^2
IRR 2017	Ionizing radiation; classified workers; RPAs; dose limits
CAR 2012	Asbestos: non-licensed and licensed work; notifiable work
DSE Regs 1992	Workstation assessments; eye tests; 'users'
Working Time Regs 1998	48-hr max/week; rest periods; night work definition
Worker Protection Act 2023	Employers must take reasonable steps to prevent sexual harassment (from Oct 2024)
Employment Rights Act 2025	SSP from Day 1; day-one unfair dismissal rights; zero-hours reforms (phased from 2026)
Flexible Working Regs 2023	Day-one right to request flexible working (from Apr 2024); 2 requests/year; respond within 2 months

RIDDOR 2013 — What Must Be Reported to HSE

Supporting occupational health and wellbeing professionals

Fatalities	All worker AND non-worker deaths arising from work
Specified Injuries	Fractures (not fingers/toes); amputations; crush injuries; burns >5% BSA; loss of eye/consciousness
Over-7-Day Injuries	Incapacitation from usual work for >7 days (not counting accident day)
Reportable Diseases	Occupational asthma, HAVS, CTS, dermatitis, occupational cancers, work-related MSDs
Dangerous Occurrences	Near misses from prescribed list: collapsed scaffold, electrical incident, gas leak, explosions

HSG65: Plan-Do-Check-Act Cycle → Plan → Do → Check → Act → Review

⚠ 2025: HSE consulting on RIDDOR reform — simplifying reporting, redefining occupational diseases

EMPLOYMENT LAW — Key Legislation

Supporting occupational health and wellbeing professionals

Equality Act 2010 — Disability

9 protected characteristics (age, disability, gender reassignment, marriage/civil partnership, pregnancy, race, religion, sex, sexual orientation)
Disability = substantial AND long-term (12+ months) impairment
Cancer, HIV, MS: automatically disabled from DIAGNOSIS
Employer MUST make reasonable adjustments
NEW **Worker Protection Act 2023 (Oct 2024): employer duty to PREVENT sexual harassment**

Reasonable Adjustments

Adjustments to premises/workstation
Reallocation of duties to others
Altered working hours or shift patterns
Provision of special equipment
Time off for treatment/rehabilitation
Transfer to different role

Working Time Regs 1998

48-hour maximum working week (opt-out available)
11-hour minimum daily rest between shifts
24-hour minimum weekly rest (or 48-hr/fortnight)
28 days annual leave (UK)
Night work: health assessment offered

Maternity/Paternity/Carers

Risk assessment MANDATORY for pregnant workers
Right to ante-natal leave (paid)
Maternity leave up to 52 weeks
Shared Parental Leave available
No dismissal for pregnancy-related absence
NEW Carer's Leave Act 2023: 1 week unpaid/year (day-one right, from Apr 2024)

Employment Rights Act 1996 / ERA 2025

Unfair dismissal (qualifying period: 2 yrs; reducing to 6 months 2026) | SSP: £123.25/week (Apr 2026) — payable from Day 1 (ERA 2025) | Whistleblowing protection | Written statement of employment particulars

ENVIRONMENTAL LEGISLATION

Supporting occupational health and wellbeing professionals

Key Acts

Environment Act 1995: EA (England/Wales), SEPA (Scotland), NRW (Wales)
COMAH Regulations 1999: major hazard sites (Bhopal-type)
Water Resources Act 1991: water pollution offences
EIA (Environmental Impact Assessment): required for major projects

REACH Regulation

Registration, Evaluation, Authorisation, Restriction of Chemicals
EU-derived; retained in UK post-Brexit as UK REACH
SVHC (Substances of Very High Concern)
Duty to communicate information in supply chain

Air Pollution — Key Pollutants

Particulates: PM10 (thoracic), PM2.5 (respirable) — linked to CVD, respiratory disease
NOx (nitrogen oxides): combustion — lung disease, ozone formation
SO_2 (sulphur dioxide): acidic, respiratory irritant
Ozone: secondary pollutant from NOx + VOCs in sunlight
VOCs: solvents, fuels — carcinogens

Food Contamination Examples

Itai-itai (Japan): cadmium → osteoporosis + renal failure
Minamata (Japan): methyl mercury → neurological damage

Water Pollution

Nitrates → methaemoglobinaemia ('blue baby')
Heavy metals; pesticides; chlorination byproducts

OCCUPATIONAL HYGIENE

AREC Model • Exposure Limits • Air Monitoring • Biological Monitoring • Controls

Supporting occupational health and wellbeing professionals

OCCUPATIONAL HYGIENE — Overview & AREC Model

Supporting occupational health and wellbeing professionals

ANTICIPATE
Predict hazards before they occur; design stage

RECOGNISE
Identify hazards in workplace; surveys

EVALUATE
Measure exposures; compare to WELs

CONTROL
Implement controls; hierarchy

BOHS Qualifications

British Occupational Hygiene Society
CertOH → Certificate in Occupational Hygiene
DipOH → Diploma (full technician level)
COH → Chartered Occupational Hygienist
CMIOSH (IOSH): safety professionals

Exposure Limit Terms

WEL: Workplace Exposure Limit (UK, EH40)
TWA: 8-hour Time-Weighted Average
STEL: 15-min Short-Term Exposure Limit
OES: old term (replaced by WEL)
NOAEL: No Observed Adverse Effect Level
LOAEL: Lowest Observed Adverse Effect Level

GB UK Workplace Exposure Limits (EH40)

WELs are UK legal limits set by HSE | Must not exceed EH40 limits (legal requirement) | TWA (8hr) AND STEL (15min) apply | Some substances have skin notation (Sk) — absorbed through skin | Available online: HSE EH40 document

MONITORING EXPOSURE — Air Sampling

Supporting occupational health and wellbeing professionals

Personal Sampling

How: Clip-on sampler worn by worker

Most representative; preferred method

Static Area Sampling

How: Fixed point in workplace

Identifies hotspots; not personal

Integrated Monitoring

How: Collects over time → lab analysis

Can detect most substances; standard method

Direct Reading (Instantaneous)

How: Real-time measurement; data logging

Good for peaks; some limited selectivity

SEG — Similar Exposure Groups

Group workers with similar exposures
6 SEGs identified ideally per workplace
Worst-case + random sampling within SEG
Compare all results to WELs (8-hr TWA and STEL)

Statistical Approach

Log-normal distribution of exposures
95th percentile should not exceed WEL
Arithmetic mean used for TWA comparison
Use HSE COSHH Essentials for guidance

BIOLOGICAL MONITORING — Biomarkers

Agent	Biomarker	Timing	Notes
Lead	Blood lead (BLL)	Any time	>60 µg/dL suspend; >50 Action level
Benzene	S-phenylmercapturic acid (urine)	End of shift	BMGV: 25 µg/g creatinine
Toluene	Hippuric acid (urine)	End of shift	Alternative: o-cresol
Organophosphates	RBC cholinesterase	End of shift	Inhibited by OPs; measure baseline first
Mercury (inorganic)	Urine inorganic mercury	End of shift/week	Also blood mercury
Cadmium	Urine cadmium + β_2-microglobulin	Any time	β_2-MG = early renal damage marker
Carbon monoxide	Blood COHb or exhaled CO	End of shift	COHb >3% (non-smoker) significant
Isocyanates	Urine MDI/HDI adducts	End of shift	Diisocyanate-specific

GB UK Standard

BMGVs = Biological Monitoring Guidance Values (HSE EH40)

US ACGIH Standard

BEIs = Biological Exposure Indices (ACGIH — USA)

PREVENTION & CONTROL — LEV & PPE

Supporting occupational health and wellbeing professionals

LEV — Local Exhaust Ventilation

HOOD (capture) → DUCTING → FAN → AIR CLEANING → DISCHARGE

LEV Hood Types (Best → Worst)

1. Enclosing hood (BEST — total enclosure)
2. Partial enclosure
3. Capturing hood (exterior)
4. Receiving hood (receptor — least effective)

LEV Legal Requirements

Legal requirement: examine & test every 14 MONTHS (COSHH)
Thorough examination and test (TExT) records kept 5 YEARS
RPE: examine monthly; stored records 5 years

RPE — Respiratory Protective Equipment

Filtering: FFP1/2/3 (disposable); P1/2/3 (reusable)
Supplied air: SCBA (self-contained); airline
APF: Assigned Protection Factor (e.g. FFP3 = 20)
Fit testing required: quantitative > qualitative
Face-fit check before every use

Gloves Selection Criteria

Permeation: chemical passing through glove material
Penetration: through seams/pinholes
Degradation: physical breakdown of material
Breakthrough time: how long protection lasts
Select from EN 374 chemical resistance database

TOXICOLOGY

Principles • Routes • Metabolism • Dose-Response • IARC Classification

PRINCIPLES OF TOXICOLOGY

Supporting occupational health and wellbeing professionals

"All substances are poisons — the dose makes the poison" — Paracelsus

Routes of Exposure (Importance Order)

1. Inhalation — MAIN route in occupational setting
2. Skin absorption — phenol, organophosphates, aniline
3. Ingestion — hand-to-mouth; chemicals on food
4. Injection — needlestick; occupational exposure

Metabolism — ADME

A: Absorption (route-dependent)
D: Distribution (to tissues; Vd)
M: Metabolism (liver: Phase I — CYP450 oxidation/reduction/hydrolysis → Phase II — conjugation)
E: Excretion (renal, biliary, exhaled)

Dose-Response Relationships

THRESHOLD: below which no effect (most toxics)
NO-THRESHOLD: stochastic (carcinogens, mutagens) — any dose carries risk
NOAEL → LOAEL → LD_{50}/LC_{50}
LD_{50} = dose that kills 50% of test population

Bioaccumulation

Lipophilic substances: stored in fat (DDT, PCBs, organochlorines)
Heavy metals: bone (lead), kidney (cadmium)
Biological half-life important for monitoring timing
First-pass effect: oral absorption through liver

IARC CARCINOGENICITY CLASSIFICATION

Supporting occupational health and wellbeing professionals

Group 1	**Carcinogenic to humans**	Asbestos, benzene, arsenic, vinyl chloride, ionizing radiation, formaldehyde, silica (crystalline), shift work
Group 2A	**Probably carcinogenic**	Red meat, acrylamide, inorganic lead, high-temperature frying, diesel engine exhaust, biological shift work
Group 2B	**Possibly carcinogenic**	ELF-EMF (childhood leukaemia), RF-EMF (glioma), carbon black, talc powder, aloe vera extract
Group 3	**Not classifiable**	Insufficient evidence to classify; does NOT mean safe
Group 4	**Probably NOT carcinogenic**	Very rare category — caprolactam only

EPIDEMIOLOGY

Study Types • Measures of Association • Biases • UK Surveillance Systems

Supporting occupational health and wellbeing professionals

EPIDEMIOLOGY — Study Types & Evidence Hierarchy

Supporting occupational health and wellbeing professionals

1	**Systematic Reviews & Meta-analyses**	Synthesize all RCTs/studies on topic; highest level of evidence
2	**Randomised Controlled Trials (RCTs)**	Rare in OH due to ethical/practical constraints
3	**Cohort Studies (prospective/retrospective)**	Follow exposed vs unexposed over time; calculate RR; best for OH
4	**Case-Control Studies**	Exposed vs controls; calculate OR; good for rare diseases
5	**Cross-sectional Studies**	Prevalence; exposure & disease measured simultaneously; survivor bias
6	**Case Reports / Series**	Hypothesis generating; lowest evidence

EPIDEMIOLOGY — Key Measures of Association

Supporting occupational health and wellbeing professionals

Measure	Formula/Definition	Used In	Interpretation
Relative Risk (RR)	Risk in exposed / risk in unexposed	Cohort studies	RR=1 (no association); RR>1 (risk increased); RR<1 (protective)
Odds Ratio (OR)	Odds of exposure in cases / odds in controls	Case-control studies	Approximates RR for rare diseases
SMR	Observed deaths / Expected deaths × 100	Cohort studies (mortality)	SMR>100 excess mortality; SMR<100 = below expected
Attributable Risk	(RR−1) / RR	Proportion of disease due to exposure	Useful for prevention planning
Incidence	New cases / population at risk / time	All study types	Rate of new disease occurrence
Prevalence	All cases / population at one point in time	Cross-sectional	Point prevalence vs period prevalence

Key Formulae

RR = (a/(a+b)) / (c/(c+d)) | OR = (a/c) / (b/d) = ad/bc | SMR = (Observed/Expected) × 100 | NNT = 1/ARR | 2×2 table: a=exposed cases, b=exposed controls, c=unexposed cases, d=unexposed controls

⚠ EPIDEMIOLOGICAL BIASES & SURVEILLANCE

Supporting occupational health and wellbeing professionals

Selection Bias

Volunteer effect: volunteers differ from non-volunteers
Healthy Worker Effect (HWE): MAJOR confounder in OH
→ Workers are HEALTHIER than general population
→ Mortality studies underestimate occupational risks
Survival bias: sicker workers leave, creating apparent 'healthy' cohort

Information Bias

Recall bias: cases remember exposure better (case-control)
Observer bias: knowledge of hypothesis influences recording
Misclassification (differential vs non-differential)
Attrition bias: loss to follow-up
Surrogate bias: proxy informants

Confounding

Age, sex, smoking — most common in OH
Socioeconomic status, lifestyle factors
Control by: restriction, matching, stratification, multivariate analysis
Residual confounding always possible

GB UK Surveillance — THOR Network

THOR: The Health and Occupation Research network
SWORD: Surveillance of Work-related and Occupational Respiratory Disease
MOSS: Musculoskeletal conditions
EPIDERM: Skin diseases
OSSA: Audiological (hearing)

CASP Framework for Critical Appraisal

PICO: Population, Intervention, Comparison, Outcome | Check: sample size adequacy; bias risk; confounders addressed; response rate (>55% desirable); external validity | Healthy Worker Effect = major confounder in OH research

ENVIRONMENTAL MEDICINE

Air Pollution • Food Contamination • Water Pollution • Major Incidents

ENVIRONMENTAL PROTECTION & KEY INCIDENTS

Supporting occupational health and wellbeing professionals

Air Pollution — Key Pollutants

PM10 (thoracic) & PM2.5 (respirable): CVD & respiratory disease
NOx: lung disease, ozone formation (secondary pollution)
SO_2: acidic, respiratory irritant
Ozone (O_3): secondary; photochemical smog
VOCs: solvents, fuels — some carcinogenic

Water & Soil Pollution

Nitrates → methaemoglobinaemia ('blue baby syndrome')
Heavy metals: lead (soil, paint), cadmium (rice), arsenic
PCBs, PAHs: persistent organic pollutants
Pesticides: endocrine disruption
Routes: inhalation > ingestion > skin absorption

Incident	Agent	Disease/Effect	Notes
Itai-Itai (Japan)	Cadmium in rice/water	Osteoporosis + renal disease	Itai = ouch (pain from fractures)
Minamata (Japan)	Methyl mercury (fish)	Neurological damage: ataxia, blindness, birth defects	Mercury from chemical factory
Bhopal (India)	Methyl isocyanate (MIC)	Acute inhalation deaths: thousands killed	Union Carbide plant explosion 1984

Vulnerable Groups

Children: higher surface area/body weight ratio → more susceptible | Pregnant women: teratogen risk | Elderly: reduced metabolic capacity | Genetic polymorphisms: NAT2 slow acetylators — higher aromatic amine risk

SAFETY SCIENCE

H&S Management • Accident Investigation • Fire Safety • Electrical Safety

som
Supporting occupational health and wellbeing professionals

H&S MANAGEMENT — HSG65 & ISO 45001

Supporting occupational health and wellbeing professionals

PLAN

Policy; risk assessment; objectives; competent persons; resources

DO

Implementation; training; communication; emergency procedures

CHECK

Performance monitoring; active surveillance; incident investigation; audits

ACT

Review; continual improvement; correct failures; update procedures

ISO 45001:2018

Replaced OHSAS 18001
International H&S management standard
Core: policy → organising → planning → implementation → measuring → audit → management review
Certification by accredited body

Accident Costs — Iceberg Model

TIP of iceberg (insured/visible): claims, fines, legal
BELOW waterline (uninsured/hidden): production loss, investigation, retraining, reputation damage, staff morale
Uninsured costs typically 8-36× insured costs

Accident Investigation

Immediate causes: unsafe acts + unsafe conditions | Underlying/root causes: management/organisational failures | Purpose: legal compliance, prevention, learning, insurance | Methods: fault tree, bow-tie, 5 Whys, RCA

FIRE & ELECTRICAL SAFETY

Supporting occupational health and wellbeing professionals

Fire Triangle — Three Elements Required

FUEL (combustible material)	OXYGEN (>16% to sustain)	HEAT (ignition source)

Class	Type of Fire	Extinguisher
A	Solid materials (wood, paper)	Water, dry powder
B	Flammable liquids	CO_2, foam, dry powder
C	Flammable gases	Dry powder
D	Combustible metals	Special dry powder
E	Electrical equipment	CO_2 (non-conductive)
F	Cooking oils/fats	Wet chemical

Electrical Safety

Electricity at Work Regulations 1989
Earthing: prevents earth fault → shock/fire
RCDs (Residual Current Devices): fast disconnect on fault
PAT Testing: Portable Appliance Testing
Key risks: electric shock, burns, arc flash, explosion, fire
Class I (earthed) vs Class II (double insulated) equipment

Injury Frequency Rates

Incidence rate = (Injuries / Employed) × 100,000
Frequency rate = (Injuries / Hours worked) × 100,000
RIDDOR statistics used for national benchmarking
OSHA TRIR (USA): different denominator (200,000 hours)

PRACTICAL PROCEDURES

Clinical Tasks • Lung Function • Audiometry • Blood Tests • Workplace Inspection

LUNG FUNCTION TESTS — Spirometry & PEF

Supporting occupational health and wellbeing professionals

Spirometry Interpretation

FEV_1: volume exhaled in first second
FVC: total forced vital capacity
FEV_1/FVC ratio:
< 0.7 = OBSTRUCTIVE (asthma, COPD)
≥ 0.7 with reduced FVC = RESTRICTIVE (fibrosis)
Restrictive: FVC↓, FEV_1/FVC normal or ↑
Pre- and post-bronchodilator; best of 3 readings

Peak Flow (PEF) Monitoring

Serial PEF: 4× daily for ≥4 weeks
Record both work days AND days off
OASYS: occupational asthma analysis software
Pattern: fall at work → improvement off work = OA
OASYS score >2.5: significant OA likelihood
Gold standard tool for diagnosing occupational asthma

Restrictive vs Obstructive Pattern

OBSTRUCTIVE: FEV_1↓, FVC normal/↓, FEV_1/FVC <0.7 (asthma, COPD, HAVS lung) | RESTRICTIVE: FEV_1↓, FVC↓, FEV_1/FVC ≥0.7 (asbestosis, silicosis, pneumoconiosis) | MIXED: both features present simultaneously

Audiometry — Pure Tone

Test range: 0.5–8 kHz | NIHL: 4 kHz notch FIRST, then 3 kHz and 6 kHz | TTS = temporary threshold shift (reversible); PTS = permanent threshold shift | Baseline audiogram → annual surveillance → compare over time

OCCUPATIONAL BLOOD TESTS & FITNESS REPORTS

Supporting occupational health and wellbeing professionals

Test	Occupational Indication & Thresholds
Blood Lead (BLL)	>60 µg/dL: SUSPEND from work; >50 µg/dL: Action level
Cholinesterase (RBC)	Organophosphate exposure monitoring; baseline essential; >20% inhibition = significant
FBC	Benzene, lead, arsenic monitoring — anaemia, leucopenia, thrombocytopenia
LFTs	Hepatotoxin surveillance (vinyl chloride, carbon tetrachloride, aflatoxin)
Urinalysis	Bladder cancer surveillance (haematuria); cadmium nephrotoxicity (β_2-microglobulin)
Spirometry	Occupational asthma and pneumoconiosis surveillance

Fitness Report — Structure

Purpose of referral → Clinical history → Occupational history → Functional assessment → Recommendations | Key: focus on FUNCTIONAL CAPACITY not diagnosis | Use: 'may/may not be fit for [specific tasks]' with adjustments stated clearly | Avoid definitive 'fit/unfit' language where possible; describe limitations instead

NON-CLINICAL TASKS — Workplace Inspection & DSE

Supporting occupational health and wellbeing professionals

Workplace Inspection

Systematic inspection: environment, work practices, equipment, people
Document findings: risk rate each hazard
Action plan: prioritise by risk level
Walkthrough survey: identify hazards on site
Job safety analysis: break down tasks

DSE Assessment (Workstation)

Screen distance: ~500mm from eyes
Screen height: top at/just below eye level
Chair: lumbar support; feet flat; forearms horizontal
Lighting: ~300–500 lux; no glare on screen; no reflections
Keyboard/mouse: straight wrists; elbow at 90°
Regular breaks from screen work

Ergonomics Assessment Tools

MAC: Manual Handling Assessment Charts (lifting, carrying, team)
RAPP: Risk Assessment of Pushing and Pulling
ART: Assessment of Repetitive Tasks (upper limb)
RULA: Rapid Upper Limb Assessment (posture)
REBA: Rapid Entire Body Assessment
QEC: Quick Exposure Check
Nordic MSD questionnaire

Research Paper Appraisal (CASP)

PICO: Population, Intervention, Comparison, Outcome
Check: Was randomisation valid?
Were all important outcomes reported?
Sample size: adequate power?
Response rate: >55% desirable
Healthy worker effect — confounder
Systematic review: heterogeneity (I^2 statistic)

EMERGENCIES

Acute Poisoning • Anaphylaxis • Needlestick • CBRN Incidents

ACUTE POISONING — Specific Antidotes & Treatment

Supporting occupational health and wellbeing professionals

NPIS UK: 0344 892 0111 | General: Remove from exposure → Airway → Call 999

Poison	Features	Antidote / Treatment
Carbon Monoxide	Cherry red skin; headache; ↑ COHb; coma	**100% O_2 (face mask); Hyperbaric O_2 (HBO) in severe cases**
Cyanide (HCN)	Rapid collapse; bitter almonds smell; lactic acidosis	**Hydroxocobalamin (Cyanokit IV) OR dicobalt edetate**
H_2S (Hydrogen Sulphide)	Rotten eggs; rapid CNS depression; rescuer danger	**100% O_2; supportive; NO specific antidote**
Organophosphates	SLUDGE: salivation, lacrimation, urination, defecation, GI, emesis; miosis; bradycardia	**ATROPINE (large doses IV) + PRALIDOXIME (2-PAM)**
Organic Mercury	Ataxia, tremor, vision loss; Minamata disease pattern	**Dimercaprol / DMSA chelation therapy**
Methaemoglobinaemia	Cyanosis despite normal pO_2; chocolate brown blood; pulse ox unreliable	**Methylene blue 1–2 mg/kg IV**
Hydrofluoric Acid (HF)	Severe pain; hypocalcaemia → cardiac arrest; penetrating burns	**Calcium gluconate (topical/IV/SC injection to burn site)**

ANAPHYLAXIS & CBRN INCIDENTS

Supporting occupational health and wellbeing professionals

ANAPHYLAXIS

Common Triggers

Latex (healthcare workers — most common occupational)
Bee/wasp stings (outdoor workers)
Medications (penicillin, anaesthetics)
Food allergens (catering workers)

Treatment Protocol

1. Adrenaline 0.5 mg IM (thigh) — FIRST LINE
2. Lay flat; raise legs if hypotensive
3. Call 999
4. Antihistamine (chlorphenamine)
5. Hydrocortisone 200 mg IV

Auto-injector (Epi-pen) for known at-risk workers

CBRN INCIDENTS

Chemical Incidents

Decontaminate before casualty enters hospital
Remove clothing (reduces contamination 80%)
NBC/HAZMAT protection for responders
Rinse with copious water

Biological Incidents

PPE; isolate affected; notify PHE/UK HSA
Avoid secondary spread; respiratory protection

Radiological/Nuclear

Evacuate; radiation dosimetry; stable iodine (nuclear reactor accidents to protect thyroid)

GOLDEN RULE

PERSONAL SAFETY FIRST — Do NOT enter contaminated zone without appropriate PPE | Follow emergency services lead

APPENDICES & QUICK REFERENCE

Exposure Limits • Regulations Timeline • Key Formulae • Exam Tips

QUICK REFERENCE — ALL KEY EXPOSURE LIMITS

Supporting occupational health and wellbeing professionals

Hazard	Lower Action Value	Upper Action Value	Exposure Limit (ELV)
Noise (daily, TWA)	**80 dB(A)**	**85 dB(A)**	**87 dB(A)**
Noise (peak)	**135 dB(C)**	**137 dB(C)**	**140 dB(C)**
WBV	**0.5 m/s² A(8)**	—	**1.15 m/s² A(8)**
HAV / HTV	**2.5 m/s² A(8)**	—	**5.0 m/s² A(8)**
Radiation (classified workers)	—	—	**20 mSv/yr whole body**
Radiation (public)	—	—	**1 mSv/yr**
Benzene	—	**0.5 ppm STEL**	**1 ppm TWA**
Lead	—	—	**0.15 mg/m³**
Carbon monoxide	—	**100 ppm STEL**	**20 ppm TWA**
Isocyanates	—	—	**0.02 mg/m³**
Asbestos	—	—	**0.1 f/mL**
Silica (quartz)	—	—	**0.1 mg/m³**

KEY REGULATIONS — CHRONOLOGICAL REFERENCE

Supporting occupational health and wellbeing professionals

1974	**Health & Safety at Work Act**	General employer duty; employee duty; HSE enforcement
1981	**First Aid at Work Regs**	Adequate first aid provision; First aider vs Appointed Person
1989	**Electricity at Work Regs**	Electrical safety; earthing; RCDs; PAT testing
1992	**Manual Handling Ops Regs**	MSD prevention: avoid, assess, reduce
1992	**PPE Regulations**	Last resort; suitable PPE; training; maintenance
1992	**DSE Regulations**	Screen/workstation assessments; eye tests for users
1998	**Working Time Regs**	48-hr week; rest periods; night work; holidays
1999	**Management of H&S Regs**	Risk assessment; competent person; emergency arrangements
1999	**COMAH Regulations**	Major hazard sites; top-tier/lower-tier establishment
2002	**COSHH Regulations**	8-step framework for hazardous substances
2005	**Control of Noise Regs**	EAV 80/85 dB; ELV 87 dB
2005	**Control of Vibration Regs**	HAV: 2.5/5.0 m/s^2; WBV: 0.5/1.15 m/s^2
2012	**Control of Asbestos Regs**	Licensed/non-licensed work; notifiable NLW; training
2013	**RIDDOR**	Reporting: fatalities, specified injuries, diseases, dangerous occurrences
2016	**Control of EMF Regs**	ELF and RF electromagnetic fields; action/limit levels
2017	**IRR (Ionizing Radiation)**	Classified workers; dose limits; RPAs; controlled areas
2018	**GDPR / DPA 2018**	Data protection; special category medical data; SARs

KEY FORMULAE — EXAM QUICK REFERENCE

Supporting occupational health and wellbeing professionals

Bradford Index

$$B = S^2 \times D$$

S = spells, D = total days

Sound Pressure Level

$$SPL = 20 \times \log_{10}(P/Pr)$$

Pr = 0.00002 Pa (reference)

HAV Daily Exposure

$$A(8) = ahv \times \sqrt{(T/T_0)}$$

T_0 = 8 hours reference

WBGT (Indoor)

$$WBGT = 0.7WB + 0.3GT$$

WB = Wet Bulb, GT = Globe Temp

WBGT (Outdoor)

$$WBGT = 0.7WB + 0.2GT + 0.1DB$$

DB = Dry Bulb added for outdoor

Relative Risk (RR)

$$RR = (a/a+b) \div (c/c+d)$$

Cohort studies; >1 = increased risk

Odds Ratio (OR)

$$OR = (a \times d) \div (b \times c)$$

Case-control; approximates RR (rare disease)

SMR

$$SMR = (Observed \div Expected) \times 100$$

>100 excess; <100 = below expected

Attributable Risk %

$$AR\% = (RR-1) \div RR \times 100$$

% of disease attributable to exposure

Dose Equivalent (Sv)

$$H = D \times Q$$

D = Gray (Gy), Q = quality factor

Incidence Rate

$$IR = (New\ cases \div Pop\ at\ risk) \times 1000$$

Per specified time period

Injury Frequency Rate

$$FR = (Injuries \div Hours) \times 100{,}000$$

RIDDOR national benchmarking

⚠ CONTROL HIERARCHY — ERIC-PD / COSHH

Supporting occupational health and wellbeing professionals

Risk Control Hierarchy (Most Effective → Least Effective)

ELIMINATION	Remove the hazard entirely — BEST OPTION
SUBSTITUTION	Replace with less hazardous substance/process
ENGINEERING CONTROLS	LEV, enclosure, isolation, guarding
ADMINISTRATIVE CONTROLS	Rotation, SOPs, training, supervision, permits
PPE	Last resort; depends on human behaviour — LEAST RELIABLE

⚠ Remember

PPE is ALWAYS last resort — it only protects the wearer and depends on correct use every time!

EXAM HIGH-YIELD FACTS — DipOccMed / LFOM

Supporting occupational health and wellbeing professionals

☆ MOST FREQUENTLY TESTED — Know These Cold!

Noise EAVs/ELV

Lower EAV 80 dB | Upper EAV 85 dB | ELV 87 dB | Peak: 135/137/140 dB(C)

HAV: A(8) formula

A(8) = ahv × √(T/8) | EAV 2.5 | ELV 5.0 m/s²

Bradford Index

B = S² × D | Spells² × Days | Higher = more disruptive pattern

Ionizing Radiation

Classified workers: 20mSv/yr | Public: 1mSv/yr | Lens: 20mSv

RIDDOR >7 days

Incapacity >7 days NOT counting day of accident | Report within 15 days

Needlestick risk

HBV: 20-30% | HCV: 1-3% | HIV: 0.3% | PEP within 72hrs for HIV

HAVS stop work

Stage 3V+ OR 2SN+ = remove from vibration work

Epilepsy driving

Group 1 (car): 1 year | Group 2 (LGV): 10 years seizure-free

Mesothelioma

Latency 30-40 years | Asbestos main cause | 0.1 f/mL WEL for asbestos

Health surveillance

Must be linked to identifiable risk | Must benefit the WORKER | Confidential

OA diagnosis

Serial PEF monitoring (OASYS) | Improvement away from work = OA

Equality Act

Disability = substantial + long-term (12+ months) | Cancer/HIV/MS = auto

CARDIOVASCULAR DISEASE & WORK

Supporting occupational health and wellbeing professionals

Occupational CVD Risk Factors

Shift work → disrupts circadian rhythm → CVD risk
Long working hours → AMI, stroke (Karoshi)
Heat stress → increased cardiac demand
Noise exposure → physiological stress response
Sedentary work → deconditioning

Toxic Chemical CVD Effects

Lead (inorganic) → hypertension, coronary artery disease
Carbon disulphide (rayon industry) → atherosclerosis, polyneuropathy
Carbon monoxide → carboxyhaemoglobin, arrhythmias
Organic nitrates (explosive workers) → coronary vasospasm (Monday disease)

Return to Work Post-Cardiac Event

Post-MI: gradual return; ETT may be required
DVLA Group 1 (car): 4 weeks off-road
DVLA Group 2 (LGV/PCV): minimum 6 weeks; ETT required
CABG: 3 months before Group 2 driving
PPM/ICD: complex DVLA rules apply

Fitness Assessment CVD

ETT (Exercise Tolerance Test): functional capacity
24-hr Holter monitoring: arrhythmia detection
Echocardiogram: LV function; EF >40% for most work
CPET (Cardiopulmonary Exercise Test): high-risk roles
Bruce protocol most used

Shift Work & CVD

Night shift: ↑ CVD risk 40% vs day workers (meta-analyses) | Disrupted circadian rhythm → ↑ BP, ↑ inflammatory markers | Night shift workers: advise lifestyle modifications, BP monitoring, cholesterol management

OCCUPATIONAL CANCERS — Summary

Supporting occupational health and wellbeing professionals

Cancer	Occupational Cause	Key Note
Lung	Asbestos, silica, PAHs, arsenic, chromate, nickel	Asbestosis + smoking → 50× risk
Lung (welding)	Welding fume (all types — mild/stainless steel)	NEW IARC Group 1 (2018); HSE 2019: LEV mandatory; no safe level
Mesothelioma	Asbestos (all fibre types)	Latency 30–40 yrs; CAR 2012
Bladder	Aromatic amines (2-naphthylamine, benzidine)	Rubber, dye, leather; haematuria surveillance
Nasal sinus	Wood dust (hardwood), leather dust, formaldehyde	Adenocarcinoma; furniture/shoe workers
Leukaemia (AML)	Benzene, ionizing radiation	WEL 1 ppm; IARC Group 1
Liver angiosarcoma	Vinyl chloride monomer (PVC)	Very rare; strong marker; 1 ppm WEL
Skin	UV radiation, PAHs, arsenic	Non-melanoma; outdoor workers; chimney sweeps historically
Larynx	Asbestos, strong acid mists, isopropanol	Synergistic with smoking/alcohol

All occupational cancers are RIDDOR reportable | IARC Group 1 = known human carcinogens

SUBSTANCE MISUSE POLICY & TESTING

Supporting occupational health and wellbeing professionals

Types of Drug Testing

Pre-employment: screen for illicit drugs
Random: unannounced testing programme
For-cause: after incident/near miss
Return from leave (if policy specifies)
Follow-up: post-treatment monitoring
Urine: most common; oral fluid (saliva); hair

Legal Considerations

Employer must have clear written policy
Consent required (written, informed)
Chain of custody essential (legal admissibility)
Medical Review Officer (MRO) interprets results
Cannot test without employee consent (breach of contract)
GDPR applies to test results

Alcohol Limits (UK Aviation)

Aviation: 20 mg/100 mL blood (stricter than driving)
Driving: 80 mg/100 mL blood in England/Wales
Scottish driving limit: 50 mg/100 mL blood
Workplace zero-tolerance policies legal for safety-critical

OH Role in Substance Misuse

Identify: FAS (FAST screening tool), AUDIT questionnaire
Support: EAP referral; treatment support
Monitor: return to work agreements; random testing
Advise: employer on fitness for safety-critical work
Confidentiality: disclose only if safety risk

Key Principle

OH approach = supportive first (illness model) vs HR/management approach = disciplinary. OH provides medical assessment; management makes employment decisions.

NIGHT WORK — Health Risks & Surveillance

Supporting occupational health and wellbeing professionals

Working Time Regulations 1998 — Night Work = 11pm to 6am

Health Risks of Night Work

Cardiovascular disease (↑40% risk in meta-analyses)
Gastrointestinal disorders (peptic ulcer, IBS)
Metabolic disorders (obesity, diabetes type 2)
Sleep disorders (insomnia, excessive daytime sleepiness)
Breast cancer (IARC 2A): circadian disruption theory
Mental health: depression, anxiety
Pregnancy complications: preterm birth, miscarriage

Legal Obligations

Offer health assessment BEFORE starting night work
Repeat offer if night worker reports health problems
Right to transfer to day work if health problems related to night work
Special provisions for pregnant night workers (right to transfer)
Record-keeping required
Working Time Regs 1998 (Reg 7)

Health Assessment Content

General health questionnaire (sleep, GI, CV, mental health)
Screening for conditions made worse by night work
NOT a statutory medical exam (just questionnaire unless clinical indication)
Nurse-led or physician-led
Confidential results

Management Strategies

Forward rotating shifts (morning → afternoon → night)
Minimum rotation speed: not too fast or slow
Bright light exposure during night shift
Avoid night shift for workers with epilepsy, diabetes, serious CVD
Fatigue risk management systems (FRMS)

HSE MANAGEMENT STANDARDS — Detailed

Supporting occupational health and wellbeing professionals

1. DEMANDS	**Workload, work patterns, environment** Workload manageable; realistic deadlines; reasonable environment (temperature, equipment)
2. CONTROL	**Say worker has in how they do work** Input into working methods, task planning, breaks, overtime decisions
3. SUPPORT	**Encouragement from organisation and management** Line manager support; HR resources; peer support; clear procedures
4. RELATIONSHIPS	**Positive working; avoid unacceptable behaviour** Anti-bullying policy; disagreements handled; positive culture
5. ROLE	**Clarity of role, no role conflict** Role is clear; no conflicting demands; understand how work fits in org
6. CHANGE	**How organisational change managed** Frequent communication; workers consulted; timely info; support during transitions

REVISION COMPLETE

Occupational Medicine

Good Luck, Everyone!

som
Supporting occupational health and wellbeing professionals