A HOLISTIC MODEL FOR IDENTIFYING DSE RISK FACTORS

A SYSTEMS VIEW OF RISK

DSE-related discomfort and musculoskeletal problems may arise from the interaction of multiple factors. No single element operates in isolation. Understanding how these factors influence and reinforce each other is essential for identifying the real sources of risk and implementing effective, sustainable improvements.

INTERACTION IS KEY

These domains influence and reinforce each other continuously. Risk emerges where demands exceed the individual's capacity for sustained adaptation.

FOCUS ON WHAT MATTERS MOST

Consider all domains together, identify the dominant contributors in your setting, and prioritise controls that will have the greatest impact.

1 ACTIVITIES AND TASKS

- Nature of tasks and workflow
- Duration and frequency
- Repetition and intensity
- Workload and time pressure
- Opportunity for variation and recovery
- Autonomy and control over task performance

Key point: High task demands or low variation increase physical and cognitive load.

2 ENVIRONMENT

- Lighting levels and quality
- Glare, reflections and contrast
- Temperature and ventilation
- Noise levels
- Space, layout and circulation
- Distractions and interruptions
- Slips & trips

Key point: The physical environment shapes posture, concentration and comfort.

THE INDIVIDUAL AT WORK

Performance, comfort and wellbeing

3 TOOLS AND EQUIPMENT

- Workstation design and adjustability
- Chair, desk, screen and input devices
- Screen position and viewing distance
- Software and digital tools
- Reliability and suitability of equipment

Key point: Equipment should fit the user and support neutral, sustainable postures.

5 PHYSIOLOGY

- Anthropometry and body size
- Physical capacity and strength
- Movement patterns
- Vision and hearing
- Fatigue and recovery
- Previous injury or sensitivity
- Health and wellbeing

Key point: Individual physical characteristics influence how people interact with work.

PSYCHOLOGY

- Stress, pressure and mental load
- Knowledge, training and competence
- Motivation and attention
- Experience
- Perceived control and support
- Job satisfaction and role clarity
- Organisational culture and behaviours

Key point: Psychological factors influence perception, behaviour and tolerance.

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APPLYING THE MODEL IN PRACTICE

Take a holistic view. Consider all domains, not just the workstation.

Look for interactions
Identify how factors influence and reinforce each other.

Focus on what matters most
Target the key contributors rather than minor issues.

Review and adapt
Monitor changes over time and adjust as needed.

Take a holistic view
Consider all domains, not just the workstation.

ASSESSMENT AREAS AND EXAMPLES OF MEASUREMENT / OBSERVATION

1 ACTIVITIES AND TASKS

KEY ASSESSMENT AREAS
- Task analysis and workflows
- Duration, repetition and intensity
- Workload and time pressure
- Variation, breaks and recovery

EXAMPLES OF MEASUREMENT / OBSERVATION
- Task observation and timing studies
- Workload profiling
- Break pattern and task variation analysis
- Work schedule review

DATA SOURCES / TOOLS
Observation, time studies, task analysis tools, interviews, workload data

2 ENVIRONMENT

KEY ASSESSMENT AREAS
- Lighting, glare and contrast
- Temperature, ventilation and noise
- Space, layout and circulation
- Distractions and interruptions

EXAMPLES OF MEASUREMENT / OBSERVATION
- Lighting and glare assessment
- Temperature and noise measurement
- Workspace walkthrough
- Distractions and interruption mapping

DATA SOURCES / TOOLS
Lighting meter, noise meter, temperature logger, walkthrough checklist, observation

3 TOOLS AND EQUIPMENT

KEY ASSESSMENT AREAS
- Workstation configuration and fit
- Chair, desk, screen, input devices
- Equipment suitability and reliability
- Software usability and functionality

EXAMPLES OF MEASUREMENT / OBSERVATION
- Workstation measurements (dimensions, angles)
- Equipment adjustability and condition
- Screen readability and distance assessment
- Software usability review

DATA SOURCES / TOOLS
Ergonomic assessment checklists, measurement tools, photos, equipment audits, user feedback

PSYCHOLOGY

KEY ASSESSMENT AREAS
- Stress and mental workload
- Knowledge, training and competence
- Motivation and attention
- Experience, control and support
- Job satisfaction, role clarity and culture

EXAMPLES OF MEASUREMENT / OBSERVATION
- Surveys and questionnaires (stress, satisfaction)
- Interviews, focus groups
- Observation of behaviours and interactions
- Organisational culture assessment

DATA SOURCES / TOOLS
Questionnaires, interviews, focus groups, psychological scales, culture audits

5 PHYSIOLOGY

KEY ASSESSMENT AREAS
- Anthropometry
- Physical capacity and strength
- Movement patterns
- Fatigue and recovery
- Injury history and sensitivity

EXAMPLES OF MEASUREMENT / OBSERVATION
- Anthropometric measurements
- Functional capacity assessments (where appropriate)
- Fatigue and recovery logging
- Health and injury history review

DATA SOURCES / TOOLS
Anthropometric data, functional assessments, health records (with consent), self-report questionnaires

INTERACTION & FEEDBACK LOOPS

Risk emerges from the dynamic interaction between all domains. Changes in one area can increase or decrease risk in others.

Examples:

High workload (tasks) → less variation → increased fatigue (physiology)

Poor lighting (environment) → forward head posture → neck strain (physiology)

Poor workstation fit (equipment) → compensatory postures → discomfort (physiology)

High stress (psychology) → increased muscle tension → pain and fatigue (physiology)

Low support (psychology) → reduced reporting → issues remain unaddressed

THE GOAL: Identify the dominant contributors, understand how they interact, and implement proportionate controls that improve comfort, health and performance.

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