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Occupational Health Nursing

Community Health Nursing

Occupational health concepts, occupational hazards, occupational diseases, workplace safety, ergonomics, industrial hygiene, prevention of occupational injuries and occupational health services.

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CHAPTER 16 / COMMUNITY HEALTH NURSING 16. Occupational Health Nursing

1. Definition and aims

Occupational health nursing promotes and protects workers' health, prevents work-related illness and injury, facilitates timely treatment and supports safe return to work. It addresses the interaction between people, tasks, equipment, workplace exposures and organizational conditions.

2. Occupational hazards

Category	Examples	Possible outcomes
Physical	Noise, heat, vibration, radiation	Hearing loss, heat illness, injury
Chemical	Dust, solvents, pesticides, fumes	Lung disease, toxicity, dermatitis
Biological	Blood, microbes, animal exposures	Infection
Ergonomic	Repetitive motion, poor posture, lifting	Musculoskeletal injury
Psychosocial	Overwork, harassment, shift work	Stress, burnout, sleep disruption
Safety/mechanical	Unprotected machines, electrical hazards	Trauma, burns

3. Common occupational diseases

Silicosis results from respirable crystalline silica exposure; asbestosis from asbestos fibres; occupational asthma from selected workplace sensitizers/irritants; noise-induced hearing loss from prolonged excessive noise; contact dermatitis from irritant or allergenic exposures; musculoskeletal disorders from combined physical and organizational risks. Exposure history is essential; symptoms alone do not establish work-related causation.

4. Hierarchy of controls

Elimination removes the hazard; substitution replaces it; engineering controls isolate workers (local exhaust ventilation, guards); administrative controls change work practices (training, rotation where appropriate); PPE provides a final barrier. Prioritize controls at the source over reliance on PPE alone.

5. Ergonomics and industrial hygiene

Ergonomics adapts work to human capabilities: adjustable workspaces, neutral posture, safe handling equipment, appropriate breaks and task redesign. Industrial hygiene anticipates, recognizes, evaluates and controls exposures through workplace assessments, monitoring, ventilation and safe processes. Nurses collaborate with safety professionals and occupational physicians.

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6. Occupational health services

Pre-placement assessment appropriate to job risks, periodic health surveillance, vaccination where indicated, first aid, exposure and injury reporting, workplace education, rehabilitation and return-to-work planning. Medical information should be confidential; communicate functional restrictions rather than unnecessary diagnoses to management.

7. Clinical safety and nursing role

For sharps or blood exposure, wash skin/flush mucosa, report immediately, and seek urgent assessment for HIV/HBV prophylaxis and follow-up. In chemical exposure, ensure scene safety, remove exposure when safe and follow chemical-specific decontamination and referral instructions. Never enter an unsafe confined space without qualified rescue procedures. Nurses identify hazards, monitor trends, educate workers, support safety committees and advocate for non-punitive reporting.

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8. Hierarchy of occupational hazard controls

The preferred approach is to remove or reduce the hazard at its source instead of relying only on worker behaviour.

Control	Example
Elimination	Remove an unnecessary hazardous process.
Substitution	Replace a harmful chemical with a safer alternative.
Engineering	Enclose machinery, improve ventilation or install guards.
Administrative	Safe work procedures, shift planning and training.
PPE	Suitable protection for residual exposure after higher-level controls.

Occupational health assessment

Take a work history: job tasks, exposure duration, materials, protective measures, injury history and symptoms during work versus time away. Record objective findings and refer for appropriate evaluation. Clinical surveillance should be based on relevant exposure hazards and authorized protocols; it does not replace hazard reduction.

9. Workplace scenario

Several workers report back discomfort during repetitive lifting. Assess lifting frequency, loads, workstation height and access to mechanical aids. Coordinate redesign of tasks and workstations, training and suitable referral. Evaluate whether exposure and new injuries decline. Merely asking workers to maintain correct posture is inadequate when the task itself is unsafe.

Industrial hygiene

Anticipate, recognize, evaluate and control chemical, physical, biological and ergonomic exposures. Work with qualified occupational hygiene personnel for environmental measurements and control plans.

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10. Important Examination Questions

Long Answer Questions

1. 1. Describe occupational hazards, diseases and preventive measures.
2. 2. Explain occupational health services.
3. 3. Explain workplace hazards and the hierarchy of controls with nursing examples.
4. 4. Describe an occupational health assessment and prevention plan.

Short Answer Questions

1. 1. Ergonomics
2. 2. hierarchy of controls
3. 3. industrial hygiene
4. 4. occupational exposure management
5. 5. Ergonomics.
6. 6. Industrial hygiene.
7. 7. Occupational health surveillance.
8. 8. PPE limitations.

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Very Short Answer Questions (with answers)

1. 1. Silicosis exposure? Crystalline silica.
2. 2. Most effective hazard control? Elimination.
3. 3. PPE? Personal protective equipment.
4. 4. Which control is generally preferred first? - Elimination.
5. 5. What is ergonomics? - Fitting tasks and work environments to human abilities.

11. Quick Revision

- Occupational illness prevention begins with hazard control.
- A detailed exposure history supports assessment.
- PPE is the last line in the hierarchy of controls.
- Report and investigate injuries without blame.

Conclusion

Healthy workplaces require source control, worker participation, surveillance and timely care.

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Practice questions

Choose one best answer. The answer key and explanations follow the questions.

1. Which workplace intervention is an engineering control?

A. Wearing gloves
B. Local exhaust ventilation
C. Staff rotation
D. Safety training

2. A worker reports prolonged exposure to respirable crystalline silica. Which occupational disease is specifically associated with this exposure?

A. Noise-induced hearing loss
B. Contact dermatitis
C. Silicosis
D. Asbestosis

3. How does ergonomics reduce occupational risk?

A. By relying only on protective clothing
B. By replacing health surveillance with first aid
C. By reporting diagnoses to all managers
D. By adapting work to human capabilities

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Answer key and explanations

1. B - Local exhaust ventilation

Engineering controls isolate workers from hazards, such as through local exhaust ventilation.

2. C - Silicosis

Respirable crystalline silica exposure can cause silicosis.

3. D - By adapting work to human capabilities

Ergonomics adapts tasks, posture, equipment and workspace to people.

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