MUSCULO-SKELETAL DISORDERS IN TELECOMMUNICATIONS

Good Practice Guidelines

Marc Moris

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- General Principles for prevention of MSD
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Part 1 : General Principles

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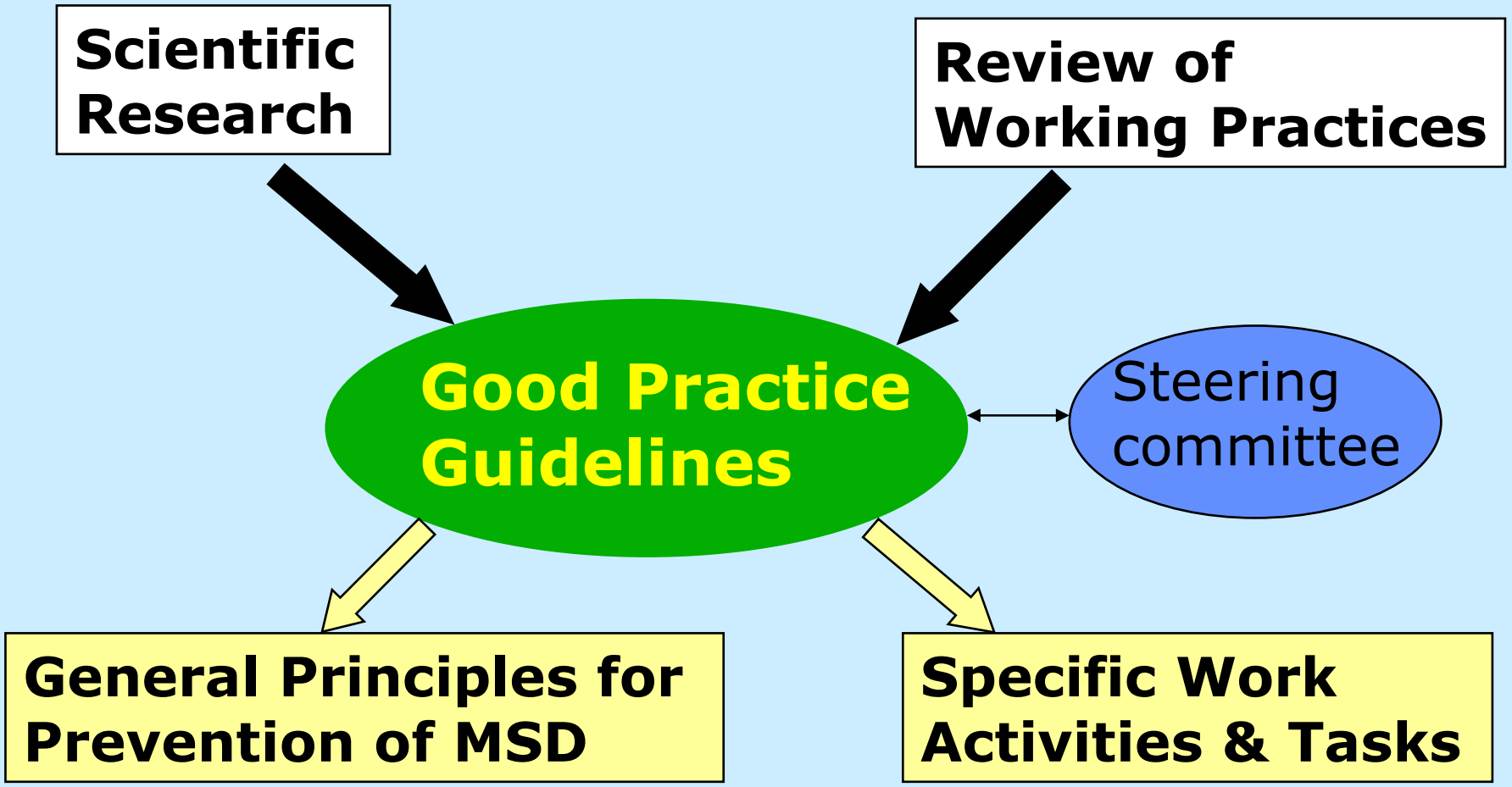
Outline of the project



General Principles for prevention of MSD

- Work Organisation
- Manual Handling
- Working in Awkward Positions
- Vibration
- Repetitive Work
- DSE Work

Specific Work Activities & Tasks

- Mechanical Digging
- Installation of Underground Ducting
- Underground Cabling Installation
- Blowing and Connecting Optical Fibre
- Cabling in Operational Buildings
- Paving
- Underground Cabling Repair
- Working on the Overhead Fixed Line Network (Pole Working)
- Working on Microwave Masts and Towers
- Erection of Telegraph Poles
- Aerial High Climbing
- Portable DSE Use
- Contact Centre Work

MSD Associated with Telecommunications Work

- Highest Risk for

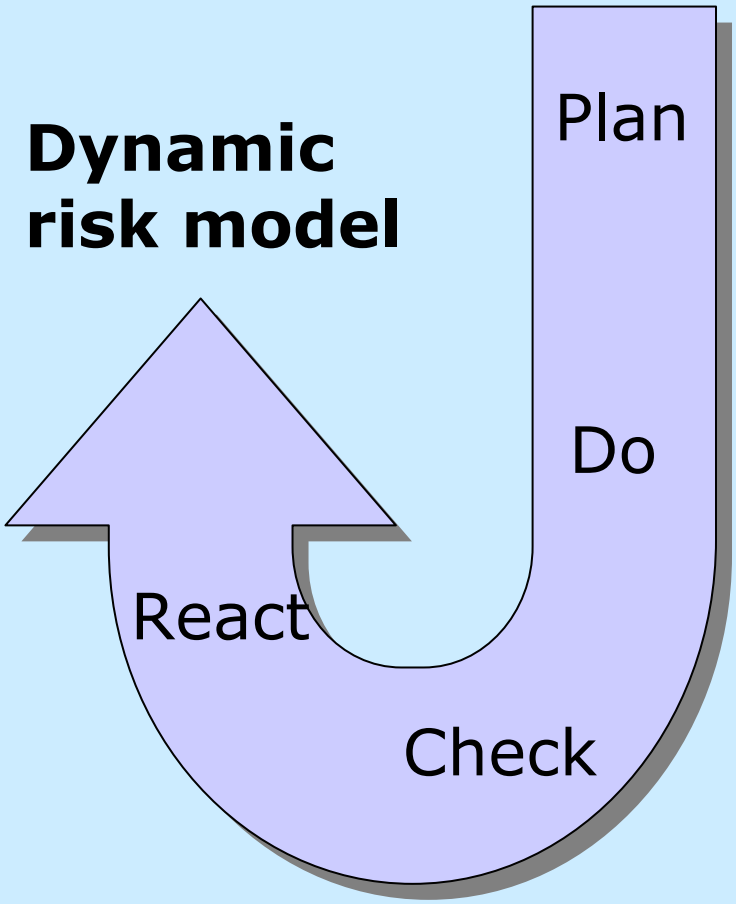
  Service Technicians

  BACK INJURIES

  - Strong evidence from scientific literature
  - Listed by most companies
  - Important : upper limbs and neck problems
- Office or contact centre enviroment :
  - Neck, shoulder, hand/wrist
  - Strong evidence for psychosocial issues

Work organisation

Dynamic risk model



- Hazard identification
- Risk analysis (likelihood of MSD and severity)
- Control measures
- Provision of information, instructions and training
- Review of working practices

Manual Handling

- Think before you lift
- Keep the load close to your waist
- Adopt a stable position
- Ensure a good hold on the load
- At the lift start, slight bending of the back hips and knees is preferable to stooping or squatting
- Do not flex your spine any further when you lift
- Avoid twisting the trunk or leaning sideways
- Keep your head up when handling
- Move smoothly
- Do not lift more than you can manage
- Put down then adjust the load

Principles for Manual Handling Training (Graveling, Melrose & Hanson 2003)

Repetitive Work

- Reorganise work to mix repetitive and non-repetitive activities.
- Introduce frequent, short rest breaks if the job cannot be varied or rotated.
- Review work rates to ensure they are realistic and are within employees' physical and psychological capabilities.
- Use ergonomically designed chairs, desks and computers, which can be adjusted to suit employees of different sizes.
- Rearrange the work area so that materials, equipment and controls can be easily reached without stretching or twisting.
- Hand tools for repetitive tasks should be a comfortable size, shape and weight, be well balanced with a comfortable grip and need no more than reasonable force to operate.
- If the job needs precise movements, make sure the task is done slightly above elbow level.
- If the job needs a lot of muscle strength, make sure the task is done slightly below elbow level.

Measures for the Prevention of Occupational Overuse Injuries (NOHSC – Australia)

DSE Work

- Ensure frequent short rest breaks are taken during the working day
- Provide training to minimise the risks of musculoskeletal problems
- Training to include posture, equipment adjustment, workstation layout, cleaning and maintenance of equipment and rest breaks
- Ensure ergonomic requirements for the display screen, the keyboard, the work desk, the work chair, the environment and the human-computer interface are met
- Encourage early symptom reporting
- Ensure workers can be rehabilitated back into work

Measures to reduce MSD in DSE work (UK Health & Safety Executive 2002)

Part 2 : Task specific

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Specific work activities

- Pole erection
- Paving
- Underground cabling installation
- Installation of underground ducting
- Manhole cover removal
- Ladder handling
- Temporary working at height
- Portable DSE use
- Customer contact centre work

Pole erection

Principal risk factors for MSD

- Manual handling
- Poor posture / awkward position
- Cold/damp conditions

Control Measures (task specific)

- Use, where possible, mechanical lifting devices to unload, transfer and erect poles.
- Use of supports and stands to avoid poles to be offloaded onto the ground.
- Use of less heavier poles is preferable
- If manual transfer is unavoidable, poles should be carried on the shoulders.
- Placing of pole on stands, repositioning team members, and then re-lifting the pole.
- Unload pole from lorry as closely as possible to the hole.
- Deposit materials as close as possible to work area
- Use long handle shovel for mixing sand, cement etc.
- Maintain correct posture when mixing and digging.
- Provide training for team members and team leaders in specific handling techniques for pole handling.

Paving

Principal risk factors for MSD

- Manual handling
- Poor posture / awkward position
- Vibration

Control Measures (task specific)

- Use, where possible, lifting device to raise paving slabs, etc
- Ensure road breaking/tamping devices are as light as possible with minimum vibration levels
- Deposit materials as close as possible to work area
- Use long handle shovel for mixing sand, cement, etc
- Maintain correct posture (straight back, etc) when mixing and digging
- Use appropriate PPE, such as cushioned mats or knee pads, for prolonged kneeling tasks
- Apply equal care to restitution and clear up of site .

Underground cabling installation

Principal risk factors for MSD

- Manual handling
- Poor posture / awkward position
- Repetitive movements
- Cold/damp conditions

Control Measures (task specific)

- Manoeuvre cable drum on trailer or, if not possible, use designated tools
- Park trailer and/or jack cable drum securely to withstand subsequent winching/pulling forces
- Clear up immediately any lubricant spillages to avoid slipping
- Use, where practicable, winch for pulling cable
- Visually inspect all winding gear for signs of damage and test emergency stop apparatus
- Evacuate all underground structures before commencing winching operations
- Start and finish winding operations slowly - maintain steady speed to minimise cable surging
- Take particular care when dealing with obstructions – follow defined operating procedures
- Only consider manual cabling for small and/or short cables
- Ensure manual cabling tasks are adequately resourced and appropriate techniques used
- Minimise time spent in awkward positions jointing, etc especially in cold/damp weather
- Use appropriate PPE, such as cushioned mats or knee pads, for prolonged kneeling tasks
- Apply equal care to restitution and clear up of site

Installation of underground ducting

Principal risk factors for MSD

- Manual handling
- Poor posture / awkward position
- Vibration (HTV & WBV)
- Repetitive movements
- Cold/damp conditions

Control Measures (task specific)

- Use, where possible, lifting device to raise paving slabs, etc
- Ensure road breaking devices are as light as possible with minimum vibration levels
- Ensure seating in digging/drilling machines is suitable for operator and damped for WBV
- Use straps, if fitted, in digging/drilling machines to provide support and reduce stress on spine
- Use mirrors and any rotating function of digging/drilling machines to prevent twisting of neck
- Ensure manual digging schedule and equipment are appropriate for ground conditions
- Consider method of spoil removal and shoring for trenches deeper than 1 metre
- Use, where possible, mechanical devices for unloading and carriage of ducting
- Use designated tools and techniques for movement (e.g. slewing) of any drums/reels
- Ensure manual handling of ducting is adequately resourced and appropriate techniques used
- Avoid manual pushing/pulling of ducting - if essential consider use of more than one person
- Avoid where possible, and otherwise minimise, manual handling in cramped conditions of trench
- Apply equal care to restitution and clear up of site

Manhole cover removal

Principal risk factors for MSD

- Manual handling
- Poor posture / awkward position
- Cold/damp conditions

Control Measures (task specific)

- If possible avoid manual lifting, for example by using manhole cover with a built in mechanical lifting device or by using mechanical or hydraulic lifting devices.
- Make sure that the device is ergonomic
- Provide the necessary proper training and information to perform manual handling for example : flexing knees while keeping the back as straight as possible

Ladder handling

Principal risk factors for MSD

- Manual handling
- Poor posture / awkward position
- Restricted access to the ladder

Control Measures (task specific)

- Only shoulder carry ladders in ideal conditions - no wind, no obstacles overhead and even, flat, non-slippery surfaces
- Heavy ladders should be carried suspended to the shoulder
- Risk assess the route to the ladder installation site on the basis of hazards not just distance
- Design ladder handling equipment, including vehicle support, to allow safer handling and avoid excessive stretching and pulling/pushing
- Provide suitable steps or other safe means of access on the vehicle to facilitate achieving a reasonable position for the handling operation

Temporary working at height

Principal risk factors for MSD

- Poor posture / awkward position
- Repetitive forceful movements
- Manual handling
- Use of ropes and pulleys
- Cold/damp conditions

Control Measures (task specific)

- Ensure any harness is properly adjusted
- Adopt a stable and braced position
- Avoid overreaching
- Ensure good leverage
- Minimise prolonged working at or above shoulder height
- Avoid twisting the trunk or leaning sideways

Portable DSE use

Principal risk factors for MSD

- Poor posture / awkward position
- Manual handling
- Repetitive movements
- Prolonged use without break

Control Measures (task specific)

- Select portable DSE with good ergonomic features
- Ensure training in set up and use of equipment is adequate
- Select portable DSE that minimises weight to be carried
- Consider provision of rucksack-type bags
- Provide manual handling training
- Minimise use in locations where difficult to adopt good posture

Customer contact centre work

Principal risk factors for MSD

- Poor posture
- Repetitive movements
- Visual fatigue
- Telephone interaction
- Psychosocial factors

Control Measures (task specific)

- Design the work station to have an ergonomic position of the body.
- Use adjustable ergonomic furniture where possible.
- Use ergonomic IT equipment
- Use telephone headset.
- Allow for regular breaks or alternative tasks.
- Allow for regular physical exercise.

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Conclusions

- Good participation
- Many good practices
- Collection of data is essential
- Web site : www.msdonline.org
- Booklet