

Repetitive Motion Disorders (RMD) - A rapidly increasing problem for the histology laboratory of tomorrow ?

Definition and Facts

Potential sources and risk factors

Sources and risk factors in Histology

Statistical data

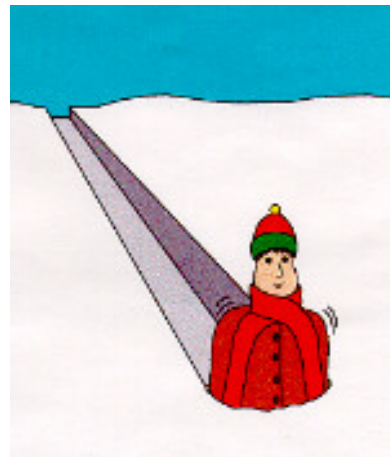
Correlation to the use of microtomes

Some hints for prevention

Literature about RMD

RMD - Definition

... an injury or illness resulting from bodily motion which imposes stress or strain upon some part of the body due to the repetitive nature of a task ...



RMD - Facts

- Repetitive Motion Disorders are in most of the cases of long lasting nature, painful and disabling.
- Repetitive motion disorders as CTS (Carpal Tunnel Syndrome) disrupts work scheduling, affects productivity, quality and throughput AND impacts compensation costs in a negative way.

Potential sources and risk factors

- Performing a series of motions every few seconds continuously for more than 1 hour.
- Unassisted frequent or forceful handling.
- Working in unsupported awkward or fixed position for more than 1 hour continuously.
- Repetitive use of tools as for example forceps (over hours)

Sources and risk factors in Histology

- Use of manual rotary microtomes
- Manual staining
- Manual coverslipping
- Exchange cassettes or blocks in microtome cassette clamp or standard jaw

clamp

- Inappropriate workplace ergonomics
- Use of non-ergonomical designed laboratory instruments

Statistical data

- 10 years ago less than 50 000 reported cases.
- 1990 already 180 000 reported cases.
- 1993 OSHA had already 300 000 reported cases.
- Women accounted for two-thirds of all reported cases (tendency increasing).
- 2.3 mio. reported occupational injuries and illnesses causing lost work time.
- Carpal Tunnel Syndrome (CTS) is one of the most reported injury, especially in the field of clinical histology.
- 42 000 CTS cases in 1993 (women: 28 000).
- Sprains and strains accounted for about 1 million cases of occupational injuries in 1992.

Correlation to the use of microtomes

- Many functions performed by histotechnologists have a potential relationship to RMD's.
- The use of manual rotary microtomes in particular has a very strong correlation to RMD's.

WHY ?

- In the course of an average work year you will perform approximately 2 million revolutions of the handwheel (50 cassettes or blocks a day).
- Frequent use of coarse feeding wheel during trimming.
- Frequent replacement of specimens in specimen holder system.
- Non ergonomic operation of the microtome.

Some hints for prevention

- Learning to identify potential sources of biomedical stress (awareness).
- Design/create an ergonomic workplace (height of workbench, chair, sitting position, instrumentation, ...).
- Ask for advice of an occupational therapist to reduce physical stress factors.
- Recognition of stress factors is the most important step towards prevention.
- Start to educate yourself on physical hazards (you did it already for chemical hazards).
- Learn to pay attention to your body's reaction to repetitive movements.

Literature about RMD

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