

Protocol for Video Recording Jobs for Risk Factors

This is a guide to preparing a video recording and related task information for facilitating job analyses and assessments of risk factors for work-related musculoskeletal disorders. The aim of this protocol is to assure sufficient job cycles, adequate angles of viewing, and variations in worker characteristics so as to offer a representative picture of the work situation for analysis.

Materials needed:

- Video camera, batteries
- Tripod (if available)
- Clipboard, pens, paper, blank checklists
- Strain gauge (optional) for weighing objects

Video recording procedure:

1. Before recording any job, announce the name of the job into the recording. Restrict running time comments to the facts. Make no editorial comments.
2. Record each job long enough to observe all aspects of the task. Record 5 to 10 min for all jobs, including at least 10 complete cycles. Fewer cycles may be needed if all aspects of the job are recorded at least 3 to 4 times.
3. Hold the camera still, using a tripod if available. Don't walk unless absolutely necessary.
4. Begin recording each task with a whole-body shot of the worker. Include the seat/chair and the surface the worker is standing on. Hold this for 2-3 cycles, then zoom in on the hands/arms or other body parts that may be under stress due to the job task.
5. It is best to record several workers to determine if workers of varying body size adopt different postures or are affected in other ways. If possible, try to video record the best and worst case situations in terms of worker 'fit' to the job.

Change the focus on the video recording based on the suspected body area with problems/complaints, as indicated in the table below:

Suspected area with problems/complaints	Focus of video recording
Wrist	Hands, wrists, forearms
Elbow	Arms, elbows
Shoulder	Arms, shoulder
Back or lower limbs	Movements of the trunk, legs, knees, feet

6. Video record from whatever angles are needed to capture the body part(s) under stress. If you intend to take any measurements from the recorded video/images (e.g., back angle, wrist angle, etc.), the camera must be placed perpendicular to the subject.
7. Briefly record the jobs performed before and after the one under actual study to see how the targeted job fits into the total work process.
8. For each recorded task, obtain the following information to the maximum extent possible:
 - If the task is continuous or sporadic;
 - If the worker performs the work for the entire shift, or if there is rotation with other workers;
 - Measures of work surface and chair heights, and whether they are adjustable;
 - Weight, size, and shape of handles and textures for tools in use; indications of vibration in power tool usage;
 - Use of gloves;
 - Weight of objects lifted, pushed, pulled, or carried;
 - Nature of environment in which work is performed (too cold or too hot?)