

## Original article. Scand J Work Environ Health. 2017;43(3):226–233.

doi:10.5271/sjweh.3617

### Effectiveness of participatory training in preventing accidental occupational injuries: a randomized-controlled trial in China <sup>1</sup>

by Ignatius TS Yu, MPH,<sup>2</sup> Wenzhou Yu, PhD, Zhimin Li, BM, Hong Qiu, PhD, Sabrina Wan, BSc, Shaohua Xie, PhD, Xiaorong Wang, PhD

<sup>1</sup> *Supplementary material*

<sup>2</sup> *Correspondence to: Dr. Ignatius TS Yu, Hong Kong Occupational and Environmental Health Academy, Room 1429, 14/F Beverley, Commercial Center, 87-105, Chatham Road South, TST, Hong Kong SAR, China. [E-mail: iyu@hoeha.org.hk]*

#### Appendix 1

### Action Checklist for Workplace Inspection Exercise

#### *How to use the checklist*

1. Define the work area to be checked. In the case of a small enterprise, the whole production area can be checked. In the case of a larger enterprise, particular work areas can be defined for separate checking.
2. Read through the checklist and spend a few minutes walking around the work area before starting to check. Read each item carefully. Look for a way to apply the measure. If necessary, ask some questions to the manager or workers. If the measure has been applied or it is not needed, mark **NO** under “Do you propose action?” If you think the measure is worthwhile, mark **YES**. Use the space under **REMARKS** to put a description of your suggestion or its location.
3. After you have gone through the whole items, look again at the items you have marked **YES**. Choose a few items where the benefits seem likely to be the most important. Mark **PRIORITY** for these items.
4. Before finishing, make sure that for each item you have marked **NO** or **YES**, and that for some items marked **YES** you have marked **PRIORITY**.

#### A. Workstation Changes

Item	Do you propose action?	Remarks	Priority
1. Adjust working height for each worker at elbow-height or slightly lower than elbow-height (for example, use foot platforms for small workers and work item holders for tall workers)			
2. Put frequently used tools, controls and materials within easy reach of workers			
3. Use jigs, clamps, vices or other fixtures to hold items while work is done.			
4. Use hanging tools or conveniently fixed tools for operations repeated at the same place.			
5. Provide chairs or benches of correct height (with the			

feet comfortably and flatly placed on the floor) with a sturdy back rest.			
6. Attach labels and colors to make it easy to distinguish from each other.			

### B. Machine Safety

Item	Do you propose action?	Remarks	Priority
1. Attach proper guards to dangerous moving parts of machines and power transmission equipment			
2. Use safety devices which prevent operation of machines while the workers' hands are in danger.			
3. Make sure machines are well maintained and have no broken or unstable parts.			
4. Ensure safe use of electricity for machines and equipment.			
5. Make emergency switches clearly visible and easy to reach.			

### C. Working Environment

Item	Do you propose action?	Remarks	Priority
1. Provide general artificial lighting adequate for the type of work done, by adding light sources, installing reflectors or re-positioning lamps.			
2. Increase natural ventilation by having more openings, windows or open doorways.			
3. Introduce or improve local exhaust ventilation.			
4. Isolate or screen the sources of dust, hazardous chemicals, noise or heat out of the workplace.			
5. Make sure all the containers of hazardous chemicals are labeled and sealed properly.			
6. Clear and mark transport ways.			
7. Provide a conveniently placed home for each tool.			
8. Provide multi-level shelves or storage racks near the work area for tools, raw materials, parts and products.			
9. Provide an adequate supply of cool and safe drinking water in all workplaces.			
10. Provide resting corners and a separate hygienic place for eating meals.			

## Appendix 2

**Table - Comparisons between participatory training and didactic training**

	<b>Participatory training</b>	<b>Didactic training</b>
Number of participants	about 30	about 30
Training materials <sup>#</sup>	4 of 6 topics	4 of 6 topics
Instructors <sup>#</sup>	3	2
Short presentations by instructors <sup>#</sup>	4	4
Group discussions	√	×
Games	√	×
Workplace inspection visit	√	×
Personal protective equipment (PPE)	demonstration and practice	Demonstration only
Stretching and strengthening exercise	√	×
Group presentation	√	×
Total duration	about 5 hours	about 2 hours
Introduction	10 min.	10 min.
Pre-training questionnaire	15 min.	15 min.
Presentation on Machine Safety	20 min.	20 min.
Discussion	20 min.	-
Games	20 min.	-
Presentation on Working Environment	20 min.	20 min.
Discussion	20 min.	-
Presentation on Work Station	20 min.	20 min.
Discussion	20 min.	-
Stretching and strengthening exercise	20 min.	-
Presentation on Dust/Chemical/Noise	20 min.	20 min.
Control (including PPE demonstration)		
Discussion	20 min.	-
Workplace inspection visit	30 min.	-
Discussion	30 min.	-
Post-training questionnaire	15 min.	15 min.

<sup>#</sup> Same contents and instructors (apart from the additional instructor for leading group activities in participatory training) involved for each pair of factories