

Fig. 1. Stocking task with and without the mobile cart: (a), (b), and (c) illustrate improper, stress-inducing postures during stocking. Stress associated with stocking is reduced in (d) due to the movement of large quantities of items, but efficiency is impeded. (e) and (f) show the mobile cart with an upper and a lower platform, and a receptacle for broken boxes. (g) shows a worker loading with the mobile cart.



Fig. 2. MVC data collection.

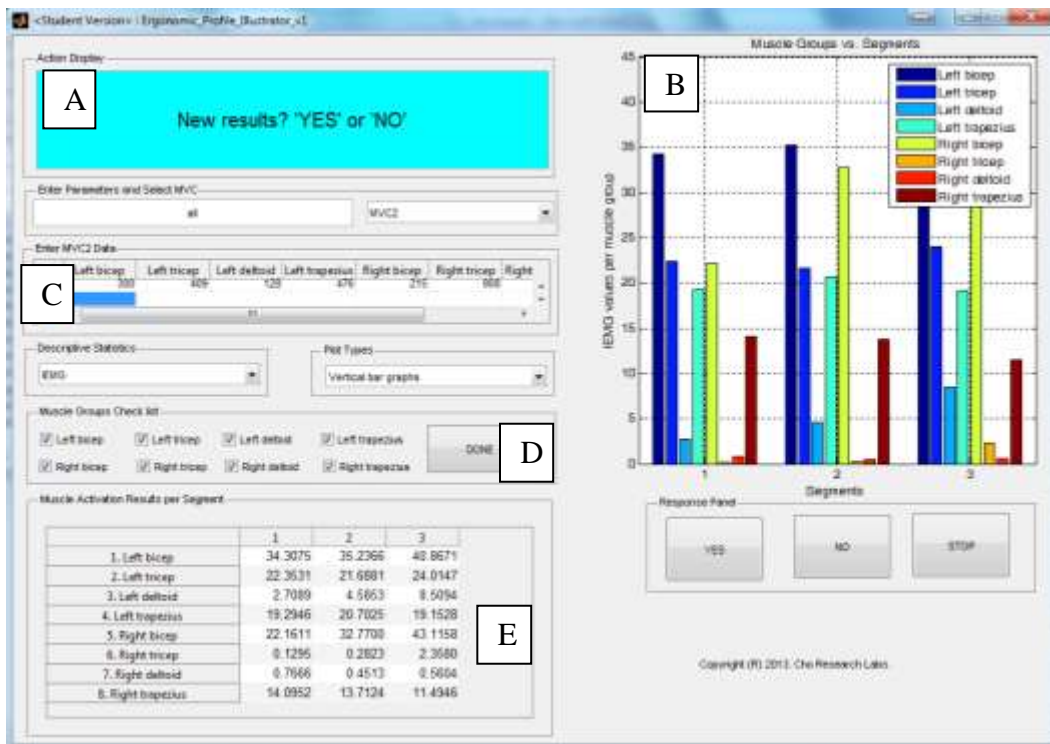


Fig. 3. Graphical user interface of the Ergonomic Profile Illustrator (EPI) showing (A) interactive options display, (B) graphical display, (C) input window for MVC values, (D) muscle groups selection buttons, (E) output window for normalized muscle activation data.

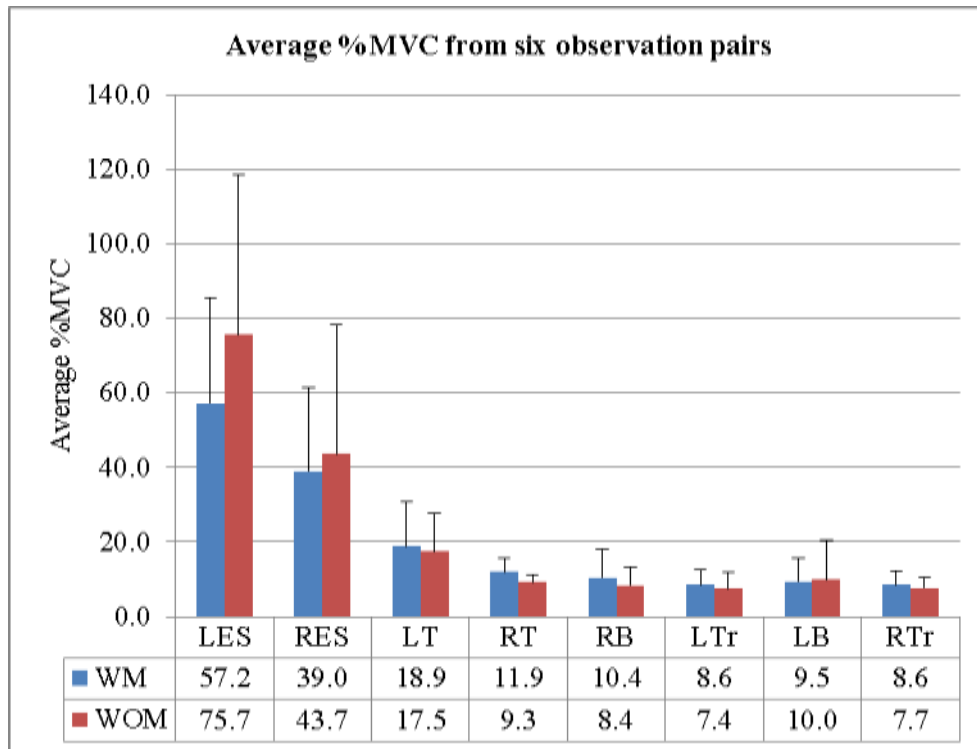


Fig. 4. Average %MVC from six observation pairs. The error bars represent standard deviations.

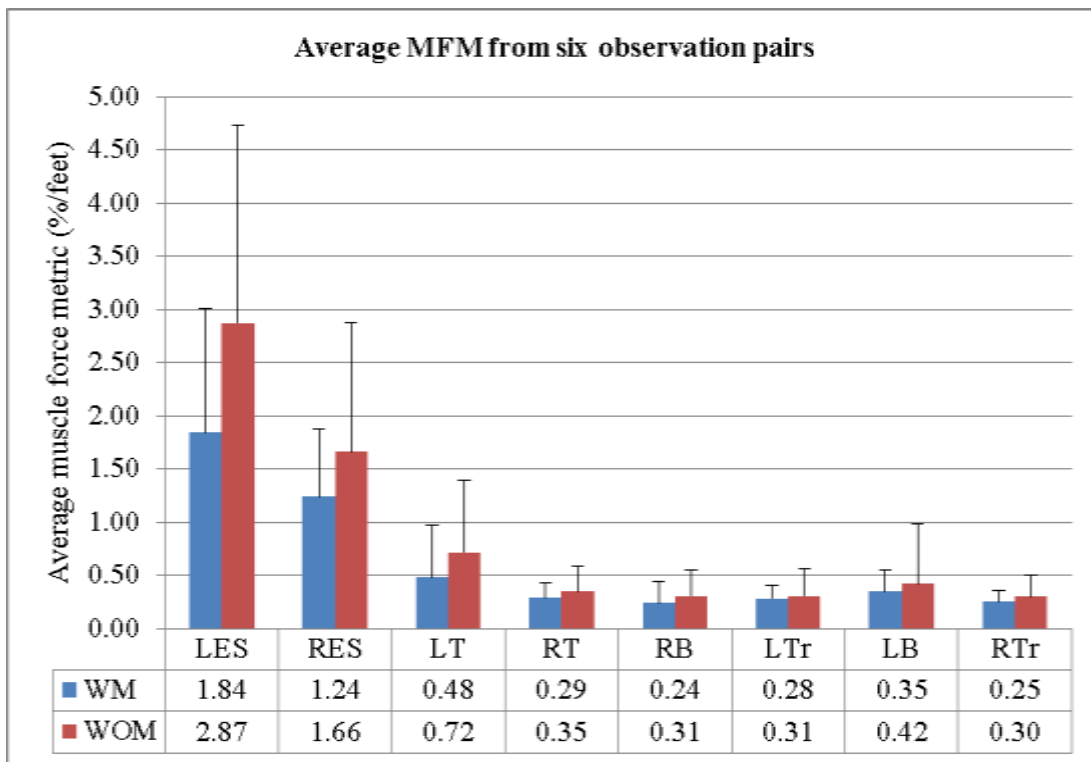


Fig. 5. Average muscle-force-metric (MFM). The error bars represent standard deviations.

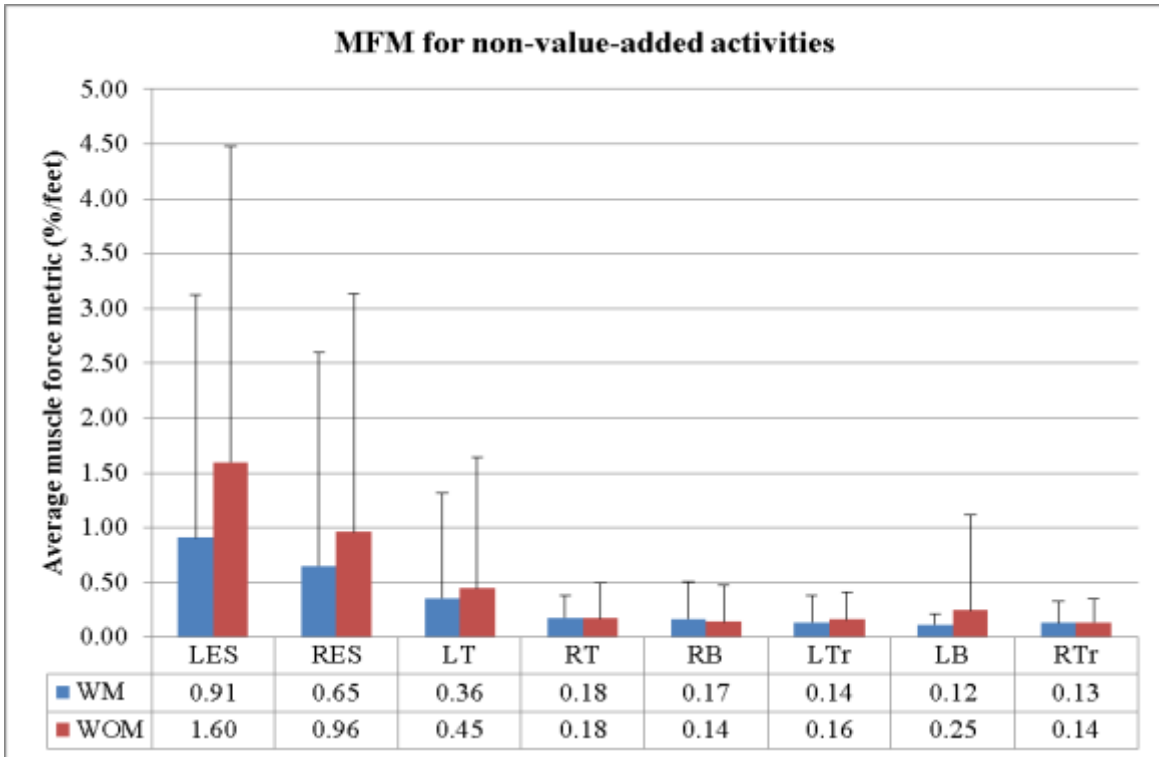


Fig. 6. MFM for non-value-added activities. The error bars represent standard deviations.

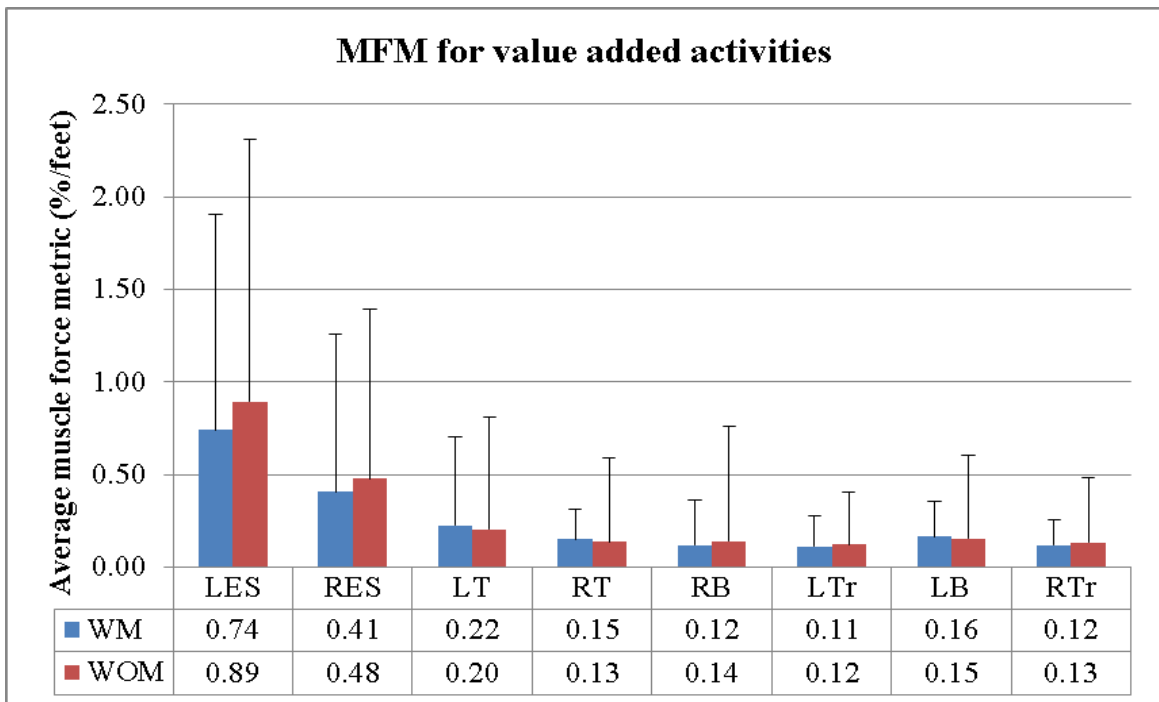


Fig. 7. MFM for value-added activities. The error bars represent standard deviations.

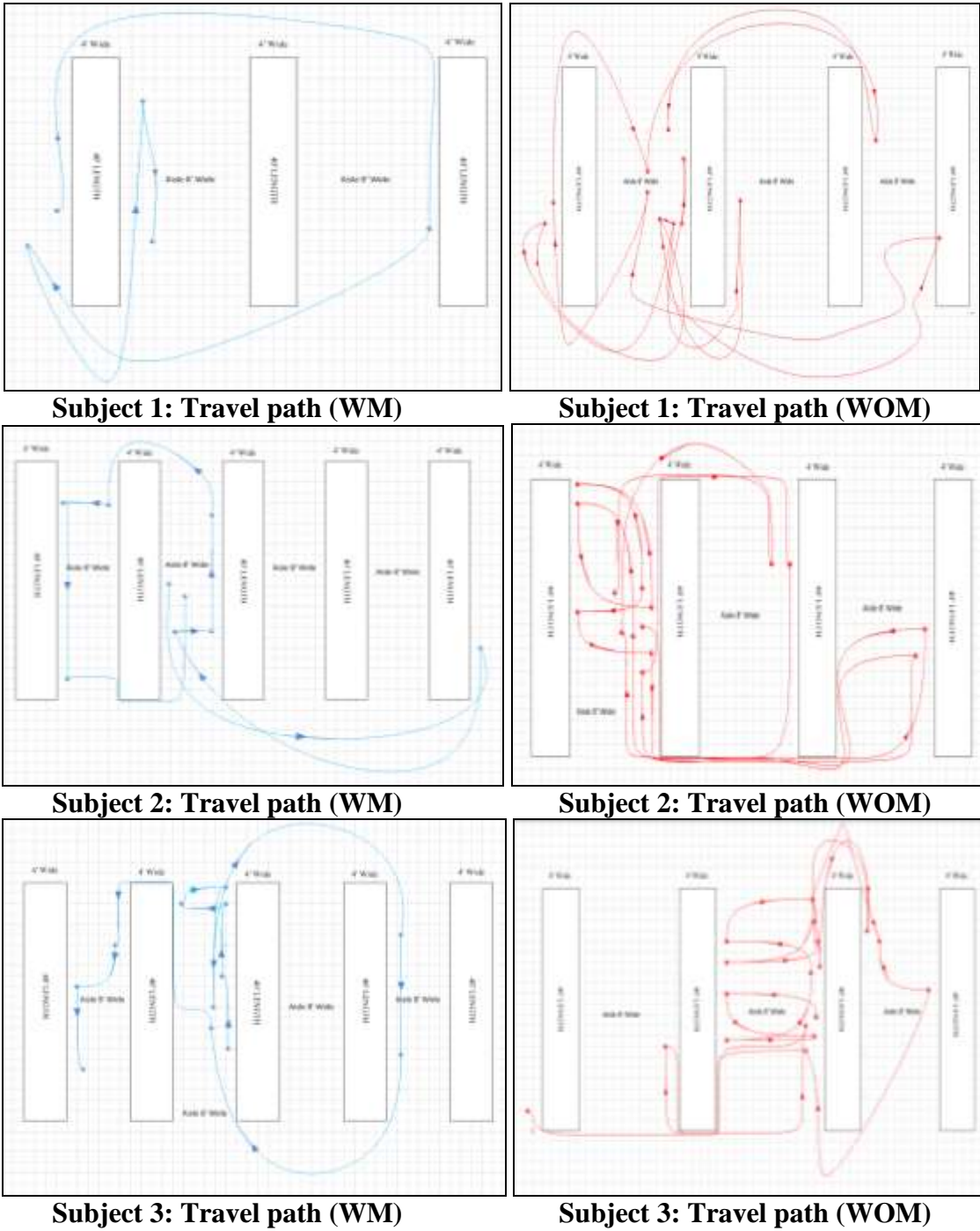


Fig. 8. Spaghetti Charts showing travel paths between shelves for the 3 subjects, each taken from one experiment pair. Greater recursive movements can be observed in travel paths without the mobile cart.