

## Physical activity in the inpatient period after cardiac surgery: an observational study

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**Questions:** How much physical activity is performed in the first five days after cardiac surgery? How much of the physical activity is physiotherapy-supervised, and how much is independent? Is there a relationship between physical activity levels and functional capacity on postoperative day six? **Design:** Prospective observational study.

**Participants:** Eighty-three patients without musculoskeletal and/or neurological impairment, who had undergone coronary artery and/or cardiac valve surgery via median sternotomy. Participants performed a twice-daily program of physiotherapy-supervised walking as permitted by clinical status. **Outcome measures:** Physical activity levels: i) step count; and ii) duration (time) of physical activity  $\geq 3$  METs, were measured daily and overall from postoperative day one to five using the SenseWear Pro3 Armband.

Functional capacity was measured on postoperative day six with a six-minute walk test (6MWT). **Results:** Physical activity levels increased significantly with each postoperative day ( $p < 0.001$ ) to a peak of  $2547 \pm 2336$  steps and  $22 \pm 24$  min on postoperative day five.  $52 \pm 20\%$  of overall step count and  $57 \pm 29\%$  of overall time  $\geq 3$  METs was physiotherapy-supervised (mean duration of supervision:  $189 \pm 35$  min over five days). There was a significant correlation between overall supervised and independent step counts ( $r = 0.718$ ,  $p < 0.001$ ), and overall step count and 6MWT distance ( $r = 0.779$ ,  $p < 0.001$ ). **Conclusions:** The majority of physical activity after cardiac surgery is performed under physiotherapy-supervision. Increased physical activity, both supervised and independent, is related to improved functional capacity.

### Key Practice Points:

- Physical activity is limited early after cardiac surgery.
- A majority of physical activity is performed under physiotherapy-supervision.
- Increased physical activity is related to improved functional capacity.