

# Sit up straight and pay attention!

## Digital Ergonomics in the Emergency Department

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### Why should I care about ergonomics?

Because it's everywhere!

Emergency departments (ED) are uniquely fast-paced, unpredictable and multidisciplinary environments.

Optimising digital device use to maximise performance during complex tasks can have **many consequences**.

This includes significant impacts on:

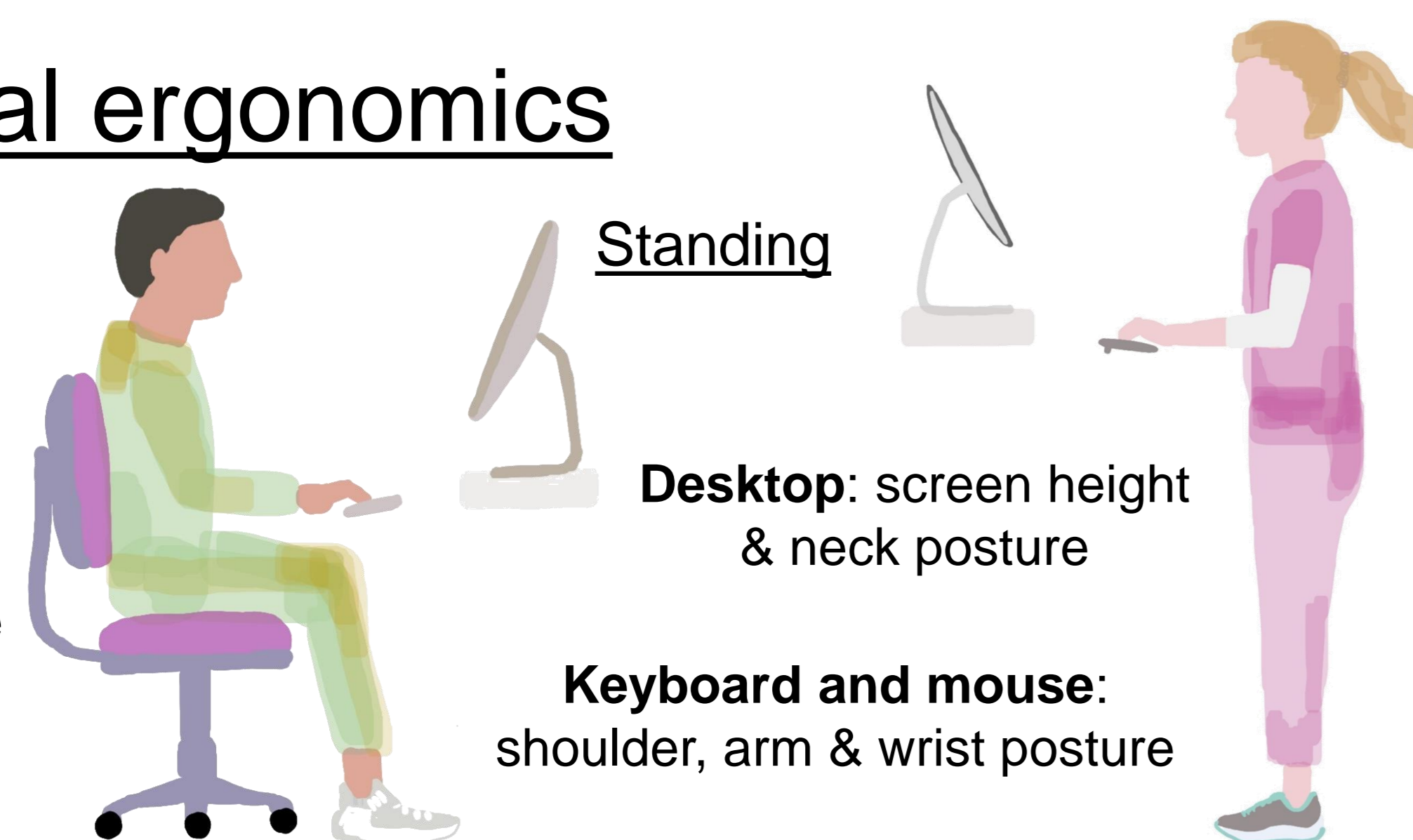
- \* Short-term comfort levels and workplace satisfaction
- \* Musculoskeletal injuries that reduce long-term productivity

Despite the central role of digital devices in the ED research specific to this environment is non-existent.

### Optimal ergonomics

Seated

Chair: Back, leg & feet posture

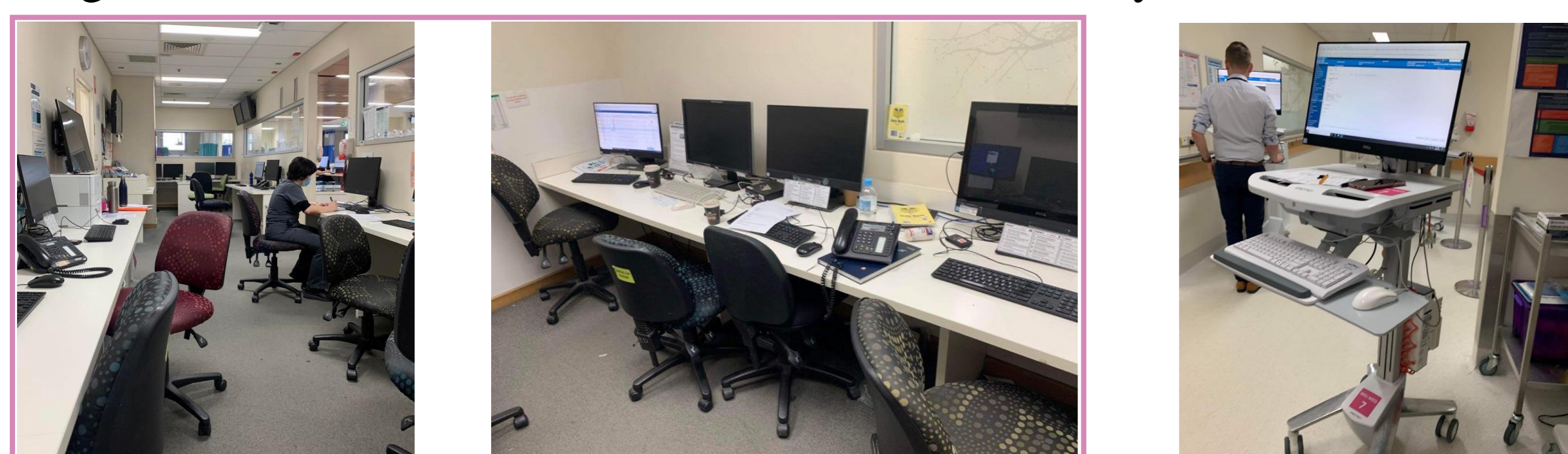


Standing

Desktop: screen height & neck posture  
Keyboard and mouse: shoulder, arm & wrist posture

### Princess Alexandra Hospital (PAH) ED

Digital device interactions were observed in three key areas of the PAH ED.



1. Acute care

2. Ambulatory care

3. Resus

Acute and ambulatory care (1,2) are mainly seated areas, whilst resus (3) is predominantly standing interactions at workstations on wheels as pictured.

### Aim

To provide a preliminary understanding of digital ergonomics in the ED and to explore reasoning behind digital ergonomics uptake by healthcare workers.

### Methods

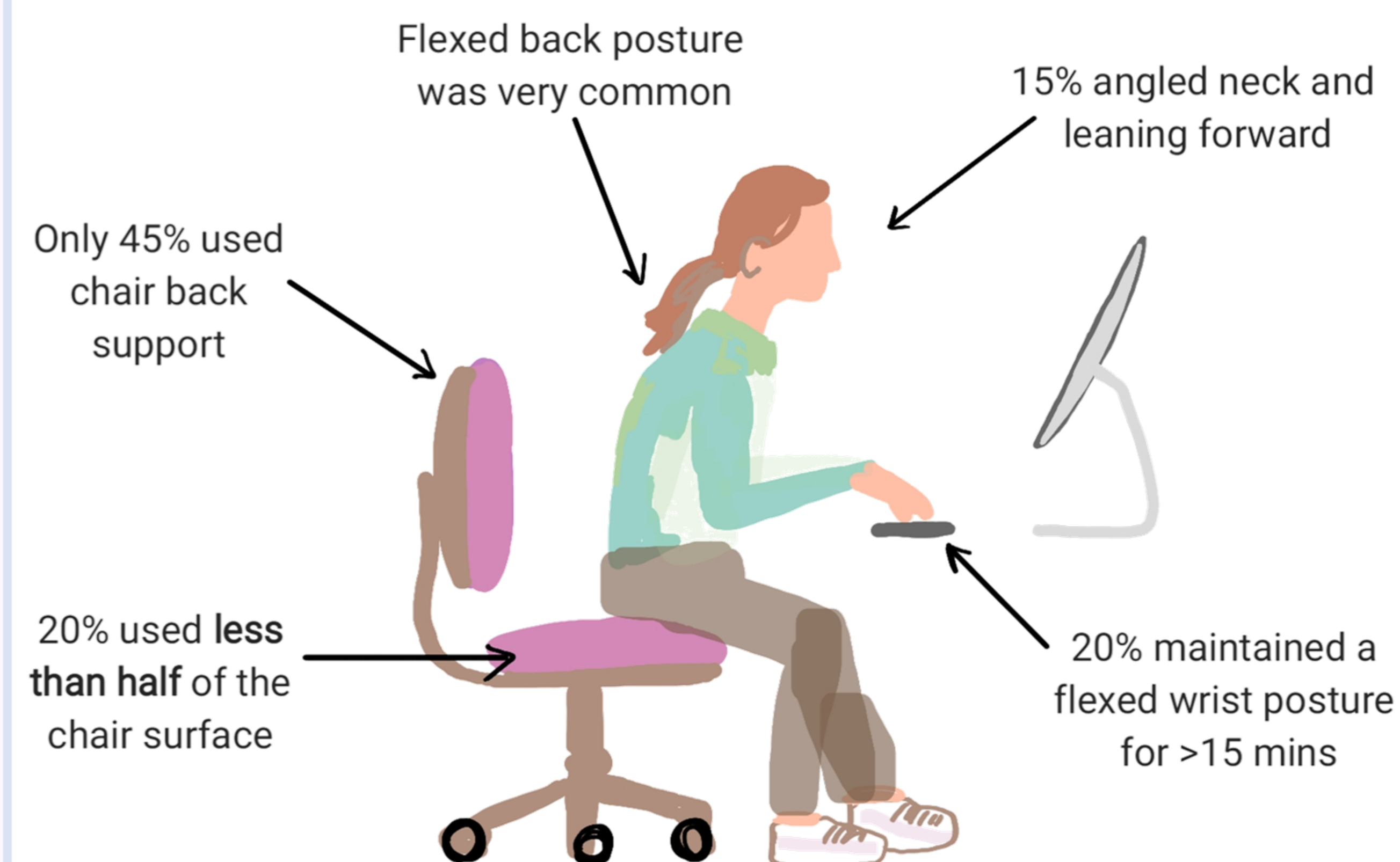


A 17-part questionnaire was designed using the Queensland OH&S guidelines.

This was used to observe healthcare workers in the PAH ED during routine interactions with digital devices.

### Preliminary Results

#### Key suboptimal ergonomics practices observed



- \* Overall standing posture was closer to optimal ergonomics than seating positions
- \* Standing with weight distributed unevenly was seen in >60% of standing interactions
- \* Subsidiary activities such as looking around were associated with suboptimal back and neck posture

### Behavioural Patterns



Interactions with colleagues obscured posture profoundly

Keyboard-predominant activities:

Longer interactions with better leg & neck posture

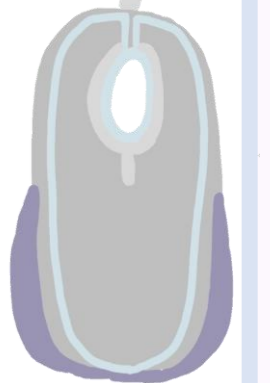


Atypical leg & foot positions observed in more than 20% of seated interactions

Personal device use rapidly transition to a flexed back & neck



Mouse-predominant activities: Shorter interactions and worse posture



"There's more important things to worry about in the ED!"  
Intern

### Next Steps

Staff are currently being interviewed using standardised questions to capture their understanding and perception of digital ergonomics in the ED setting.

### Key Limitation

Most interactions observed were of doctors in acute care. Nurses were more difficult to observe as interactions with equipment were brief and transient.

### Consequences

This preliminary study will address an existing gap in literature by systematically describing the interactions of ED staff with workplace digital technology.

This will provide insights into the potential effects of suboptimal ergonomics and guide scope for future studies.

*How much do you slouch?*