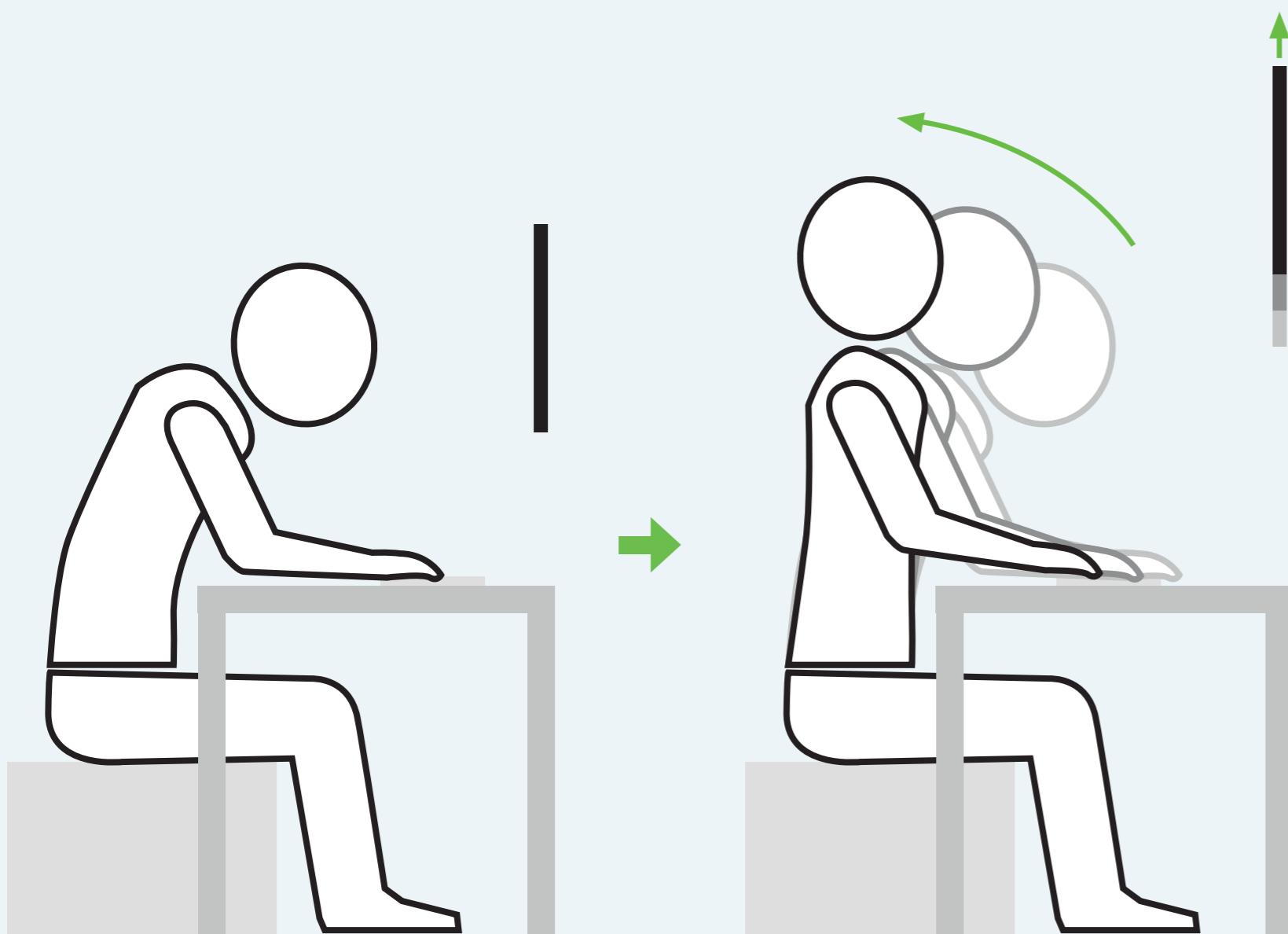


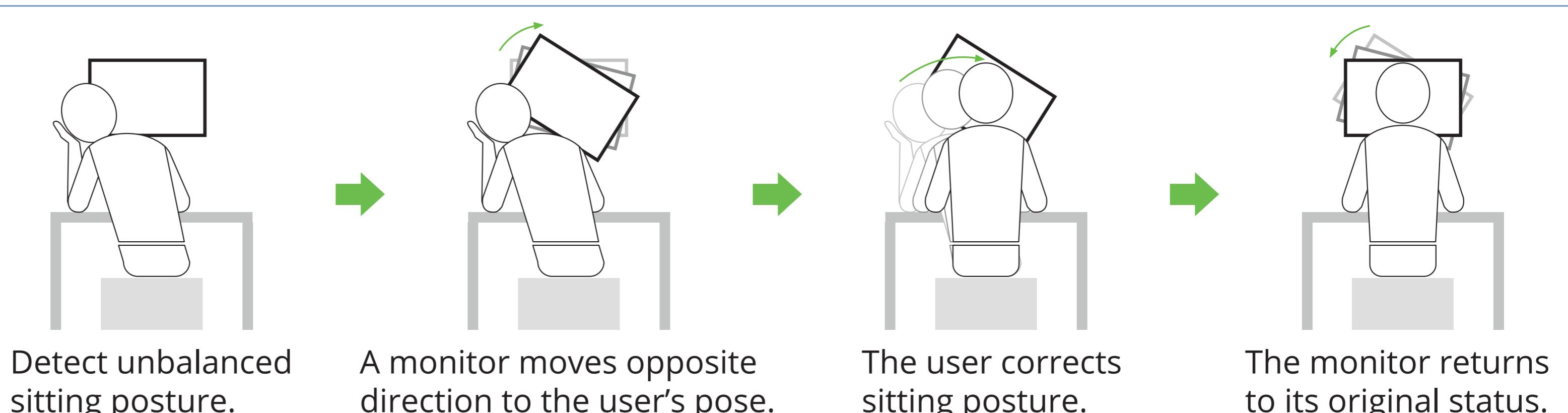
# Actuating a Monitor for Posture Changes

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The position and orientation of a monitor affects users' behavior at their desk. In this study, we explored and designed six types of monitor motions to induce posture changes from a user. We built a virtual monitor that simulates the motions of an actuated monitor and slowly moved in the opposite direction of unbalanced sitting postures. We conducted an explorative study with eight participants. The study showed participants' responses and step by step posture changes toward balanced sitting postures. As contribution, we share considerations for designing monitor actuations that induce posture intervention.

## 01 General interaction

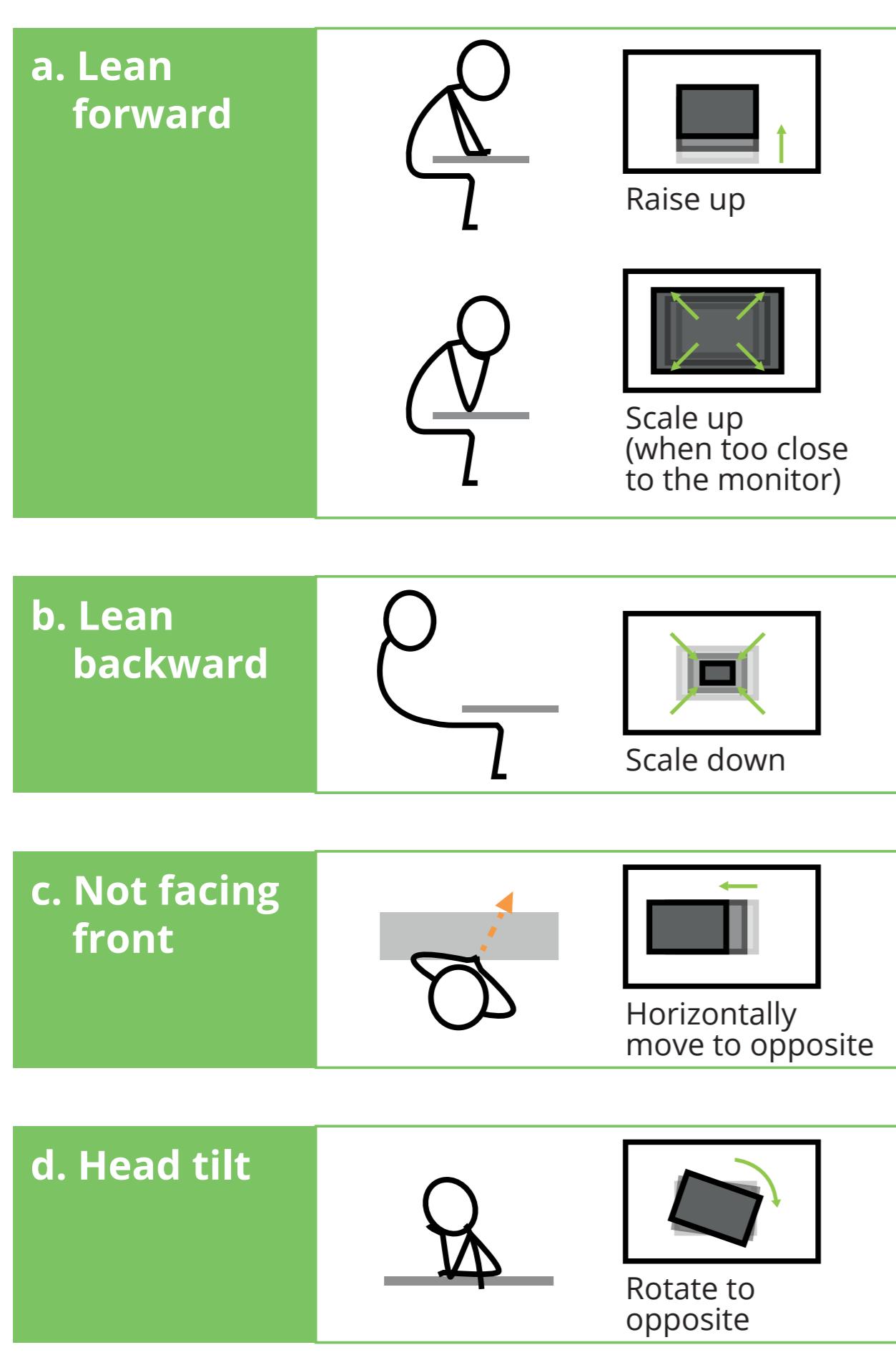


## 02 Formative study

We conducted a formative study with six participants to map the relationship between monitor movements and unbalanced postures. In a lab setting, a researcher hid behind a cardboard wall and moved a monitor to induce posture changes from diverse unbalanced sitting poses.



## 03 Design



From the formative study, we categorized 4 types of unbalanced sitting posture, and designed 6 monitor motions. We implemented scaling up and down.

## 04 Explorative study



Since our interaction did not require direct physical contact, we built a virtual monitor that simulated the movement of an actuated monitor.

We recruited 4 male and 4 female university students (mean age: 22.87, SD: 2.35) who spend most of their time at their desk in unbalanced sitting posture.

The monitor motions induced participants to change their posture as we expected. They followed the virtual monitor in the order of moving eyes, neck, and back. On the other hand, the duration of maintaining corrected posture varied.

As for our futurework, we will build a full robotic monitor, as the software based interactions would not achieve physicality and the motion range that we found effective.