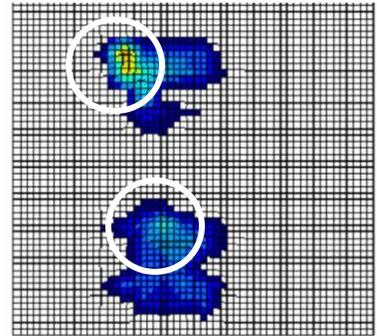




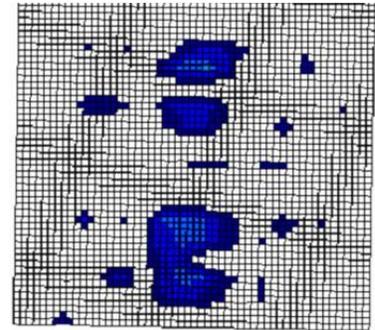
## Approach

After Yaoki's posture evaluation, the Sleepform was set up for him. The Xsensor pressure mapping system was also used to help with the moulding process. This map taken in supine (on his back) before using Sleepform shows the majority of pressure asymmetrically between Yaoki's right shoulder and his sacrum.



This map taken in supine using the Sleepform mattress shows a much more even distribution of pressure.

Yaoki's parents and clinical team also recorded how many times he wakened during the night and how often he had to be re-positioned. Every two months his range of movement was measured, photographs taken, and x-rays monitored the development of his spine.

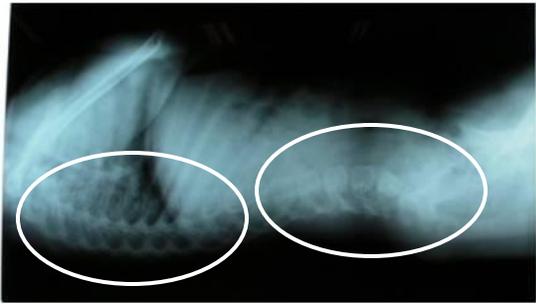


## Outcomes

### Range of movement and measurements of chest and distance between acromion and anterior superior iliac spine

	Start	2 months	4 months	6 months	10 months	12 months
	R / L	R / L	R / L	R / L	R / L	R / L
<b>Hip Ext</b>	-10 <sup>0</sup> -15 <sup>0</sup>	-10 <sup>0</sup> -15 <sup>0</sup>	-5 <sup>0</sup> -15 <sup>0</sup>	-5 <sup>0</sup> -10 <sup>0</sup>	5 <sup>0</sup> 0 <sup>0</sup>	5 <sup>0</sup> 0 <sup>0</sup>
<b>Hip Abd</b>	5 <sup>0</sup> 5 <sup>0</sup>	10 <sup>0</sup> 10 <sup>0</sup>	15 <sup>0</sup> 10 <sup>0</sup>	15 <sup>0</sup> 10 <sup>0</sup>	15 <sup>0</sup> 10 <sup>0</sup>	20 <sup>0</sup> 15 <sup>0</sup>
<b>Xiphoid process to side of trunk (cm)</b>	8 9.5	8.5 9	9 10	10 10	10 10	10.5 10.5
<b>R acromion – R ASIS</b>	30cm	30cm	30cm	30cm	32cm	32.5cm
<b>L acromion – L ASIS</b>	28cm	28.5cm	29cm	30cm	32cm	32.5cm
<b>R acromion – L ASIS</b>	36cm	36cm	36cm	36cm	39cm	40cm
<b>L acromion – R ASIS</b>	35cm	35.5cm	35.5cm	36cm	39cm	40cm

## X-Rays



At 2 months post-intervention, the excessive curves of the thoracic and lumbar regions can be seen.

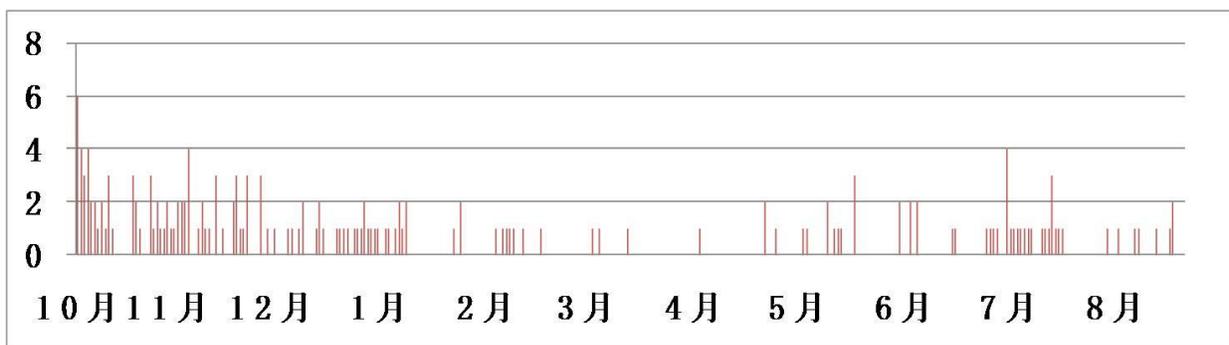


Ten months later this is less marked, particularly in the lumbar region.



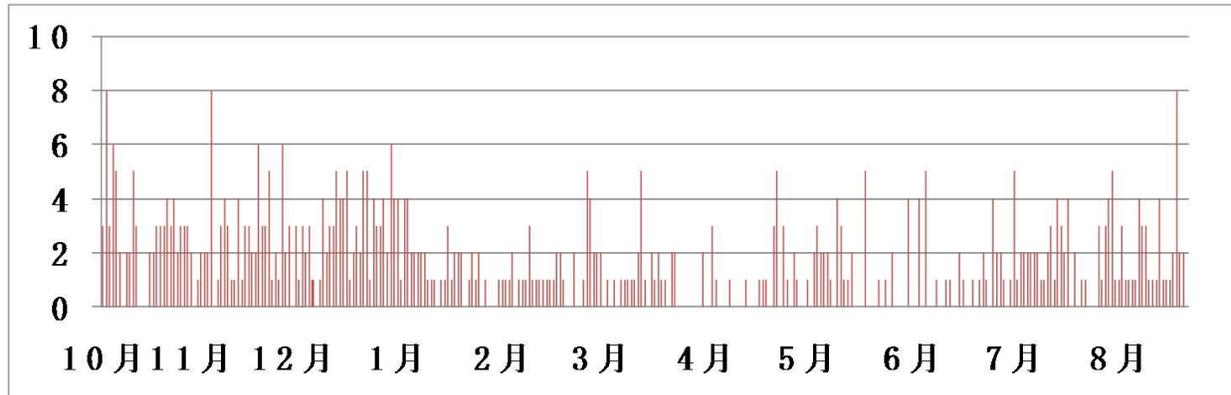
At 12 months post-intervention, the change in spinal shape is sustained.

## Frequency of position changes during night from 10pm to 8am



The graph shows a downward trend in the number of occasions that Yaoki needs repositioned. There have been many nights where, he has not needed to be readjusted at all, especially between the hours of 1am and 7am, indicating better duration and therefore quality of sleep.

## Frequency of waking at night between 10pm and 8am



Again, the graph shows a downward trend in the frequency of waking, with many nights having no waking or only one waking episode.

## Conclusions from the Japanese team

- Sleepform can adapt with changing postures and changing body shape to continuously manage overall posture
- Yaoki is able to hold a supine position for longer than before, *even without Sleepform*
- Sleepform improved Yaoki's posture
- His tone is reduced, enabling him to sleep for longer
- His parents slept more too



At the start

2 months

4 months 6 months

8 months 10 months



12 months