

May 2, 2024

## Pressure Mapping Study

### Introduction

Three foams were tested for a comparative pressure mapping analysis. A slow-recovery memory foam (viscoelastic) material was tested against PrimePad® and PrimePad® Plus at a 1” thickness on top of a very firm surface. Measurements were taken in the dorsal supine position with focus on the region of the body from buttocks to shoulder.

The variables of interest within this study are the peak pressure and total contact area experienced by the test subject. All pressure mapping images and data were obtained by averaging several frames over the span of a 30 seconds. This is to account for minor fluctuations due to breathing, slight movements, etc. All units of pressure were recorded in mmHg with the following pressure legend:

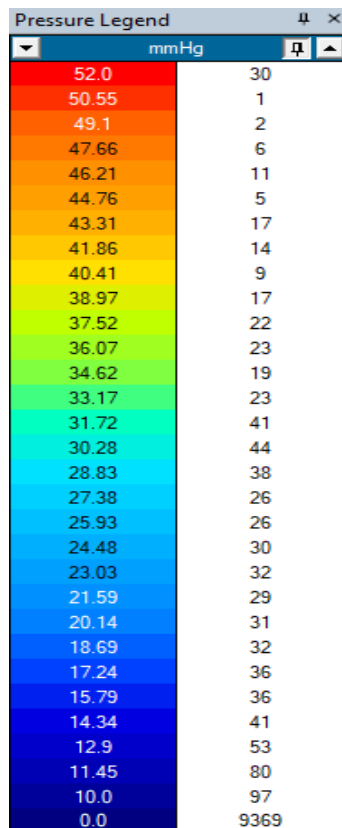
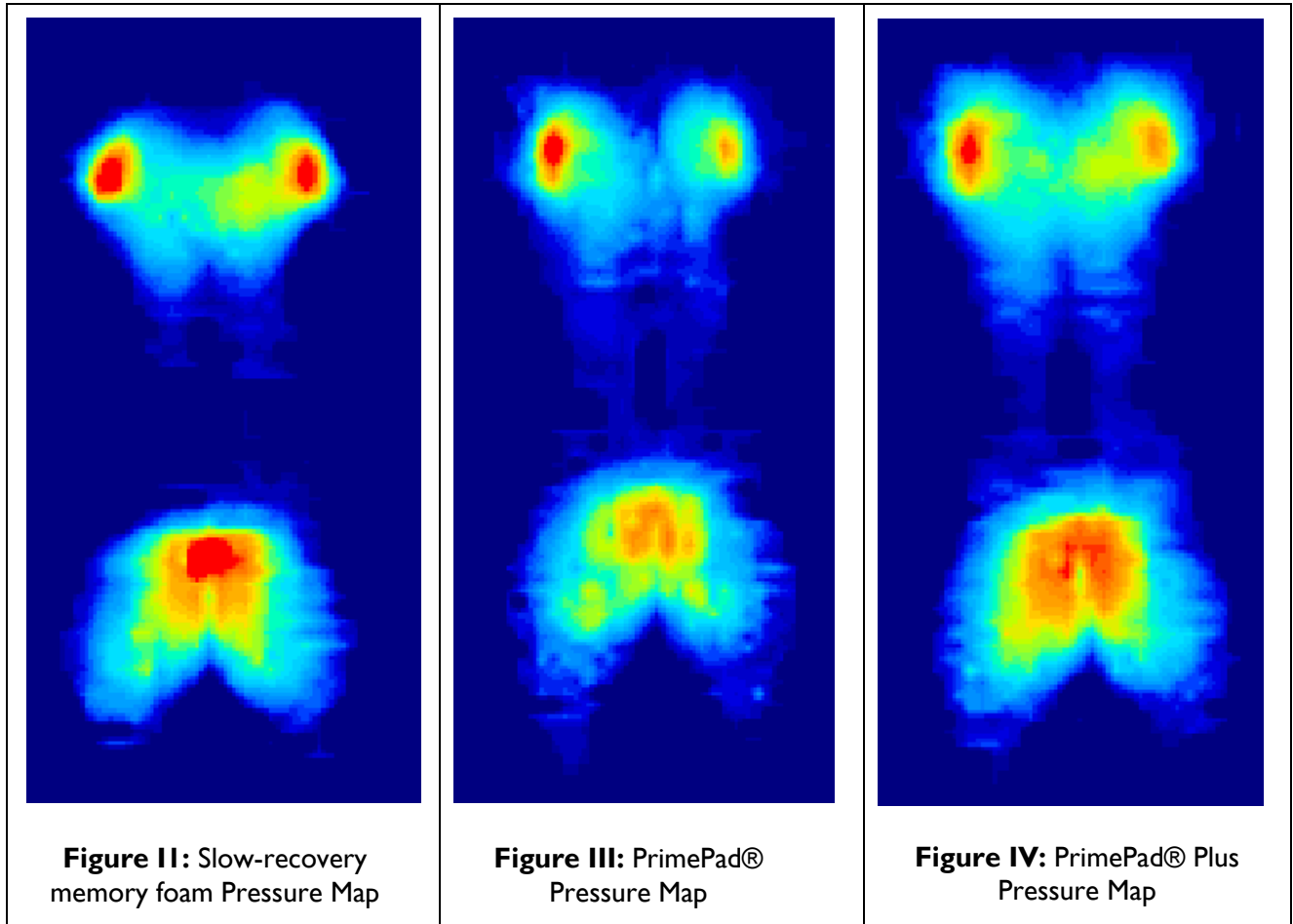


Figure 1: Pressure Legend

## Results



**Table I: Full Region Pressure Results**

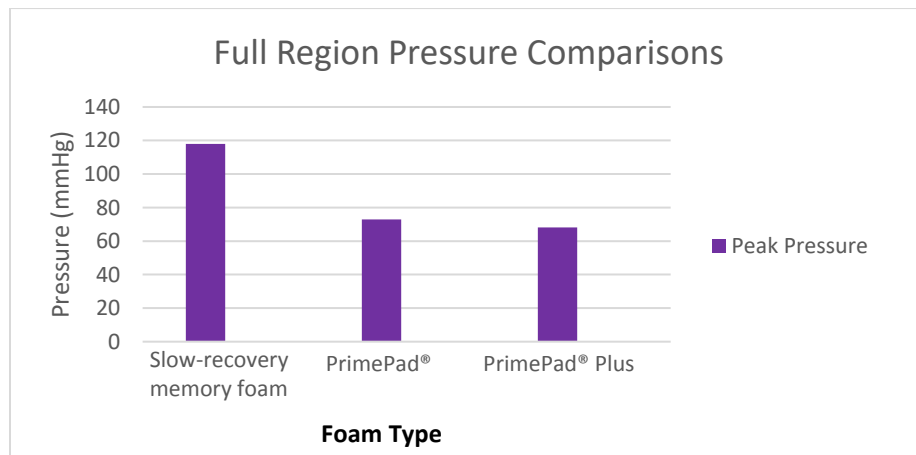
Identification	Peak Pressure (mmHg)	Average Pressure (mmHg)	Contact Area (in <sup>2</sup> )
Figure II Foam	118	24.8	202
PrimePad®	73.0	20.9	280
PrimePad® Plus	68.1	23.6	273

**Table II:** Shoulder Region Pressure Results

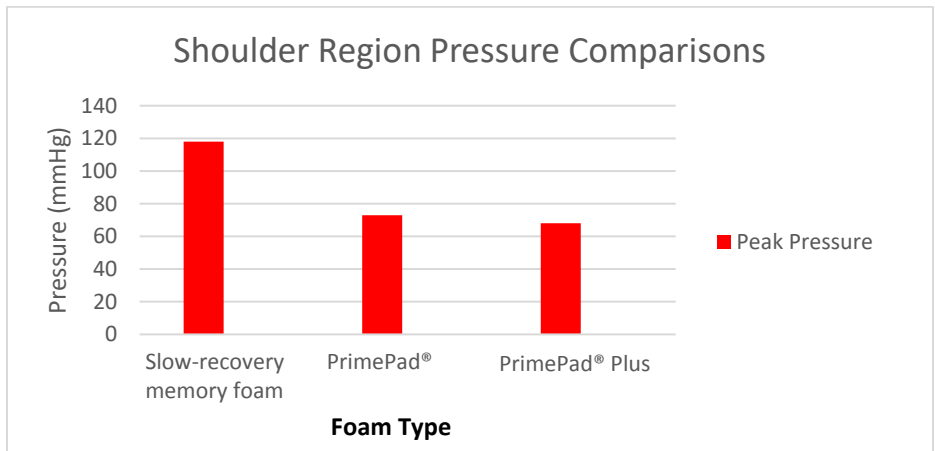
<b>Identification</b>	<b>Peak Pressure (mmHg)</b>	<b>Average Pressure (mmHg)</b>	<b>Contact Area (in<sup>2</sup>)</b>
Figure II Foam	118	23.8	97.2
PrimePad®	73.0	20.9	120
PrimePad® Plus	68.1	24.4	118

**Table III:** Buttocks Region Pressure Results

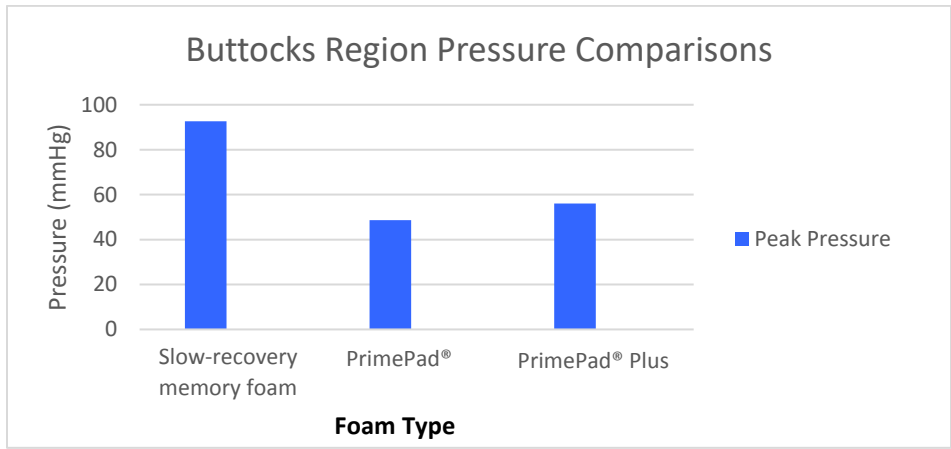
<b>Identification</b>	<b>Peak Pressure (mmHg)</b>	<b>Average Pressure (mmHg)</b>	<b>Contact Area (in<sup>2</sup>)</b>
Figure II Foam	92.7	25.8	104
PrimePad®	48.7	23.1	128
PrimePad® Plus	56.0	25.5	124



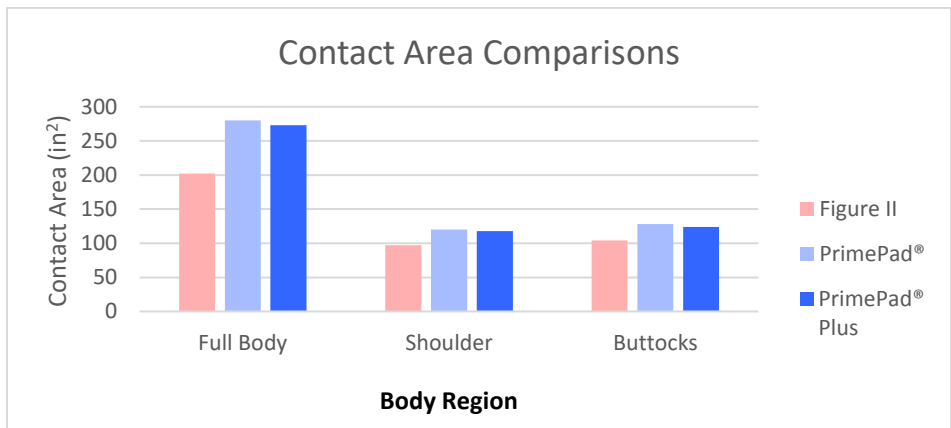
**Figure V:** Graph of Full Body Region Pressure Values



**Figure VI:** Graph of Shoulder Region Pressure Values



**Figure VII:** Graph of Buttocks Region Pressure Values



**Figure VIII:** Graph of Contact Area Values

## **Discussion**

Compared to the slow-recovery memory foam, both PrimePad® and PrimePad® Plus appear to exhibit superior pressure-relieving behavior. In terms of peak pressure, the latter two greatly outperformed the memory foam in all circumstances. Additionally, the contact area of the body on top of PrimePad® and PrimePad® Plus was roughly 20% higher in the shoulder and buttocks regions, indicating more support in those higher-stress areas of the body, and almost 40% higher overall, indicating an increase in lumbar support as evident when comparing Figures II-IV.