

# Pressure Mapping

## GLOVE™ IN-CHAIR SLINGS VERSUS COMPETITOR IN-CHAIR SLING

### BACKGROUND

Pressure mapping is a specialised measurement technology used to measure and visualize the contact pressure distribution between the human body and a supporting surface and equipment interface, e.g. person, chair or sling. Care & Independence commission independent pressure mapping experts to conduct such trials to ascertain sling performance and help identify areas of risk. The subsequent scientific data insight has enabled Care & Independence to develop solutions and vastly improve upon the areas which indicate tissue viability risks, pain or other health concerns to the equipment user.

### TEST STAGE 1

To establish a control map, a baseline test was undertaken with the subject sat clothed direct upon the cushion without a sling. The resulting pressure readings and image capture taken after a period of ten minutes is the control standard against which all the subsequent test results are based.

### TEST STAGE 2

Next, three different sling models were introduced to the test.

All slings tested were of an in-chair style, purposely designed to remain beneath the user for longer periods of time than normally recommended.

Two of the three test slings are divided leg styles, one of which had an aperture. The other in-chair sling is a hammock style design with no aperture.

Each sling was fitted separately and was then left in-situ between subject and cushion. Readings were duly taken at two and ten minute intervals.

### TEST INFORMATION

SUBJECT: Male, 5'6", 82.5kg

MEDICAL CUSHION TYPE: Sumed Integrity® Static High Risk

SLING MODELS TESTED: GLOVE™ Airflow  
GLOVE™ In-Chair Divided Leg  
Competitor In-Chair with divided leg and aperture

TESTER: Sumed International (UK) Ltd

DATE OF TEST: April 2021

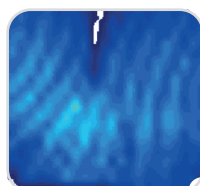


# Results & Conclusions

## SLINGS + INTEGRITY® CUSHION

SUBJECT SAT DIRECT ONTO CUSHION WITH SLING

 2 MINUTE DURATION

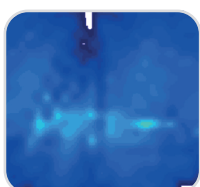


GLOVE™ Airflow

81 mmHg  
PEAK

31 mmHg  
AVERAGE

Fig. 2

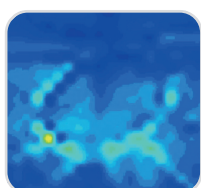


GLOVE™ In-Chair  
Divided Leg

86 mmHg  
PEAK

34 mmHg  
AVERAGE

Fig. 3



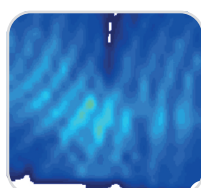
COMPETITOR  
SLING-A

119 mmHg  
PEAK

31 mmHg  
AVERAGE

Fig. 4

 10 MINUTE DURATION

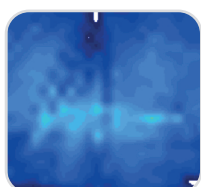


GLOVE™ Airflow

87 mmHg  
PEAK

32 mmHg  
AVERAGE

Fig. 5

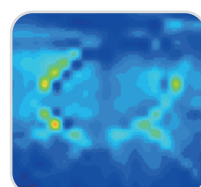


GLOVE™ In-Chair  
Divided Leg

88 mmHg  
PEAK

35 mmHg  
AVERAGE

Fig. 6



COMPETITOR  
SLING-A

125 mmHg  
PEAK

36 mmHg  
AVERAGE

Fig. 7

## BASELINE MAPPING

SUBJECT SAT DIRECT ONTO CUSHION  
WITHOUT SLING

 10 MINUTE DURATION

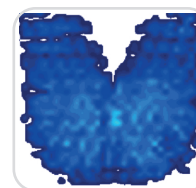


Fig. 1

75 mmHg  
PEAK

30 mmHg  
AVERAGE

### Baseline

The results produced clear low pressure indication as seen by the expanse of blue colouring and low mmHg numbers [Fig. 1]

### GLOVE™ slings

The results for GAIR and GIDL slings [Fig. 2, 3, 5 and 6], show strong low pressure results in the readings; the Average mmHg for both GLOVE™ slings remains essentially static across both time periods and is akin to the Baseline result. Peak pressures are only marginally different across the time intervals. The pressure distribution across the user's posterior is even and consistent.

Whilst there is a slight increase detected against the Peak Baseline mmHg, it doesn't exceed more than 13 mmHg at it's highest figure [Fig. 1 vs Fig. 6 Peak results].

### Competitor Sling

Competitor Sling A results tell a different story. The increase of pressure caused directly by the aperture is clearly evidenced by a ringed outline - even at the 2-minute reading [Fig 4]. This startling aperture marking only continues to intensify with time. [Fig 7], causing increasing discomfort and skin integrity risks to the user. Furthermore, the aperture marking shows an uneven pressure distribution, adding to concerns.

Whilst Average pressure results for Competitor Sling A are not dissimilar to the Baseline or GLOVE™ mmHgs, the **Peak pressure recorded sky-rockets up by 44mmHg at best and 50mmHg at worst** against the Baseline. That equates to 31mmHg worse performance than the result for the GIDL sling which returned the highest Peak of the GLOVE™ slings tested here [Fig. 4 vs Fig. 6].

### Conclusion

The negative impact of having an In-Chair sling with an aperture is scientifically proven; for in-situ use, an aperture severely compromises skin integrity and puts the user at an unnecessary risk of developing pressure ulcers.

For this reason, Care & Independence do not recommend nor manufacture In-Chair style slings with an aperture. **Without an aperture present a user's skin integrity risk remains low. The GAIR and GIDL slings do not impair user comfort and they are not detrimental to a user's skin integrity risk.** Their performance so clearly apparent in these independent tests, surpasses the competitor sling with ease.

\*mmHg stands for millimetres of mercury and is used as a pressure measurement