151

115

78

42

MmHg* scale

5

THE SCIENCE BEHIND SLINGS

Pressure Mapping

GLOVE™ DIAMOND DELUXE (GDDP) HOIST LIFT VS COMPETITOR DELUXE STYLE LEG LIFT

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.

BACKGROUND

When hoisting in a sling, the pressure created at the back of the knee makes it a prime area for high skin integrity risk. When lifted, the sling's hip and leg sections can take up to 90% of of a user's weight - in particular at the edge of the sling which can often 'bite' into the back of the knee where there is less muscle density and skin can be more sensitive. This causes discomfort and increases pressure-related injury risk.

TESTING METHOD

In order to test the pressure at the back of the knee, a specialised pressure pad was placed in between the back of the subject's knee and the leg section of the fitted sling. The subject was then hoisted as normal for a duration of two minutes A reading was taken at the end of the time period whilst the subject was still in the air.

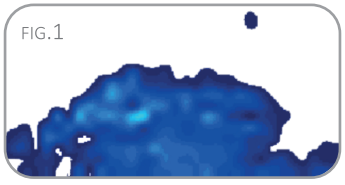
SLING STYLE: Deluxe shape with divided leg and aperture. Same size sling. Same leg loop configuration
1. GLOVE™ Diamond Deluxe Plus (GDDP) 2. Competitor A 3. Competitor B

SUBJECT: Male, 5'6", 82.5kg

DATE OF TEST: April 2021 TESTER: Sumed International (UK) Ltd

RESULTS

FIG.1

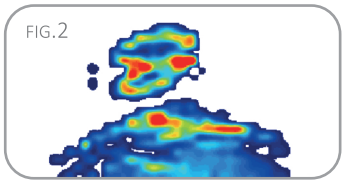


GDDP

2 MINUTES
SUBJECT SAT IN SLING AND HOISTED AS NORMAL

PEAK	75 mmHg
AVERAGE	28 mmHg

FIG.2

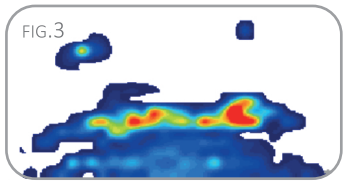


COMPETITOR A

2 MINUTES
SUBJECT SAT IN SLING AND HOISTED AS NORMAL

PEAK	255 mmHg
AVERAGE	57 mmHg

FIG.3



COMPETITOR B

2 MINUTES
SUBJECT SAT IN SLING AND HOISTED AS NORMAL

PEAK	229 mmHg
AVERAGE	45 mmHg

Each of the above image maps captures the pressure at the back of the knee during lifting as if viewed from above. The greater the expanse of blue at the lower end of the mmHg scale, the less the pressure and the lower the skin integrity risk.

The GDDP has a patented binding free leg section which was designed to specifically address lifting pressure issues. As can be seen in Fig.1, the expanse of blue denotes an even and low pressure reading which is further confirmed with the low Peak and Average pressure readings. The GDDP therefore shows no evidence of skin integrity risk.

Conversely, with both Competitor slings [Fig 2 & 3], the intense red markings provide stark verification of the unseen damage which binding and sling edges can cause. The Peak pressure readings for the competitor slings are as remarkable in their high recorded levels as the GDDP is for it's low peak reading. Average pressure performance is also significantly higher in the competitor slings than the GDDP.

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

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