

## **Moldcare cushion provides an extra level of conformity to the neck when required**

(Summary of the Webinar, Introduction Part of “Use of & Experience with Moldcare”)

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My name is Rhydian Powell and I am the Pre-Treatment Lead Radiographer here at the North West Cancer Centre in Derry, Londonderry, Northern Ireland.

In 2020 with us still encountering the random set up errors and technical challenges with the DSPS, we took the decision to move away from using it routinely for our radical head and neck work and started to use a standard, 5 -point thermoplastic shell in conjunction with 1 of 3 carbon fibre head rests with the head rests being assessed for degree of conformity to the neck at CT Sim and the best fit chosen.

Although this system proved to be quicker and easier to manufacture, a review of the set up errors again showed limitation with best fit not always being sufficient and similar issues with random set up errors were still being seen. A particular issue we identified was that the head rest would not always conform completely to the neck and skull with gaps often being seen between the head rest and the superior part of the skull, and, with this in mind, we looked to find a way to improve and personalise the shell and head rest fit to a greater degree.

In 2021, having previously used **Moldcare** cushions in my last role, we started to trial their use here at the NWCC to see if they would improve head rest fit and conformity having moved to our 3rd generation of head and neck immobilisation and collected a significant amount of data around set up error over the last few years, we also decided to design a study to assess the 3 systems to determine if any were superior to the others.

To do this we selected 10 patients from each of the immobilisation systems and analysed a total of 1033 CBCT images, calculating the mean translational and rotational set up errors for each patient, followed by the population systemic and random errors for each of the 3 systems. Statistical analysis showed that set up errors were very similar across the 3 types of immobilisation systems with only with only a small difference being seen in terms of pitch correction. This was, in fact, less than 1 degree and in practical terms made no real difference to set up accuracy and all 3 systems provided a high degree of set up accuracy and reproducibility.

The team felt that the standard head rest and 5 point BDS's were quick and easy to manufacture and use. It's well tolerated and accommodates the majority of our patients but the addition of a **Moldcare cushion provides an extra level of conformity to the neck when required. Moldcare was considered to be quick and easy to incorporate into the 5 point head and neck system and is now used routinely** whenever the 3 standard head rests do not offer the required amount of stability and conformity.

\*The contents of this document are based on the webinar "Use of & Experience with Moldcare" held on 22<sup>nd</sup> May 2023.

For more information, please refer to the original video below.

<https://vimeo.com/manage/videos/854486090>