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Material makeovers of asthma inhalers: A medical application of craft practice

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The health service has problems with patients not using their inhaler devices, his non- adherence / non – compliance needs to be identified and improved.

“Non-adherence, in any class of therapy, is known to be a huge burden on the current healthcare system costs, with an estimated \$100 billion being lost every year in the US alone due to this issue. It is estimated that from 16 to 50% of patients with asthma do not comply with their medications.”

Compliance to medical intervention is not only dictated by the patient but often also influenced by aspects of practicality, aesthetics and public perception with users often feeling conscientious or embarrassed with their use e.g. asthma inhaler, insulin pen, hearing aid.

These devices need to be redesigned in order to increase the likelihood that they will be carried and used.

Approaching this dilemma as a jeweler, who mainly works with accessories for the body, I view medical devices in the same category as jewellery, as an accessory, and as potential ornamentation for the body. In this paper I will discuss my approach to the material makeover of asthma inhalers, using rapid prototyping. More broadly, the paper asks where the craftsperson can locate their practices in the medical or pharmaceutical industries.

How can craft processes be used to make medical devices more appealing to their users? How can craft processes enable the personalization of medical devices? Would users be more likely to carry and use their medical devices if they were redesigned as fashionable wearables, using rapid prototyping? How might a craftsperson approach these challenges using rapid prototyping?

This study has found that, rather than redesigning the medical device, the most cost effective was to achieve these roles is to craft personalized cases. Cases can also be exchanged, in order to adapt the style of the medical device to suit a range of activities, or to compliment other wearables. Using rapid prototyping technologies, a range of inhaler covers were designed for a variety of adult and child users. Through questionnaire feedback users expressed equal preferences for a yellow cover with an animal' bunny' shape and a golden cover with evenly distributed holes. The third most popular cover had an attachment for a carabineer hock.