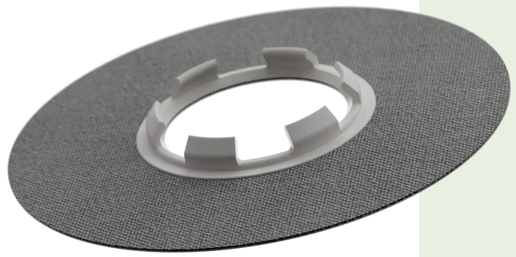
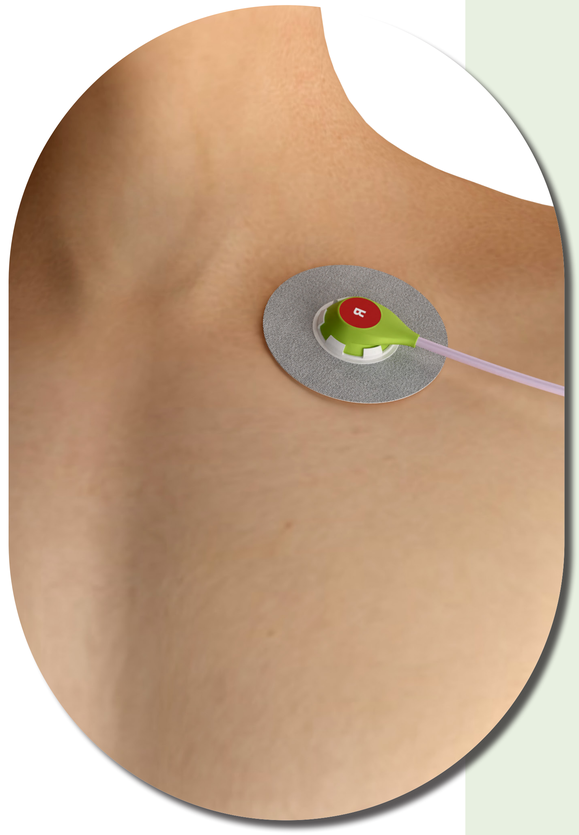


RELEAD

Rethinking ECG-lead sets to Reduce environmental impact



Project Context

This graduation project, focussed on the environmental impact of the ECG-lead sets used at Erasmus Medical Centre (EMC). It explores how circular design techniques can help create a more sustainable healthcare system. The project set out to redesign ECG-lead sets using an evidence-based and context-specific methodology, in order to evaluate theoretical sustainability strategies and their actual implications

ReLead connector & electrode

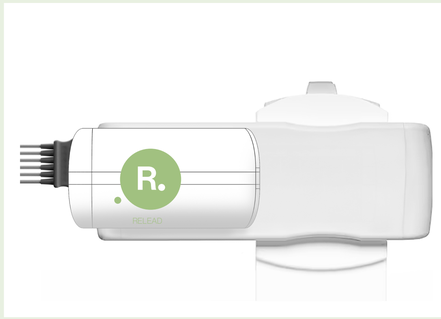
To keep valuable materials in the loop, ReLead presents a new approach for the signal connection to the patient. By transferring the connection point, from the single-use electrode, to the reusable cable. The value of the conductive materials is kept in the loop of the ReLead ECG-lead set, whereas before these materials would go to waste after each use. To achieve this, the lead connector was redesigned to incorporate a so-called dry electrode. This electrode is made of stainless steel and is housed in a new type of lead connector. The new electrode patch, is designed to purely hold the lead connector in place.

ReLead track & trace

The traceability system was identified to be relevant to make an impact on the efficient use of the multiple ECG-lead sets in the hospital. ReLead track & trace gives insight in the currently lacking visibility of the real use of the product. The ReLead track & trace adapter, RFID technology and digital platform, complements the system and generate additional value.

ReLead repair by design

The last, main design feature, is an approach to the design that allows the product lifetime to be extended. ReLead makes it possible for the ECG-lead set to be repaired by the manufacturer. The computer connector can be easily screwed open, and each individual lead can be replaced. The design thrives to maintains the same product quality, whilst making this possible.



Conclusion

The project shows that achieving sustainability in healthcare calls for more than just technical solutions; it also calls for a thorough comprehension of user behavior, systemic obstacles, and collaborative design. This project not only produced a validated product design but also served as a model for rethinking other disposable medical devices by integrating circular principles into a practical clinical setting. It serves as an example of how contextual research and co-creation can result in significant, scalable solutions for the shift to a circular healthcare system.

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Rewiring for Sustainability
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