RightLoad: Cast Load Monitoring System to Speed Up Recovery

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Project's Goals: During the healing process of a patient with a broken leg the doctor instructs him to put a certain load on his leg. This load is translated by the doctor to weight. The purpose of that instruction is to improve the healing process and decrease the healing time. The specific amount of load is critical and can change during the healing period. Furthermore, too much load can cause irreversible damage. This project's main goal is to develop a device that connects to the cast and guides the patient how to put the right amount of load on his leg. Procedures Used: The system we developed consists of three main components: a smart sandal, a user interface and a vibration motor for providing sensory feedback to the patient. We used a number of load sensors located strategically along the sole, in order to measure the load exerted on the foot in the most accurate way. The system is wirelessly connected to a computer or application, and both the patient and the doctor can track the patient's progress. Results Our product connects externally and comfortably to a cast of a broken leg and the system can be reused. It has been effectively tested on healthy participants. Conclusion: Our product answers a known medical need, the system is effective, simple, smart, easy to apply and remove, cheap to produce and reusable so a price tag is not relevant. Our ultimate goal is that the system will be temporarily given to the patient to shorten the healing period, and once healed, the system will be returned and used by other patience. RightLoad will help more than 600,000 people a year just in the U.S.A, to shorten their healing period and return to their normal routine faster.