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הפקולטה להנדסה ע"ש איבי ואלדר פליישמן אוניברסיטת תל-אביב

Rheumatoid Arthritis Monitoring Assistant

Project number: 18-1-1-1749

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ביומדטק התכנית לפיתוח טכנולוגיות רפואיות פורצות דרך
אוניברסיטת תל אביב

Introduction

BioMedTech is an entrepreneur program, in which teams of students from different faculties develop engineering solutions for medical problems.
Our team focused on the development of a reliable way of measuring and monitoring symptoms of Rheumatoid Arthritis (RA) disease in patients, so pharma companies could use this data for clinical trials.

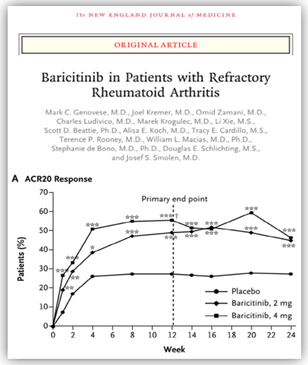
Clinical Background

Nearly 1% of the USA population deals with RA, mostly women. It reduces life expectancy by 3-12 years, and affects patients' quality of life who suffer from inflamed joints. (inflammations express in pain, swollenness, redness etc).

Unmet Need

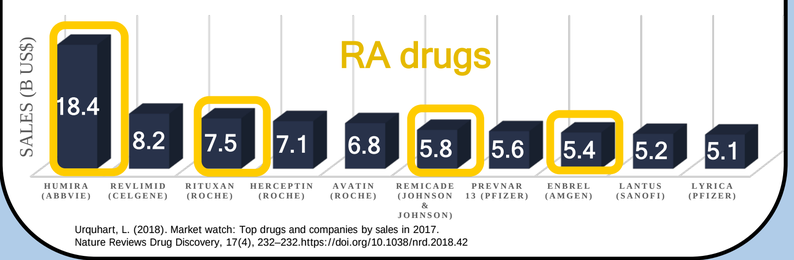
Objective, Accurate & Continuous monitoring device for Rheumatoid Arthritis

In order to approve a new RA medicine, the Pharma companies use subjective and inaccurate methods (ACR20) for monitoring patients' symptoms and disease progress. Our device is designed to provide objective, accurate and continues data, to be used by pharma companies in clinical trials, to check the effectiveness of new RA drugs.



The Market

The RA market has a CAGR of 12%, and is evaluated to get to 30B$ by 2019. Some of the most profitable medications in 2017 were RA medications.



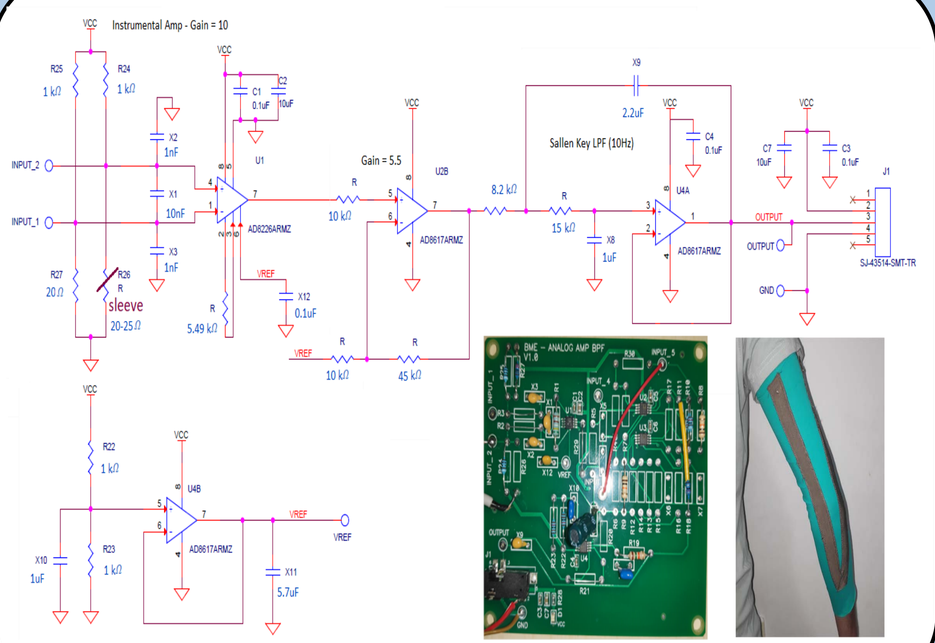
Urquhart, L. (2018). Market watch: Top drugs and companies by sales in 2017. Nature Reviews Drug Discovery, 17(4), 232–232.https://doi.org/10.1038/nrd.2018.42

Proposed Solution

Multifactorial monitor system

Symptoms measurement	Function measurement
Hand & Leg Band	Phone app

Range of motion	Swelling	Temperature	Keyboard use	Padding & Holding	Physical activity



Prototype

Range of motion measurement by using the changing impedance of a conductive fabric attached on a sleeve.