

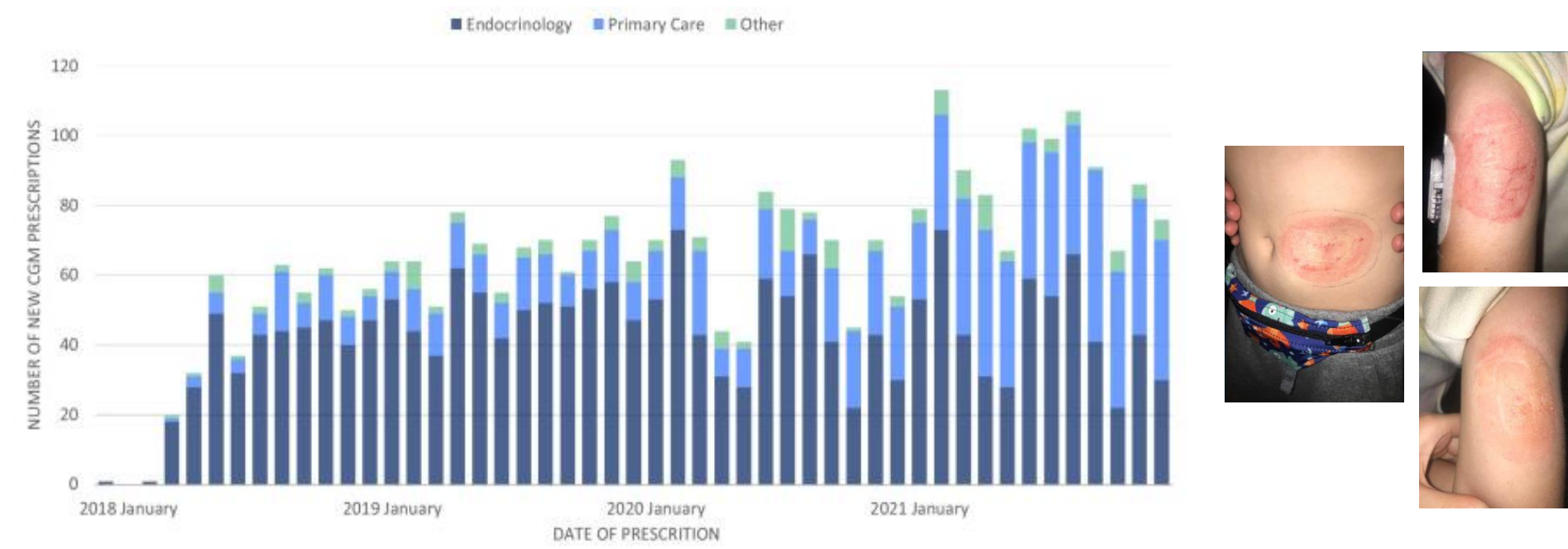
GlucGuard: A Non-Irritating CGM Adhesive

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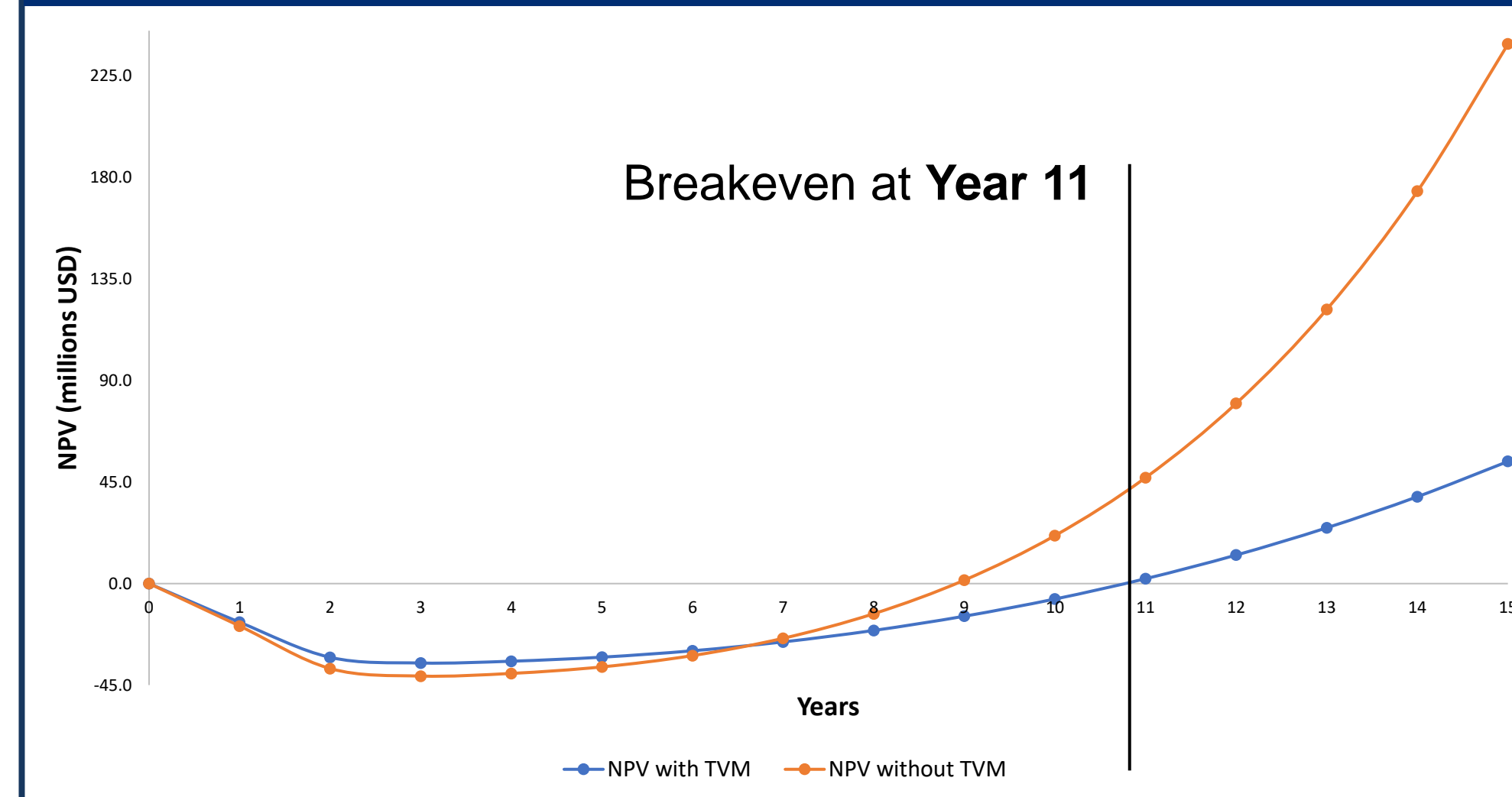
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Motivation¹

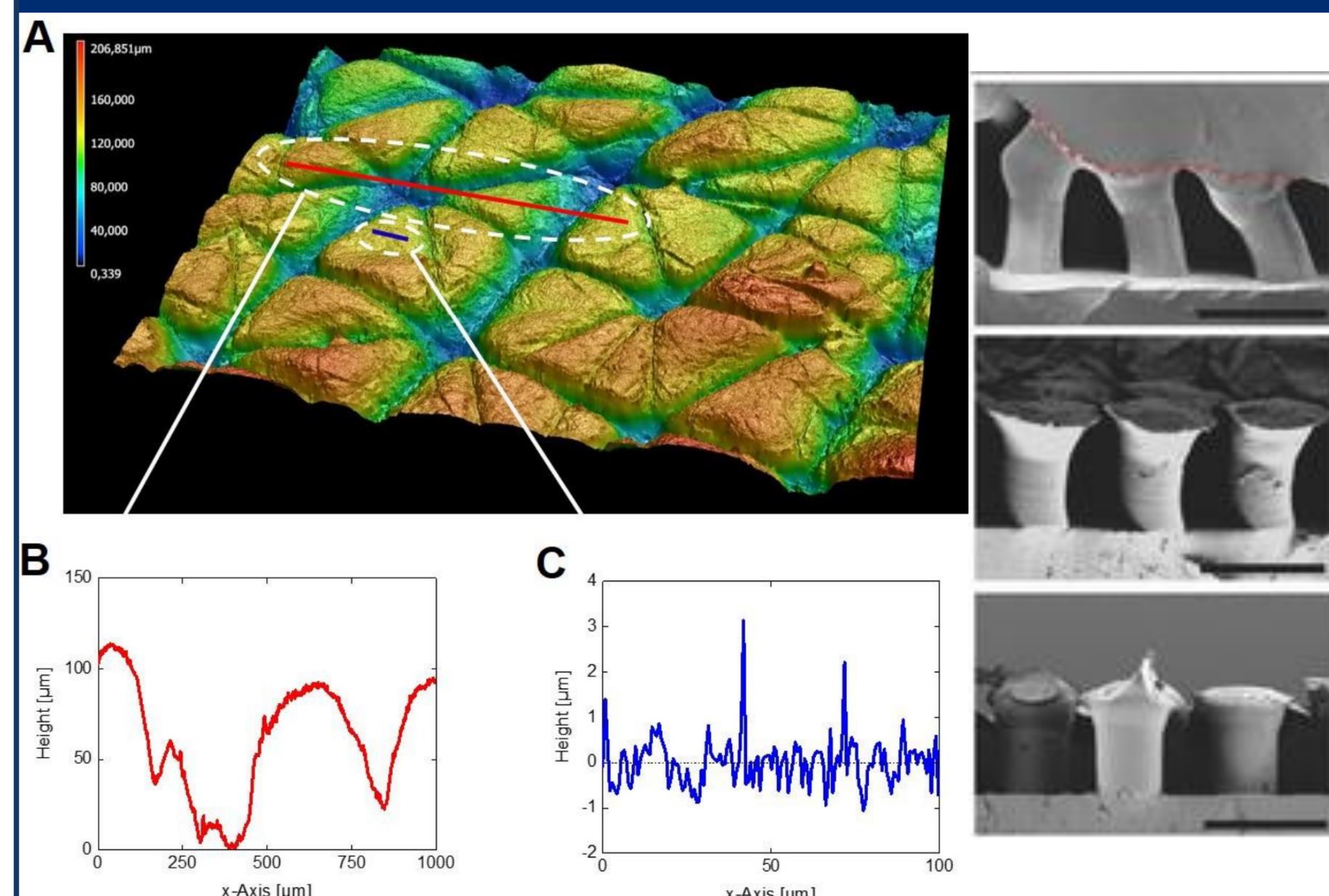
Continuous Glucose Monitor (CGM) usage is on the rise, and as use increases, so too have instances of rash and allergic reactions caused by CGM adhesives. This is challenging for families with children with Type 1 diabetes. We present GlucoGuard, a non-irritating CGM adhesive composed of a polydimethylsiloxane backing and polyvinylsiloxane-functionalized micropillars.



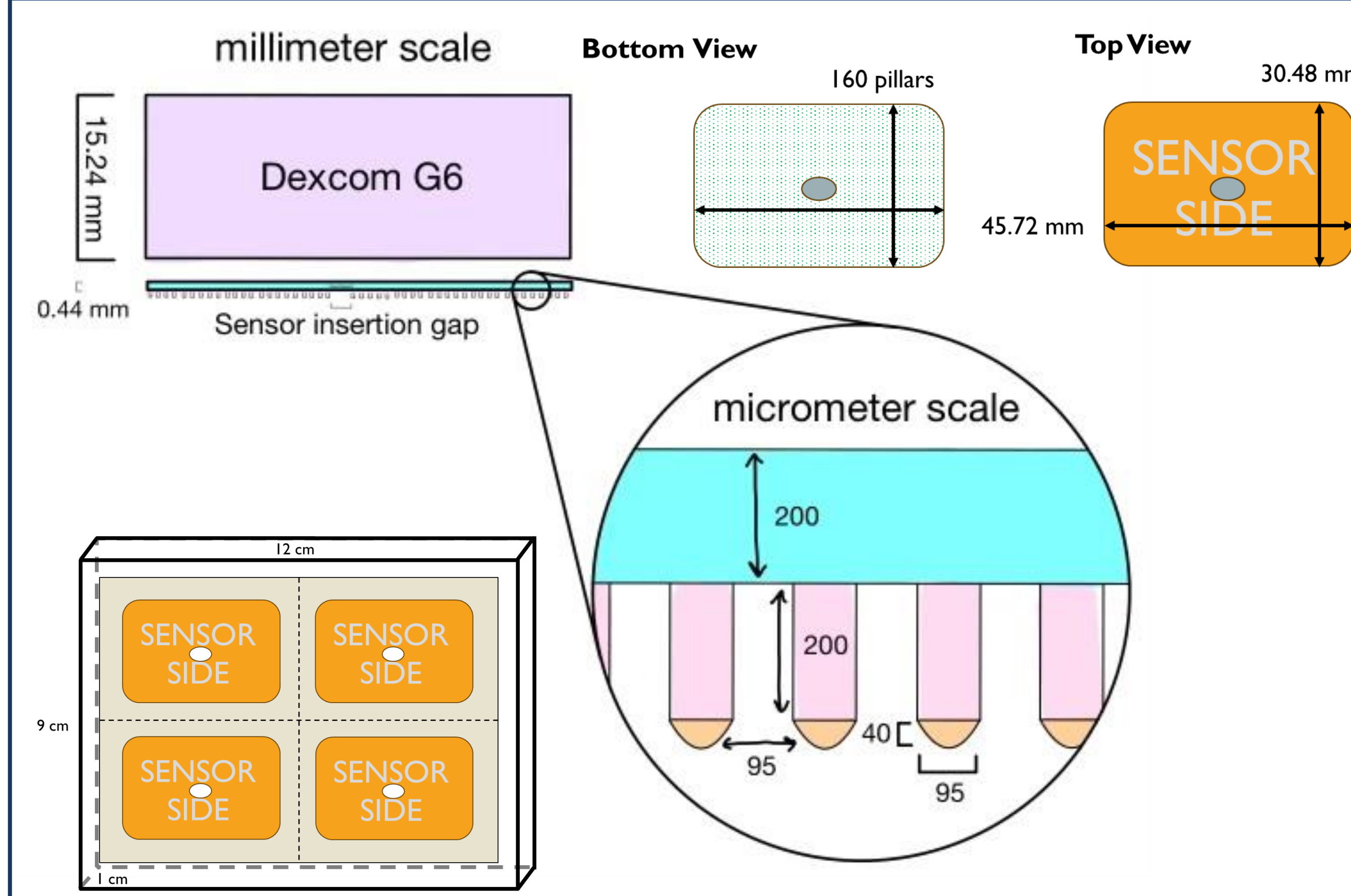
Economics



Skin Topography & GlucoGuard's Solution²



Product Design



Product Comparison

	Sensor Hole in Center	Patented Technology	For Sensitive Skin	Underlay Patch	Lasts for 10 Days	Adhesive Comes on Patch	Reusable
GlucGuard	✓	✓	✓	✓	✓	✓	✗
ExpressionMed	✗	✓	✓	✓	✓	✓	✗
Skin Grip	✓	✗	✓	✓	✓	✗	✓
Stick2Hope	✗	✗	✓	✓	✓	✓	✗
Pump Peelz	✗	✗	✓	✗	✓	✓	✗

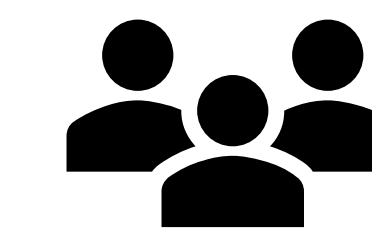
Conclusions⁴

Dexcom G6 enables users to ...

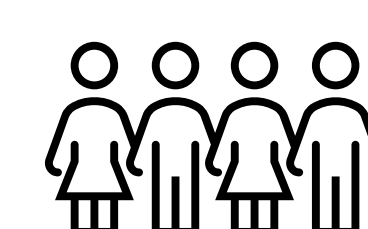
- Avoid fingersticks
- Lower A1C
- Alert users of blood glucose highs and lows
- Connect with continuous subcutaneous insulin infusion devices, doctors, family, and friends

However, the Dexcom G6 adhesive often leads to **skin reactions**. Take control of diabetes management and protect your child's skin with **GlucGuard**, an adhesive patch created to **protect sensitive skin** from irritating Dexcom G6 adhesives.

Future Directions

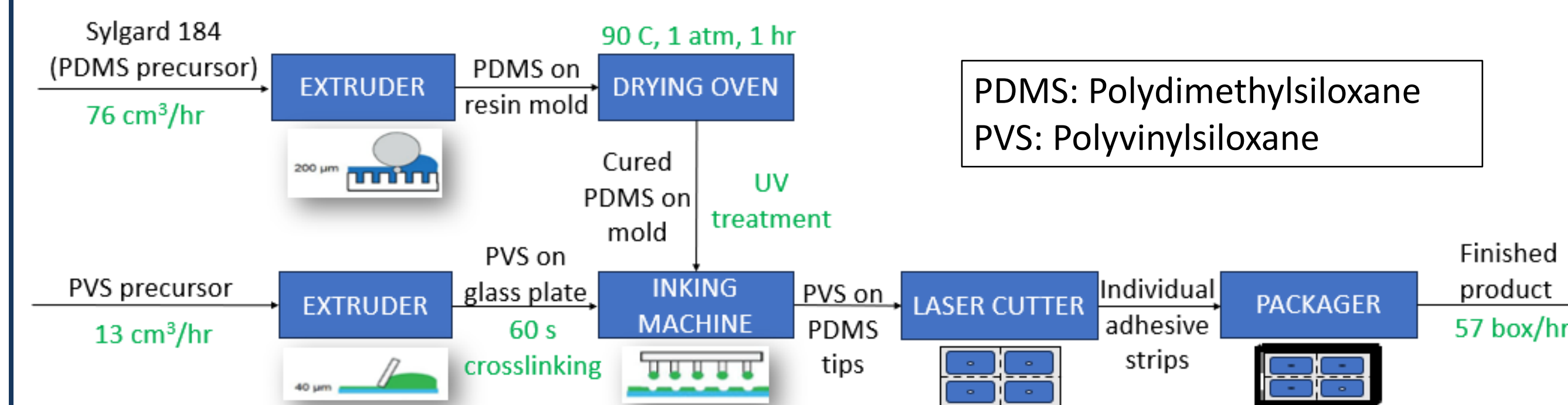


Adult Type 1 diabetic CGM users



Child and Adult Type 2 diabetic CGM users

Manufacturing Overview²



Kinetic Modeling³

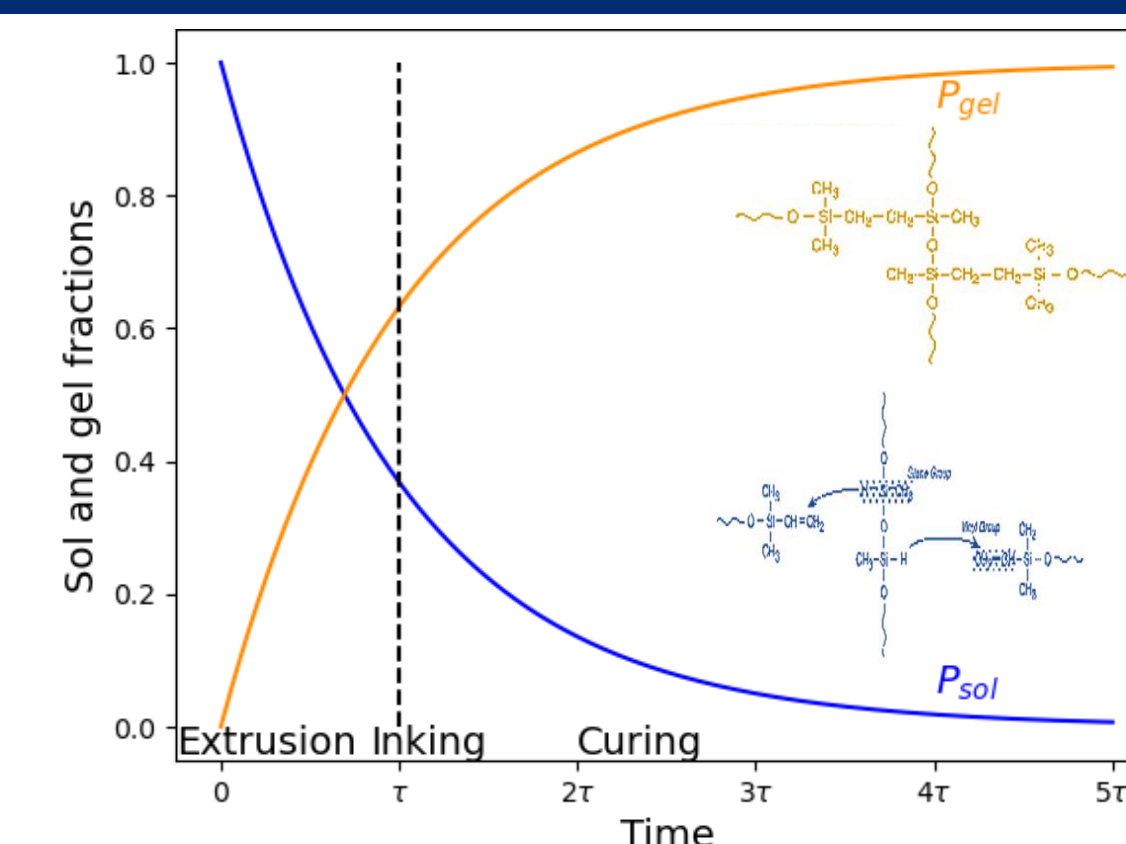
$$\frac{\partial P_{sol}}{\partial t} = -kP_{sol}C_i = -k_{eff}P_{sol}; \quad P_{sol}(t=0s) = 1$$

$$P_{sol} = \exp(-k_{eff}t)$$

$$\text{Let } \tau = \frac{1}{k_{eff}} = 60 \text{ s}$$

$$P_{gel} = 1 - P_{sol} = 1 - \exp\left(\frac{-t}{60s}\right)$$

Assume PVS solution is at gelation point p_c at $t=0$.



Acknowledgements

We would like to thank our course instructor and mentor, **Dr. Lilian Josephson**, for her knowledge and continued support as we developed GlucoGuard this semester. We would also like to thank course instructor **Stephen Farias**, as well as teaching assistants **Ashley Tang** and **Chris Acha**, for their insights and feedback. We appreciate the encouragement throughout the semester.

References

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