

A plan you have been working on for a long time is beginning to take shape.



press release

Novo Nordisk plans first global launch of connected insulin pens and announces key digital health partnerships

Bagsværd, Denmark, 1 October 2018 – Novo Nordisk today announced plans to make the durable, connected insulin pens NovoPen® 6 and NovoPen Echo® Plus commercially available across key markets commencing in early 2019. In parallel, to support the future integration of its connected pens with broader digital health solutions, Novo Nordisk has signed new partnership agreements with leading diabetes technology companies that share Novo Nordisk's vision to improve the lives of people with diabetes: **Dexcom**, **Glooko** and **Roche**.

2018-2019 Innovation Challenge

This challenge is seeking solutions that address one or a combination of the following needs of people living with diabetes:



DATA SHARING

How might we combine pen injector data with other relevant health data to incentivize and enable patients to actively collect, manage and share their health data with their physician or caregiver?



TITRATION

How might we optimize medicine titration and treatment decisions for people living with diabetes?



DIALOGUE

How might we support the patient and provider dialogue in, and between, clinical visits to improve treatment and care?



HEALTH INSIGHTS

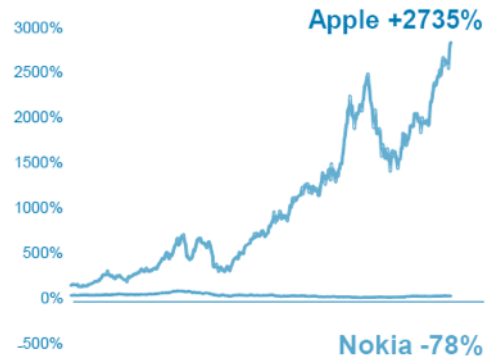
How might we combine pen injector data with other relevant health data to develop actionable population health insights, targeted treatment care plans and novel business models that support improved care and outcomes?

<http://novonordisk.innovationchallenge.com>

Pharma needs to evolve ahead of oncoming disruption

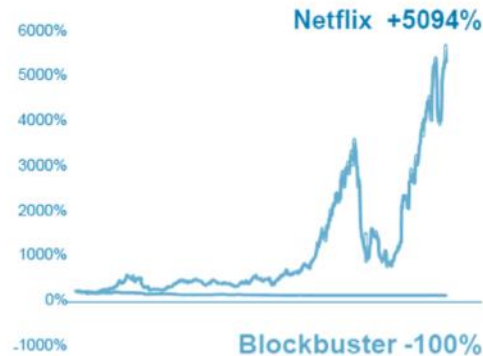
Mobile Phone

“They will be a niche player, like they are in computers”



Video Entertainment

“Why should we put shareholder money at risk in a market that's +5 years out? They are not even on the competitive radar screen.”



Media Retail

“Technology will not replace the fact that you can come into our stores and there is someone knowledgeable about books.”





Digital Health in diabetes

**Today, more than 425 million
people have diabetes**

**And by 2045, 736 million people
will have diabetes globally**

TODAY, 425 MILLION PEOPLE HAVE DIABETES.¹
BY 2045, IT IS ESTIMATED THAT

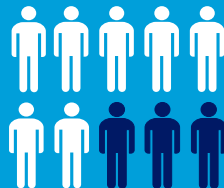
736 MILLION

PEOPLE WILL HAVE DIABETES GLOBALLY²



1 IN 2

PEOPLE WITH TYPE 2 DIABETES DO
NOT KNOW THEY HAVE IT¹



7 in 10

PEOPLE WITH DIABETES DO NOT ACHIEVE
DESIRED TREATMENT OUTCOMES³

4 MILLION

DEATHS ARE CAUSED BY DIABETES
ANNUALLY¹





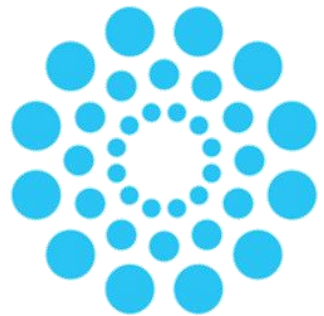
**World Health
Organization**

**“Medicines will not work
if you do not take them”**

**19% increase in
adherence to
glaucoma
medication**

**Improvements in
adherence to asthma
medication from 2% to
22% across multiple
studies**

**Statistically significant
improvement in adherence
to therapies in asthma,
lung disease and epilepsy**



Propeller



**up to
79% fewer
asthma
attacks**



**up to
50% more
doses taken
on schedule**



**up to
50% more
symptom
free days**

A man wearing a brown fedora, a light blue denim jacket over a pink sweater, and brown pants is sitting on a concrete ledge. He has a sad expression, looking down with his hands clasped. The background is a busy city street at night with blurred lights and cars.

**There is not a
single person
who would
choose to have
diabetes**

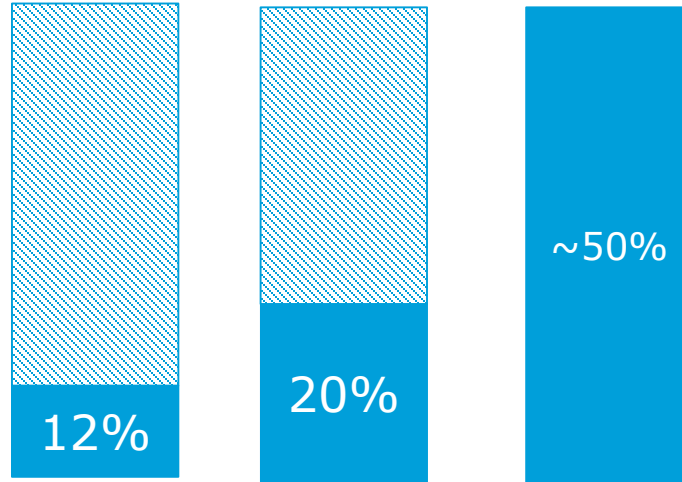


“Increasing the effectiveness of adherence interventions may have a far greater impact on the health of the population than any improvement in specific medical treatments”



Massive opportunity for improvement

% of patients reaching HbA1C < 7%



Real world data studies

Clinical trial

42

Factors That Affect BG

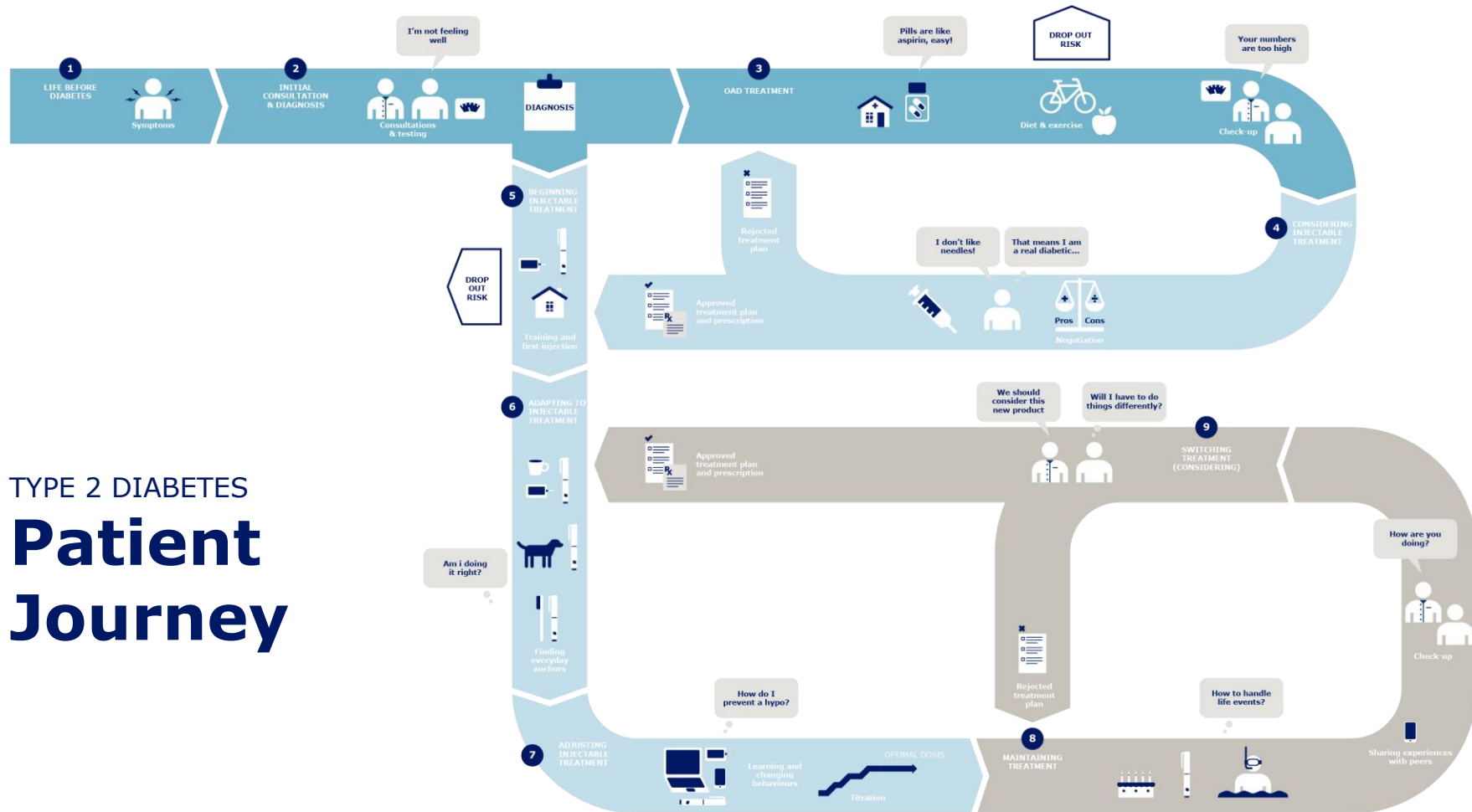
Food	Biological
<ul style="list-style-type: none">↑↑ 1. Carbohydrate quantity→↑ 2. Carbohydrate type→↑ 3. Fat→↑ 4. Protein→↑ 5. Caffeine↓↑ 6. Alcohol↓↑ 7. Meal timing↑ 8. Dehydration? 9. Personal microbiome	<ul style="list-style-type: none">↑ 20. Insufficient sleep↑ 21. Stress and illness↓ 22. Recent hypoglycemia→↑ 23. During-sleep blood sugars↑ 24. Dawn phenomenon↑ 25. Infusion set issues↑ 26. Scar tissue and lipodystrophy↓↓ 27. Intramuscular insulin delivery↑ 28. Allergies↑ 29. A higher glucose level↓↑ 30. Periods (menstruation)↑↑ 31. Puberty↓ 32. Celiac disease↑ 33. Smoking
Medication	Environmental
<ul style="list-style-type: none">→↓ 10. Medication dose↓↑ 11. Medication timing↓↑ 12. Medication interactions↑↑ 13. Steroid administration↑ 14. Niacin (Vitamin B3)	<ul style="list-style-type: none">↑ 34. Expired insulin↑ 35. Inaccurate BG reading↓↑ 36. Outside temperature↑ 37. Sunburn? 38. Altitude
Activity	Behavioral & Decision Making
<ul style="list-style-type: none">→↓ 15. Light exercise↓↑ 16. High-intensity and moderate exercise→↓ 17. Level of fitness/training↓↑ 18. Time of day↓↑ 19. Food and insulin timing	<ul style="list-style-type: none">↓ 39. Frequency of glucose checks↓↑ 40. Default options and choices↓↑ 41. Decision-making biases↓↑ 42. Family relationships and social pressures

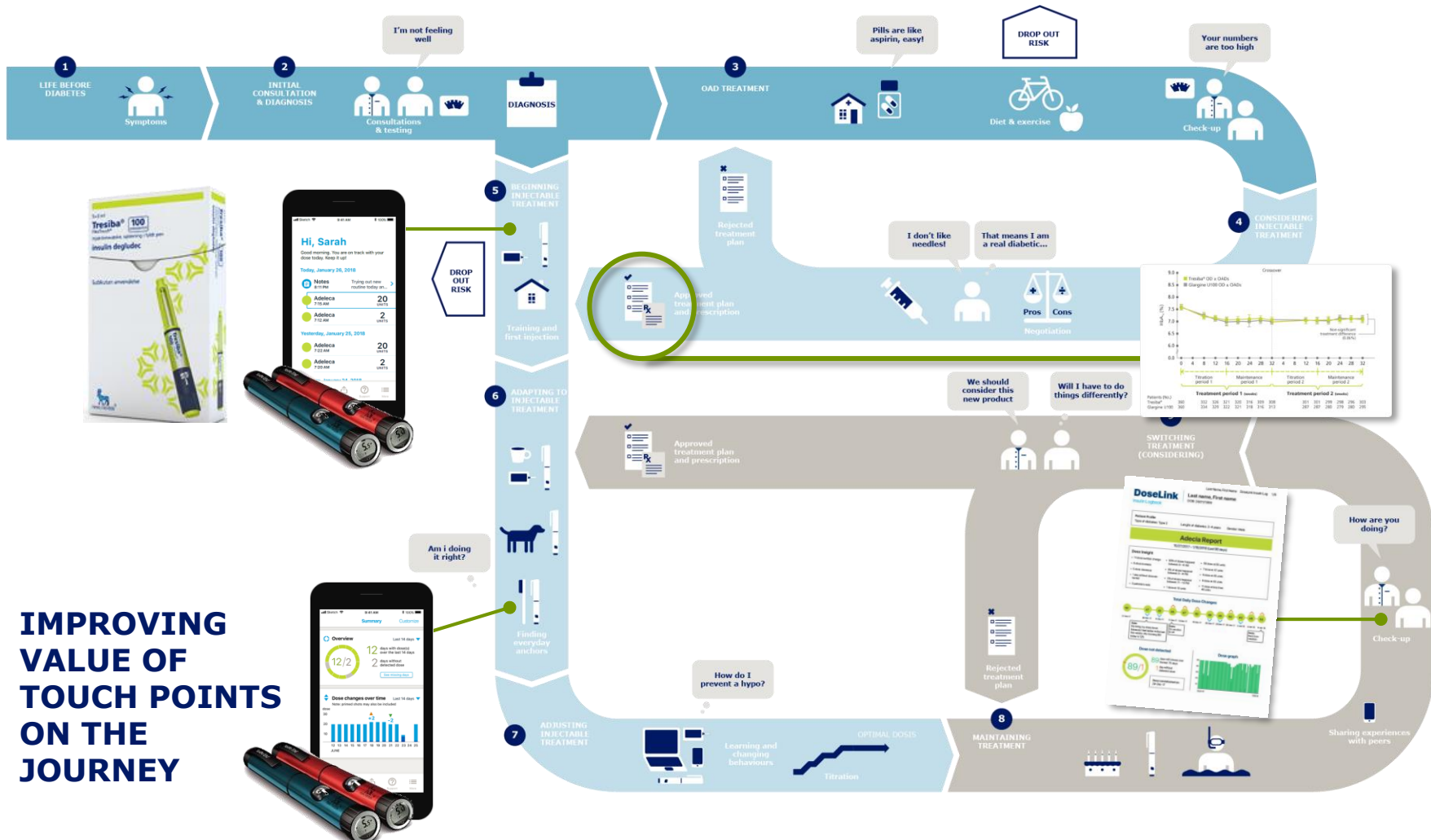


**people don't forget to pick up their
kids from day care**

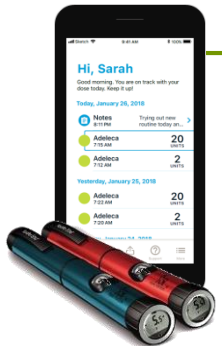



**It's not about
the app, it's
about the
journey**





IMPROVING VALUE OF TOUCH POINTS ON THE JOURNEY



A close-up photograph of a blue square marker with a white number '1' on a steel cable. The marker is weathered and shows signs of rust. The background is a blurred sunset over water, with a steel cable and another marker visible in the distance.

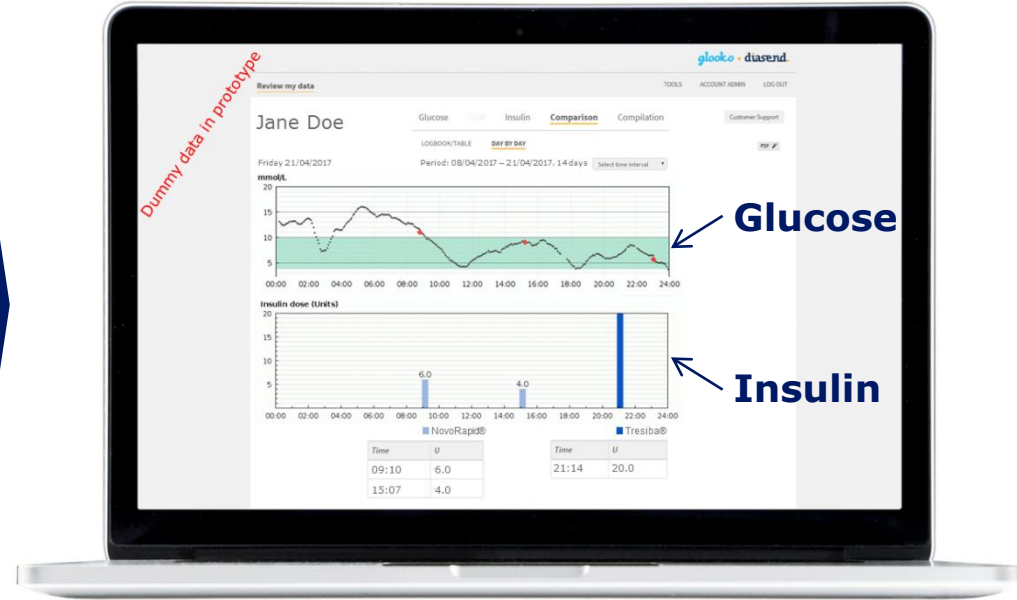
**The
segment
of $n=1$**

DIGITAL HEALTH SOLUTION TO IMPROVE DIALOGUE

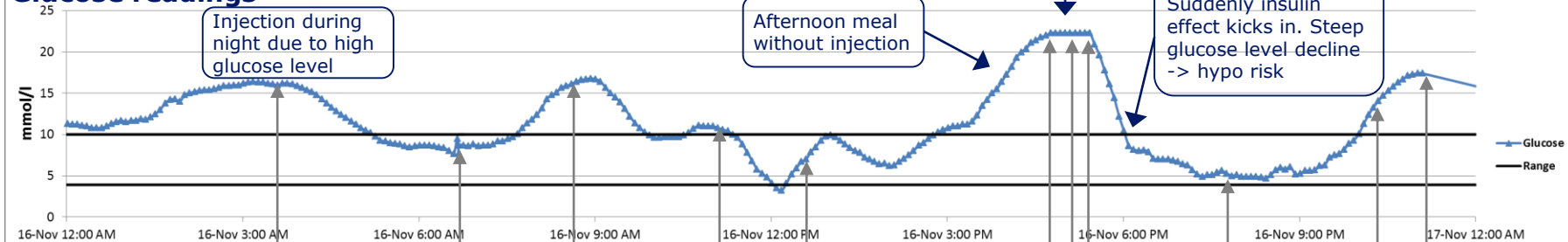
Data download



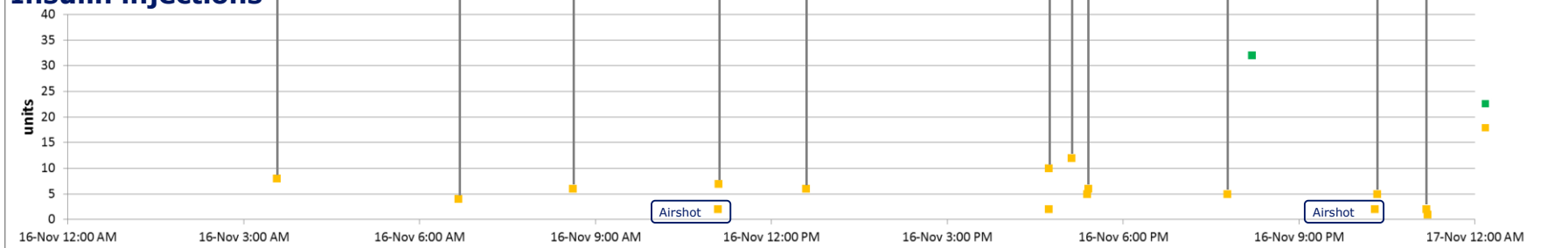
Data visualisation

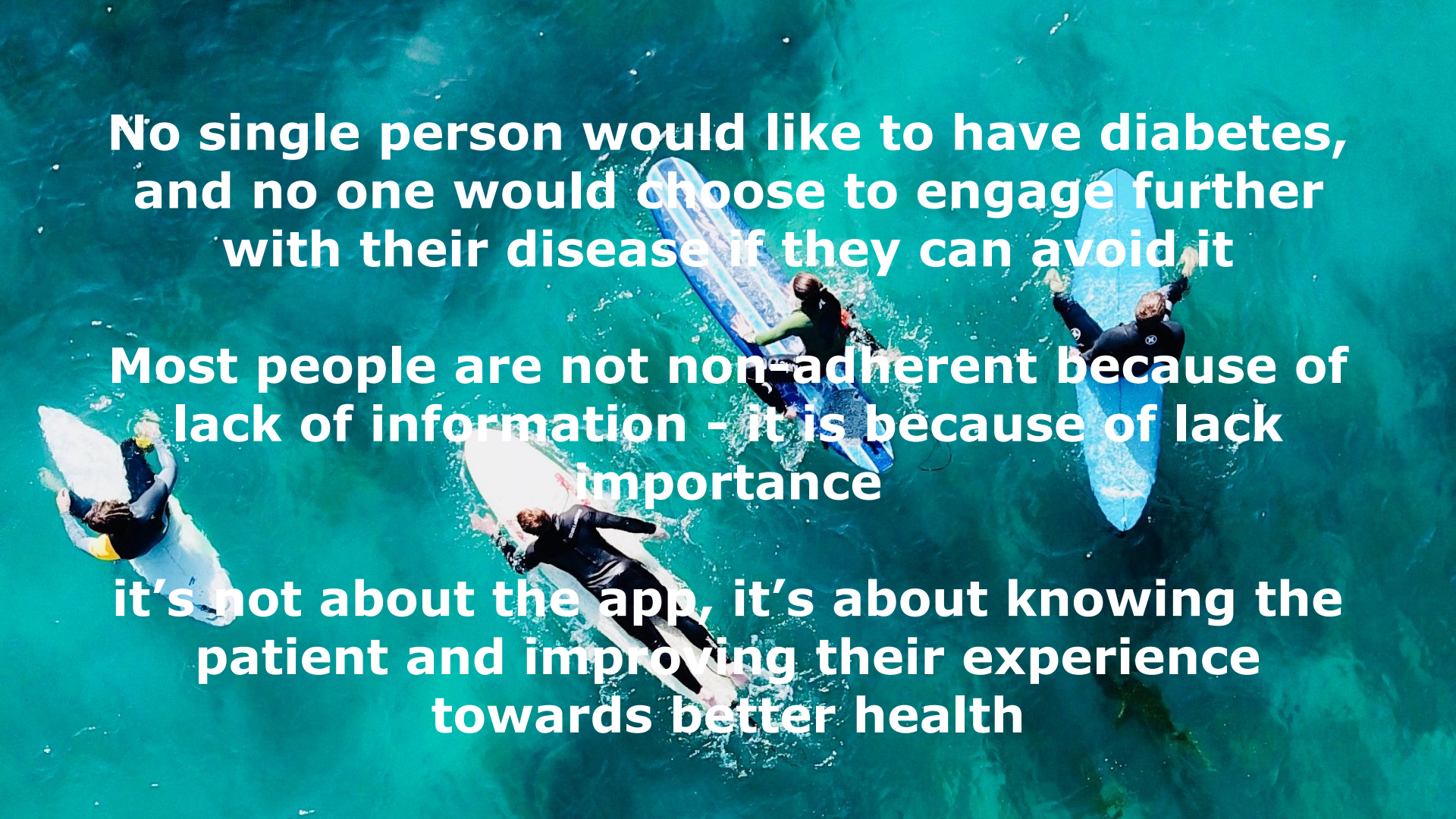


Glucose readings



Insulin injections






**No single person would like to have diabetes,
and no one would choose to engage further
with their disease if they can avoid it**

**Most people are not non-adherent because of
lack of information - it is because of lack
importance**

**it's not about the app, it's about knowing the
patient and improving their experience
towards better health**

A young woman with long dark hair and bangs is shown in profile, blowing a dandelion seed head. The background is dark and out of focus, with several dandelion seeds floating in the air. The text is overlaid on the right side of the image.

*let us start to
design solutions
that let people with
diabetes and other
chronic diseases
decrease the
engagement
needed to
effectively treat
their disease.*