Frequently Asked Questions

1. Vision and mission

Why was Bisu created?

Bisu was created to help build a world where everyone has affordable access to actionable health data at home. We exist to help people know and meet their body's needs, so they can take control of their health and fitness, and live a healthier, happier life. We believe that lab tests should not be the only way to learn deeply about our bodies. We believe that while primary care is crucial, ultimately health happens *between* doctor's visits, and prevention is better than cure. We also want to bring to wellness the same standard of technology and validation that is expected in the medical field – we call this "clinical-grade wellness".

What's special about Bisu's approach?

Bisu brings both new technology and a new experience to at-home testing and personalized nutrition.

Our proprietary "lab-on-a-chip" technology takes urine testing from the stone age of messy and inaccurate test strips, to an easy, accurate addition to your self-care routine. It uses spectrometry and real-time end-to-end measurement to eliminate the measurement timing issues of conventional test strips, enable higher sensitivity to be obtained from conventional reagents, and enable use of new reagents that are not compatible with conventional strips.

Our app provides intelligent, personalized advice, based not only on your test results, but also your goals, age, weight, physical activity, sleep and menstrual cycle. Target intakes are set for each nutrient based on these data and supporting research, and adjusted periodically. Recommended food items are filtered based on your eating style and allergies, and portion sizes can be adjusted to account for any supplements you're taking. You can also scan food items to get feedback on how these might affect your test results. We are also developing features to let you share your journey with someone you trust, like a partner or nutritionist.

2. Product and release

At what stage is Bisu Body Coach at now, and when will it be released?

Bisu Body Coach is currently in beta with a group of testers in the US and EU. We are also working on the setup of our manufacturing line, in preparation for going on sale in 2022.

How much will it cost?

We are in the process of testing different pricing structures, and expect to release further information in 2022.

3. Technology, uniqueness and validation

What is the technology behind Bisu Body Coach?

Microfluidic "lab-on-a-chip" technology is a method of manipulating a sample (such as blood, urine, saliva or sweat) inside tiny channels (using pumps, valves and/or capillary forces) in order to perform a chemical or biological process of some kind. While the technology field as a whole has existed for around 30 years, there are very few products which are both small, accurate, affordable, easy to use and manufacture.

Why test urine and saliva? Why not blood?

We use urine and saliva testing as an easy, painless way to provide regular feedback on actionable indicators of dietary health, not as a replacement for blood testing or a doctor's visit. Different biomarkers are more or less valuable in different samples, depending on the intended application. For instance, testing glucose in blood is without question the gold standard. We would never suggest testing glucose in urine because it has a "false negative" risk – glucose can be absent from urine even when blood glucose is high. However, one of the negatives of blood testing is that nutrient values can be too tightly controlled to reflect dietary intake unless they are abnormally high or low. In the case of electrolytes, urine excretion varies in response to intake, and is often used by nephrologists when assessing kidney function. In the case of a biomarker like cortisol, saliva is the gold standard, not blood. For hydration both urine and blood provide actionable data, but urine is more accessible.

What biomarkers do you test now? Why did you choose them?

Our current test stick tests hydration, sodium, potassium, magnesium, calcium, pH, Vitamin C, uric acid and ketones (BHB and AcAc) - please see our Science page for further details.

Do you plan to release new biomarkers?

For our nutrient test, we plan to add zinc and B vitamins in future. For our other tests, we expect to release our pet health test for cats and dogs soon after our nutrient test. We are also working on other test sticks for saliva cortisol, and a urine test that measures the effect of exercise on the body. We will release further details in due course.

What steps have you taken to validate your technology and claims?

Bisu is committed to validating both our accuracy, recommendations and outcomes - an approach we call "clinical-grade wellness". We are currently preparing for a peer-reviewed accuracy validation study run by former astronaut Prof. Jay Buckey. We have further studies in our validation pipeline which are aimed both at externally validating our recommendation model, and at quantifying health improvements experienced by an average user.

4. Other companies and differentiation

How is Bisu different from Theranos?

The only similarity Bisu has to Theranos is that they both operate in the same broad field of microfluidic "lab-on-a-chip" technology. Otherwise, they are very different.

Theranos	Bisu
No medical experts on advisory board	Dr. Lynda Frassetto MD Dr. Molly Maloof MF
No medical or deep tech investors	Backed by SOSV and QUAD
Tests blood	Tests urine and saliva
Hard to collect enough blood at home	Urine and saliva are easy and painless to collect
Blood requires centrifuging before testing	Urine and saliva don't require centrifuging
Tried to test 100 biomarkers in one system	Tests 11 biomarker at a time
Uses liquid reagents that required cooling	Uses immobilized reagents that do not require cooling
Undisclosed / secretive measurement method	Spectrometry
Focused on disease detection	Focused on nutrition, lifestyle change and prevention
Selling device despite low accuracy	Validating accuracy before going on sale
No vetting by professional bodies	Screened and acknowledged by: •Johnson & Johnson Innovation •MedTech Innovator •US Sports & Fitness Industry Association

How is Bisu different from Cue Health?

What Cue Health has done for at-home disease diagnostics, Bisu is doing for personalized nutrition and wellness. Both companies use microfluidic "lab-on-a-chip" technology in the broad sense, but the sensing approach and compatible biomarkers are somewhat different. Whereas Cue Health is focused on detection of individual biomarkers of high significance (such as COVID and influenza) that may guide the user to seek help from a physician, Bisu is focused on simultaneous testing of multiple biomarkers that enable the user to understand and make positive changes to their diet and lifestyle when they're *not* seeing their doctor.

We are delighted to see Cue Health's recent IPO success, and to see more lab-on-a-chip technologies coming into the mainstream.

Who are your direct competitors? How are you different?

We have a few competitors who use conventional urine test strips and lateral flow tests which are scanned with a smartphone camera. These test strips require the user to either pee in a cup and dip the strip, or to pee all over the strip. Accuracy issues can occur where the user gets too much sample on the strip, or takes a photograph at the wrong timing. Changes in lighting conditions and camera quality can also have an effect. Even where measurements are obtained, the results are generally qualitative or semi-quantitative at best, which can

make it hard to reliably track the body's response to short-term changes. It can also be hard to develop new biomarkers for these tests, as they are limited to paper-based reagents. With Bisu, the microfluidic "lab-on-a-chip" technology in our test sticks enables testing from only a few drops of sample captured mid-urination, which makes the test process easier and cleaner. The reader eliminates the aforementioned timing issues by controlling and detecting the start of each chemical reaction, and measuring the whole reaction process from beginning to end using spectrometry, which provides much higher resolution than conventional colorimetry methods used by phone-read test strips.

Bisu Body Coach is also unique in that it is capable of testing both urine and saliva, not just urine. The ability of the test stick to capture a sample (using the absorption pad on its end) without starting a chemical reaction has also enabled us to develop unique new test sticks, such as a test for cats and dogs, and a baby diaper with an embedded, removable test stick.

5. Partnerships

Why did you decide to take investment from ASICS?

Bisu and ASICS have a lot in common. ASICS stands for "Anima Sana In Corpore Sano", or "A sound mind in a sound body". While the company is known primarily as a maker of running shoes, it cares deeply about health and wellness. It puts product quality and scientific validation ahead of marketing and making money. It is also both a Japanese company and a global brand. Most importantly, ASICS is sportsmanlike - they treat us fairly and equally as a trusted partner. These qualities lead us to accept ASICS' recent investment.

Are there any other partnerships you're building that aren't yet public?

We are currently building relationships with some companies in the fitness, pet care and bathroom space. That's all we can say at this stage, but we hope to disclose more next year.

6. Team and location

Why are you based in Japan?

Founders Daniel Maggs (CEO) and Dr. Wojciech Bula, PhD (CTO) met in Japan and have lived there for some time. Previously Daniel was a Product Manager at DeNA, a Japanese listed technology company, and Wojciech was a Project Researcher at the University of Tokyo.

Japan has many strengths – a lower cost base than SF, NY or London, a high standard of living, great placement in Asia, a stable legal jurisdiction, and a growing international startup community. It also has a strong track record of developing complex hardware technologies and high-precision manufacturing – a culture of *monozukuri*, or "craftsmanship".

While our HQ, core R&D and production team are based in Tokyo, our software and marketing members are based in the US. We operate as a distributed global company.

7. Investors and fundraising

Including the current round, we have raised $4.4m to date. Our investors include:

- SOSV: The world's most active investor in hardware and health tech. Operator of the HAX and IndieBio accelerator programs
- 15th Rock Ventures: Wellness-focused Japanese VC belonging to Taizo Son, brother of Masayoshi Son, founder of Softbank
- ASICS Ventures: Corporate venture capital arm of global sports brand ASICS
- QUAD: Leading Korean biotech investment fund with VC arm. Managing Partner Haisung Lee was former Associate Director at Johnson & Johnson in South Korea
- Henrik Berggren: Entrepreneur who sold Readmill to Dropbox, and Steady Health to Carbon Health

8. Traction to date

In 2017 we went through the HAX hardware accelerator program, the second startup from Japan to do so. During 2018 and 2019 we went through numerous prototypes, continually shrinking the device to its current compact size. From 2020 until now we have refined the device to manufacturing grade, and developed a new, immersive app experience. Now we are focusing on setting up our production line while running a rolling beta program.

In addition, we've also:

- Filed multiple patents on both our technology, device and app design
- Obtained data demonstrating superior accuracy to clinical-grade urine test strip analyzers
- Validated product market fit with top-tier conversion rates through extensive ad testing
- Won numerous awards and endorsements inc. from Johnson & Johnson Innovation, MedTech Innovator, British Business Awards, UK Tech Rocketship Awards, CES IHS Markit Innovation Award, and US Sports & Fitness Industry Association startup challenge

9. Roadmap going forward

We will use the current round of financing to build out our production line while optimizing the product experience for our beta testers. We are also planning a peer-reviewed study to externally validate our measurement accuracy, and will continue to develop our partnerships pipeline with the aim of signing at least one formal partnership by our Series A.

Our initial point of sale is the US and EU, but we are also laying the groundwork to enter Asian markets such as Japan and Korea by 2023. In particular, we have seen very strong interest in our pet test on the Asia side, as the pet care market is experiencing rapid growth.