

Unlock your body's potential

By measuring body chemistry and mining the data, InsideTracker is pioneering personalised, evidence-based insights into health and fitness – and how to improve it

Gil Blander is a huge fan of what's flowing through your veins. "Blood is the equivalent of liquid gold," says the former research biologist, now founder and Chief Scientific Officer of InsideTracker, an innovative wellness startup.

Blander's appreciation of blood arose from the realisation that, for more than 100 years, peer-reviewed scientific publications have been detailing the biological information that blood carries. There is a wealth of largely untapped potential in that literature, Blander points out.

Now, though, that potential is being tapped. InsideTracker has performed a broad analysis of scientific papers about blood's "biomarkers", and combined it with genetic information from DNA samples, and personal health data from fitness trackers. So the company's software can chart an individual's potential, their performance and, through regular blood sampling, the effect of scientifically-sourced tweaks. "Blood changes with time and with intervention so it gives you feedback," Blander says.

This feedback signifies a giant leap forward for personalised health. Gideon Akande is a former collegiate athlete and three times Chicago Golden Gloves boxing champion who is now working as a fitness professional (see *Giving Power to the People*). He says being an InsideTracker customer has made a significant difference to him. "I love that I can learn about my internal status and take away actionable items to become a better version of me," he says.

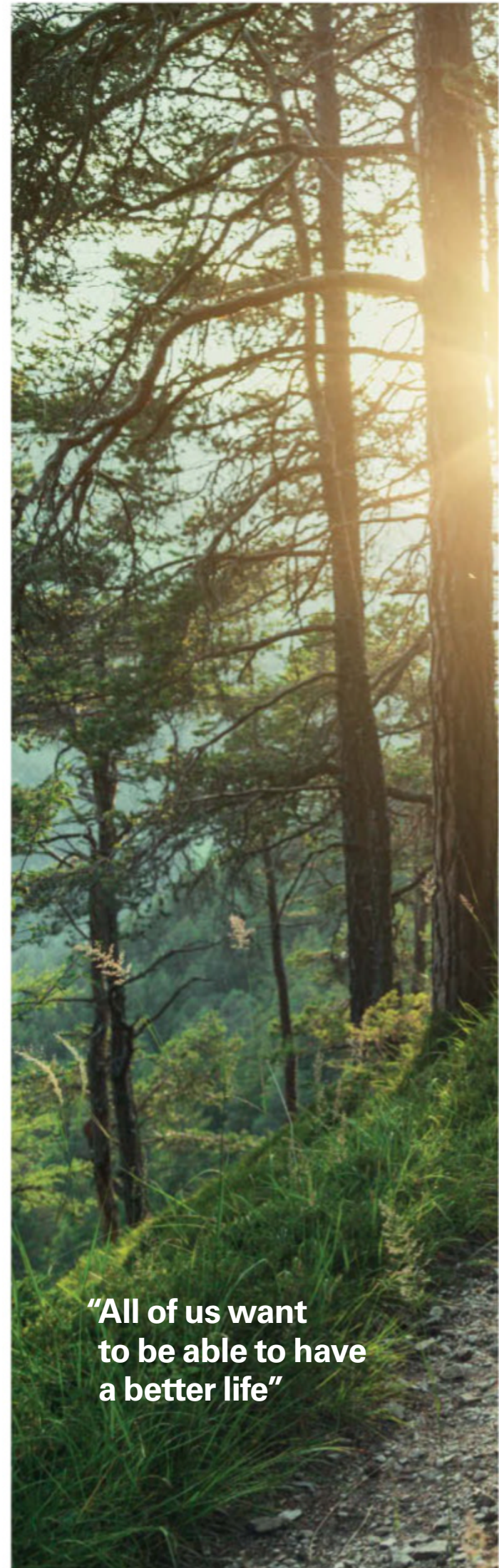
Wanting to improve quality of life is all very well, but that requires having a measure of success. This is where the blood comes in.

The liquid gold in our veins contains thousands of biomarkers that highlight good health. Blander set out to identify those that respond to intervention, whether through food, supplements, exercise or lifestyle choices. He further narrowed them down to those biomarkers that are relevant to most people. "We don't want to look at something that's 1 in 10 million, because then you're not giving a useful service to the majority of the population," Blander says.

Today, InsideTracker follows around 45 blood biomarkers and is adding more as the science shows their value. "We can tell you what each thing means, why it's important, and give you recommendations to optimise your health. That's something that was impossible 10 years ago."

The tumbling cost of genetic analysis led the company to add DNA into the mix. "It's much cheaper now, and more accessible," Blander says. The value of DNA analysis is that it shows a person's potential, and any susceptibilities, such as a tendency to abnormally high cholesterol or difficulty managing blood glucose levels. "If you combine DNA analysis with blood analysis we know your current level of glucose and whether you are high risk or low risk for having high glucose," Blander explains. "Based on that, we can inform you – and give you a specific recommendation."

The recent boom in fitness trackers has added another layer to InsideTracker's analysis. "We have started using data from from FitBit, Garmin and Apple Watch," Blander says. "We can log your REM sleep, your deep sleep, resting heart rate, heart rate variability, and other markers of health. It's



"All of us want to be able to have a better life"

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the kind of information that used to only be available if you went to a sophisticated lab.”

This daily flood of data, analysed alongside regular blood tests and matched against a user’s DNA profile, allows InsideTracker’s scientists — including exercise physiologists, biologists, nutritionists and data scientists — to give frequent personal recommendations supported by machine learning algorithms that comb the scientific literature.

The algorithms might compile all the data about coffee, for example: hundreds of papers that show coffee combined with running is good for reducing high LDL cholesterol, or how it interacts with heart rate for people of a certain age, or ethnicity, or genetic predisposition. “Instead of saying coffee is good for everyone, we can say that if you are X, coffee is good for you, in terms of helping with this specific outcome,” Blander says.

Other recommendations might be concerned with what to eat or drink after a workout, what supplements to take to support your level of activity, or simply how to adjust sleep schedules for best recovery. Each recommendation comes via an app with pointers to supporting peer-reviewed scientific publications. “I don’t like a black box: I want it to be completely open, for people to read and understand,” Blander says.

A peer-reviewed study published in the Nature journal Scientific Reports in 2018 (DOI:10.1038/s41598-018-33008-7) showed that InsideTracker’s approach makes a positive difference. The company looked at 1,000 users, comparing their blood biomarkers from baseline to follow-up. Between them they used 525 different, highly personalised interventions. Whether they started with high LDL cholesterol, high glucose, inflammation markers or something else entirely, their particular problem biomarkers were moving towards the individual’s precisely defined “optimal” range after seven months. “It shows that with this population, when you give them an intervention, blood biomarkers will improve significantly,” Blander says.

Blander is enjoying fulfilling his life’s goal. “All of us want to be able to have a better life, and to be climbing mountains when we are 80 or 90, to go for a run, to enjoy our grandchildren,” he says. “That’s what I’ve been aiming towards, and it’s so exciting to have this finally become possible.”

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GIVING POWER TO THE PEOPLE



California-based actor and nutritionist Melanie Avalon had been tracking her bloodwork for years before discovering InsideTracker.

“I wanted to take charge of my health, but found it quite difficult to keep on top of everything, and to make sense of all the data.” She has had trouble with anaemia in the past, sometimes needing to be hospitalised, but the information from InsideTracker has helped her resolve the issues. “InsideTracker’s full iron panel revealed a state of anemia which my conventional doctor didn’t spot,” she says.

With data and advice from Inside Tracker, Avalon has also tracked and stabilised her Vitamin D and blood glucose. “I mostly use the combination of genetic information and blood analysis,” she says. “I find it so encouraging, especially when I see that I’m doing ‘better’ than my genes might otherwise indicate. By seeing your genetic data in combination with your actual blood results, you can see how your epigenetics and lifestyle are interacting with your genes. This is so empowering!”



Fitness professional Gideon Akande is similarly impressed. “It’s so rewarding to know that InsideTracker’s recommendations will work for me,

and the biomarker data is always there to prove it,” he says.

Akande plans to keep optimising his health into old age for a whole swathe of reasons: to enjoy sports and athletics into old age; forge memories with his family; gain freedom from health concerns, and to travel and enjoy retirement age when the time comes. “Basically, I want to live fully, and InsideTracker gives me all that I need to do just that.”