

Running sensors are becoming more and more useful.

You might get lost with the huge amount of modern sport sensors. Discover now which systems are useful for runners.

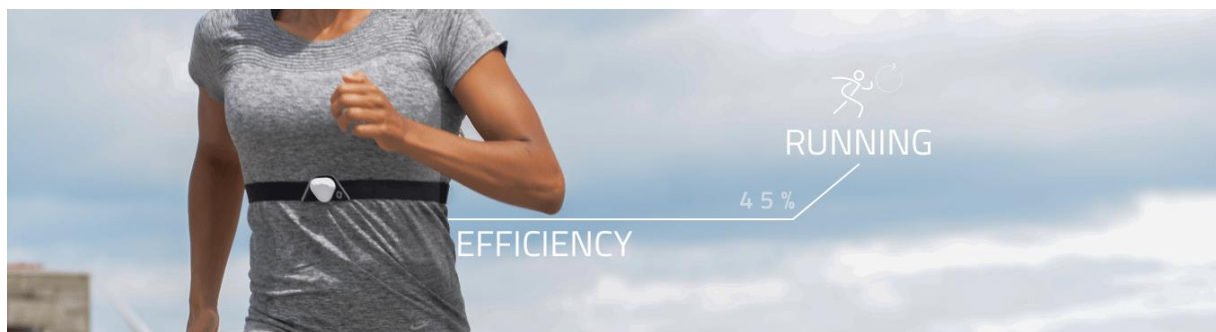


For a long period of time Herman Heskamp was the voice crying in the wilderness. In his running sport store in Hilversum he gathered an impressive amount of measuring devices. They are being put together and create a LoopLab (running laboratory) where runners can get their running technique analysed as well as the use of their running shoes. However, the last couple of years it seemed Heskamps LoopLab was going to be passed by, because many types of sensors and pods appeared to the market and they promised the runners the moon.

These modern measuring devices, which can communicate with your smartphone or sports watch via Bluetooth, were unable to live up to their promises. They disappeared from the market again or they did not make the runners life any more fun, easier or better. On the contrary, the flood of data that you can measure now with a sensor, might push you into the wrong direction. So this situation appeared to be a new challenge for the LoopLab in Hilversum. Since Heskamp has the knowledge and equipment to test the new systems thoroughly and, if possible, validate these new systems. In this way he can reject nonsensical complaints and ask critical questions to manufacturers.

Noticeable conclusions

Heskamp himself is a passionate athlete and therefore the ideal guinea pig. The possibilities of the sensors have become more and more impressive in recent years, but could those devices actually make that happen? With a real test group, Heskamp has been laying all sorts of sensors on the rack for a period of two years and comes to noticeable conclusions. Virtually no device on the market produces consistent data, according to Heskamp. 'We have seen lots of inadequate junk. Or, for example, four different descriptions for a notion like contact time. What exactly do you inform about then?' Or do you opt for a fairly pricey sports watch from a renowned brand, or an online, dirt cheap pod from the US? Please note: in the tests of Heskamp almost all of them couldn't deliver on their promises. In an absolute sense the data are completely unreliable, and data can only be compared in time with data from the same sensor and the same person.

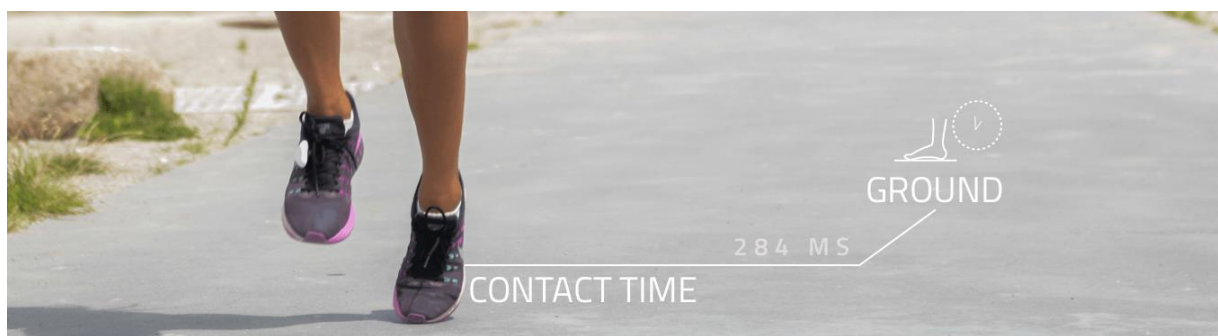


Calculations

Do they measure what they are supposed to be measuring? No, they use a certain algorithm, a self-invented calculation, and they put literally a number on it. In this respect we even disregard the built-in inaccuracy of GPS. That the 'measurements' are repeatedly wrong, we owe the applied technique. Virtually all sensors make use of tiny, so-called 3D accelerometers, and they can do a lot, but they do it all very simple. Over three axes, and therefore 3D, three-dimensionally, these motion sensors always measure the change of speed (acceleration/deceleration) in a certain direction. However, these data have only a limited value, depending on the quality and the location where you attach the sensors to your body. Yet, by using all kinds of calculations, specific values are being invented. Doing like this, in the apps you will come across all sorts of impressive values, which the average runner has never heard of.

Hard data

Therefore programmers are inventing what you can(not) do with these data. They are not really hard data and that explains the inaccuracy measured by Heskamp. In addition, there seems to be an even bigger problem. How do you translate these data into usable and understandable information for the runner? And above all: how can a runner adjust and improve his running technique? It is the holy grail of modern running sports, a lot of new business developers had this on the table lately.

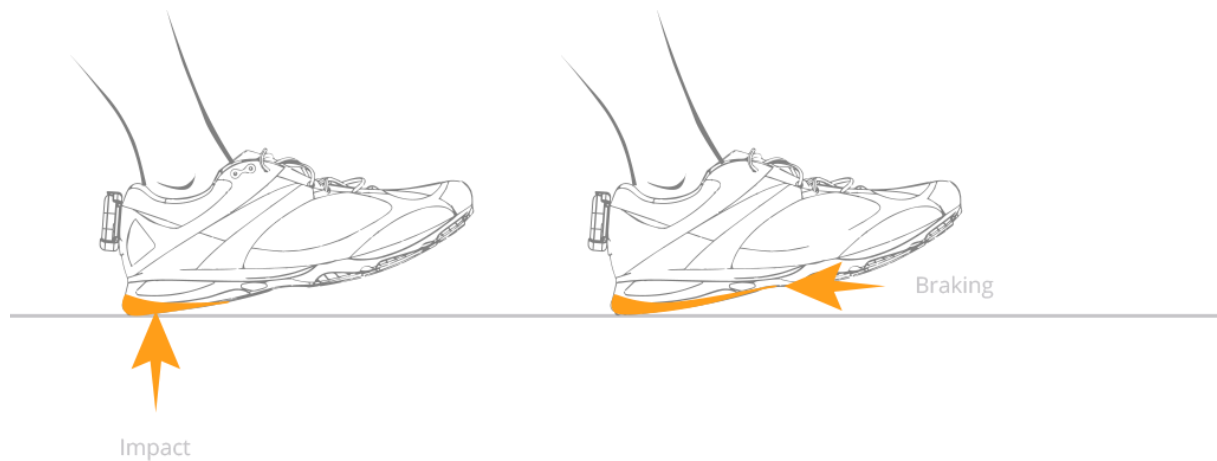


Stubborn

Fortunately, it was Herman Heskamp, who continued stubbornly and used his LoopLab to find out which sensors could be of any use to us. Sensors like SHFT and RunScribe (see overview below), which according to Heskamp do offer reliable information. The thousands of data in his database have also given Heskamp the insight, that three values are upmost important for the runner. Together, these three – ground contact time, flight time (= time without ground contact) and speed – create a value that represents the running efficiency. Heskamp is able to use these data in order to identify a connection with training errors and overtraining. This makes it possible for him to give training advices. 'If you want to run faster, you need to get a shorter ground contact time. You can measure and train well with the devices mentioned above.'

Limitations

'I now see in all data that runners often explore their limits too much. Thanks to these sensors you can give a feedback to the method and intensity of training, and to the running technique. Analysing the data allows me even to predict an upcoming injury.'



Finally, SHFT and Runscribe can also be improved a lot, Heskamp argues. For example, SHFT works with two sensors, one on the chest and one on a shoe. In terms of the latter, the two RunScribe sensors, each on a shoe, are better for measuring balance differences. The advantage of SHFT is that it gives audio commands and thus brings the ideal future a little closer: real time coaching on the road, so that you – without having to gaze on an app – are having some kind of a coach running next to you. However, the accurate interpretation of the figures and data is currently only possible for a qualified specialist, such as the Lafoot LoopLab. Heskamp: 'We are talking about popular gadgets, but you will have to spend some time learning to understand them. At the moment, however, the required knowledge is rarely available.'

