



Abandoned machine that became key at Aston Villa

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WRITTEN BY SIMON AUSTIN – FEBRUARY 14, 2019

DAVE FEVRE estimates that the Biodex isokinetic machine he used at Blackburn Rovers saved the club as much as £40m during the 18 years he was in post.

“For every player we were about to sign, we did a Biodex test,” the former Rovers Head of Medical tells TGG. “It’s about giving the manager as much information as possible about the player who’s due to be coming through the door.”

"You can do statistical analysis and watch lots of videos, but this is the equivalent of getting the car in the garage, stripping it down and seeing what's under the bonnet.

"Based on the information we got, the club might then negotiate to reduce the size of the player's contract, or the transfer fee. We didn't always do an MRI scan, but we always did a Biodex test and saved literally tens of millions."

So it comes as a surprise when Fevre says many clubs either do not have, or do not know how to use, the Biodex. Now working as a consultant, a chunk of his working year is spent going into clubs and showing them how to use the machine.

"What can happen is that when the person who *did* know how to use the machine leaves, no-one else knows how to switch it on," the former Manchester United Senior Physio adds, "because you do need some experience and expertise to understand the reports that come out."

Aston Villa injury specialist **John Hartley**, who worked under Fevre at Blackburn, agrees "maybe people can be a bit overphased by how many things the machine can do." When Hartley arrived at Villa, in 2012, he found a Biodex machine "stuck in a storage room" because "no-one knew how to use it".



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"When the club had opened its new training facility, more than 10 years ago, they knew this was a fantastic piece of kit to have. Because of staff changes, it ended up becoming dormant.

"I was delighted when I found it and it's something we now use all the time - in fact I used it earlier today. As practitioners, I think we should be using it to gain objective data in rehab, training and screening - it has massive value. It's just having the knowledge of how to use it."

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Grant Downie OBE, the former Head of Performance at Manchester City's Academy, is another advocate. "Biodex is a great tool and I had one at Rangers, Lilleshall and Middlesbrough," he says. "If I didn't have one, I would make sure I could use one at a local university. If they knew more than I did about the machine, I'd invite someone in to show us how to use it."

WHAT IS A BIODEX ISOKINETIC DYNAMOMETER?

It evaluates strength, endurance, power and range of motion for all the major joints and muscles, providing objective measurements to work with. Isokinetic means it produces a constant speed, no matter the force applied by the user.

"The machine consists of a chair, a dynamometer head - the measuring tool - and a touch screen computer, which gives live data as well as reports," Hartley explains.

"If you were doing a knee, the most common test is sitting in the chair, with a strap across the chest, waist and one thigh, and the attachment is down the lower shin. The user would then straighten and bend their knee against the dynamometer.

The Biodex Multi-Joint System 4



"How hard they push against the attachment gives us a force curve reading for how much force they can produce against a given speed. No matter how hard you push, that attachment will not move faster than the speed you've set. You produce a different force as you go through the range of motion.

"From the objective data we get, we can spot little things, like irritations within the knee, bits of instability and so on. It has massive value."

US company Biodex introduced the world's first multi-mode, computerised, robotic dynamometer in 1985, which Fevre describes as "the gold standard".

IPRS Mediquipe, based in Suffolk, is the sole distributor of the machine in UK and Ireland. They have been supplying and servicing the Biodex for more than 20 years, in addition to providing bespoke clinical training and an annual Isokinetic educational user day.

TRANSFERS

Fevre says he did two-day testing on ALL players before they signed for Blackburn Rovers.

"We didn't always do an MRI scan but we always did a Biodex test," the former Wigan Rugby League senior physio explains. "Afterwards the doctor and I would sit down with the manager and explain the demands there would be if we signed this particular player.

"It was about giving him all the information possible about the player coming through the door. At Blackburn, we were a smaller club that often wanted to buy players who had had injury problems or else had not played over a period of time.

"That was where the club saw value - in reinventing a player. Roque Santa Cruz played as many games in his first season for us as he had in his previous six at Bayern Munich and then we sold him to Manchester City for £17.5m. Craig Bellamy was similar."



"The crucial thing was having all the medical information about them at the outset - so you know exactly what you're getting and also so you have the baseline data of what to look out for and what to work on."

Hartley (above) adds: "People don't always tell you everything you need to know ahead of a transfer and there are many things you can pick up from a Biodex test."

"Signing a player without seeing them is like buying a car on eBay based only on the picture. As new players come in, we get a baseline measure for them which gives us valuable data should they get an injury."

"And if there is an imbalance - between right and left leg or quads and hamstrings, for example - then we can work with the S&C guys to correct this. We're trying to make them a bit more robust and reduce the future risk of injury and the objective data guides us."

"I also work with our Academy lads on what we can screen with the younger players and what are good objective measures for developing players to measure development and growth."

PRE-SEASON TESTING

Fevre estimates that he did more than 250 biodex tests during his time with Blackburn. Many of these took place in pre-season.

Hartley adds: "We try to get a baseline measure for each of the players in pre-season. Then, if we find something, we'll follow it up, whether it's an imbalance or weakness."

"It helps us provide an objective measure of strength. The most common thing tested is the knee, which can cause a lot of problems for footballers, and it will give us an objective

strength measurement for the quads and hamstrings and an idea about the muscles operating across the knee.

"In my time in rugby league (Hartley worked for Warrington Wolves before joining Villa) we did shoulder rotational strength tests to look at weaknesses there, because that was a fairly common injury in the sport. We used the Biodex as a screening tool to reduce shoulder injury rates.

"An injured muscle can hide, but with the Biodex you can isolate specific muscles and specific traits of the muscle as well.

"The data is live on the screen as you're doing the test and the players like it because it gives them really specific feedback about how they're doing. They can see their deficit between the right and left leg going down, for example, and it reassures them that their injury is improving.

"You can produce a report at the end and export that data to compare progression over time. You don't have to be a maths genius to understand it - the software in the system."

REHAB

Hartley says the machine is "one of our key markers for return to play" and is used "through the stages of rehabilitation for injured players".

"It provides return to training data," he says, "so we know we're not putting them back in when they're significantly weaker on one side than the other for example. So long as you standardise your procedure, you can compare progress over time and see whether rehab is working."

However, the machine can be used as a training as well as a testing tool.

"A lot of people think of it purely as a testing machine," Hartley admits, "but you can use it as an exercise instead of just the gym. We had one player who had a lot of problems with a problematic knee, and he struggled to do other things in the gym, so we used the machine to build him up.

"The player struggled to do a great deal in the gym, with squats or step-ups, because his knee wouldn't tolerate it and would swell up. With the Biodex, we managed to reduce a bit of the load that was going through the knee and put it just through the muscle and strengthen him up."

"Then, when his strength was back close to the other leg, we found he could now tolerate the work in the gym without his knee swelling. The machine really isolates the muscle. With a lot of things we do in the gym, like squatting, all the muscles are working together in tandem.

"The differences you're measuring might only be a tiny percentage and the Biodex will measure that in newton metres, whereas in the gym - on on a cable machine, for example, when you have a stack of weights - you're not able to measure the differences. This is exact."

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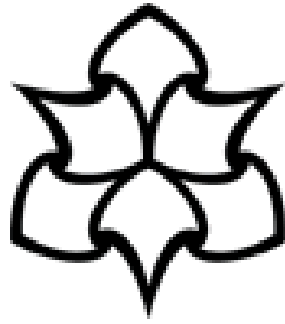
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