

3 Reasons a Gait Analysis at a Running Store May Not Help You Find the Right Shoe

Written by Matt Phillips – (adapted)



Ask a group of runners what the reason for video gait analysis is and one of the most common answers will be “to help you choose the right running shoe.”

It may be closely followed by ‘to have your running technique analysed’ but even in those cases one of the burning questions is

typically ‘so are these the right type of trainers for me?’

A study earlier this year by Saragiotta, BT et al.: highlighted the popular belief amongst recreational runners that wearing ‘incorrect trainers’ is one of the highest risk factors for injury.

To meet this demand, the last few years has seen an increase in running stores making use of in house ‘video gait analysis’ to help provide customers with the ‘correct type’ of trainer. A quick web search for gait analysis shows most results linking it with some form of shoe fitting service.

Unfortunately, despite the genuine good intention from most running stores, the ‘science’ typically used to translate results from their gait analysis into suitable trainer selection is *not* science.

In this article, we’ll look at the three main reasons why gait analysis to choose your running shoe is an outdated practice and help you understand how you can use gait analysis more effectively.

The ‘arch-type’ model

Many running stores and websites still promote and use the outdated, non scientific ‘arch-type’ model to prescribe trainers. Runners are still categorized into one of three groups, each of which has a shoe to match:

- ‘high arch’ runners are labelled *oversupinators* and given a more cushioned shoe
- ‘normal arch’ runners are labelled *neutral* and given a stability shoe
- ‘low arch’ runners are labelled *overpronators* and recommended a motion control shoe.

Research has *conclusively* shown that this practice of categorizing runners into three groups based on arch height is way too simplistic.

The model provides a very neat, attractive way of selecting a specific running shoe for everyone's needs but it totally lacks the specificity required to cater for the immensely varied physiological make-up of each and every runner.

The lack of evidence for the arch-type model has seen many websites and stores recently placing *less* emphasis on the significance of the once popular 'Wet Foot Test' in which runners are asked to stand on a heat sensitive foot pad in order to evaluate their arch type.

Statements such as "*this will only give a basic indication of your running gait*" are now made, as well as the very common "*it's a start and we all have to start somewhere.*"

But it's *not* a start.

The idea that what your arches do when you are standing on a pad will be replicated once you start running has been consistently disproved.

One of the biggest problems for some running stores is that science has yet to produce an alternative model that can be used for trainer prescription. As we saw [here](#), the only factor that has stood well in the quest to find shoes that will reduce risk of injury is making sure the shoes are *comfortable*.

Though the idea of trying on a few pairs, going for a run and seeing what 'feels' most comfortable sounds very un-scientific, there is more evidence for that potentially reducing injury risk than prescribing the runner a shoe type based on the arch type model.

Misuse of overpronation

And so we turn to in house video gait analysis.

Having someone look at you *actually* running sounds like a great way to be recommended suitable trainers, but once again the problem is the model used to prescribe trainers.

It is worth pointing out at this point that recording a video of somebody's *feet* when they run is *not* gait analysis. It is *feet* analysis. If movement of the rest of the body is not considered, the only real observation that can be made in an in house '*feet analysis*' is whether the arch of the weight bearing foot is '*going too low*', in which case the runner is once again labelled an *overpronator*, or that the arch is '*staying too high*', in which case they are labelled an *oversupinator*.

Like the Wet Foot Test, this method of measuring '*overpronation*' lacks the specificity required to be able to attribute such movement to current or future injury.

Failing that, a quick look at the way in which Haile Gebrselassie's feet '*overpronate*' should be enough to seriously challenge the in house overpronation model for prescribing shoes, especially as Gebrselassie runs in Adidas Adizero Adios.

Is overpronation an issue?

Using the term '*overpronation*' as a diagnosis is where the problem lies.

There are many potential causes for the observed foot mechanics: the most commonly quoted is descending of the inner arch but the same movement could be a product of the heel falling onto its inner edge or the forefoot turning outwards, or maybe a combination of all three.

Categorizing a runner according to what their medial arch is seen to do during slow motion video is not a viable model for prescribing a running shoe.

Full-body video gait analysis

Hopefully by now you are realizing that video gait analysis is *not* about helping you choose the best trainers.

A full body video gait analysis is about looking at the interaction of the whole body and evaluating how movements in one area may be contributing to tissue overload in another.

Research shows the importance of considering the mechanics of the hips and trunk of the body and how they can play a vital role in controlling movement seen distally in the lower limbs.

In contrast to the *lack* of evidence supporting a cause-effect relationship between distal contributions to lower extremity injury, an increasing amount of studies are managing to link movements in the proximal lumbo-pelvic hip complex with overuse injuries in the lower extremity, e.g. foot and ankle injuries, patellofemoral pain syndrome, iliotibial band syndrome, anterior cruciate ligament injury.

The message to date is therefore as follows: Sort out what's happening up top first.

Full body video gait analysis can help with this. Improving running form can so often lead to resolution of pain in the lower limbs.

Avoid relying on running shoe or trainer 'prescription' to sort issues or reduce injury risk.

The current model used in most stores is no more accurate than flipping a coin. Modern running stores should be using their treadmills to help promote comfort for trainer recommendation, not foot mechanics. Let's leave that for the podiatrists to figure out!

Happy running!

(Matt Phillips is a Run Conditioning Coach, Video Gait Analyst & Sports Massage Therapist with over 20 years' experience working within the Health & Fitness Industry)