



DIGITSOLE®
PRO

Case Study

Diagnosis and treatment of a patient with a hallux valgus using DigitsolePro

The practitioner

Fabrice Millet has been a sport podiatrist since 2003, specialising in running and cycling, and is an instructor in the Sport Podiatry D.U. in Lyon.

He has a highly varied patient clientele, including athletes and ranging from children to the elderly. In an ad hoc manner, he uses a pressure platform as well as a video device to analyse running for athletes.



Since November 2019, Fabrice Millet has used DigitsolePro for all of his podiatry consultations, which allows him to detect problems with mobility in both walking and running, and to obtain a better evaluation of his patients by measuring objective biomechanical data that cannot be observed with the naked eye.



Patient information & reason for the consultation

The patient is a 25-year-old woman. Her work in dentistry involves a standing position for a large part of the day.

She made an appointment with the podiatrist because of a hallux valgus that is starting to bother her when walking but also from an aesthetic point of view.

The Hallux Valgus is characterised by numerous deviations (deviation of first metatarsal in varus and big toe in varus).

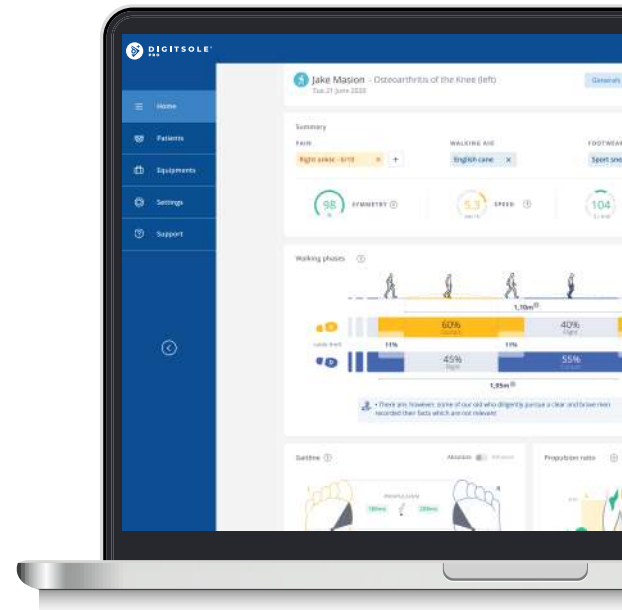
How do you use DigitsolePro in your daily activity?

Fabrice Millet uses DigitsolePro for the dynamic analysis (walking or running depending on the patient).

He collects data on the patient's walking or running activity using the web interface available online at <https://app.DigitsolePro.tech>. The results are then presented to the patient, allowing the patient to integrate them into the treatment process and facilitating acceptance.

Do you use other movement analysis systems?

Fabrice Millet uses a camera to analyse the activity of athletes and movement analysis software.



What are the most frequently used parameters and how are they used?

The sport podiatrist analyses the gait line, the swing phase, and the ankle roll (absolute)



The Gaitline

provides a **quick overall view of the walk** and shows what abnormalities may be detected. The contact times are indicated by step phase, allowing one to visualise a potential difference between the two sides and monitor the evolution.



The swing phase

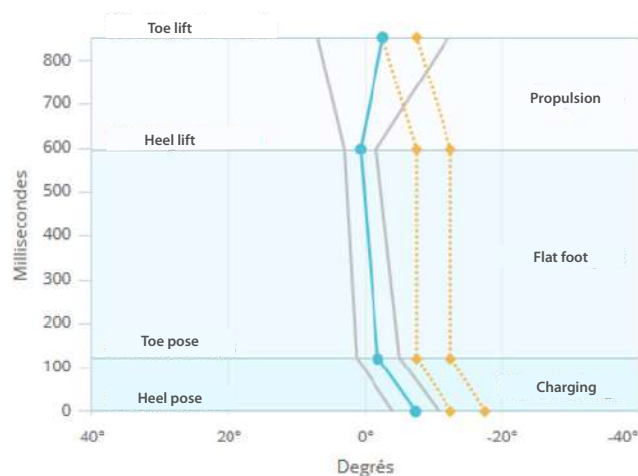
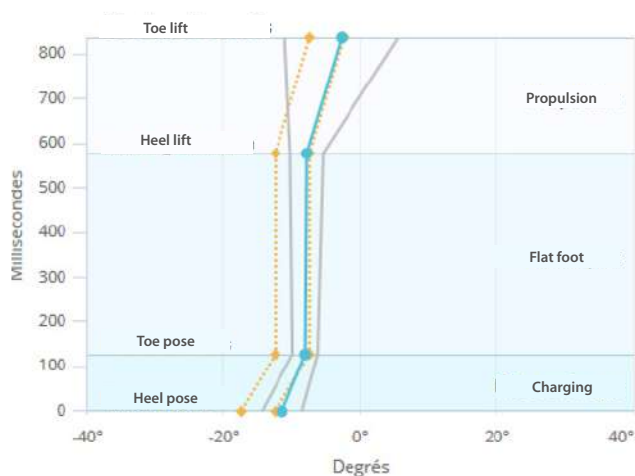
is used to determine **propulsion ratio** and the muscles that create the propulsion. In this way, the symmetry between the two legs can be verified. The swing phase is also used to analyse the length of the stride and the similarity between the two sides. These data help in advising patients regarding daily exercises to avoid asymmetry (strength training, proprioceptivity, etc.).



The ankle roll

allows for the visualisation **angles when striking, flat footed, and during propulsion** in specify corrections. The illustrative graphic is explained to patients, who can see their deformations and the differences between the two sides.

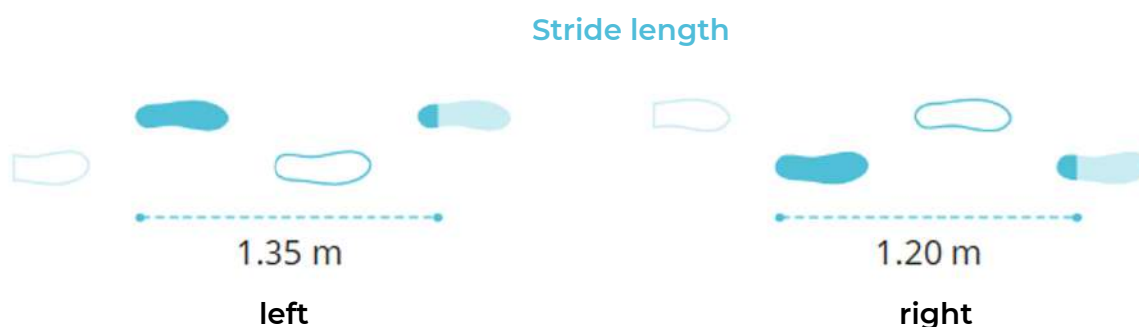
For this patient, what information was collected using DigitsolePro?



The severity of the deformation is especially clear in the right illustration, where we perceive the difference between the right and left foot.

We can also see that at times the patient tries to correct her walk, which explains the significant opening between the two lines during propulsion. There is insufficient support of the first radius.

The first radius is not providing the support it should, and forces are transferred to the middle radii. This results in a deviation of the alignment (in this case, deviation in supination), and a shorter right step (side where the hallux valgus is more pronounced)



We can perceive the difference between the two feet. The right foot is less propulsive, and there is muscle weakness on this side.

What examinations were carried out in order to complete the DigitsolePro analysis? What information did you obtain?

Fabrice Millet carried out his examinations in a conventional manner:

questioning and examination while seated on a chair, examination standing on the podoscope and standing on one foot.

These examinations allowed him to measure the hallux valgus (increased on the right, estimated at 30° in the right), and to note that the first metatarsal is short, leading to insufficient support of the first radius.

Stationary, we observe an increased calcaneus valgus on the right and a midfoot valgus. Standing on one foot with a bent knee, the patient is very unstable, especially on the right, and a foot pronation is visible.



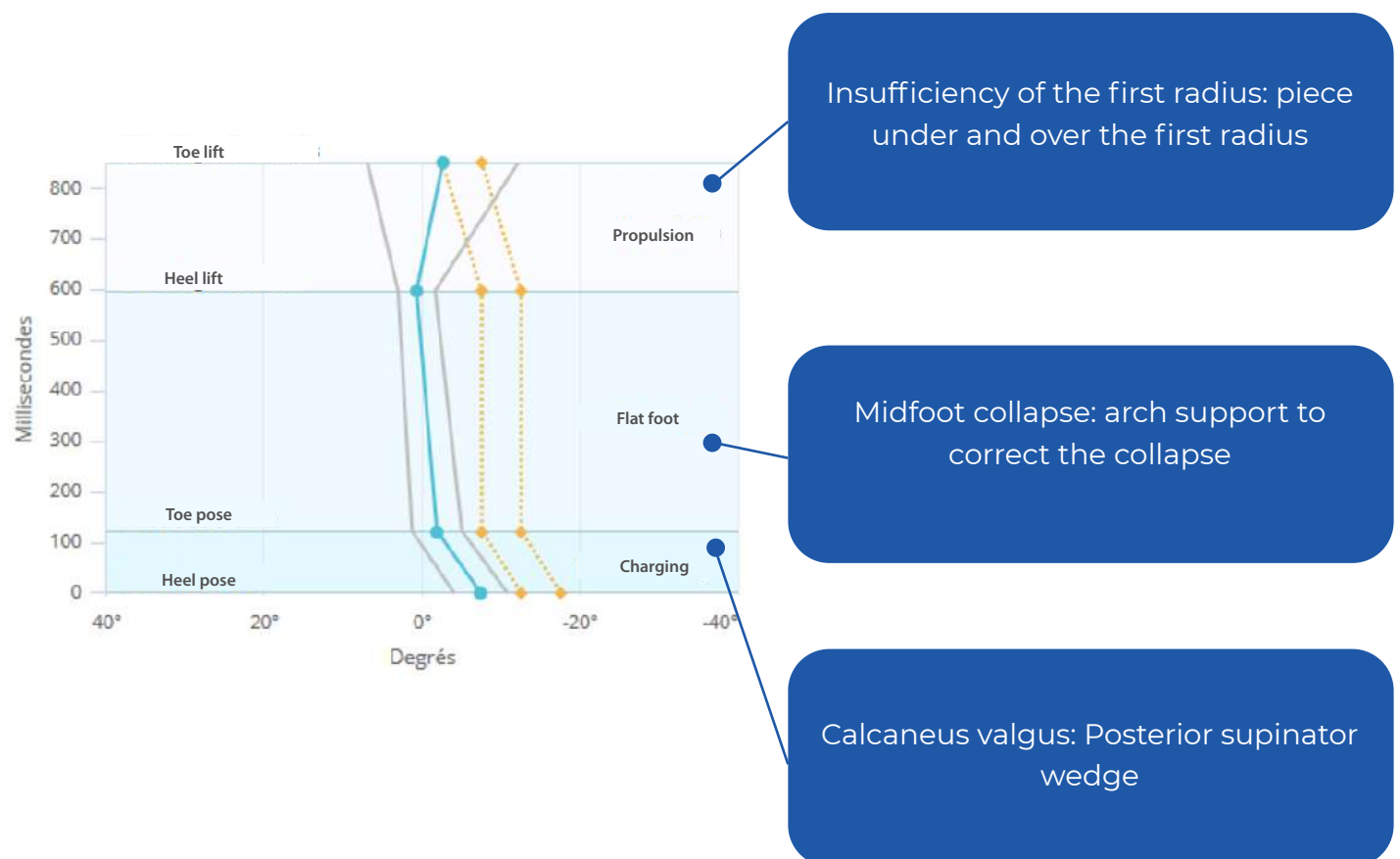
What diagnosis was made?

The hallux valgus is due to a short first radius combined with a valgus foot..

What treatment or solution have you provided the patient with?

The practitioner made thermoformed orthopaedic soles to correct the calcaneus valgus and the midfoot valgus to prevent the collapse of the foot.

The corrections placed are a PSW, an arch support and a piece under and over the first radius.



Digitsole Pro, an international Establishment



ISO 27001 : 2017

International standard for information security. It's a requirement for establishing, implementing, maintaining and continually improving an information security management system (ISMS) -We make the information assets we hold more secure.



ISO 13485 : 2016

Regulatory requirements are increasingly stringent throughout every step of a product's life cycle, including service and delivery. Increasingly, organizations in the industry are expected to demonstrate their quality management processes and ensure best practice in everything they do. This internationally agreed standard sets out the requirements for a quality management system specific to the medical devices industry.



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