

Report Challenge Disc 2.0 in Rehabilitation

Oliver Schmidlein is a physiotherapist and the founder and owner of the OSPHYRIO® Training & Therapie practice in Munich, opened in 2008. Between 1999 and 2001 he lived, worked and trained in the USA. He specialises in manual therapy, sports physiotherapy and all forms of medical and functional training. He has worked with the German national football team, FC Bayern Munich and TSV 1860 Munich as a physiotherapist and athletics coach. He tested the brand new MFT Challenge Disc® 2.0.

Mr Schmidlein, you tested the new MFT Challenge Disc® 2.0 in your practice – what are your first impressions?

I was pleasantly surprised by the new training approach, the ease of use and the reactions of our patients. Everyone is familiar with traditional wobble boards. What makes the Challenge Disc 2.0 different is the feedback function and the app-based training programme. It offers something completely new in co-ordination training, for both athletes and coaches.



The MFT Challenge Disc® 2.0 is primarily a training device for co-ordination. Why is this ability particularly important?

Co-ordination training is about uncoupling coupled motions. In this context, “coupled” means that when a particular movement is executed, it results in a movement that is not absolutely necessary - for example, when accelerating fast, both positive and negative, or when changing direction. Co-ordination exercises can be used to improve movement patterns in a very specific way. The primary goal is always to achieve control over movement. Every movement should be executed as planned, efficiently and not randomly - selective movement, so to speak.

Selective movement - can you give an example of this?

When referring to the MFT Challenge Disc 2.0, selective means: I can see visually on the tablet that the point is moving left. If I can follow the point at the prescribed speed, I can selectively control my musculature. Co-ordination training in this form was previously only possible with a physiotherapist who specified a stimulus and monitored the exercise. The patient was given a verbal instruction which he had to translate into a movement. The difference with the Challenge Disc 2.0 is that there is now a visual stimulus that has to be translated into a controlled movement. The novelty is that the device gives direct feedback via the same channel and replaces the therapist’s verbal instruction.

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There are different co-ordination skills. Which of these does training with the MFT Challenge Disc 2.0 particularly stretch?

Primarily equilibrium and balance. The exercises are not just a simple movement such as standing on one leg or a horizontal standing position on two legs as you would do on an ordinary disc, but a controlled and active motion sequence. Not only is it possible to learn to stand up straight, which most patients master relatively quickly, but it is also possible to train unbalancing-and-recovery to a specific defined position in a targeted way. This means your legs and spine do not remain in a fixed position. Instead, you shift them constantly in order to keep control of the movement.

What co-ordination process do you follow in rehabilitation?

In rehabilitation, we first bring the patient into a neutral standing position to determine the initial situation. The primary objective of the exercise is always to define stability at rest. When the patient can keep their balance, we then progressively increase the level of complexity. The difficulty is gradually increased by making the body execute increasingly difficult co-ordination tasks after it has first mastered simple ones. First cyclical, then acyclical up to perturbation-based training consisting of external acyclical stimuli to which the patient must react. The situation concerning the leg, foot and ankle never changes. The patient must try to remain in the neutral position, in balance.

Is training with the MFT Challenge Disc® 2.0 also suitable for rehabilitation?

Definitely, because the foot is specifically moved out of the neutral position and motor activity is brought out of balance. To my knowledge, there are currently no other devices available with which you can test ankle co-ordination at different angles. Previously, co-ordination at the foot has only been carried out at a neutral angle, which always addressed the same mechanoreceptors. With the Challenge Disc 2.0, the ankle and the motor needs are exercised and trained in completely new positions. For us that means we can now create a specific stimulus that we could not otherwise produce before. This is particularly helpful for ankle, knee and hip injuries.

How do you decide, on a day-to-day basis in your practice, whether a patient's co-ordination has fully recovered after an injury?

We use the Y-balance test as part of our Return-to-Activity algorithm*. This special test for arms and legs quantifies co-ordination when standing on one leg and when supported on one arm. By specifically dividing the range of movement into quadrants, we can check the upper and lower body and the left and right-hand sides of the body for asymmetry. Put in simple terms, the therapist receives feedback on whether there are deficits and if so, in which quadrant and therefore in which limb. The MFT Challenge Disc 2.0 is

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therefore ideal for working on possible limitations and weaknesses in the legs and correcting and improving them. If one of our patients fails the Y-Balance test, I will get them to train with the Disc in future. It offers appropriate training content to pass the test.

(<http://www.osinstitut.de/download/cms/22/164.pdf>)

Your patients are already training with the MFT Challenge Disc® 2.0. Why were you surprised by their reactions?

Everyone who has been able to train with the Challenge Disc 2.0 was curious to start with, and that is certainly to do with the interaction between the Disc and the app. They only get brief instructions from us up front and then they can start training very quickly. What is interesting is that people of all ages registered an interest in the device. I had expected it to be more popular with younger people. But a middle-aged man also embraced the exercises on the Disc perfectly and was highly motivated. In my view, this is down to the real-time feedback and the scoring value. The ability to see a before-and-after comparison allows the patient to immediately see the improvements made during training. That makes it self-motivating, so to speak. When patients have done an exercise, they want to move straight on to the next one. That is pleasing.

Does training with the MFT Challenge Disc® 2.0 support all age groups equally?

In my view, the Challenge Disc is suitable even for children as young as five, to train coordination in a fun way. Kids practically grow up with tablets these days and are often more familiar with using them than many adults. Children of this age can also grasp the visual feedback more quickly than verbal instructions from a coach. Basically, anyone who can stand on two legs can train with the device so it is equally suitable for all age groups. Another major bonus, in my opinion, is that it helps prevent falls in older people. Some of the individual exercises in the training programme are very good for that.

Thank you for the interview.