

Our Hands Are Our Capital

Support and development for top young sports people



Carsten Hinz (right) pictured here with Thomas Ehrmann (left) has been a physiotherapist since 2001. He runs his own practice, PHYSIOLIFE THERAPIE&TRAINING, in Essen. He has completed a number of professional development courses including manual therapy, DOSB [German Olympic Sports Confederation] sports physiotherapy, Typaldos style fascial therapy, medical training therapy, sports osteopathy, various osteopathic treatment techniques... Since 2004 he has been a physiotherapist to the German Football League U18-U20. His focus is on treating orthopaedic sports medical injuries and clinical presentations. He also specialises in (sports) functional regeneration training following injury as well as on prevention training.

Carsten Hinz is a physiotherapist with his own practice in Essen (PHYSIOLife Therapie & Training). Since 2004 he has been a physiotherapist to the German national U18 to U20 football team. Masiar Sabok Sir spoke to him shortly after the U20 Football World Cup in South Korea about the developments in top-level young people's sport, the role of modern physiotherapy and interesting therapy options.

Carsten Hinz, you have been supporting the DFB national U18 to U20 team as a physiotherapist since 2004. How has working with young athletes changed/evolved?

In the area of physical development of the players, things have changed quite a bit. In the last few years the game has become faster and more dynamic. The physical capacities of the players have become, alongside the technical and technical capacities, ever more important. More and more games are taking place at the highest level. This means that enormous performance levels are expected of players. It's our role to attain these performance levels and improve them still further with the help of the training team. Even in the lower level youth teams, we begin to use sport-specific intensive and individual training programmes to work on the basic physical characteristics of strength, stamina, agility and coordination. This intensity of training means that accordingly there is more of a focus on our work. In the past our job was mainly to treat injured players and return them to full fitness. Now, prevention is also a large part of our work. We are now using all of our therapeutic knowledge and expertise to make sure that the sportsperson doesn't injure themselves in the first place and can thus

continue to develop in order to reach an even higher level. The only way that we have been able to guarantee this over the last few years is by expanding the medical teams and sharing the work between at least 2 – 4 physiotherapists – plus an orthopaedic specialist and an internal medicine specialist. In addition to this, each team has an athletics trainer whose job it is to improve performance and direct both performance and training. So our work with the players has become more complex which means that the various jobs must be shared amongst several experts. Without this distribution of tasks it would no longer be possible to guarantee the professional and responsible treatment of the athletes.

Have the players' habits also changed – are there particular points that you have to look out for which didn't exist before, e.g. the use of smartphones, social media etc.?

The players' habits have simply kept pace with the passage of time. But we should not see this as a negative thing. In the past you just used to have a TV in the bedroom, nowadays we can make use of all the opportunities offered by the Internet, anytime and anywhere. Nonetheless, you should use these opportunities within moderate limits. There are some situations where the mobile phone simply doesn't belong. For example, we don't permit our patients to use their mobile phone during therapy. The players should concentrate on the treatment. They should be giving us feedback about the effects of the treatment and that can only be achieved with full attention. It's the only way that therapy can be effective. Or there is also the issue of sleep: it has now been proven that using a mobile phone for too long before falling asleep can have considerable negative impact on the quality of sleep. And a person who doesn't sleep well enough will not have a body that regenerates well and will therefore not perform as well and will be more susceptible to injury.

We have to inform the athletes about this situation, that a smartphone or tablet can have a negative influence on important processes. But whether they take that into account and implement it in their lives is their own responsibility.

The modern physiotherapist these days should be more than a simple therapist. What role do professional training courses, osteopathy, manual therapy, chiropractic and interaction with doctors, athletics trainers etc. play for you?

First of all the most important thing is that you continue to develop as a therapist. This includes learning as many effective treatment techniques as possible. The only way to do this is with a very wide range of professional training. Of course the focus here is fundamentally on the manual techniques.

After all, our hands are our capital. This is the way that every therapist develops his own kind of therapy strategies. But particularly when working with athletes, manual therapy, (sports) osteopathy and sports physiotherapy are absolutely essential. In addition to that, I consider Typaldos-style fascial therapy, manual lymph drainage and medical training therapy to be important building blocks for a complex therapy approach. DOSB sports physiotherapy brings together all of the techniques required for providing support to athletes, including learning functional tape bandaging. Without the interaction within the team, it is impossible to provide good support to the athletes. These days, providing support to athletes means working as a team of experts. Trainers, doctors, athletics trainers, video analysts, cooks etc...

In the medical team we discuss diagnoses, therapies and so on and develop strategies. These are then discussed with the trainers. That discussion is primarily about managing the load on the athlete, building up what's expected of him, training breaks, downtime etc. Together we then find a solution as to how we will handle the player's situation so that he can quickly get back to full fitness.

After the physiotherapy treatment, the patient is often "left alone" – I mean the "normal patient". Would it not be sensible and indeed important, to create a training plan for the patient and to send him home with useful exercises to do?

Absolutely! In principle, for me the patient is responsible for themselves, but during physiotherapy treatment there is an opportunity to point the patient in the direction of self-guided activity. It's not unusual to draw up a suitable training programme with the patient during therapy. Training during this phase contributes to alleviating or eliminating pain. The patient therefore understands the necessity for training in his situation. If in the end we have been able to take away his pain, then an individual, intense training programme is required in order to ensure that the pain does not come back. This is where our preventive thinking once again pays off. The training should ideally be a

mixture of stamina-craft-agility-coordination exercises, which can be done as a self-guided exercise programme at home as well as under the direction of a trainer/therapist using equipment. In order to be able to manage the intensity of the programme for each individual, it pays to test strength, agility, coordination and stamina. This approach has paid dividends in our practice and is now established. When it comes to designing the training programme, the patients naturally benefit from seeing therapists who have experience with supporting top-level athletes.

Let's come back to your work with young footballers. How do you see the developments in the area of conservative therapies and what do you use in practical terms?

Conservative therapies can always be developed further with the aid of research. The research is continually gathering new findings in many areas. At the moment the focus is on finding new causes and connections responsible for injuries. This may also lead to new therapies and training approaches for us therapists and athletics trainers. Until then we should continue working on refining and improving currently recognised methods of therapy.

Alongside the treatment techniques which we have already mentioned as being required for supporting top athletes, in my opinion shock wave therapy is a very interesting and effective supplement to my work. Under the guidance of our team doctor we used shock waves this year at the U20 World Cup in South Korea.

Its effectiveness has been proven by numerous independent scientific studies. This method is now well recognised, particularly in the treatment of tendinosis, (insertion) tendinopathies, heel spurs etc.

Very good results have also been obtained in the treatment of myofascial complaints. In combination with manual techniques, the therapy was able to reduce pain even faster and prevent or at least reduce player downtime. The players were also happy to accept this method.

Are there other aspects which are important for you in supporting young, top-level sportspeople?

We work with sportspeople who give their all in order to someday be able to practise their sport at a professional level. So during their training they should be prepared for this professional phase as well as possible. In my opinion, this includes introducing them to all the opportunities that they will also have later as professionals. And these opportunities are very complex and need to be managed on an individual basis. So the sportspeople have to develop a sense of responsibility for

themselves, which you should surely be able to expect above a certain age. They should experience how they can benefit from working with trainers, athletics trainers, doctors, physiotherapists, psychologists, video analysts and cooks/nutritionists. Of course they will be confronted with many issues in the team, but particularly in matters of nutrition, regeneration (sleep) and psychology (mental constitution in a wide range of situations) young sports people have little experience. So of course we use the time to teach the athletes about these areas, too.

Thanks for talking to me.

The case for Shock Wave Therapy

During the U20 football World Cup in South Korea in 2017, we used shock-wave therapy (equipment from EMS) in the following diagnoses/complaints:

- Pain in the case of insertion tendinopathies (supraspinatus, Achilles heel)
- Iliotibial band syndrome with pain at the lat. knee insertion
- Discomfort at the scar site of a healed pulled hamstring biceps fem.
- Hypertonicity of various muscles as a supplement to manual techniques, e.g. gluteus max/ med/ rectus fem/peroneus muscles/ gastrocnemius c.lat/
- Triggerpoints (trapezius p.d./ levator sc./ vastus med.
- Pain during muscle tensing exercises (primarily triceps surae)
- Triggerbands
- Plantar fascia primarily in the case of hypertonic calf muscle.

Our experiences with it are thoroughly positive. With the complaints mentioned above in particular we used this therapy all the time as a supplement to manual techniques. Using the combination of Shock Wave + therapy we were able to reduce

regeneration periods and downtime. We also noted very rapid improvements when palpating tissue. It's impossible to present the therapeutic benefit objectively, but constant monitoring within our team has shown a clear trend. And we had completely positive feedback from the players, too.

Summary

Shock Wave therapy for us represents a perfect supplement to manual techniques in the case of myofascial complaints. We were able to quickly bring the myofascial structures back into a pain-free mode. The players' capacity was quickly re-established. In the case of insertion tendinopathies we were also able to achieve rapid pain relief. We also managed to avoid longer downtimes here and promptly reintegrate the players into the training programme.

These treatment results meant that we were quickly able to re-establish myofascial and neuromuscular capacity.



RUNNER'S KNEE CASE STUDY

Complex and therapy resistant iliotibial band syndrome



Peter Stiller

is a specialist in general medicine and emergency medicine as well as the team doctor for FC Augsburg 1907.

Peter Stiller, FC Augsburg team doctor

The person treated was a 58-year-old, very good former long distance runner (half marathon and marathon) who had never had major injuries. Two years ago he suddenly began to repeatedly experience muscular problems in his left thigh and calf area.

The patient tried to repress the problem and "simply run it out", but as a result he was forced eighteen months ago to abandon his proper training programme and in the last few months was not running at all because the pain always set in very early meaning that it was impossible to have a proper run.

Previous treatment

Physiotherapy, several orthopaedic images, injections ("herbal only") and pain relief —> no improvement! So far, no insoles provided, no clear diagnosis, x-ray images of the left hip, lumbar spine and pelvis showed only normal, age-related signs of wear, no higher-level arthrosis.

Diagnostic findings

He presented at my clinic as a visibly despondent, hopeless patient who was clearly suffering (his reaction to my recommendation, "one last try can't hurt"). On initial examination there was significant increased tension on the band on both sides (left >> right), flat feet/fallen arches on both sides, minor pes valgus on the left, unbalanced pelvis (left high) with significant myofascial trigger points on left lumbar spine, uneven gait due to internal rotational malalignment of the left leg when walking (patient unaware). Significant pain on pressure over the trochanteric bursa and the entire musculature surrounding the trochanter. Pain on pressure along the band to above the head of the fibula in the lateral calf musculature. These main tender points were in exactly the same locations as the patient's pain on effort. Additional pain on pressure and pain on stretching above the left sacroiliac joint and nothing abnormal detected in the lower lumbar region. Achilles tendon NAD.

NB: upon precise questioning, the patient remembered having bought new, but "very good" running shoes shortly before the pain began "after running gait analysis in the sports shop).

**Dr. Josh Sandell,
Minnesota Vikings
team doctor**



Therapy and outcome

Due to the complex picture of complaints and causes we sought to achieve three things:

- Alleviating pain
- Reducing muscle tone
- Correcting the internal rotation and improving the gait

In order to rapidly reduce the muscle tone and quickly improve the pain picture, I began with extensive **Shock Wave** treatment (Swiss Dolorclast, large applicator, diameter 36 mm). I then followed up with a chirotherapeutic treatment of the sacroiliac joint and lumbar spine. There was immediately a significant objective improvement and reduced internal rotation of the left leg as well as a more rounded gait. I recommended that the patient rest for one week and exercise only by walking with control of the internal rotation. At the one week check-up: significant reduction of muscle tone, much more rounded gait, symmetrical pelvic alignment, reduced internal rotation of the left leg. The patient feels "somehow freer" when walking, however the patient was of course not able to notice any significant improvement in pain during this strain-free period.

At the time of the patient's second appointment I was being visited by one of the best orthopaedic specialist/chiropractors in the USA, Dr. Josh Sandell, team doctor to the Minnesota Vikings from the American NFL football league. Due to the complexity of the case and the long history of the pain, I asked our runner to come in on this day and asked my colleague for an assessment. After a detailed

discussion and examination, the patient was given another Shock Wave treatment. The patient also received comprehensive treatment by Dr. Sandell to stretch out the fascia, which led to further improvement of the pelvic position and to an alleviation of the increased muscle tone. After this combined treatment of shock wave and chirotherapy the patient was very pleased because he now had a completely normal gait and felt no pain at all on stretching.

The patient has now been advised to acquire high quality insoles following precise measurement and to begin immediately with self-guided BLACKROLL exercises in order to achieve a further and continuous relaxing of the muscle tone. The stretching of the fascia and muscles achieved by the BLACKROLL exercises are the perfect supplement to radial **Shock Wave therapy** in all forms of muscle hypertonicity. In addition, yoga was recommended to the patient as a method for reducing overall muscle tone and improving the stretch ability of muscles, tendons and bands. One further shock-wave treatment followed after one week. In the subsequent days the patient was told that he could recommence gentle exercise (jogging/cycling) and increase the strain depending on the pain experienced.

Continue with BLACKROLL exercises and yoga. After several more weeks I received a text saying that the patient had continued to do his exercises, that he found yoga fun, the insoles were doing him a lot of good and he had now returned to his normal training regime.



"Pain and sport is an old yet very current issue," – this is a quote from the book "Schmerz und Sport" [Pain and Sport] by Prof. Dr. Spingte and Dr. Roland Droh, published back in 1988. The subject is no less current today, almost 30 years later. The interesting thing is that most methods are not new but were described back then in that book. Prof. Spingte [sic.] Confirmed this in a recent email to sportärztezeitung magazine. The potential of conservative approaches to pain therapy should be intensively exploited in application.

Schmerz und Sport

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