

## The Expert



**Daniel Schloesser** is a sports scientist, physio and manual therapist, personal trainer and nutrition adviser.

Since 2008 he has been treating, training and advising motorsport drivers, first of all in Formula 3 and the GP2 Series and then in the Dakar Rally. Since 2010 he has been looking after Nico Rosberg in Formula 1. Daniel Schloesser is the owner of the company DS Sport Performance.

Exchanging with experts from other fields of expertise is important to Daniel Schloesser. For example, he is already engaged in lively collaboration with Steffen Tröster of FSV Mainz 05.

Training in motorsport is different from any other type of sport – it mostly takes place without the sports equipment, i.e. the racing car.

Sports scientist **Daniel Schloesser**, who looks after Formula 1 driver Nico Rosberg, swears by the concept of therapy and training from a single source. Robert Erbelinger spoke to him about the potential of this approach.

**M**otorsport, and above all Formula 1, holds a particular fascination for spectators. However, between the loud engines and high speeds, the particular challenges facing drivers and their support are often overlooked. “What is special about Formula 1 drivers and is at the same time the biggest difference between them and other professional athletes, is that they are only able to train in their sport in a very limited way,” says Daniel Schloesser. “For the past few years drivers have only had four to six test or training days available to them each year in addition to the normal training Friday of a Formula 1 weekend.”

Whilst a tennis professional for example can prepare his body for the extreme physical demands of the match with sport-specific training, it's completely different in Formula 1. The musculature of the neck is subject to an extreme stress (G-force) due to the acceleration, deceleration and change of direction every time the driver brakes at the end of a long straight or in the countless fast bends in every race. Yet the drivers – particularly in the three-month long winter break – have no opportunity to prepare their musculature for these types of stress in any way close to the reality of the sport. So the team has to be resourceful in order to prevent damage to the musculature or spine through overstraining.

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### Strengthening the neck

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“To train for this we use a specially made cable and pulley training apparatus with a seat which mimics the seat in a racing car,” explains sports scientist and physiotherapist Daniel Schloesser.



Nico Rosberg, born in 1985 in Wiesbaden, is the son of Finnish Formula 1 world champion Keke Rosberg. He began his motorsport career on the karting track in 1996.

# Therapy and Training, a holistic approach

How the expertise of a physiotherapist  
can help top athletes to prepare for competition



Since 2002, he has been racing in Formula motorsport, first of all in the Formula 3 Euro Series, and then in the GP2 Series where he won his first championship title in 2005.

Since 2006, Rosberg has been competing in Formula 1 races, first of all for the Williams racing stable and since 2010 for Mercedes. He has notched up

numerous Grand Prix victories. In 2014 and 2015 he came second in the Formula 1 world championship.



## Steffen Tröster

Physiotherapist  
with the medical team  
of 1st FSV Mainz 05



The medical challenges in motorsport and in football are not always similar, nevertheless an exchange across the borders of these two sports of the kind which I am pursuing with Daniel Schloesser is very meaningful. We both provide therapy to athletes – or sometimes to patients.

We have confidential and lively exchanges about experiences we have had with modern therapy methods, and discuss which measures are useful for our own particular specialist areas of competitive sport. For us in sports medicine, this exchange has become essential. But beyond the medical points of contact, Daniel Schloesser and I have a friendly relationship which finds its origins in our shared training as physiotherapists.

The driver's steering wheel and helmet are linked to the weights on the cables via karabiners. This enables the driver to train with varying weights, statically or dynamically, for stamina or maximum strength. When travelling, they use mobile sling trainers. Using these, the driver can lay into different angles on his side or on his back and train neck extension or lateral flexion.

Another way to strengthen the neck is by placing weights on a towel directly on top of the head and keeping them there. The training intensity is increased by carrying out the exercise on a Power Plate. The vibrations are similar to the shuddering felt in a racing car, caused by an uneven track surface for example.

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### Sitting as a health risk

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A Formula 1 racing driver sits in his car from Friday to Sunday for up to seven hours a day. This is no normal kind of sitting and cannot be compared to sitting when driving a normal car. In motor racing, it is active sitting. Each individual muscle is called upon during the drive. The driver must constantly make subtle adjustments to his body position depending on the bend and the view. This can lead to health problems; since the driver is very tightly held by his safety harness and seat, high compressive forces act on his back through the seat. In a poorly designed seat, this can even cause bruises and severe swelling. For this reason, the manufacturing of a seat and its individual adjustment to the driver takes place at the highest technical level.

But a special training is also required for the driver. "Since his torso is permanently tensed during the race in order to stabilise the body, we try to take this into account in training, too," explains Daniel Schloesser. "We achieve this by training with free weights when seated, lying on the front or back or standing on a gym ball." Wherever possible, this is done without putting hands or feet on the floor in order to train for balance. "This is another opportunity to use the

sling trainer," adds Schloesser. "You can lay into the hip sling for any of the free weights exercises and this means that you are always activating the musculature of the torso at the same time."

For Daniel Schloesser, therefore, the particular challenge lies in finding ways for top athletes to reach their best possible level with regard to physical stamina, strength and perfect concentration without training in the Formula 1 car. Naturally there is a close connection between these elements. A driver with poor physical stamina will also be lacking concentration by the end of the race. If the driver does not have enough strength in his neck, then he will rest his head in fast bends against the headrest, meaning that he has a poorer field of vision than drivers who can hold their heads up straight to the end.

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### Concentration

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"The most important factor is the ability to concentrate constantly," stresses Daniel Schloesser. "If a driver loses concentration in just one bend – for example in the leading position in Monaco – then the best stamina and strength will be of no use to him. He will throw victory away because of this one brief moment of inattention." Here in particular, the trainer and the driver tread on a very fine line because too much stamina and strength training can have a negative impact on mental freshness. So it's important for the driver to have a regeneration phase fitting him before the race weekend, in order to ensure that his mental fitness and thus concentration are at the highest possible level when it comes to qualifying and racing.

To this end, Daniel Schloesser and Formula 1 driver Nico Rosberg also often play table tennis. On the one hand, it boosts hand-eye coordination and on the other, after a stamina training session, table tennis is ideal for concentration. The breaks in concentration between each kick are considerably shorter than in tennis and the physical effort, too, is relatively low in compari-

son to other sports. “This enables us to train on concentration in a state of physical fatigue,” explains therapist Daniel Schloesser.

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### Jet lag and nutrition

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In Formula 1, of course, the often long journeys to the race circuits of the world also have an impact on the driver. A good immune system is essential for resisting the stress caused by jet lag and changes in climate, amongst other things. After all, what use are the best stamina and strength if the driver is sick for four of the 20 annual races due to overtraining?

According to Daniel Schloesser, it is more sensible to drop one or other of the intensive training sessions and perhaps be a little less fit, but to reach the start line of each race healthy. Nico Rosberg has not had to miss one single race in the six years that he has so far been working with Schloesser. The therapist and the driver have achieved this through a special concept. Rosberg adjusts his sleep rhythm to the time zone of the overseas race while he is still in Europe, in order to avoid jet lag. Little tricks such as avoiding very bright light can influence melatonin levels, which makes it easier to adjust to time changes (melatonin controls the body’s day-night rhythm).

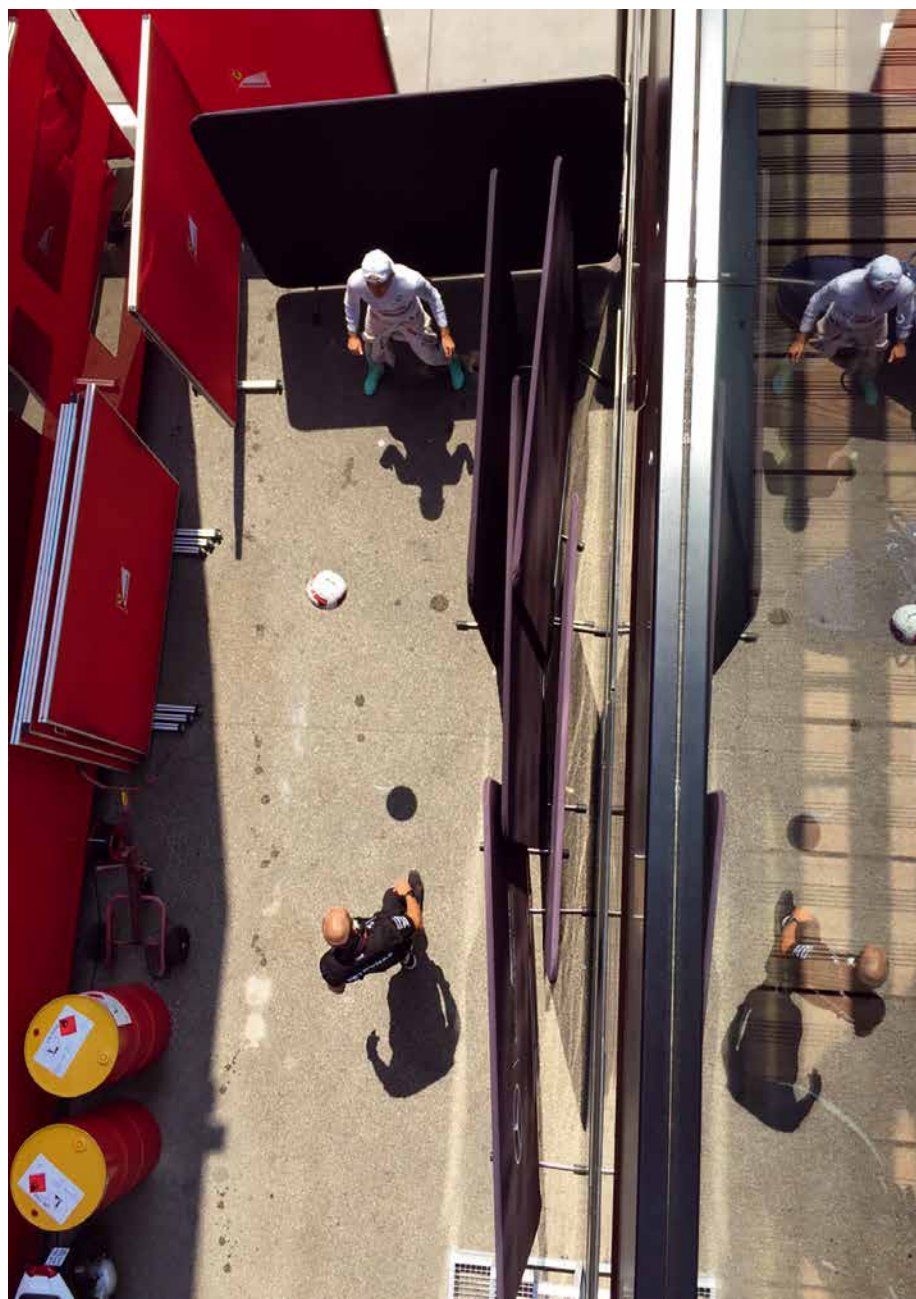
With regard to his nutrition, Nico Rosberg has been an expert himself for a long time. Schloesser illustrates this with the racing driver’s eating habits, “He tries to completely avoid all short chain and industrially processed sugars. He takes in vitamins and minerals primarily through vegetables and less through fruits, similarly to reduce his sugar intake.” On a race weekend, Rosberg’s menu will for example include quinoa with some eggs and broccoli, carrots and aubergine or basmati rice with chicken or salmon fillet, red pepper and fennel. “For breakfast, there is usually porridge with half a banana and lactose free milk or gluten free toast which is quick and easy to digest, with avocado and tomatoes,” reports Schloesser.

As a reward for gaining pole position, though, the physiotherapist and nutrition adviser will

give him a quinoa muffin. “My own recipe,” he stresses. “It is sugar free and looks much more delicious than it is. You could tell that from the envious expression on an engineer’s face when he saw one and wanted to try it,” Schloesser remembers with a smile. Following the current low-carb trend and heavily cutting back on carbohydrates in his diet would be too risky because of the enormous mental demands in the car and is therefore not even up for debate.



Daniel Schloesser and Nico Rosberg playing Keepy-Up-Soccer.





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A concept ahead of its time

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Daniel Schloesser's collaboration with Nico Rosberg, however, goes far beyond training and nutrition advice. "I think having both medical and sports science knowledge is an advantage, for someone who supports an athlete" says Schloesser. "As a trainer, you ought to know the potential medical consequences of certain stresses and as a therapist, you ought to know how to accelerate the healing process through training, or how to minimize the drop-off in performance following an injury." Therapy and training from a single source – what does that look like in practice? "Since Nico and I do the majority of the training together I can always control, experience and evaluate the intensity and scope of the work I do with him," explains the trainer. "Since we have a similar level in most sports, we should also experience the intensity of the training in a similar way. For example, if we both go on a training run after a long haul flight and before an important race, and I feel fitter during the run than he does, it could be a warning sign that he is about to come down with an infection or that he needs more regeneration."

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Top athlete as trainer

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Having a background in competitive sports stands Daniel Schloesser in good stead; he has finished eight ironman competitions with a personal best time of nine hours, 18 minutes and was a ranked player in the German tennis association for many years. "It makes a difference on the quality of the training whether as a trainer you can compete at the same level in triathlon training, table tennis or even in snooker, or simply ride alongside on a bike or throw in balls from a bucket," says Schloesser. "Nico and I mainly choose sports in which we are at a similar level and try to make each session a competition. That can lead to brief moments of tension sometimes, but also guarantees that the quality of the training remains high."

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Finding causes

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Schloesser thinks that it is in principle easier to find the causes of issues when the trainer is also the therapist. For example, if problems arise in the shoulder, then a therapist who is also the



trainer would more easily know what the cause could be, perhaps a new technique or unfamiliar movement.

Beyond the application of this concept in professional sport, it is also being used by people practicing sports for leisure. They are increasingly requiring instruction in sport, or at least desiring it – primarily after an injury or when starting physical exercise after a period of inactivity. The trend here is towards the personal trainer, ideally in combination with therapeutic support. This offers security and provides confidence, and in the areas of rehabilitation and prevention as well. It has been a long time since people have not considered sport as mere physical exercise, but a form of therapy.

The significance of sport and physical activity in our society has increased in the recent years and will continue to do so. Therapy and training from the same source is a model for competitive sport but also for the broader sports market and the medical field. Yet even though the concept of “therapy and training” is already emerging in leisure sports, it is still not yet established or even widespread in top level sport. It is possible to find positive examples in triathlon and professional soccer. In general, these examples

however are the exception. Only in Formula 1 has this kind of collaboration existed for a longer period of time.

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### Formula 1 as trendsetter

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The job of trainer in Formula 1 cannot be compared with the tasks of coaches in other sports. From Thursday to Sunday, there is very little training as a rule. The focus is on the setup of the car, media work, free sessions with the car, qualifying and racing.

Here, the trainer or physiotherapist primarily takes care of nutrition, hydration, preparation of the race team and other support tasks. And yet even this phase is not completely without support. “Before each of the sessions, Nico and I usually play keepy-uppy soccer against each other. Even here, competition and the drive to win play such a big role that it often expresses itself in lively discussions and no one dares to be our referee,” says Daniel Schloesser.

“It gets him to the right operating temperature and sometimes also adds a bit of adrenalin and aggression for the qualifying round or the race. Shortly before Nico gets into the car, I also give him a bit of manual resistance training on his head to activate the musculature of the neck.”

The particularity of not being able to train in a sport-specific way can absolutely also be seen as an advantage. By engaging in extremely diverse training, Formula 1 drivers avoid the danger of the demands becoming too repetitive. Being stimulated in constantly changing ways also optimises the adaptability and effectiveness of the training.

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### Interdisciplinary thinking

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The medical team and/or trainer team play an important role in the athlete’s success. In his work with Nico Rosberg, however, Daniel Schloesser has also learned that in very many cases, the athlete can also find out for himself what is best for him. To achieve this, he must

They plan to expand the network. One of those set to join them is **Dr. Klaus Pöttgen** of Darmstadt 98.



be prepared to get to grips with the basics of training, nutrition and medicine.

Nico Rosberg is definitely prepared to do this. “Whether it concerns training or therapy, he always wants to know and understand why he is doing something,” says Schloesser. Rosberg frequently develops a great interest in the theory. “When we began to work together, we did a lot of triathlon training and as a highlight, we set ourselves a competition over the Olympic distance in Kitzbühel,” Schloesser remembers. Rosberg achieved the good overall time of 2:07:23.

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### Training design

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Alongside the little daily swimming, cycling and running competitions, at some point a competition over knowledge of training theory and the best way to design training developed. “There was a time when Nico was reading so many different triathlon magazines that he was to some extent better informed than I was,” Schloesser admits. “During that time I was less of a trainer than his equal discussion partner and adviser.”

Knowledge like this, paired with the ability to listen precisely to one’s own body and the experience of how one’s body reacts to therapeutic approaches, nutrition and training often help the athlete more than numerous pieces of medical advice. Nevertheless, in many situations, athletes require additional medical help from other experts. On the medical side, Nico Rosberg has been supported for many years by Finnish doctor Dr. Aki Hintsa and his Australian colleague Dr. Luke Bennet.

These two doctors in turn seek the advice of other experts when it comes to specialist matters. This interdisciplinary exchange and collaboration between a variety of experts from different backgrounds have paid off.

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### Exchange with other experts

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Since Daniel Schloesser is travelling around the world with Nico Rosberg during most of the year, he only has little time left to engage in professional development. Even if he takes a variety of courses, currently for example in the fields of FDM (Fascial Distortion Model), SDCA (Swiss DolorClast Academy) and osteopathy, the result is often that he comes under great time pressure.

This is why he works to build cooperation and exchange networks with other professionals from various fields. There’s already an exciting collaboration with Steffen Tröster of FSV Mainz 05. Setting up a more comprehensive network with Steffen Tröster and Dr. Klaus Pöttgen (SV Darmstadt 98) is in the pipeline.

“When I realised during my FDM training that a contact with a specialist in this field could be beneficial for Nico and me, I asked my tutor Christoph Rossmay for advice. We could really gain from this exchange,” summarises Daniel Schloesser. “But here too, in the end it’s always Nico who takes the decisions as to which of the various pieces of advice and opinion are most useful for him.” Including the competent athlete in all areas is certainly also part of the strategy that makes the Rosberg/Schloesser model so successful.