MATHYS
European Orthopaedics

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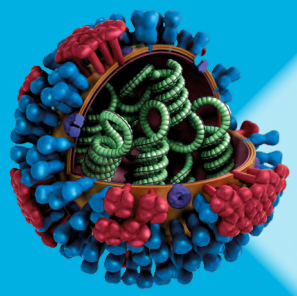
STIMULI FROM ORTHOPAEDICS AND THE PROFESSIONAL FIELD – FOR PHYSICIANS, SPECIALISTS AND EXECUTIVES

Focus on science

In brief:
The optimys stem impresses at the «half-way stage»

Interview with Dr Benjamin Reinmann

Behind the scenes during COVID-19



From the professional field

«Knowledge hiding» – the truth behind knowledge hoarding

In brief: The optimys stem impresses at the «half-way stage»

Dr Karl Philipp Kutzner [a]

The optimys stem is one of the most popular members of the calcar-guided short stem family. As the «half-way stage» analysis following 5 years of clinical use illustrates, patient satisfaction, functional scores and survival rates are remarkably high.

Short-stem hip prostheses have become increasingly established in many parts of the world over recent years. Short stems represent a bone- and soft tissue-sparing alternative to conventional implants, are ideal for minimally invasive procedures and, where required, allow the option of revision to a standard straight stem. [1]

The optimys stem belongs to the latest generation of short stem implants and is now one of the most popular members of the calcar-guided stem family. [2] The key feature here is individualised shaft positioning in accordance with existing anatomy, which is achieved through variation of the femoral neck osteotomy. [3] In addition to purely metaphyseal anchoring, additional fixation in the proximal diaphysis is therefore also possible, depending on the anatomy.

The optimys stem was first implanted in Wiesbaden in 2010 as part of a multi-centre study. Over the past ten years, the medium-term results of 216 stems have been analysed and published.

Impressive clinical and imaging data

The overall values of both the functional scores and patient satisfaction surveys were excellent after 5 years. [4]

An extremely satisfactory post-operative level of activity was demonstrated in a separate analysis of a total of 54 patients who underwent synchronous bilateral implants. [5] In many cases, the patients were even able to resume sporting activities. [5]

After 5 years, images taken from the entire study population showed no evidence of osteolysis. Small radiolucent lines were observed in just 2 cases (1 %), with no progression over time. Compared with other short-stem implants, it was noted that there were few signs of distal load transfer as evidenced by cortical hypertrophy (4.5 %); moreover, all these cases remained completely asymptomatic. In varus configurations, there were almost no discernible signs of bone resorption consistent with stress shielding allowing the assumption of metaphyseal anchoring in this situation (Fig. 1).

In valgus configurations, only partial proximal bone preservation occurs. Due to additional anchoring in the proximal diaphysis, a slight reduction in bone density was recognisable after 5 years. [4] A recently published DEXA study has demonstrated that short stems can minimise stress shielding and periprosthetic bone loss.

«Undersizing» recognised as a cause of migration

Axial implant migration is regarded as a negative predictive factor for implant survival. [6] After 2 years, the mean axial migration in the entire study population was 1.43 mm. [7] At the 5-year point, most cases exhibited stability with a mean value of 1.50 mm. [8] Continued migration of > 1 mm occurred in only 4 cases. In all of these cases, undersizing of the stems, which in some cases was significant and attributable to a surgical error, was determined as the cause (Fig. 2).

Undersizing was more common particularly in valgus configurations; more axial migration was therefore also noted. [9] The risk of stress fracture formation was increased in overweight male patients. [10] At the 5-year point, none of the cases in the study population exhibited any clinical consequences.

High survival rate of 98.5 % after 5 years

While the study population from Wiesbaden had no cases requiring revision surgery with a change of implant, stem revision was required in 13 cases after 5 years in the multicentre study. This corresponds to a survival rate for the optimys stem of 98.5 % after 5 years. The most common cause of revision was determined to be a traumatic periprosthetic fracture. In particular in femora with a very wide cylindrical medullary cavity (DORR type C), the risk of post-operative fracture increased significantly. [11] The observed low complication rates, both intra-operatively and during the first few years after surgery, is notable. These results are impressively confirmed by recent data from the Australian, Swiss and German endoprosthesis registers. [12–14] In this case, the optimys stem is one of the stems with the lowest revision rate overall.

Summary

Excellent clinical outcomes, bone-sparing properties in most cases, a broad range of indications and a remarkably low complication and revision rate make the optimys stem an exceptionally reliable and versatile implant. To ensure high primary stability, undersizing should be avoided. Intra-operative check X-rays are mandatory. These implants are not recommended for DORR type C femora.

An analysis of the 10-year results will begin this year and should provide provide additional support for the optimys stem's continuing success story.

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Fig. 1 *Example of a varus configuration with metaphyseal anchoring (left: post-operative; right: 5-year follow-up)[4]*

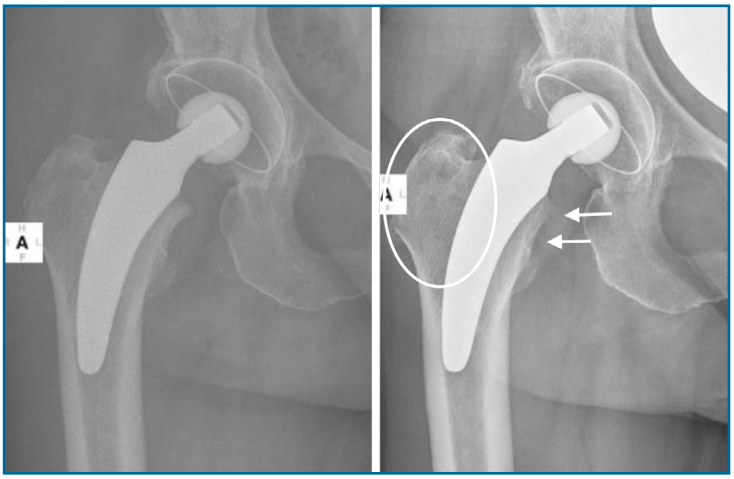
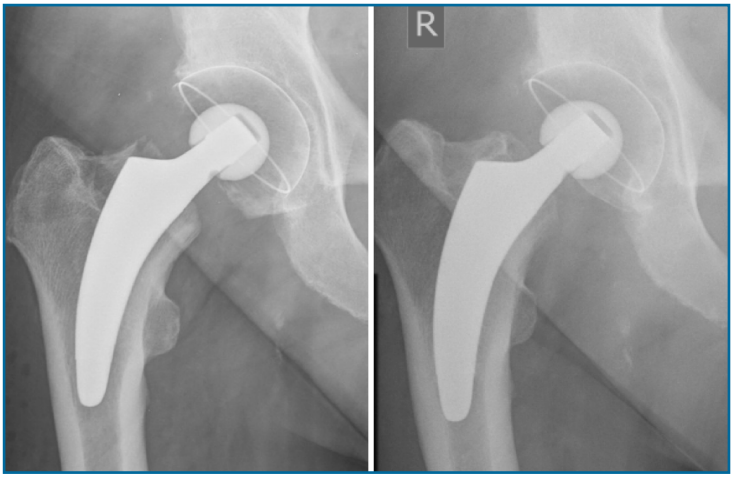


Fig. 2 *Example of a varus configuration with metaphyseal anchoring (left: post-operative; right: 5-year follow-up)[8]*



Behind the scenes during COVID-19

Dr Benjamin Reinmann *has been CEO of Mathys Ltd Bettlach since 2017.*

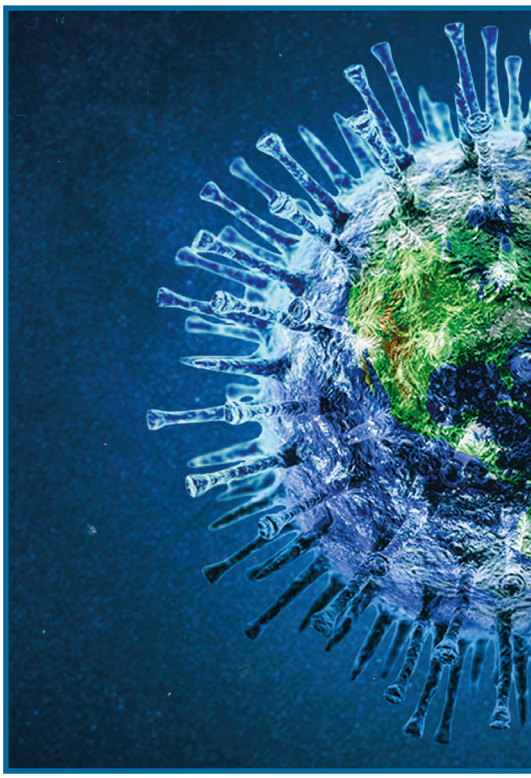
The novel virus COVID-19 has globally forced all of us into an extraordinary situation and confronted us with challenges. How have we at Mathys mastered this crisis? In the following interview, our CEO Benjamin Reinmann discusses this and ventures a look into the future.

When did you first hear about the new Coronavirus, and when did you realise that Mathys would be in danger from it?

The first time I encountered the new COVID-19 virus, thank God only virtually, was in January 2020, when I saw the news from Wuhan, China. Of course, I was familiar with Coronaviruses from my medical training, and so I was still rather relaxed in the first days. I was bewildered, however, when it became clear on the one hand how aggressive this type of virus can be towards humans, and on the other hand what drastic measures the Chinese authorities were taking to prevent spread of the virus. I was aware that China is not exactly squeamish. But the fact that a city of millions like Wuhan was completely sealed off from the outside world in all dimensions made me prick up my ears. It was immediately clear to me that a virus with an incubation period of up to 2 weeks is unstoppable. Our world is simply too fast-moving and networked; any reaction time is too long. A short time later it was clear: Mathys would be affected in many ways.

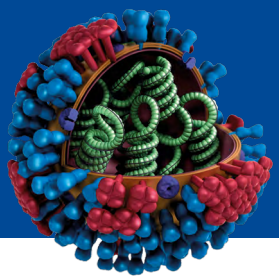
What were the first measures taken immediately at Mathys?

As early as February we established a pandemics team at Mathys, under the direction of our safety officer. The paramount focus was on the protection of our employees worldwide. Here, we strictly adhered to the guidelines of the health authorities of the respective countries, and implemented them accordingly. This included having approximately 90 % of the administrative staff work from home, with all meetings held virtually, using the «Teams» software. In those fields where physical presence of the employees was absolutely indispensable, such as in production, we consistently complied with the rules on distance. Employees with pre-existing conditions whose obligations in the company could not be met via home office were instructed to stay at home. As during the further course of the pandemic our customers, i. e. the doctors and hospitals, were no longer allowed to perform elective surgeries,



we immediately introduced part-time working throughout the company worldwide. This was often not easy on the employees, as it was also accompanied by personal financial losses.

«The paramount focus was on the protection of our employees worldwide.»



How did you perceive your leadership team during this time?

The long weeks of lockdown in the countries affected were exhausting for all of us, above all emotionally. The initial anxiety about health quickly gave way to the stress of childcare, home office, part-time work, and social isolation. In such demanding times, leadership of the employees is particularly important. Uncertainty creates insecurity. The best way to counteract this is through open and frequent communication and motivation. This task was solved in a commendable manner by the management team of Mathys. It is no myth that crisis reveals who can lead.

How did the workforce behave as a result of the measures, and how did they react to them?

The Mathys team is simply wonderful! I cannot say it any other way, and I am very proud of my staff. Despite the stress of the lockdown and the rigid measures we had to take, every day I experienced how the employees always gave their best and jointly found pragmatic solutions adapted to the situation. I always had the feeling that each and every one supported the other and was ready to go the extra mile. This impressed me very much and demonstrated that this team spirit is essential as the «glue» for our company.

How did we handle our customers and partners in this extraordinary situation?

This question touches two aspects. Our customers were just as severely restricted by the country-specific measures of the health authorities as we were. In many cases, our sales force was not even allowed to enter the hospitals, which was absolutely understandable and correct. Contact was therefore primarily conducted electronically and reduced to a minimum so as not to place an additional burden on the resources in the hospitals. Most of the national organisations set up an on-call service in order to be able to address any needs of our customers quickly and easily. Our most important goal was to be there for our customers at all times and everywhere, even during the COVID-19 crisis, and above all to remain able to deliver, as you would expect from Mathys. The other group are our suppliers. We were very lucky that our supply chains were never interrupted at any time. Thanks to longstanding, partnership-based relationships with our suppliers, a low degree of dependence on China, and the high vertical integration and value creation in our production, we were able to smoothly ensure delivery capability here as well.

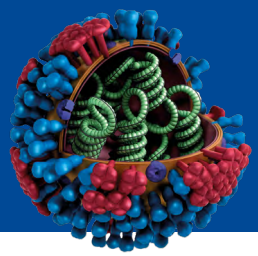
«Our most important goal was to be there for our customers at all times and everywhere.»

Which projects were most affected by the new situation?

The question must unfortunately rather be which projects were not affected by the crisis. We focused primarily on two goals: Ensuring our ability to deliver for the benefit of our customers, and secondly, implementing the MDR guidelines. As you know, the European Commission has decided to postpone introduction of the new MDR guidelines, scheduled for 26 May 2020, by one year, to 26 May 2021. However, since the validity of the MDD certificates of existing products was not concomitantly extended by the European Commission by one year, the postponing of the introduction helps in the short term but not in the long term. We therefore decided to continue work on this important project. This will now benefit all other projects, which we are now powering up again.

What chances may this crisis offer for Mathys?

Use of electronic means of communication, or in other words digitalisation, is in my opinion a clear opportunity. This may sound a bit trite, as this is what every CEO states. Nevertheless, it is true. During the crisis we all had new experiences with it, because we had to, not because we wanted to. It is always astonishing that often an external event is necessary as a reminder to be open to change and new and unfamiliar things. In my view, however, this goes far beyond the use of smart conferencing tools. Take the congresses for example. Most of them have been cancelled for 2020, and new formats are emerging to complement or replace the classic congress. Personal contacts are important and necessary for us



as human beings. It is difficult to interpret facial expressions and body language via electronic media and to develop a «feeling» for the person at the other end. Nevertheless, the congress landscape will not be the same in the future. The same will be evident in our dealings with customers. Digitalisation of customer relations will also gain momentum. Humans will be humans, and thus social beings. People will continue to meet in person for leisure activities or meetings for hands-on training. However, technical possibilities and platforms are now going to bring about changes that will replace other traditional formats. In the future, the following applies: Whatever can be discussed, exchanged and learned virtually will move into a digital world.

«Use of electronic means of communication, or in other words digitalisation, is in my opinion a clear opportunity.»

Will the economy change permanently after COVID-19, and what consequences may this have for Mathys?

As is well known, people are swift to forget. This is probably due to the fact that in terms of a protective mechanism, our brain tends to repress negative experiences more quickly. So, the question is justified whether in the end nothing will have changed and everything will remain the same. I do not think so!
An event like COVID-19 will have kept our society and especially the economy busy for long enough to make changes inevitable. New ideas emerge, the status quo needs to be reconsidered. I do not expect the economy to recover completely before 2022. We may see some compensation towards the end of 2020, but it will level off. I am curious about the impact of the COVID-19 crisis on supply chains. Even though I do not believe in de-globalisation, and consider this wrong too, some manufacturers will have to devote more attention to the in-sourcing of critical processes or semi-finished products again. This will have little impact, on us as Mathys, as we can build on a resilient supply chain and thus ensure a reliable supply capability for our customers. In general, Mathys will survive the crisis well. We are very solidly positioned and have prepared intensively for the period after COVID-19.

«New ideas emerge, the status quo needs to be reconsidered.»

Mr Reinmann, thank you very much for talking to us today!

Preservation in motion

Energy boost from illuminated eyewear

For doctors, nursing staff and other hospital workers, it is important to be wide awake and highly focused at the right time. New CHRONOGY Eyewear, tested by top athletes, is designed to help its wearers achieve this.

The novel eyewear is equipped with an LED layer that sends high-intensity light to photoreceptors in the eyes, regulating the internal clock. CHRONOGY Eyewear is supplied with a smartphone app that allows the eyewear to be adapted to individual requirements. Boost mode stimulates the brain with blue-white light and is intended to improve alertness and concentration and ensure shorter reaction times. Relax mode produces a warm, reddish light scenario with a slowly varying intensity to slow the wearer's rate of breathing and encourage recuperation. Jetlag mode accelerates the adjustment to time differences or when the wearer is on varying shift patterns.

Further information about CHRONOGY Eyewear and how you can download the app can be found at:
www.osram.com/cb/chronogy

«Knowledge hiding» – the truth behind knowledge hoarding

Hospitals are knowledge-intensive organisations and are dependent on their staff exchanging their knowledge. However, not all hospital employees are keen to share their expertise. Our checklist, available for you to download, shows you how to tap into this knowledge base and how to prevent «knowledge hiding».

In hospitals, the sharing of practical experience, professional expertise, knowledge regarding unofficial structures and rules is of crucial importance for safeguarding and improving the quality of healthcare. [1] Many companies and organisations encourage their employees to share their knowledge with each other. The reality, however, is sobering. In an online survey by «The Globe and Mail» in Canada, 76 % of readers said they hid knowledge from colleagues. [2] Catherine Connelly, Professor of Organisational Behaviour at McMaster University in Hamilton, Canada, used scientific methods to investigate how employees at an international financial service provider handled questions from colleagues about their knowledge. [3] Her findings: To approximately every tenth question, respondents preferred to keep their knowledge to themselves. [3] Connelly coined the phrase «knowledge hiding» to describe a person's attempt to consciously withhold or hide knowledge requested by another person. [3]

Strategies for not revealing knowledge

«Knowledge hiding» is not simply the opposite of «knowledge sharing». Researchers uncovered various strategies that knowledge hoarders use to keep their knowledge to themselves: [3, 4]

Evasion

Knowledge hoarders respond to questions from a colleague regarding the best surgical approach for a crucial ligament tear with an evasive answer, such as: «*There are various options, all of which have their advantages and disadvantages*», but just what these are, the requester will never find out.

«Acting dumb»

The person who wants to keep their knowledge to themselves feigns ignorance. In response to a question from a new intern about how a patient's case notes are managed, they might say: «*Oh, it's complicated. I'm really not sure myself.*»

Rationalisation

With this strategy, the person apparently has a good reason for keeping quiet. They may answer a question from a colleague regarding what criteria the decision to use a certain implant is based on like this: «*It's confidential*», or «*I'm not authorised to discuss it.*»

An individual may not always pursue the same strategy: a study of assistant professors and research assistants at Turkish universities showed that they are most likely to use a rationalisation strategy vis-à-vis their colleagues, while using an «act dumb» tactic towards their superiors. [5]

Reasons for «knowledge hiding»

There are obviously many different reasons why employees might withhold knowledge. [3–8] Sebastian Mangold at the School of Management at the Technical University of Munich has identified the following reasons, among others, for «knowledge hiding» that can also occur in hospitals: [6]

Creating a competitive advantage

Rivalry between colleagues can lead to knowledge not being shared. The desire behind this is to look better and to shine with their expertise or make their rival look worse and minimise their performance.

Desire for power

Anyone who has acquired specialist knowledge that nobody else in the hospital has – knowledge of domination – can make themselves indispensable and exercise tremendous influence over their department or the organisation as a whole.

Desire for retribution

Anyone who feels disadvantaged or held back

due to their manager or a colleague may, by withholding information, wish to get revenge on them.

Researchers in Australia found that employees kept information to themselves if they felt that their colleagues relied on them to complete their work, as this created unrealistic work demands and excessive pressure. [9] Chinese researchers discovered that negative affective states of senior and junior nurses could encourage both direct and indirect knowledge-withholding behaviour. [10] Negative affective states can be triggered by rude and aggressive patients or high levels of work stress, for example. [10]

«Knowledge hiding» has serious consequences on the organisation as a whole, its employees and their relationships. It poisons the atmosphere and creates mistrust. The quality of healthcare is jeopardised and the hospital's competitiveness is hampered. This is why it is important to understand and recognise this phenomenon, where people in your organisation prefer to guard their knowledge rather than share it, and what the reasons for this might be.

Our checklist tells you where you can take action to tap into employees' wealth of knowledge and experience to prevent «knowledge hiding».

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Download

You can find the downloadable checklist entitled «Using the right tools to increase motivation for ‹knowledge sharing›» here.

Further reading

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Anchor Academic Publishing, 2015.

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