

JUNE 2021

move! 101

*a new way of thinking about everyday life
in medicine and in the clinic*

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

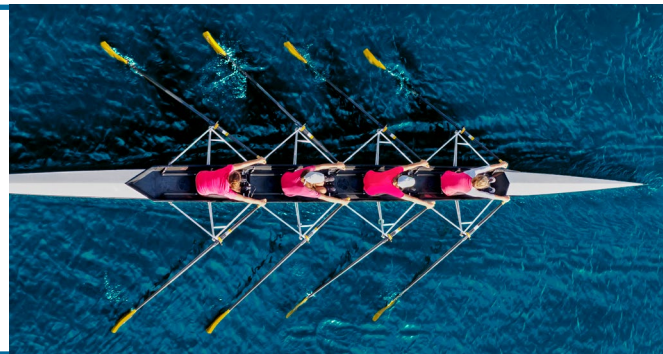
Preservation in motion

Augmented reality (AR) –
the future of knee
replacement surgery?



From the professional field

Personnel management:
what is «team spirit»?



Mathys Online-Live Event

Online advanced training format:
«Kinematics and
biomechanics of shoulder
arthroplasty»



Online advanced training format: «Kinematics and biomechanics of shoulder arthroplasty»



Retrospective of session 1:
**«Periprosthetic joint infection
in shoulder arthroplasty»**
23 March 2021

Following the success of our first session – «Periprosthetic joint infection in shoulder arthroplasty» – on 23 March 2021, we are pleased to now provide you with access to the recording of the first session in the Mathys Online-Live Events series.

All you need to do to watch the recording of the event is register free of charge. This event will remain certified by the German Medical Association until 23 March 2022 and is worth 4 CME credit points. It was developed especially for orthopaedic surgeons. To receive the credit points and a personalised certificate of participation, you will need to complete the CME quiz following the online advanced training session.

»Recording

»Brief instructions on how to
[register free of charge](#)

»Brief guide to the CME quiz

In collaboration with Winglet, we will be presenting our second CME-certified online live event (in English) at 7 pm on 29 June 2021. The topic will be «Kinematics and biomechanics of shoulder arthroplasty».

The session was developed and will be moderated by Andreas Niemeier, Prof. MD (Hamburg, DE), and Philip Kasten, Prof. MD (Heidelberg, DE), together with the international faculty: Andreas Marc Müller, Prof. MD (Basel, CH), J. Philippe Kretzer, Prof. PhD (Heidelberg, DE) and Thomas Gregory, Prof. MD PhD (FR).

Get insight into clinically relevant problems and challenges in total shoulder arthroplasty with focus on the biomechanics and kinematics and enjoy respective case discussions!

SESSION NO 2

**Kinematics and biomechanics
of shoulder arthroplasty**

29.06.2021, 07:00 pm – 08:45 pm

ONLINE-LIVE EVENT

CME CREDIT COUPON AVAILABLE FROM YOUR LOCAL MATHYS REPRESENTATIVE

Titel & Faculty

Introduction Ph. Kasten (DE)

Reverse TSA – Impact of humeral and glenoid parameters on kinematics and biomechanics of the shoulder A. Müller (CH)

Reverse TSA – Stemless, Short or Long Stem? Biomechanical Considerations regarding Risk of Loosening Ph. Kretzer (DE)

Anatomic TSA – Impact of glenoid positioning on long term outcome in TSA Th. Gregory (FR)

Summary and discussion A. Niemeier (DE)



Chairs:



Andreas Niemeier
Prof. MD (DE)



Philip Kasten
Prof. MD (DE)

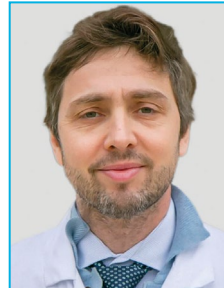
Faculty:



Andreas M. Müller
Prof. MD (CH)



J. Philippe Kretzer
Prof. PhD (DE)



Thomas Gregory
Prof. MD PhD (FR)

The core content of the session:

- How new implant designs might influence clinical outcome and practice.
- About new technical developments in anatomic and reverse total shoulder arthroplasty.
- The effect of humeral inclination, lateralization and retroversion in reverse total shoulder arthroplasty.
- The influence of stem length on biomechanics and long term survival in reverse total shoulder arthroplasty.
- Biomechanical aspects about glenoid in anatomic total shoulder arthroplasty.
- New considerations on glenoid positioning in reverse total shoulder arthroplasty.

Registration:

Register for the event free of charge by clicking on this [link](#). The event is certified by the German Medical Association and is worth 4 CME credit points. It is aimed specifically at orthopaedic surgeons specialising in shoulder surgery. To receive the CME credit points, as well as a personalised certificate of participation, you will need to complete the CME quiz following the online advanced training session.

»[Brief instructions on how to register free of charge](#)

»[Programm](#)

»[Brief guide to the CME Quiz](#)

We look forward to receiving your registration and to your attendance at the session.

For more information, please find us on:

[Winglet](#).

If you have any questions, please contact

Ms Sybille Käser:

sybille.kaeser@mathysmedical.com

Telephone +41 32 644 12 58

Communicate with colleagues hands-free

Having your hands free while working and still being able to call colleagues in your team – without changing gloves and disinfecting your hands again – saves time and effort.



For a lot of clinicians, it is often impractical and inefficient to use a smartphone during patient care. The Vocera Smartbadge, which is worn around the neck or pinned to a lab coat or scrubs, enables doctors and nurses to reach other team members using voice-operated commands. The communication device has proved extremely useful during the COVID-19 pandemic, as it enables clinical staff to make hands-free calls, without having to remove personal protective equipment. The Smartbadge responds to more than 100 voice commands thanks to an optimised speech recognition engine. It is also possible to send alert and alarm notifications along with patient information.

The Vocera Smartbadge was listed among the 100 best innovations of 2020 by *TIME Magazine*.

Learn more about the product here:
www.vocera.com/vocera-smartbadge

Augmented reality (AR) – the future of knee replacement surgery?

In June 2020, the world's first knee replacement using AR technology Knee+ was performed. In collaboration with its developers, Mathys is opening up new possibilities in knee arthroplasty for users.



Knee+, the first CE-certified AR navigation system for total knee arthroplasty, was developed by the France-based company Pixee Medical. As a partner company, Mathys is set to distribute the Knee+ system in Europe and selected countries around the world.

What is the Knee+ system?

The Knee+ system comprises a lightweight pair of augmented reality glasses and a set of instruments fitted with reusable trackers for navigating a universal cutting block kit (facilitating proximal and distal cuts). The glasses' built-in navigation software allows information from the surgical scene to be relayed to the surgeon: the camera calculates the position of the trackers and an augmented reality image is displayed on an OLED screen.

The operating surgeon is provided with a visualisation of the osseous axes, which are normally difficult to identify during surgery and are not visible through the skin. Intraoperative settings are displayed in real time, which opens up a wide range of possibilities: the open platform allows it to be used in everything from hemiarthroplasty through to complex revision.

An alternative to robotics?

Recently, robotics has also entered the field of orthopaedics. These systems come with high investment costs, significant space requirements, high technical complexity in terms of

use and commitment to specific implant systems or industry partners.

Looking at the machine industry as a benchmark, where the use of robotics has been mainstream for decades, we can draw the following conclusion: robots are used to replace workers, thereby raising the quantitative efficiency of the work.

A modern surgical robot in prosthetics is like a traditional navigation system paired with a mechatronic device, which semi-automatically positions a saw or a cutting block on the cutting plane.

Instead of relying on a mechanically controlled cutting system to perform the critical steps of the operation, we keep the focus on the surgeon. AR technology first became widely known through Pokémon GO! Since the launch of the iPad Pro with its LiDAR sensor, this technology has found widespread use in the design, architecture and construction sectors. Now, AR is opening up tremendous new possibilities with affordable hardware the size of a notepad.

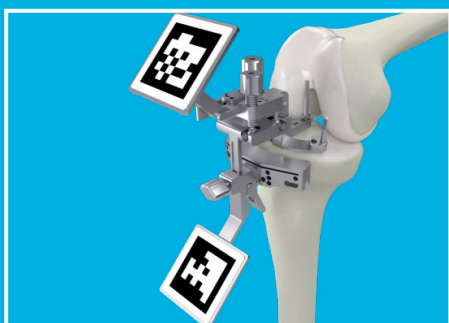
What is possible with Knee+?

The Knee+ system supports surgeons with performing operations with balanSys BICONDYLAR implants. The balanSys BICONDYLAR

knee prosthesis has been in use for over 20 years with excellent registry data, in part thanks to its system of soft tissue-oriented implantation using the unique balanSys BICONDYLAR ligament tensor, which in future will be integrated into the AR navigation.

The balancing tool enables intraoperative simulation of the ligament tension and joint axis before the bone is cut – combined with AR, the interpretation of e.g. femoral rotation is greatly simplified. The important external rotation of the femoral components in relation to anatomical orientation points such as the Whiteside's line, epicondylar axis and dorsal condylar axis can be displayed in a virtual representation in real time – the physician retains absolute control over the prosthesis placement at all times.

Furthermore, it is possible to expand the system to mixed reality: in future, prosthesis kinematics and soft tissue balancing could be simulated during surgery using MRI or CT data, the Mathys ligament tensor and the balanSys BICONDYLAR endoprosthesis. Mathys is pursuing this and other innovative approaches for the future of endoprosthesis in close partnership with another company.



For further information, please contact:

Mathys (Schweiz) GmbH
Ben Hausammann
Product Specialist Knee & Shoulder
ben.hausammann@mathysmedical.com

Video



Personnel management: what is «team spirit»?

Team work, team player, team focus. In clinics, team spirit is a high priority. But how do we define «team spirit» and what is the ideal team composition?

We present nine team types – from Co-ordinator to Completer Finisher – in our checklist.

In hospitals, teamwork is a decisive factor in employee satisfaction and quality of care.¹ Observational studies in surgical departments show that approximately 30% of team interactions include a failure in communication.¹ Where there was less communication, for example during surgery or handovers, patients were five times more likely to suffer complications or death.² Functional teamwork, on the other hand, leads to increased patient safety and also boosts commitment, resilience and satisfaction in employees.³ A team is therefore more than just a group that shares a manager. Real teams are intact social systems, whose members work together to achieve a common goal.³ But who is suited to working this way – that is to say, who has team spirit?

Team spirit has several dimensions

Team spirit cannot be assigned or denied to an employee as a general character trait. Although some people have a greater ability to operate within groups than others, the overall cohesion depends on more than just one individual. The team itself, with its members and its setting, plays a key role in determining team success. Team spirit therefore describes a person's aptitude for being a member of a community.⁴ The person who succeeds in contributing their skills and personality to the team can be said to have team spirit.⁵ The following three dimensions determine how a team cooperates:

1. Personality

First and foremost, personality dictates whether a team works in harmony: studies suggest that, of the so-called «Big Five» personality traits, high levels of proficiency in the categories «openness to change», «conscientiousness», «tolerance» and «emotional stability» as well as a moderate level in the category «extraversion», will facilitate team spirit.⁴ In the high-risk environment of the operating theatre, different personalities have to be able to solve conflicts and problem situations, for example – be they specific questions during a surgical interven-

tion, or differences that actually belong outside the operating theatre.

2. Competencies

Specific abilities foster team spirit: for example, effective communication, targeted planning and good organisational skills have a positive effect on the team.⁴ But independence and empathy are also beneficial to a team. The importance of communication skills and active

3. Fit

The team composition determines whether your own team spirit is right for a specific team: it requires a certain flair to combine skills and personalities in such a way that cooperation runs «like clockwork». According to British psychosociologist Raymond M. Belbin, the ideal team is composed of a variety of heterogeneous personality and role types⁶ (see checklist). Differing skills also complement each other



information-related behaviour is demonstrated by the issue of medication: without a good culture of discussion between doctor, pharmacist, nurse and patient, serious mistakes can occur in dispensing medicines. In some circumstances, specialist knowledge has to be «re-packaged» in order to be understood.

well: it was possible, for example, to raise the quality of care, shorten the stays of trauma patients and improve communication and mutual understanding, by introducing multidisciplinary rounds by doctors, case managers, nurses, physiotherapists, pharmacists and other specialists.¹



Download

The checklist with «From Co-ordinator to Completer Finisher – nine personalities in teams» is available to you as a [Download](#).



Nurturing team spirit

In the clinic, it is part of a manager's job to consciously nurture team spirit, for example by selecting appropriate team members. You should also pay attention to the following factors:⁷

- A team leader who is accepted by everyone provides a firm foundation for team spirit. A doer who is ready to learn and has good social skills makes a good choice.
- Define common goals repeatedly and very clearly. Only if there is clarity about them can everyone strive to achieve them, which develops a sense of togetherness.
- Each person in the team must know their role and their tasks. Otherwise, work ends up being done twice, or conflicts can arise over responsibilities.
- Set standards and set an example, so that your employees can experience and learn what is expected from them in terms of team spirit.

Download our checklist and read about the personality types that can clash in teams, and how important team composition is for team success.

Sources

- ¹ Rosen M A, DiazGranados D, Dietz A S, et al. Teamwork in Healthcare: Key Discoveries Enabling Safer, High-Quality Care. *Am Psychol*. 2018;73(4):433–450.
- ² Mazzocco K, Petitti DB, Fong KT, et al. Surgical team behaviors and patient outcomes. *Am J Surg*. 2009;197(5):678–85.
- ³ Lyubovnikova J, West MA, Dawson JF, et al. 24-karat or fool's gold? Consequences of real team and co-acting group membership in healthcare organizations. *Eur J Work Org Psych*. 2015;24:929–50.
- ⁴ Teamfähigkeit stärken: Drei Handlungsfelder. [Strengthening team spirit: Three mistakes.] Available at <https://wpgs.de/fachtexte/gruppen-und-teams/teamfaehigkeit-wer-ist-teamfaehig/>. [22.02.2021]
- ⁵ Franke, M. Teamfähigkeit – Sind Sie wirklich teamfähig? [Team spirit – Are you really a team player?] Available at <https://arbeits-abc.de/was-ist-teamfaehigkeit/>. [22.02.2021]
- ⁶ Teamrollen nach Belbin. So stellen Sie ein perfektes Team zusammen. [Team roles according to Belbin. How to put together the perfect team.] Available at https://www.impulse.de/management/personalfuehrung/teamrollen-nach-belbin/7305936.html#Welche_Teamrollen_sollten_im_idealen_Team_besetzt_sein [22.02.2021]
- ⁷ Teamgeist fördern – 7 Tipps für mehr Teamfähigkeit. [Nurturing team spirit – 7 tips for more team capability.] Available at <https://ottmarwander.de/teamgeist-foerdern-7-tipps-fuer-mehr-teamfaehigkeit/> [22.02.2021]

Further reading



Valerie Patrick, Anita Williams Woolley
When Bad Teams Happen to Good People: Your Complete Repair Guide for Successful Teamwork.
Career Press; 2021.

Donna Weiss, Felice Tilin, Marlene J. Morgan
The Interprofessional Health Care Team: Leadership and Development.
Jones & Bartlett Learning; 2nd Edition; 2016.

Theresa J.K. Drinka, Phillip G. Clark
Healthcare Teamwork: Interprofessional Practice and Education.
Praeger; 2nd Edition; 2016.

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Mathys Ltd Bettlach • Robert Mathys Strasse 5 • 2544 Bettlach • Switzerland
Telephone: +41 32 644 1 644 • E-mail: move@mathysmedical.com

Editor responsible for the magazine:

Denise Flury • Marketing Communication Manager • Mathys Ltd Bettlach

move! is published by Mathys Ltd Bettlach – your competent partner for total arthroplasty. With new, useful information, *move!* is addressed to specialists in orthopaedics and traumatology in hospitals and practices, as well as all specialist and management staff in the medical field, nursing

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