

THE DENTAL
SOLUTIONS
COMPANY™



Special Care Dentistry

Clever Solutions for Special Needs

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Dear readers,

Did you know? According to the World Health Organization (WHO), some 15 percent of the world's population is living with a disability - i.e. just over 1 billion people. So the question we want to address with this brochure is: How can we bring about reliably good dental care for these people in dentistry? It is evident that people with disabilities pose special challenges for the dental practice - especially in clinics. This starts with equipping the treatment room and ends with training employees to treat people with disabilities.

As the world's largest manufacturer of dental products and technologies for dentists and dental technicians, the topic is of key importance to us. For this reason, here in this brochure we have compiled many aspects which can help you as clinicians to enable optimum treatment for people with disabilities. This has involved us asking representatives of university hospitals in various countries how they have gone about this on their premises.

Further, we show in what form we can support with our product solutions as a company - not only as suppliers, but also as consultants, project managers and partners. Read here our conversation with Melissa Marlin, Key Account Manager at Dentsply Sirona, who supervised the project for fitting out the center for treating special needs' patients at the NYU College of Dentistry. A mother whose son is being attended in this center also has her say.

Hope reading this will serve as inspiration.

A handwritten signature in black ink, appearing to read 'J. Vogel', written in a cursive style.

Yours,
Jörg Vogel

Did you know that...

Germany has only had one chair for dentistry geared towards the disabled since 2015 and no others have been added since then? Dental treatment for people with disabilities is not a particular focus – either in training, or in the daily routine of clinics and practices. The topic, however, is relevant to many patients.

Allow us to divulge some exciting facts and figures in this regard.

7.9 million

people in Germany are living with a serious disability.



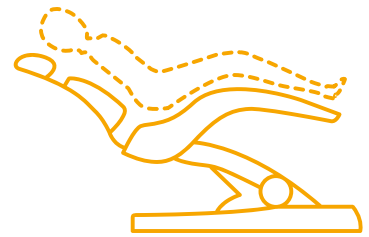
In **20%** of households in the USA there are **children with a disability**.



Each year

1 billion

people are treated with products from **Dentsply Sirona**.



1 in 4 women

in the USA live with a disability.

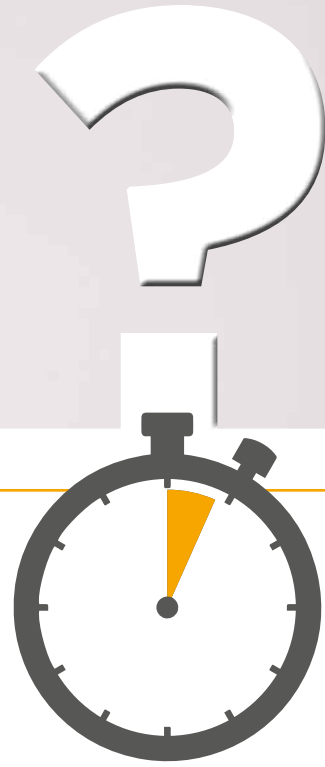
Virtually 100%

of people exhibit **caries** the most prevalent chronic disease in the world.



Since 2015 Germany has had a **chair** for dentistry geared towards the disabled.





Every 4 seconds

worldwide a **digital impression** is taken with an intraoral scanner from Dentsply Sirona.

A dentist integrates on average **12 direct** and **7 indirect restorations** a week.*



Dentsply Sirona installed **9 Intego treatment centers** and **9 Heliodont Plus intraoral X-ray units** in the “Care Center for Persons with Disabilities” at the University of Pennsylvania.

Every year Dentsply Sirona brings **30 innovations** to market.



Almost 1,000 universities and clinics throughout the world have already been fitted out with **products and solutions from Dentsply Sirona.**

\$150 million is invested by Dentsply Sirona in **R&D each year.**

* Dentsply Sirona survey from December 12 to 31, 2019, 1profession1000jobs

Support for disabled patients in clinics: “We are a real partner.”

Treatment for people with disabilities in dentistry previously tended to be a fringe topic – unrightly so. This brochure also shows how university clinics promote improvement in treatment for this group of patients. In the following interview Jörg Vogel and Klaus Lehmann, in charge of clinic business at Dentsply Sirona, give specifics describing which services and solutions the company supports clinics with.



All these people need to use general health services provided by doctors and dentists. The WHO's figures have motivated me to get in touch with a sufferer. We discussed how people with disabilities experience their visits to doctors and dentists. What goes smoothly, what doesn't? How would people with special needs like the environment to be? What would make their visit to a specialist easier?

Lehmann: Through research we have furthermore determined that oral health is a key topic among people with disabilities.

Dentsply Sirona Clinics Solutions stands for well-conceived concepts in university dental clinics and dental care centers. At present, this involves putting particular focus on equipping clinics for treatment of people with disabilities. How have we got here?

Vogel: The World Health Organization (WHO) assumes that some one billion people worldwide are forced to live with some degree of disability. This equates to approx. 15 percent of the world's population. What's more, according to the WHO between 110 and 190 million adults experience considerable functional difficulties. In addition, rates of disability are on the rise – partly due to the aging population and the increase in chronic medical conditions.

Apart from the physical and mental requirements, the prevalences in oral health also dictate the demands on clinics in treating this group of patients. This is the specific point at which we apply our concepts.

How does your idea of a clinic environment aimed solely at patients with disabilities look?

Vogel: We are talking about a global concept which transcends outfitting with products and solutions. Treating people with special needs requires an environment which differs from a classical dental clinic. What is behind this is that – put simply – these patients do not just arrive at the clinic, take a seat on the chair and have their treatment done. For this reason, along with the clinics, we attempt to create an environment which

allays fears (of contact) through intelligent architecture and room planning.

This all shows that it makes sense to concentrate the treatment of disabled people in one part of the clinic, especially as the patients often exhibit restricted mobility.

Lehmann: We quickly determined that a key task involves bringing people together from different disciplines, who on one hand have expertise in dental treatment and on the other realize that students have to learn how to treat people with disabilities. Accordingly, it is a matter of combining the needs of many parties under one umbrella.

What are the biggest challenges from a corporate perspective with regard to fitting out such clinic environments with equipment?

Vogel: There are manifold and particularly legitimate interests to be taken into account inside a dental clinic. This involves keeping track of them all. There must be clarity regarding how a change at point A will induce changes at points B, C and D. In such projects this therefore makes us very much sought after as consultants, moderators and coordinators.

Lehmann: Precisely. Mandated by their daily routine, clinics have their primary focus on aspects that deviate from considerations of how, for example, blind patients' dogs are supervised during treatment. For this reason, we stand ready as "sparring partners", we can report on experience in other clinics and present concepts which also highlight precisely these minor details.

Vogel: As partners to the clinics, we not only bring the parties together within the clinic, we also coordinate external partners, for example, for furniture and other room fittings. In all our considerations, we concentrate on finding a solution which puts patients with their special needs at the heart of treatment. This involves, for example, sound-proofed areas, or also so-called "fake rooms". Although they look like a treatment room, they only have the outer shells of instruments and no connections. This can help patients to slowly acclimatize to the treatment situation.

At what point does Dentsply Sirona offer services and products that are of key importance to dental clinics in treating this patient group?

Vogel: In my judgment, the decisive advantage resides within these five words: everything from a single source. As the world's biggest manufacturer of equipment and materials for dentistry, we maintain a large portfolio of products from which we can provide a suitable solution to satisfy almost any requirement. What is special about Dentsply Sirona's concept is not so much the individual components, but rather the way they seamlessly mesh. No user ever needs to worry about interfaces, compatibilities or material specifications – the appropriate parameters are always anchored in the corresponding system. You can, for example, see this in functions which are integrat-

» Cooperation between the project teams and the various dental disciplines was the key to success.

ed in treatment centers (implantology, endodontics), in x-ray software able to do more than just control an x-ray unit and in a CAD/CAM system (CEREC) which enables a patient's restorative treatment to take place in just one session – especially valuable as a concept for disabled people and those with restricted mobility.

The following pages shed light on the topic of dental care of people with disabilities from different angles. What can other clinics take from this?

Vogel: Many patients, incl. also sufferers of disabilities, undergo daily treatment in dental clinics, in particular at universities. This group of patients can only be successfully catered for if optimum equipment is provided and efficient workflows are ensured. Under such conditions, dentists can take care of their patients much better, i. e. devote all the necessary attention to them. From our experience with clinics that have set up such a center for this group of patients, we know how decisive this is.

Lehmann: Treating disabled patients poses certain challenges to clinics. We feel that they can benefit from the experience of other clinics – in terms of the ideas, the concepts and above all the implementation. This affects not only the treatment itself but also the students' training. In addition, patients make comments and report on their experiences with the dental care.

NYU College of Dentistry: A whole floor for special needs' patients

8,000 square meters, the size of a parking lot for some 50 cars: This is the area inside the NYU College of Dentistry in which the university has set up a center for treating patients with special needs. Dentsply Sirona was involved in this project in several capacities: as a supplier, consultant, sparring partner, project manager. The story of an exceptional project.

Planning the center for treating special needs' patients at the NYU also included 3D simulations. This made for an early impression of how the premises might look.



Melissa Marlin, Key Account Manager at Dentsply Sirona, accompanied the project from the outset. One of the most demanding tasks for her was to expediently tie up the individual requirements.



Melissa Marlin, Key Account Manager at Dentsply Sirona, took part in this team for the company and was at the first meetings. “I experienced children with serious disabilities on site,” she recounts. “And despite being really severely incapacitated, they exuded a kind of positive energy. For me that was precisely when I decided to put my heart into this project.”

Communication as a key factor

But to begin with, the task appeared very hard to resolve: Setting up such a center involves more than just dental chairs and x-ray units. It was a complex project in which many personal ideas, interests and various technical aspects needed to be brought under one umbrella: from architecture, through design, technology and equipment to preventing infections. As it quickly turned out, managing such a multi-faceted project with all its

specifications became a key to success in this undertaking. “In retrospect,” project manager Melissa Marlin is convinced, “our communication skill was a considerable

factor. With all our experience in consulting for clinics we were able to conceive the project in all its multiple facets, understand it and ultimately also convince the NYU of our ideas.”

In a project with so many parties – the team comprised about 30 people on the New York University side – coordinating the processes takes on a special role. This can be aptly described by an example: The plan was to set up a so-called multisensory room in this center particularly geared towards allaying patients’ tensions and fears, allowing them to relax and thus enable a better treatment

It started back in 2017. At the time, New York University was debating whether to set up a proper oral health center for patients with disabilities. Dr. Ronald W. Kosinski, Professor for Pediatric Dentistry and Anesthesia at New York University, was in overall charge and is now Clinical Director of the Oral Health Center for People with Disabilities. This idea was foreshadowed by a minor incident involving the dean, Dr. Charles N. Bertolami. He came into the dental clinic and saw that a patient was strapped by his head to his wheelchair at the loading ramp while awaiting transport. This cannot be the way the NYU works with these patients, reports Kosinski. This was set to improve and Dr. Bertolami put together a team of representatives from different departments to scrutinize the idea of setting up a bona fide oral health center for patients with disabilities. The team was mostly made up of experts from a broad range of areas, colleagues with a particular interest in the disabled community, and architects.

» The collaboration between the project teams, as well as the different dental disciplines, was crucial for success.





| Specially lit treatment rooms provide for a more relaxed atmosphere.

situation. This involved specialists from different sections of the NYU coming together. Parents of disabled children were also included. Several blueprints were created which were discussed exhaustively. Such big meetings needed to be moderated and steered to a decision. The impressive result is now of benefit to the patients. And as a practical side effect participants were able to network more closely inside the university. "Our task was always to keep our target in the crosshairs," says Marlin. "In the many meetings, we found that ultimately the same patients are always involved. Treating them holistically then also seemed meaningful and effective to everyone."

Successful with experienced partners

One of the most demanding tasks was to expediently relate the individual requirements. In specific terms that meant determining the order of the steps and integrating

» **Integrated systems make for a high degree of treatment comfort and safety - both for dentists and patients.**

respective partners at the right time. "Nobody can do everything by themselves," explains the Key Account Manager, "and it is the strength of Dentsply Sirona to be able to rely on partnerships going back many years." For example, anesthesia equipment from Dräger and wheelchair recliners and bariatric benches from Design Specific

were integrated (see page 21). In conjunction with Zyris Iso-Lite, we succeeded in directly integrating a pioneering solution for a nitrous oxide pump into the Intego treatment unit.

"This is where we were able to bring our greatest strength to bear as Dentsply Sirona: thinking in integrated systems," says the project manager. "The staff in the clinic reported that it greatly facilitates their work to have everything they need at the ready. This ensures a high degree of treatment comfort and safety -

for themselves as dentists and, of course, for the patients." Thanks to these integrated systems, the practitioners can achieve more than before with just one patient visit, the byword is 'single-visit dentistry' - especially when referring to restorative care. The CEREC system offers an appropriate set-up for this. It means a lot to patients not to have to go to the clinic several times due to the treatment not having been completed.

There is also a repeatedly positive echo from patients: It is important to them that they are now garnering a lot of attention. Hitherto, these patients and their special needs were not a particular focus in dentistry. It is a key message to this group of patients that, thanks to combining different disciplines in one place, the center for treating special needs' patients has really added to its value.

The work has also changed for dentists and their assistants. They all report on the great experience of being able to place

Integrated systems greatly facilitate treatment, allowing dentists to have everything they need at the ready.



all areas of dentistry at a patient's disposal under one roof instead of constantly having to send them from one place to another. The outcome convinces everyone concerned. There came into being, a

self-contained oral health center for those with disabilities in the biggest dental training center in the USA. Dr. Kosinski spoke of the opening of a paradigm shift in the manner in which students of dentistry are

trained in managing treatment for the disabled. He linked with it the hope that dentistry for people with special needs will one day also come to be a sub-discipline within dentistry.

The dental center for treating people with disabilities at the NYU College of Dentistry

The new oral health center provides all-round dental care for patients with disabilities. Some figures reveal the significance of this one-of-a-kind special clinic: In New York, a city numbering some 8.5 million residents, according to estimates approx. 950,000 people live with a disability, about 99,000 of whom have to rely on a wheelchair. The goal was to make appropriate dental care possible for these patients whose disability does not allow them to be treated in a customary dental setting. The

clinic's services are correspondingly extensive: prosthetics, endodontics, periodontology, orthodontics or anesthesia - are all readily available here. 3,000 patients can currently be treated each year. This figure is set to rise to up to 10,000 a year.

In addition, the NYU offers a special curriculum for students of dentistry devoted to treatment of special needs' patients. The objective is to enable students to meet these special patients with self-assurance and knowledge in

order to have solutions available for this group, too. The Department for Pediatric Dentistry of the NYU College of Dentistry under the direction of Dr. Ronald W. Kosinski, Professor for Pediatric Dentistry and Anesthesia has recently received a subsidy to the tune of nearly two million US dollars from the Health Resources and Services Administration (HRSA) to train dentists and other dental specialists in caring for the oral health of people with disabilities and complex diseases.

Everything from a single source: Consultation, equipment, service

Providing adequate treatment to those with disabilities mainly requires two key things: a well-organized and trained team of dentists and (prophylaxis) assistants and top-equipped, suitably fitted out treatment rooms and technologies which simplify the course of treatment and additionally support through integrative systems. In Dentsply Sirona, clinics and dental care institutes are encountering a partner which, apart from equipment and fittings, also provides integrated systems that enable seamless workflows in treatment – easily, quickly and of excellent quality.

CAD/CAM

Dentsply Sirona has been very successful in the market for over 35 years with CEREC, the CAD/CAM system for the dental practice. This includes digital impressions with CEREC Primescan, designing restoration with CEREC software and manufacturing restorations with the CEREC Primemill grinding and milling unit. With these components, CEREC sets standards in CAD/CAM technology, offers a lot of flexibility with the workflows, provides for clinically reliable results – and in only one session.

Single-visit dentistry

For patients with disabilities it is important for treatments to proceed briskly and require as few visits to the clinic as possible. The CEREC system supports optimally in this regard for restorative indications: The digital impression with CEREC Primescan supersedes the conventional impression tray which is unpleasant for many. Due to the choking reflex and restricted breathing in patients with disabilities, analog impressions often cannot be taken. The intraoral scan is different: It is easy to carry out

and takes just one to two minutes – depending upon compliance.

Digital scans provide several benefits: On the one hand, the quality of the impression can be immediately checked and rescanned as necessary. A dental technician can be directly integrated into assessing the scan through the Connect software. On the other, the scan captures both

the teeth and the soft tissue, which further improves treatment planning.

By directly implementing the planned restoration (for example an inlay or a crown) using the CEREC software and CEREC Primemill, the new milling and grinding unit, the treatment has usually reached a successful conclusion after about two hours. For the patient this





Treatment Centers

When people with disabilities go to a dentist, positioning these patients often poses a challenge. Classical surgical recliners often prove inadequate in everyday clinical practice due to the absence of support for restricted-mobility patients. Dentsply Sirona's solutions here are extensive:

The treatment centers can be equipped with the Orthomotion or Ergomotion function. These tools support in positioning patients and prevent stretching the back in the case of orthopedic problems. Further, units such as the Intego have an extremely low entrance position, which is particularly important for children and elderly people. At a height of only 37 cm, Intego has the lowest patient-access position on the market. The Teneo treatment center offers that special extra with the massage function integrated into the backrest for a relaxed treatment position. Being a premium unit, the Teneo also has the function of being able to store preferred treatment positions. If the unit features a dual-jointed headrest, the headrest can simply be "folded down". So patients in a wheelchair, who are pushed to the treatment unit from behind, can receive good treatment.

In addition, treatment centers can be individually configured. So, for example, a university in Switzerland was kitted out with Sinius treatment centers which do not have a dental chair, but are combined with a special wheelchair recliner or bariatric bench. In other words: The conventional dental chair or the surgical recliner were replaced by a custom-made alternative tailored to customer requirements in order to be able to optimally treat and better address the needs of severely obese patients or those in a wheelchair. Doctor's and assistant element and lighting are retained.

Ideal treatment conditions – for the dentist, too

A treatment center which can be adjusted as required proves particularly effective for treating patients with disabilities: In the Intego Intego Ambidextrous, the clinician and assistant element can be moved with just a few handles so as to make them suitable for either left- and right-handed practitioners. This also works if patients can only be treated from one side due to being incapacitated.

means a marked reduction in stress and real treatment comfort. In implant procedures, the number of consultations is also reduced as the final restoration can be done in one session.



Digital Imaging

As market leaders in the area of dental imaging, Dentsply Sirona x-ray units enable incomparable diagnostic image quality at the lowest acceptable dose. They are furthermore simple and intuitive to operate.

Unlike analog, digital imaging offers many advantages for diagnosis and patient workflow in a clinic. It also facilitates dental training as students can work on extensive digital patient records.

In relation to diagnostics in people with disabilities, digital imaging procedures prove especially beneficial: When, for example, x-raying intraorally, the image can be taken directly in the chair, it is very fast, and the result is immediately available – which all saves time and causes minimal stress to patients.



In radiological diagnoses of disabled people the modern imaging solutions units from Dentsply Sirona (Orthophos SL and Axeos) provide many benefits: Positioning aids (bite block, chin support in case the patient cannot bite and autopositioner) support in rapidly achieving the optimum alignment for the image. Lastly, lighting concepts like ambient light create a more pleasant situation for patients.

Concepts which shorten the process of x-raying prove effective when treating patients with disabilities. These include a quick-shot function with 2D-images, the option for segmenting images and, above all, barrier-free patient positioning. Imaging solutions from Dentsply Sirona feature direct entry and access. Wheelchair users can remain comfortably seated. There is additional support within Axeos from a patient positioning & image assistant. This function permits the patient size to be entered in advance in order to adjust the unit for a perfect match before the patient comes for x-ray.

Taking x-ray images is now easier and faster than ever. This is a real plus both for patients and the treatment team.





Instruments

With the Dentsply Sirona instrument series, ultramodern rotary instruments are available for both the treatment and the simulation units. The straight and contra-angle handpieces and turbines provide high-grade workmanship and the so-called quick-stop function. Along with aspiration return flow protection, it prevents microbes and aerosols penetrating into the instrument and thus meets the highest standards of hygiene.

The new generation of turbines offers customary high performance with small head dimensions and quiet running in use. The patented speed control featured in the T1 Control turbine has proven particularly effective in treating patients with disabilities.

Noise, in particular, from the rotating instruments is stressful to patients, especially to those with disabilities. The noise does not even have to be loud - if it is perceived to be unpleasant, the patient experiences discomfort, becomes tense and at worst starts to panic. Dentsply Sirona's turbines feature an improved rotor with optimum quiet running. Treatment at low speed further reduces the noise level. An independent study, conducted by the acoustic consultant advacoustics, also showed: Dentsply Sirona's turbines are currently the quietest on the market.

All rotary instruments are easy to clean, can be thermally disinfected and thus ensure the highest possible safety.

In focus from the outset: Patients with disabilities

Since 2015 Witten/Herdecke University's dental clinic has had the first and only chair for dentistry geared towards disabled people in Germany. As the chair holder, Prof. Andreas Schulte attaches great importance to students promptly and intensively learning to deal with patients who are incapacitated in different ways. In this interview he explains his concept here.

Professor Schulte, before being appointed to Witten/Herdecke University you already had a responsible position in conservative dentistry and you were working in pediatric dentistry. How did dental care for people with disabilities become your subject?

After brief employment at a clinic for maxillofacial surgery, I spent time until 2015 in various university departments for restorative dentistry, which pediatric dentistry also nearly always falls under. Treating children I regularly came upon young patients with disabilities. Two things struck me: Some of these patients need such complex treatment that they have to be treated under a general anesthetic. My approach is that, with targeted and extensive prevention, it should be possible to do more and more treatments on patients who are awake. On the other, I also coped well with children and youngsters with impairments, which is what they reported back to me. So my getting into this area was quite natural.

Why is the particular attention to this group of patients so important in your view?

Children and adults with a mental disability, in particular, need support in their oral care, something which parents or carers are not typically trained for. This gives rise to diseases like caries, gingivitis or periodontitis. There are also pretty often dental traumas resulting from falls. These people have to be treated by specialists, and this can be a special challenge due to the incapacities. Because: disabilities differ markedly, they can be physical and/or mental in nature. In each case, practitioners require special knowledge to be able to deal with them. The goal is to keep the natural teeth healthy

for as long as possible and be able to treat the patients when they are awake. I am very proud that we treat as few as 20 percent of our patients under a general anesthetic in our department.

What general demands does treating patients with disabilities pose on the dental treatment environment?

First we have to have rooms with enough space because our patients do not come alone, there is always at least one carer in attendance. And: It takes space to be able to stand a wheelchair beside the treatment unit - only about two thirds of our patients can move or be moved from the wheelchair to the dental chair. Furthermore, there is the matter of barrier-free access to the treatment rooms. These things are not all self-evident. In addition, we also need corresponding furniture incl. sufficiently long tubes and cables for the aspirators, motors and also a wireless foot switch. There should also be an x-ray unit available in the treatment room. This is all in place at our clinic - as dentistry geared towards disabled people has been the focus at Witten/Herdecke University since the 1980s. We are, however, also aware that our commitment to treating special needs' patients takes repeated investment.

What challenges do dental specialists face from special needs' patients? Does this entail a special qualification?

Aside from technical expertise, we mainly need empathy and patience while conducting treatment. With "we", I specifically mean the whole team. The real skill lies in patient management. You have to recognize what is actually feasible within the consultation. Many treatments need to be spread

» Aside from technical expertise, we mainly need empathy and patience while conducting treatment.

across several sessions because the patients simply are not up to more.

You know from an institute-specific survey that students attach importance to getting training to treat these patients. How do you take account of that in practice?

Having set up the chair, fortunately puts us in a position to be able to offer at least one event each academic year where we impart both theoretical background and also content of a very practical nature. For example, psychological patient management focusing on the different kinds of disabilities we face in our patients is important. Our students have to follow treatments of patients who are both in awake and anesthetized states. One Saturday a month we hold a special consultation hour for patients with disabilities at which students can do practical training. As it does not conflict with lectures, students always take up the opportunity.

How do you assess the state of affairs that no other chairs have been set up, and how do you see the mid- and long-term trend here?

I of course would hope for several chairs distributed across different regions so that students in all regions receive good training in the subject of dentistry for people with disabilities. In addition, national centers are making key contributions to good treatment for disabled patients. In Germany we are alluding to some 3.5 million people with a dentally relevant disability. Many of these people have often gone on a long odyssey to receive adequate treatment. Surveys at other clinics furthermore show that there is still very much room for improving and extending training in this subject.



Prof. Andreas Schulte, since 2015 holder of the chair for dentistry geared towards disabled people at Witten/Herdecke University

Professor Schulte, to finish, please continue this sentence: In the dental care of people with disabilities I would want ...

... there to be many more dentists who are willing to commit in this area and this would in consequence create more broadly-based treatment options for this group of patients.

Professor Andreas Schulte

- 1975 - 1981 Studied dentistry at the Westphalian Wilhelms University Münster
- 1981 - 1986 Sci. employee at the Clinic for Maxillofacial Surgery of WWU Münster
- Since 1987 Specialist in oral surgery
- 1986 - 1991 Senior physician in the Dept. for Restorative Dentistry of WWU Münster
- 1991 - 1997 Senior physician in the functional area pediatric dentistry of the Philipps University Marburg
- 1996 Habilitation in the Faculty of Medicine of the Philipps University Marburg
- 1997 - 2015 First senior physician, later chief physician and adjunct Professor in the Health Center for Conservative Dentistry of the Ruprecht Karl University Heidelberg
- Since 2015 University professor for dentistry geared towards disabled people at Witten/Herdecke University
- Since 2016 Chair of the Dentistry Working Group for People with Disabilities or requiring special medical support (AG ZMB) in the German Association for Dental, Oral and Maxillofacial Medicine (DGZMK)



Barrier-free university training

Treatment for disabled patients always relies on the expertise of the attending dentists and also on equipment providing optimum support. The report shows how the respective training is implemented at selected universities and what contribution a company like Dentsply Sirona can make.



SCADA – Student Competition for Advancing Dental Research and its Application

Dentsply Sirona has encouraged innovative thinking by supporting the SCADA program for many years. SCADA came into being in 1959 during the centenary of the ADA in New York City as a joint venture of the then DENTSPLY International and The American Dental Association. SCADA is a project for promoting scientific research in dentistry which sets out to encourage graduate students to use scientific methods to gain a deeper insight into dentistry and thus enable them to treat their patients even better.

Getting adequate dental support as a patient with a disability is occasionally akin to an odyssey: Either dentists do not feel adequately prepared for the specific requirements of this group of patients, or the way the consulting rooms are set up makes treatment difficult to impossible.

This is also reflected in the training of dentists, which differs widely at universities.

For example

Dr. Jacobo Limeres Posse (University of Santiago de Compostela, Spain) reports of a “very heterogeneous university system”. The subject “Special Care Dentistry” has only formed a very minor part of the curriculums at Spanish universities in the last 20 years. The universities were generally faced with the question, “How a curriculum for dentistry in patients with disabilities can be integrated in terms of organization and personnel?”, explains Prof. Denise Faulks of Clermont Auvergne University, France. The results of the initial considerations look quite different today: While, according to Dr. MacGiolla Phadraig of Trinity College Dublin, a corresponding curriculum in Ireland has included the “principles of disability awareness and inclusivity” since 2004, there is only one chair for dentistry geared towards disabled people in Germany (see pages 16/17). In Spain they now follow the guidelines of the International Association for Disability & Oral Health (iADH). According to

» It is important for students to recognize what constitutes the barriers limiting access to dental treatment in order to be able to develop adequate solutions.

Dr. Limeres Posse, the main difference to other subjects when studying dentistry is the patient-centered approach: “The first part of learning is to recognize what barriers there are. Sometimes there are physical, sometimes cognitive,

but there are also socio-economic and practical factors restricting access to dental care.” Also for Prof. Denise Faulks, the initial task is always to convey, a “medical, social and judicial

context to disability”. “In the preclinic the focus is on showing the inequalities in oral health and access to oral health care, and showing what mindset and which methods make for an adequate dental treatment.”

Clinical training with digital support

After the preclinic, the students in Spain can “develop their empathy and communication skills relating to experiences in treating patients with difficulties in oral articulation, a learning disability or a lung transplant,” explains Dr. Limeres Posse. “Adapting the treatment environment by changing positions in the dental chair and treating patients in their own wheelchairs also plays a key role.”

Here the expertise of manufacturers like Dentsply Sirona comes to the fore. Equipment and furniture geared to the special needs, digital technologies and seamless workflows support treatment for patients with disabilities. This



Top left: Dr. Jacobo Limeres Posse, Santiago de Compostela University, Spain



Top right: Prof. Denise Faulks, Clermont Auvergne University, France

Right: Dr. MacGiolla Phadraig, Trinity College Dublin; Ireland



includes, for example, treatment centers with low access height and/or fold-down dual-jointed headrests. These enable patients in a wheelchair who are pushed to the treatment unit from behind to be treated. Digital x-ray units such as the Axeos are equipped in such a way that the patient is able to gain access without barriers, i. e. also in the wheelchair, and thanks to the quick-shot function does not need to remain in the position for long. Taking digital impressions with an intraoral scanner proves particularly valuable, for example for patients with restricted mouth opening or difficulty breathing. “These technologies do not replace the expertise of a practitioner, but they provide useful support and the chance to offer teaching and treatment at the highest level,” explains Dr. Limeres Posse.

Cooperative Partnership

The approach to cooperation with industry is correspondingly constructive. This involves supporting clinical research both in teaching and in the preventive treatment of patients, explains Prof. Faulks. Furthermore, the

view of Dr. Limeres Posse is that the discipline will face more and more patients showing age-related diseases or disabilities due to demographic trends. For these patients it is a question of developing modern therapy concepts – cooperation with industry, for example in studies and the researching of materials is essential here. In this regard, Dr. MacGiolla Phadraig would particularly also like online resources to be developed in view of the current pandemic.

Curriculums of the iADH

The iADH (International Association for Disability and Oral Health) advocates the further development of training in special care dentistry (SCD). Leading institutions throughout the world are now anchoring teaching and learning in the SCD area in their curriculums. As a reaction to queries from teachers worldwide, the iADH has initiated development of curriculums for a foundation course and postgraduate studies in SCD by a process of reaching a consensus in which leading experts for SCD from 32 countries were involved. These documents create the requirements for evidence-based learning results which are study-centered and sufficiently flexible to be able to be easily imported into current dental curriculums.

Big ideas for smaller clinics

Everyday dental care is usually provided in dental practices or smaller care centers. Often just small and low-complexity changes are sufficient to configure them optimally for the needs of disabled patients. Dentsply Sirona has also developed concepts in this area.



One is statistics: They say that some 15 percent of the world's population live with a degree of disability. The other is the question how people can receive optimum dental care. A university hospital is not easily and cheaply accessible to everyone. It is all the more important to create facilities close to residential areas for patients with disabilities. For dental practices or smaller care centers or dental clinics this involves checking the set-up to determine whether treatment for this group of patients is possible in such a way that all participants feel at ease.

"As a company collaborating with many big institutions, we understand that smaller clinics initially have reservations because they anticipate big expenditure," explains Jörg Vogel, in charge of clinic business at Dentsply Sirona. "Our experience shows that a great deal can already be achieved with organizational and quite basic modifications to the equipment."

Needs of patients with disabilities do not rely on where they are treated. The prime consideration

Patients who are wheelchair-bound can be treated directly in the chair using a special device, which improves patient comfort.

is easily accessible rooms in addition to space in the treatment room to enable the respective carer to be present. It is key for the treatment team to have good access to the patient in every phase. "This is one of the most important topics in our consultations", explains Vogel. "A great deal can be achieved by x-ray units in which images can be taken without patients having to exit their wheelchairs. Also treatment centers which can be transformed with just a few hand movements into a unit for left-handers can help in providing optimum treatment for the patient." Wireless foot switches, quiet instruments, comfortable recliner positions are additional factors that are conducive to treatment for patients with disabilities.

This includes treatment concepts which take into account the special needs of this group of patients which can be implemented in as few sessions as possible. The CEREC system, which enables ceramic restorations to be directly manufactured in the practice, offers advantages here.

Ultimately, it is not a matter of extensive modifications or big budgets which need to be invested. Jörg Vogel: "It depends more on careful choice of equipment. Today there are corresponding imaging systems, treatment centers and also instruments which are equally convincing in treating all patients and which at the same time take into account the special needs of those who live with handicaps or disabilities."



Partners for individual room planning

Patients with disabilities are intended to be able to get optimum treatment even in smaller clinics and treatment centers. The changes sometimes required can best be implemented with a competent team consisting of various partners. One of these is Design Specific, a company which has specialized in developing and manufacturing a broad range of medical devices and dental equipment

for treating disabled patients. John Walters, Design and International Marketing Executive at Design Specific, describes the products and services as follows:



In equipping dental clinics we have found that it is a matter of knowing the conditions locally and adjusting our offer accordingly. This means in concrete terms: If the clinic, for example, has to be able to use both the existing dental chair and new equipment, we attach our ShifterBase™ which enables the dental chair to be moved so as to bring our compact wheelchair recliner into the respective treatment position. We are further developing our products accordingly. One example for a very needs-oriented solution is that the patient does not have to leave his or her wheelchair for the treatment. For this, the set-up at the treatment unit takes only one minute. This procedure makes it unnecessary to move the patient.

Good partnership with the clinics and Dentsply Sirona is key to the success of our solution. We perceive the company in joint projects to be committed and precise in project management. This contributes to delivering the products and solutions in time.



The demographic trend also shows how important this approach is: In the future, elderly patients will be showing up in dental practices and clinics more and more frequently. They are often not as mobile as younger people and have special needs during treatment in terms of accessibility, comfort and treatment duration. "Along with the very individual require-



It is a matter of recognizing needs and developing suitable solutions for them. These consist of more than just one new device.

ments of treatment centers, we focus on precisely these diverse aspects in our consultations," says Vogel. "Here we see ourselves mainly as project managers and partners - the solutions plainly consist of more than just getting new equipment."

Patient Steven: Well catered for

If there is only a limited possibility of dental care due to an illness and dental treatments are also difficult, the main requirement is an empathic team and clinic equipment over and above the norm. The Dolinsky family from New York (USA) and their son Steven have been experiencing this for nearly 20 years at the Dental College of New York University, which now has a special oral health center, fitted out by Dentsply Sirona. This is their story.

Steven was just 16 months old when his parents found out that their son was suffering from Williams-Beuren syndrome. It is a genetic anomaly on chromosome 7 which results in various disabilities in the person affected. These include problems with the teeth due to misalignments and a dental enamel hypoplasia. Steven's mother Melinda was aware early on that good dental care is key and sought corresponding dental support from the outset.

"A friend of the family, himself an orthodontist, recommended us to Dr. Kosinski," recounts Melinda. "From the first meeting he had a quite wonderful way of dealing with Steven. As a small child, Steven would always sit on my lap while Dr. Kosinski performed his exam-

ination and while he had his teeth cleaned by a dental hygienist. Even if things became more difficult as Steven got older, it always worked out. The whole team were always very attentive and friendly."

As Steven became bigger and stronger, there was no more talk of treatment on Melinda's lap. Dr. Kosinski then proposed a kind of tether which for a long time was very helpful. Melinda was of the feeling that the sensory input did Steven good.

Two things were always particularly important for the whole family: Confidence in the dentist and clinic

» Trust in the dentist and in the clinic's equipment is important for affected families and patients.

facilities which are geared towards people with disabilities. "The bond of trust between Dr. Kosinski and Steven still is very close. It even resulted in us being able to forgo sedation with bigger dental procedures as well," explains Melinda. In addition, the sensory

room that the NYU Oral Health Center for People with Disabilities now has, turned out to provide good support – especially when there are moments of fear and great uncertainty. The room works with reassuring colors, music selections and various options for calming patients down: For example, videos can be played on specific topics. There are also special blankets available which give patients a sense of security. So, many patients are glad to take up this offer. Thanks to the new facilities at the NYU Oral Health Center it is now possible to enable ultramodern dental treatments outside of a conventional clinical environment for all those with disabilities, this means a marked improvement to the quality of life for this group of patients. "Steven benefits very much when an environment contributes to him relaxing and if the staff are attentive and empathic," reports his mother. "Especially children with disabilities need more than a classical dental practice can offer."

Steven Dolinsky, incapacitated by a genetic anomaly, has been treated successfully.



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Editorial management:

Jutta Antretter, Marketing Manager, International Special Clinic Solutions

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Jörg Vogel, Vice President Sales International Special Clinic Solutions; Melissa Marlin, Institution Account Manager; John Walters; Melinda Dolinsky

Contact:

SalzburgAUT-ClinicSolutions@dentsplysirona.com

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