



Möller Medical GmbH
Company Information

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Business model of Möller Medical GmbH

Möller Medical GmbH in Fulda, Germany, is one of the very few mid-sized, German companies who is able to develop, obtain medical approval, quality manufacture, and internationally sell medical products of all certification levels, sterile as well as active. Möller Medical is working under its own brand and at the same time is a successful supplier of the demanding OEM market. Möller Medical is certified according to DIN EN ISO 13485:2003.

OEM and brand business as double strategy

Möller Medical is developing, manufacturing and distributing medical and diagnostic products and devices of all certification classes. The company is working for the technologically demanding OEM industrial market for medical technology and diagnostics/pharmacy as well as, under its own brand Möller Medical, for end customers in the fields of neurosurgery, aesthetic medicine and blood transfusion - creation of further end customer segments is being prepared. This purposely dual strategy has proven to be extremely successful. The OEM industrial business is an established, stable, profitable and constantly growing basis laying the ground for an innovation wave in the end customer business. On the other hand, any experience gained in the medical end market (user perspective, sales strategies, system idea, service level, documentation, risk management) is highly valued by our industrial customers. Proof for this is, for example, the fact that industrial customers order complete devices including user manual and certification documents, ready-for-sale at the medimondi subsidiary Möller Medical. Since the markets for medical technology and diagnostics are so extremely fragmented, there are synergies rather than conflicts between the OEM business and the brand business.

Continuous innovation generates strong organic growth

Möller Medical and its parent medimondi AG are characterised by continuous and on-going product innovation, besides the unique manufacturing know-how. A key difference between medimondi and its competitors is the unusual technological

depth: All manufacturing steps for innovative medical products – starting from the idea up until delivery of the end product – are bundled in this company. For some of its products, all medimondi buys is plastics granulate and stainless steel tubing, the rest of value creation is taking place in-house. Constant dialogue with end users (doctors, hospitals) serves to bring marketable ideas for highly profitable niche products to the company. Our sales department thus serves, besides its core purpose of selling, also to return momentum and ideas from the market back to the company – with medimondi, product development is always starting in the marketing department. The new products are then developed and manufactured in-house, and sold under the brand Möller Medical. With development and production, the company is benefitting from its long-standing experience in the OEM business.

Own distribution For the German-speaking countries, we have created our own group of sales representatives for the end customer market. The very best product ideas and new insights in the latest market trends usually come most easily out of this direct contact to customers. Thus, we are serving our home markets in the German-speaking countries directly. As an intended side effect, the experience gained here enables us to talk with international distributors on an equal level of knowledge.

Internationalisation by the creation of a global distribution network

In the mid-term, Möller's direct sales will expand into other countries. Until then, we are utilizing – similar to almost all internationally active, mid-sized medical technology companies – a network of dealers and representatives around the world.

Product management for the OEM business

Product managers have their central place as entrepreneurs within the company, coordinating processes between customers, R&D, production and purchasing. The PMs are the face and primary contacts of the company.

Management

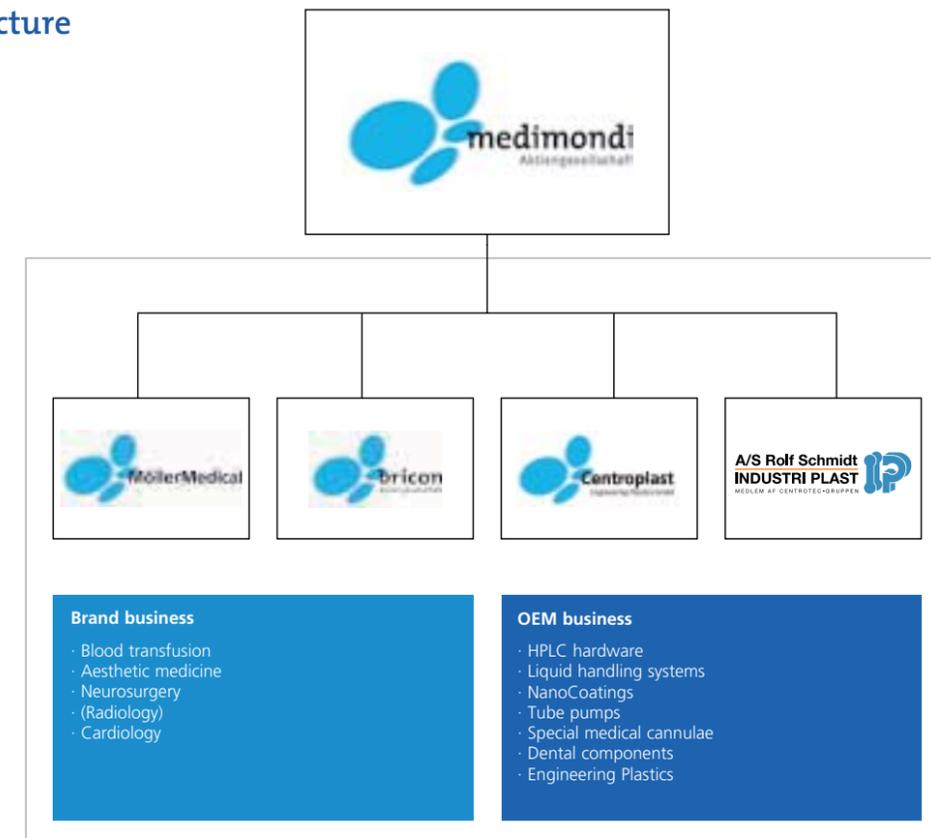


Dr. rer. nat. Christoph Traxler is member of the CENTROTEC executive board and has been building the medimondi group - including Möller Medical – since 2003. Chris is physicist and manager with a focus on sales, product development, operations and M&A. With the help of his team, Chris has turned Möller Medical into an innovative medical devices manufacturer with a quickly growing customer basis and an own, successful product brand. He also led the acquisition of sister company bricon ag (spinal implants). Before medimondi, Chris was working as engagement manager at McKinsey."



Dipl.-Betriebswirt (BA) Peter Schrempf came to Möller Medical in 1999. Soon thereafter, he obtained commercial procurement, and since 2003 he is managing director of Möller Medical. Peter has studied business and computer science; directly after his studies, he was able to collect valuable experience in the management of various mid-sized packaging companies.

Corporate Structure





“The technological versatility of the medimondi group is its key strength.”

Dipl.-Ing. Thomas Staar, Production head of Möller Medical.

A viscosimeter is being used at Möller NanoCoatings to test the lacquer and ensure the correct coating thickness.. The chemical properties of the lacquer is tested by FTIR spectroscopy.

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Segment_OEM Business

The OEM business segment is our stable home business. On the following pages, we illustrate the examples medical cannulae, liquid handling systems, and tube pumps. These demonstrate Möller's development and manufacturing skills.

The company offers a wide variety of manufacturing technologies from plastics precision injection moulding (with own tool shop) via plastics and metal chip-removal technology (turning/milling and special grinding processes) to CNC laser machining, assembly (black/clean room), galvanics/coating, fixture/rig construction, electronics and software. These technological competence and our high quality are much appreciated by our OEM customers.

Diagnos*tics* *In-Vitro-Diagnostics encompass the market for diagnostic processes to investigate samples from the human body. Products include reagents, calibration and control material, so-called "kits", instruments, apparatuses and autosamplers. There is a trend towards laboratory automatization and decentralized diagnostics (point-of-care, home diagnostics).*

Tube Pumps *The tube pump, also called peristaltic pump, has earned a permanent place in medical applications for hygienic reasons – only the tube itself, a single-use part, gets into physical contact with the medium being transported. The pump's principle is simple and relies on the squeezing of a flexible tube by castors mounted on a rotating wheel.*

HPLC *HPLC (High Performance Liquid Chromatography) is used in biochemistry and analytical chemistry to determine and separate the components of a mixture (analyte). Generally, the analyte is introduced as a sample into a carrier liquid (mobile phase), which is then forced through a column packed with small particles (stationary phase). The time at which a specific component of the analyte comes out of the end of the column is considered a reasonably unique identifying characteristic.*



Human medical cannula Socket

Our patented, versatile development is being used for one-, two- and three-part special cannulae.

Liquid handling systems/ heating coil

The heating coil serves as part of a larger liquid handling system, to store liquid before an analysis step.

Peristaltic pump

Extremely precise tube pumps and components are highly appreciated in medical technology due to their hygienic working principle.

NanoCoatings

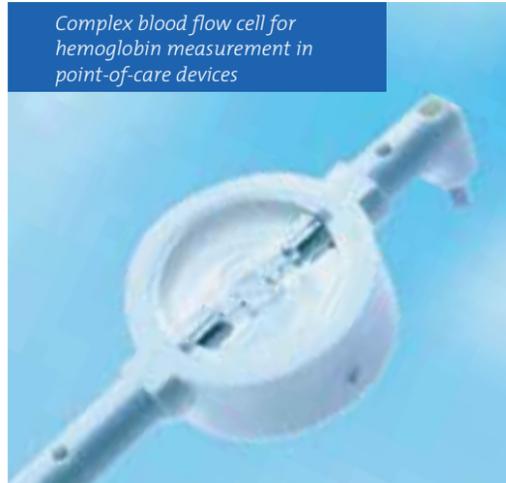
The visibly large contact angle of the liquid drop proves a high-quality interior and exterior hydrophobic coating of this analysis tip.



Heated sample tip for
blood diagnostics



Complex blood flow cell for
hemoglobin measurement in
point-of-care devices



Tube pumps – starting point for many new developments

For decades, the medimondi-subsiary Möller Medical has been manufacturing tube pumps for very different medical applications – among others, they are used as blood pumps, sterilization pumps, infiltration pumps, drainage pumps, and cooling pumps, in applications that include hemo- and liver-dialysis, diagnostics, aesthetic medicine, neurosurgery and radiology.

Commercially speaking, the tube pump is an interesting product. Usually, a system business with trailing revenues is created, with an investment good (pump) and a disposable good (corresponding tube set). In many cases, Möller supplies both, such that an installed base of devices is generating stable revenues for the future.

The end customer areas (brand business) of aesthetic medicine and neurosurgery started with product ideas based on the tube pump principle. This strategic method can be transferred to other areas as well.

In-vitro-diagnostics and analytics

The worldwide growing market for in-vitro-diagnostics (IVD) is closely related to medical technology. Here, Möller Medical is participating as global supplier for liquid handling systems of almost all well-known manufacturers of laboratory analysis machines. By liquid handling, we mean: technical cannulae with maybe nano composite coatings, heating/cooling, level detection and special shapes/grindings (e.g. cap piercing system, drawn-in PTFE tubes), complex tube systems, minimal dead-volume or dead-volume free fittings, and special, frequently customized, application-specific tube pumps. Additionally, Möller is active in the field of chemical analysis with HPLC hardware, a system-critical component for manufacturing of high-end chromatography columns.

In all these areas, long-standing and patented process know-how is existing, e.g. for interior cleaning and coating of complex tube geometries. Besides, since 1995 we have been offering high-end nano composite coatings and developpon



OEM tube pump in high-end stainless steel finish for sterilization testing, developed and manufactured by Möller Medical.

customer specifications. Technical cannulae for chemical and medical analysis are the most important application for such coatings.

Human medical special cannulae – strategic outlook into radiology

Möller Medical commands several decades of manufacturing experience of special medical cannulae. Applications include cancer diagnostics (hard and soft biopsy), in-vitro-fertilisation (IVF) and vertebroplasty (osteoporosis treatment). Our manufacturing know-how for cannulae is a starting point for a potential future entry into an end customer segment of radiology and related disciplines.

Further OEM business: Dental components and HPLC hardware

The extensive metal machining competence has turned Möller Medical into a regular supplier of the dental industry for several decades. Here, we supply, besides other systems and components, flushing tubes, precisely deformed according to a 3D drawing, centerless-grounded, reduced in diameter, hammered, laser-welded or combined with plastics fittings. Also, the chemical analysis industry is procuring a critical component from Möller Medical. In HPLC (high performance liquid chromatography), mixtures of substances are analyzed and separated by chromatography columns under high pressure. Key components of these columns are stainless steel tubes and cartridges with extremely high interior surface quality, corresponding, injection-moulded inserts like sieves and frits, and fitting systems. All these components are manufactured by Möller Medical and filled by our customers with their packings. Afterwards, they go into laboratories and the industry as disposables.

Dual-channel tube pump of the highest quality



Operating panel with touch screen and soft keys



High-end, complex stainless steel cannula for the removal of perspiration glands.



“Minimally invasive,
radiological procedures
are the future!”

Dirk Schlecht, Product manager special medical cannulae.

The cannula set for vertebroplasty was developed at Möller Medical and is being distributed under our own brand and medical approval.

„Medical devices must be easy to use, so the doctor's focus stays with the patient.”

Dipl.-Ing. Matthias Grün, electronics and software development.

The blood mixing scale Docon® serves to support and document blood donation process. It is an international success mainly because it can be configured very flexibly to the customer's needs.

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Segment_Brand Business

On the previous pages we explained the core OEM business of Möller Medical. This traditional, proven business forms the fertile ground for very special innovations – medical products sold under our own brand, usually by means of our own sales representatives in the German-speaking countries, and using a fast-growing international distribution network elsewhere. Our brand business is currently comprised of the segments blood transfusion, aesthetic medicine, and neurosurgery, the last segment being a particularly interesting high potential business.

Blood transfusion *This market is in need for devices and disposables for blood donation, processing and specific diagnostics. Regulatory requirements are continuously increasing, shaping the product and industry development. A relatively stable market is forecast. There is, however, ample space for small and mid-sized companies with innovative products aiming at process optimization in blood donation and corresponding documentation.*

Aesthetic medicine *Growth of this market is dictated by the ongoing beauty and wellness trends, as well as overweight and lack of physical exercise. Liposuction (body fat removal) treatments increased by 15 % p.a. from 1997 through 2004. Europe is somewhat behind on this trend and is forecast to catch up; frequency of liposuction treatments will therefore continuously increase in the mid-term.*

Neurosurgery *Neurosurgery is dealing with the detection and treatment of diseases and injuries of the brain and spinal nerves as well as the peripheral and vegetative nerve system. Typical products include spinal implants, neurostimulation devices, external and implanted pressure measurement and drainage systems and surgical tools for innovative procedures such as vertebroplasty/kyphoplasty (injection of bone cement) or brain surgery (navigation, stereotaxy, image processing, etc.). The expected annual market growth is markedly above 10 %.*



Neurosurgery/vertebroplasty cannula

The cannula serves to inject bone cement (PMMA) into spinal bodies after accident- or osteoporosis-induced fractures.

Aesthetic medicine/vibration hand piece

The strong Vibrasat power hand piece is the high-end solution for vibration liposuction (body fat removal).

Aesthetic medicine/tumescence pump

The tumescence infiltration pump Liposat power transports highly dissolved anaesthetics into the tissue before liposuction in the so-called "super wet" procedure.

Blood transfusion/blood mixing scale

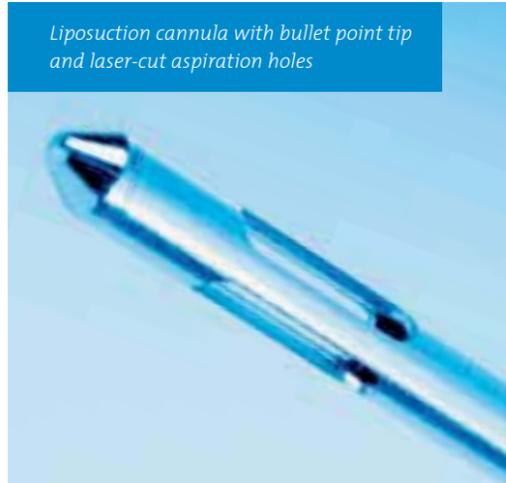
The blood mixing scale Docon controls and documents the blood donation process; data transmission is possible by cable and wireless.



New Docon mobile with integrated transponder reader



Liposuction cannula with bullet point tip and laser-cut aspiration holes



Market leadership with Docon, a device for the blood transfusion market

After Möller Medical had been manufacturing a blood mixing scale as OEM product for many years, the technologically leading blood mixing scale of Europe was developed here within recent years. The device serves to support, control and document stationary and mobile blood donation processes. With this device, marketed under the own brand Möller Medical, the company was able to reach market leadership in Germany.

This business was considerably strengthened by a strategic alliance with one of the large blood bag manufacturers. This alliance allows to make coupled offers (device plus disposable).

Another cooperation with a university and a large blood donation organization is already working on the next generation of devices, aiming to further simplify blood donation and processing.

Established products for aesthetic medicine

For about 5 years, Möller Medical has had a position in the market for aesthetic medicine with the products Liposat and Vibrasat. This system for liposuction (body fat removal) has been developed in cooperation with one of the leading aesthetic dermatologists of Germany. Using the gentle vibrating cannula technique, superfluous body fat tissue can be removed in all body regions permanently, with little pain. This product is distributed under the own brand Möller Medical. Again, the products form a system of investment and disposable goods – after sale of the devices, the corresponding disposable sales yield a trailing revenue stream.

Outlook

Möller's parent company medimondi was able to prove that, starting from a stable and established industrial business, it is possible to develop an interesting end customer business with an own brand. The significant fragmentation of the medical devices market helps to do this without any cannibalisation. And we are just at the beginning! Further developments are planned in niches that are related to our current business, e.g. radiology, orthopedics or even diagnostics.

Liposat power configuration, the complete solution for liposuction. About 500 devices are installed within the market of aesthetic surgeons and dermatologists.



„A highly dynamical team
with excellent products!“

Michael Eis, product manager spinal implants.



The patented implant system Seriflex for static and dynamic spine fixation (in the version trauma/ repo also suited for fractured and sliding vertebra) was developed by medimondi-subsidiary bricon ag. It is distributed under its own brand. The implant box is manufactured by another medimondi subsidiary, Centroplast, from a special, autoclavable material.

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CSF drainage A healthy human adult has about 150 ml cerebrospinal fluid (CSF, in German "Liquor") in his/her head and spine. The CSF is reproduced and reabsorbed several times a day. CSF pressure is autoregulated by a complex mechanism not yet fully understood. The goal of this pressure autoregulation is to allow enough blood perfusion and oxygen supply to the brain. Some situations cause the regulation mechanism to break down, and a CSF drainage at the head ("ventricular") or back ("lumbar") is vitally necessary. Indications include: severe trauma, subarachnoid hematoma, shunt infections, normal pressure hydrocephalus, post-surgery treatment. The number of external CSF drainages is roughly estimated to be 30–40,000 p.a. in Germany, 130–140,000 p.a. in the USA, with an annual growth rate of about 6 %.

LiquoGuard® for neurosurgery

Initially, there was a revolutionary idea of a brilliant neurosurgeon. To this came hundreds of design changes and improvements out of our R&D and sales departments. Thus, in only 15 months, the new product LiquoGuard® was created. This closed system, consisting of device and disposable sets, was received with extremely positive feedback on international, subject-specific congresses in Europe and the United States. We are positive that this system will change the CSF drainage market permanently. Experts call it a "game changer".

LiquoGuard® replaces the traditional dripping chamber principle by a sealed system with dual pressure transducers and an electronically regulated tube pump. At the same time, LiquoGuard® replaces all external and many implanted systems to measure intracranial pressure (ICP).

Safety LiquoGuard® offers alarm functions, in contrast to all other current drainage systems. With legacy CSF drainage systems, catheter occlusions, collapsed ventricles, overdrainage situations or even subdural hematomas can remain undetected. LiquoGuard® strongly supports the avoidance and detection of such situations. Additionally, the innovative concept of a closed system serves to minimize infection risks.

Cost and time savings By eliminating the dripping chamber, the necessary chore of frequent, time-consuming height adjustments is eliminated as well. In some cases, the safety concept may even enable the doctor to responsibly make the decision to move the patient from an intensive care unit (ICU) into the (supervised) normal care area.

Mobility Strong batteries allow the continuation of CSF pressure measurement and drainage during patient movements. Patients who are awake can even freely move about the hospital, a feature much appreciated.

Versatility LiquoGuard® supports, by permanent data recording, new therapeutical concepts. The extended possibilities of data analysis help decide shunt indications, judge medication effects and calculate CSF flow as well as ventricular compliance. Further features, such as the support of the spinal infusion test, are being developed. To the scientific community, LiquoGuard® strikingly contradicts the prevailing notion that simultaneous pressure measurements and drainage should be impossible. For this and other reasons, LiquoGuard® is often called a paradigm shift in CSF drainage and ICP measurement.



History function

All data are recorded and available for later evaluation at the device or off-line on a PC.

LiquoGuard®

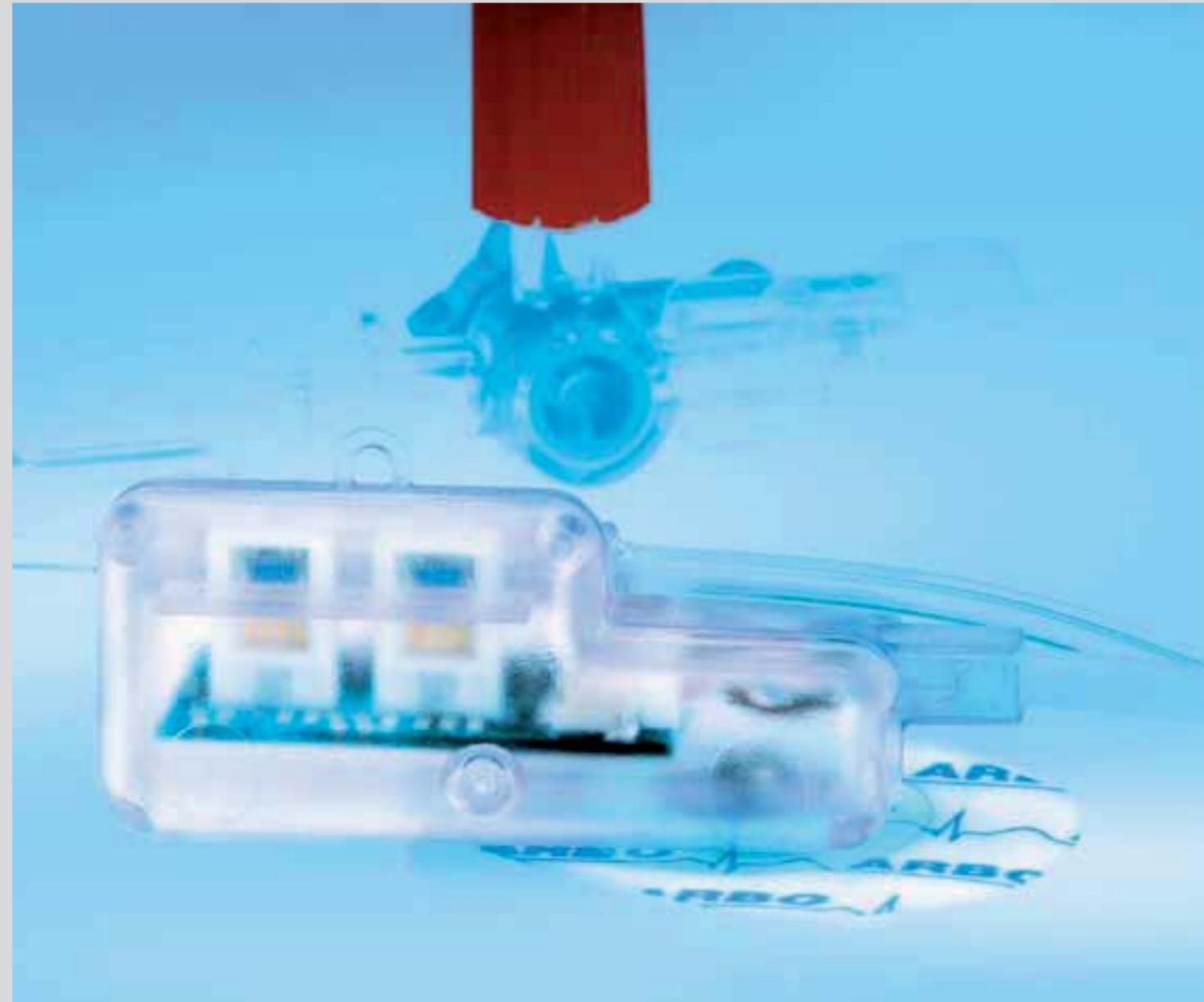
The revolutionary solution of most clinical CSF management problems: safe, time-saving, mobile, versatile.

Peristaltic pump

The electronically controlled pump is regulating CSF pressure of patients by taking away superfluous CSF while maintaining positive pressure.

Pressure transducers

The complete sensor and alarm chain is build redundantly to ensure an alarm in any conceivable error situation.

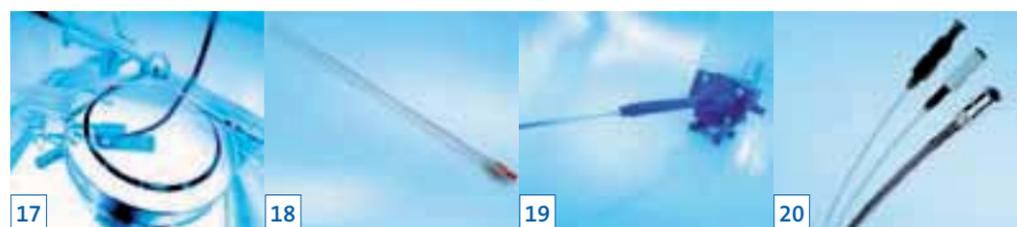


Sample Applications

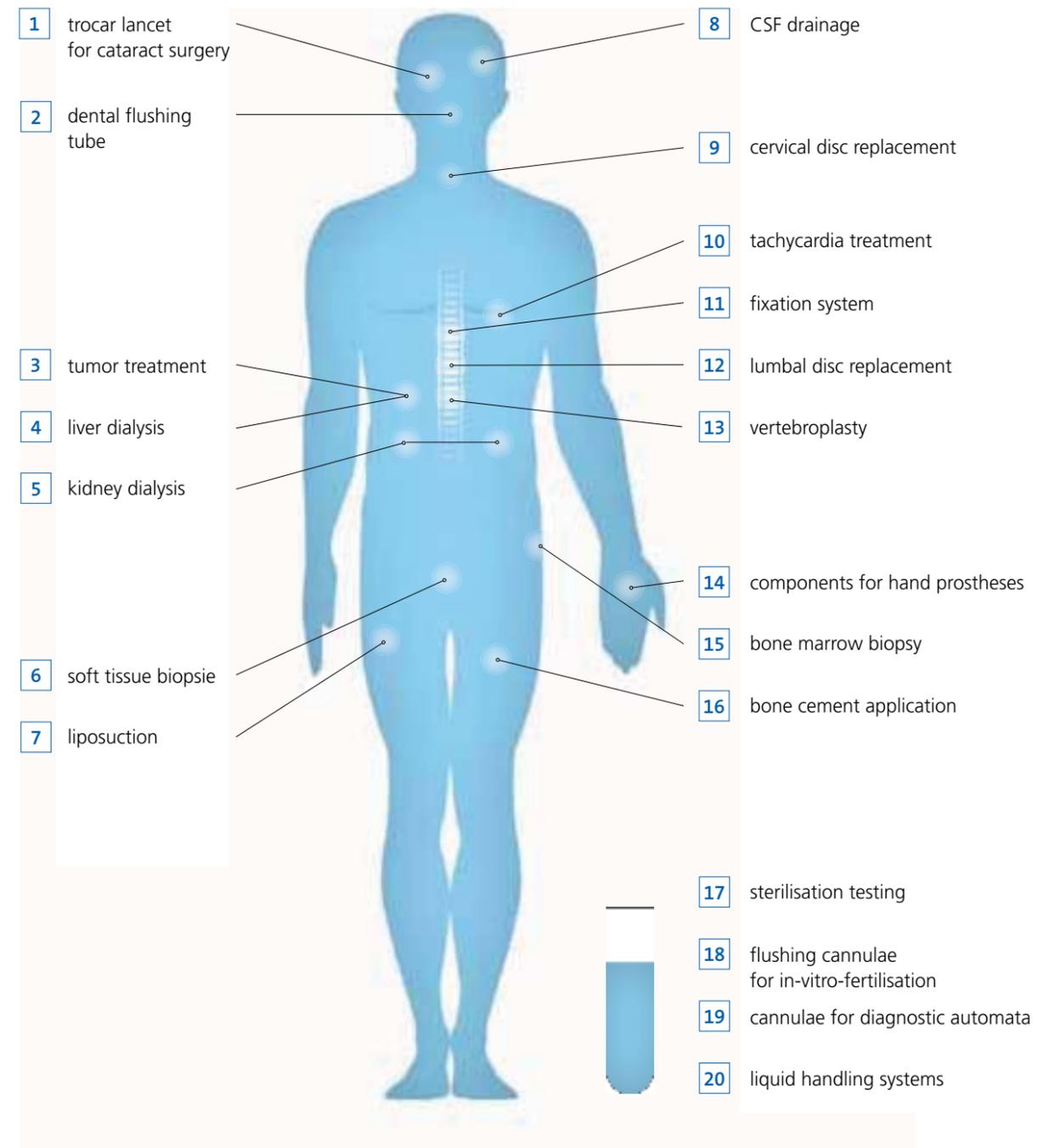
Some product examples in medical technology



Some product examples in in-vitro-diagnostics



„Aegroti salus suprema lex“ – „The good of the patient is supreme law“



Möller Medical GmbH

Wasserkuppenstraße 29-31

36043 Fulda, Germany

Phone +49 661 9 41 95 - 0

Fax +49 661 9 41 95 - 90

info@moeller-medical.com

www.moeller-medical.com

