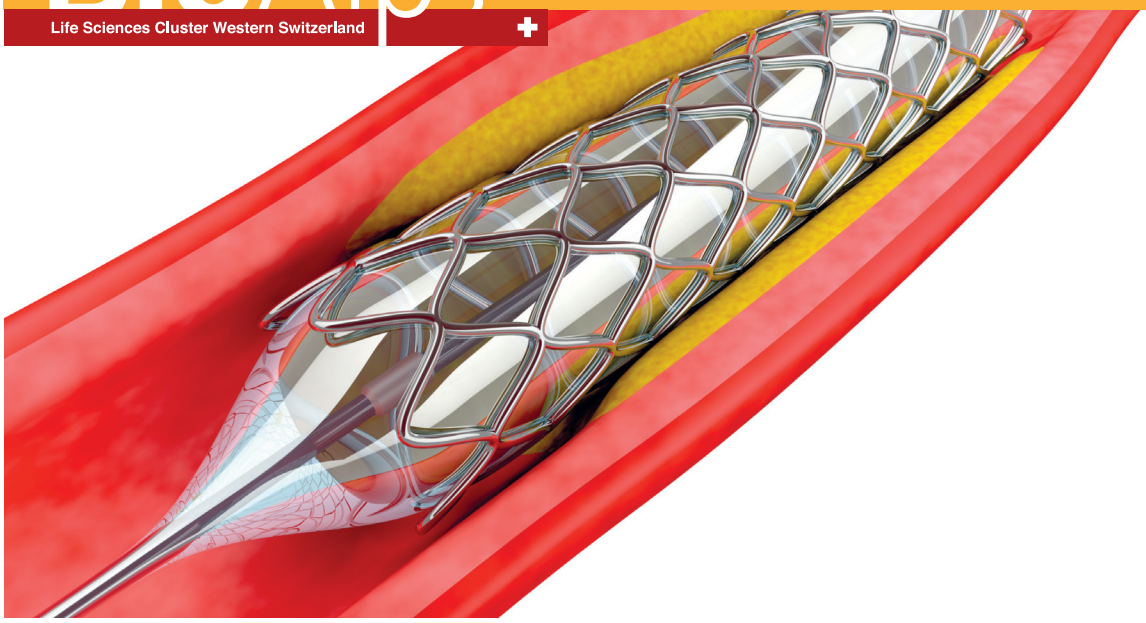
BioAlps

Life Sciences Cluster Western Switzerland



Medical technology

High innovation and strong growth

Medical technology, often called medtech, has the highest density ratio per inhabitant of companies in the sector[1], with some 3,700 companies employing 51,000 people in the whole of Switzerland. On average, over the last ten years medtech has contributed 2% to Swiss GDP and 5.5% total export value, while 13% total revenue in the field was invested in R&D. For example, the world's first cardiac stent was developed in Switzerland. In 2011, Switzerland ranked third in the Europe in terms of absolute numbers of medtech patent filings[2].

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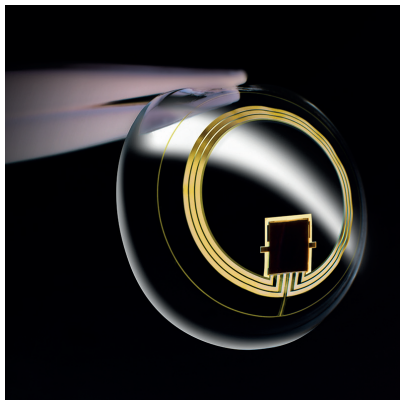
The BioAlps cluster gathers together the competences and know-how of many leading academic institutions; these initiate many medtech research projects with the industry. There are numerous world class medtech companies in the field of implants, hearing aids, lab instruments and non invasive surgical systems in the country. About 10% of the medtech companies based in Switzerland are located in the BioAlps cluster, close to leading academic institutions. More specifically, multinationals such as Medtronic, Edwards Lifesciences, Beckman Coulter, Agilent, Biosensors Europe and Johnson & Johnson have settled their research, development, production, sales and marketing operations within the BioAlps cluster. A multitude of start-ups are active in fields as varied as cardiovascular health, orthopaedics, oral care, ophthalmology, neurology, metabolic diseases and intensive care. They benefit from the proximity to research projects such as the translational programme on Neuroscience and Neuroengineering at the Ecole Polytechnique Fédérale de Lausanne (EPFL), jointly run with Harvard University. The Inselspital in Berne, Lausanne University Hospital (CHUV) and the Geneva University Hospitals (HUG) regularly set up clinical studies with medical technology partners, with teams dedicated to both research and training.

In the medtech sector, the Western Switzerland region builds on its traditional microtechnology skills to create new products. Such companies as Valtronic or De Puy Groups are situated in traditional watchmaking areas to be able to leverage this very particular expertise. Furthermore, the National Centre of Competence in Research (NCCR) Robotics [3], launched by the Swiss National Science Foundation, is a nation-wide center with the common objective of developing new human-oriented robotic technology for improving our quality of life, has chosen EPFL as the home institution.

[1] www.implantate-schweiz.ch
[2] Swiss medtech report, 2012.
[3] www.nccr-robotics.com



SENSIMED LEVERAGES THE BIOALPS NETWORK

Winner of the 2012 PriceWaterhouseCooper "Coup de Coeur" award and 2010 R&D magazine USA's Award for being one of the top 100 most technologically significant products on the market, Sensimed is revolutionizing glaucoma management with its lens to monitor fluctuations of intraocular pressure in glaucoma treatment, the Sensimed Triggerfish® system. Based on research carried out in the EPFL in Lausanne, Sensimed is a spin-off of the institution. The project was initiated after a meeting between ophthalmologists and researchers Matteo Leonardi and Sacha Cerboni. Sensimed Triggerfish® is currently in restricted commercialization in various countries. Sensimed has also set up a collaboration with Nidek in Japan to develop the registration path for Sensimed Triggerfish® in Japan and has obtained a CPT-III code in the USA, and is currently in the clearing process with the FDA. Since its creation, the company has successfully raised more than CHF 53 million from venture capitalists within the cluster and abroad.

CROSS-FERTILISATION LEADS TO SUCCESS

Medtech prospers at the intersection of research, technology and medical need to create innovative products for world markets. Western Switzerland offers a close-knit network of research institutions, teaching and research hospitals, and technology centres, enabling cutting edge research to take place.

The lists below are non exhaustive and showcase some examples of the work being done in the region.
Find more information in our extensive databases: www.bioalps.org/database and, for the six Alpine regions, www.alpslifesciencesearch.com

THE LEADING ACADEMIC MEDTECH RESEARCH IN WESTERN SWITZERLAND

Geneva University UNIGE & Geneva University Hospitals HUG	Department of Medicine Department of Cardiology	Cardiac devices such as heart valves, stents, biodegradable mitral ring, hydrogel product to prevent epipericardiac adherences.	www.medecine.unige.ch www.hug-ge.ch
Geneva University UNIGE & Geneva University Hospitals HUG	Faculty of Medicine Department of visceral surgery	Robotic surgery and endoscopy Transplantation Gastric rings and bands	www.medecine.unige.ch www.visceral-surgery.ch
Ecole Polytechnique Fédérale de Lausanne EPFL	Faculty of Life Sciences Neuroprostheses Centre (CNP)	Cortico-spinal neuroprosthesis, cochlear implants, dexterous hand prosthesis, Rehabilitation using advanced technologies (robotics, electrical stimulation, virtual reality)	cnp.epfl.ch
Ecole Polytechnique Fédérale de Lausanne EPFL	Faculty of Life Sciences Institute of Bioengineering	Interventional and diagnostic biomedical micro-devices and image processing tools Sensory and motor neuroprosthetics	ibi.epfl.ch
University of Berne UNIBE/ISTB/IEFM	MEM Research Center Institute for Surgical Technology and Biomechanics & Institute for Evaluative Research in Orthopaedic Surgery	Research, discovery, and invention in the area of biomedical engineering	www.memcenter.unibe.ch
University of Berne UNIBE & Bern University Hospital (Inselspital)	ARTOG Center for Biomedical Engineering Faculty of Medecine & Bern University of Applied Sciences	Electronic implants, Biomedical acoustics Tissue engineering, Rehabilitation engineering	www.artorg.unibe.ch
Centre Suisse d'Electronique et de Microtechnique CSEM	MEMS (including Optical MEMS, BioMEMS, PowerMEMS, RF-MEMS) Nanotechnology Integrated and Wireless systems	Product concepts such as artificial retinas and hearing aids.	www.csem.ch/site

A WIDE VARIETY OF MEDTECH COMPANIES IN THE BIOALPS CLUSTER

AARDEX	Medication monitoring	www.aardexgroup.com	**GOMINA**	Surgical instruments	www.gomina.ch
ALEVA NEUROTHERAPEUTICS	Implants	www.aleva-neuro.com	**GTX MEDICAL**	Neuroscience	www.gtxmedical.com
BECKMAN COULTER	Lab automation	www.beckmancoulter.com	**INTUITIVE SURGICAL**	Robotic surgery	www.intuitivesurgical.com
BIENAIR DENTAL	Dental care	www.bien-air.ch	**MEDTRONIC**	Cardiology, neurology, implants	www.medtronic.com
BIOSAFE	Regenerative medicine	www.biosafe.ch	**PHONAK COMMUNICATIONS**	Hearing	www.phonak.com
DEBIOTECH	Cardiology, metabolism	www.debiotech.com	**SENSIMED**	Spine Implants	www.spineart.com
DENTSPLY MAILLEFER	Dental instruments	www.dentsplymaillefer.com	**SPINEART**	Opthalmology	www.sensimed.ch
DEPUY SYNTHES	Neuroscience and neurovascular	www.depuysynthes.com	**STRYKER**	Orthopaedics	www.stryker.com
DISETRONIC (ROCHE)	Diabetes	www.roche.ch	**SYMBIOS**	Orthopaedics, hips and knee	www.symbios.ch
EDWARDS LIFESCIENCES	Cardiology	www.edwards.com	**VALTRONIC**	Implants, medical devices, orthopaedics	www.valtronic.com

The fact sheet provides a view of the key players in the sector at any given time; it is not comprehensive and is subject to regular updates. This current edition was updated in Spring 2018.

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Schweizerische Eidgenossenschaft
Confédération suisse
Confederazione Svizzera
Confederaziun svizra

Département fédéral de l'économie DFE
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