

# Switzerland

**Prof Dr Pierre Hoffmeyer**  
Professor of Orthopaedics  
Chairman of the Department of Orthopaedics, University Hospital of Geneva  
President, Swiss Orthopaedic Society  
SICOT National Delegate of Switzerland



Switzerland lies in the centre of Europe and shares boundaries with France (572 km), Italy (734 km), Liechtenstein (41 km), Austria (165 km) and Germany (346 km). It covers a land area of 41,285 km<sup>2</sup> (or 15,940 square miles). The highest elevation is Mount Monte Rosa at 4,634 m. It hosts many lakes, natural and dammed, the largest being Lake Geneva with its 584 km<sup>2</sup>. The major rivers lead to three different seas. The Rhine flows into the North Sea, the Rhone into the Mediterranean Sea and the Inn, a tributary of the Donau, drains into the Black Sea. There are more than 3,000 km<sup>2</sup> of glaciers in Switzerland, the largest being the Aletschgletscher in the Valais beneath the Jungfrau mountain. Time zone is Central Europe (GMT +1 hour). The capital is Bern which lies in the geographic centre of Switzerland.

## Population

As of the latest national census in 2008, the population was 7.6 million and is mainly concentrated in the more urban cantons. The largest is Zurich (1,181,000 pop.) followed by Bern (938,000 pop), Vaud (608,000), Saint Gallen (443,000), and Geneva (396,000).

## Climate

Switzerland is in a transition zone. The west is influenced by the Atlantic Ocean, which brings wind and moisture. In the East the climate is more continental with lower temperatures and less precipitation. The Alps circulating west to east divide the country into a Northern and a Southern region. The mountain chain acts as a divide so that the South is influenced by the Mediterranean, which means higher temperatures and a lot of precipitation. As a rule winters are mild on the plateau between -5° and +10°C. Summers can be warm up to 30°C in some regions. The inter-seasons are mild with long periods of sunshine alternating with precipitations. Up in the mountains, winters bring snow, great for winter sports and summers are pleasant allowing hiking and mountain climbing. The lakes have good sailing conditions from March to October.

## Language

There are four official languages: German (65% of the population) is spoken in the centre and the east, French (18% pop.) is spoken in the west and in the north, Italian is spoken in the south (10% pop.) and Romansh, a Rhaeto-Roman dialect, is spoken in parts of the Grisons in the south-east. The German spoken is a dialect called Schwyzerdütsch while the written language is Hoch Deutsch. Most Swiss master or understand at least two of the official languages and a majority has a working knowledge of English.

## Religion

Over 40% of the population is Roman Catholic and 35% is Protestant; there is a Jewish community totalling about 1% of the population and a small Muslim minority. 11% of the people profess no religion.

## History and Government

Switzerland, officially named Confoederatio Helvetica (CH), began its existence in 1291 as league of cantons in the Holy Roman Empire. Fashioned around the nucleus of the three districts of Schwyz, Uri, and Unterwalden, the Swiss Confederation slowly added new cantons. By 1815 the Congress of Vienna guaranteed the neutrality and recognized the independence of Switzerland. The federal constitution of 1874 established a central government while giving large powers of control to each canton. Strict neutrality was the policy in both world wars. Geneva became the seat of the League of Nations in 1919 and later the European headquarters of the United Nations and of a large number of international organizations including the International Red Cross and the World Health Organization (WHO). In 2002, Switzerland became the 190<sup>th</sup> member of the UN.

The president, who is both head of state and head of government, is elected annually by the legislature. The cabinet, or Federal Council, is the main executive body; it is composed of seven members elected for four years by the legislature. The bicameral legislature, or Federal Assembly, consists of the 46-seat Council of States, with two members from each canton and one from each half canton, and the 200-seat National Council, whose members are popularly elected. All legislators serve four-year terms. Switzerland frequently employs the referendum as well as the popular initiative to achieve political change. Switzerland's 20 cantons and 6 half cantons remain sovereign in many respects such as health, education and police.

## Economy

Switzerland has a highly successful market economy based on international trade and banking. Agriculture employs less than 5% of the population, and since only 10% of the land is arable, the primary agricultural products are cattle and dairy goods (especially cheese); grains, fruits, and vegetables are also grown, and there is a large chocolate-processing industry. Tourism adds significantly to the economy. Switzerland has a worldwide reputation for the high quality of its export manufactures, which include machinery, chemicals, watches, textiles, precision instruments, and diverse high-tech products.

## THE PRACTICE OF ORTHOPAEDICS IN SWITZERLAND

### The birth of the Swiss Orthopaedic and Traumatology Association

The history of the Swiss society goes back a long way. The beginnings of Orthopaedics in Switzerland start with Jean-André Venel, who opened the first dedicated Orthopaedic Hospital in 1780 in Orbe, not far from Lausanne. The aim was to take care of crippled children and Venel developed, amongst other working tools, a shoe "*sabot de Venel*" designed to straighten club feet. This pioneering institution evolved, from 1876, into the *Hospice Orthopédique de la Suisse Romande* in Lausanne. Other institutions dedicated to Orthopaedics were created throughout the country, in 1883 the Schulthess Clinic and followed in 1912 by the Balgrist Clinic, both in Zurich. In Geneva, the Hôpital Gourgass was built in 1884 and dedicated to osteo-articular tuberculosis. The Santa Anna Klinik in Luzern began in 1930 to take care of orthopaedic patients. Some of these institutions and others evolved into University clinics and centres devoted to orthopaedic surgery and later traumatology.

**In 1929, the Swiss chapter of SICOT was founded. This became the "Free association of Swiss orthopaedists" which was renamed in 1953 the "Association of Swiss Orthopaedists" and became in 1963 formally the Swiss Society of Orthopaedics and more recently the Swiss Society for Orthopaedics and Traumatology (SSOT/SGOT).**

Today the Swiss Society of Orthopaedics and Traumatology is over 700 members strong, dispersed throughout the regions of Switzerland where four national languages coexist. All Swiss Society meetings are multilingual, speakers using their own tongue and expecting to be understood by their listeners.

**The Swiss Society has thus grown from its status as a chapter of SICOT into a strong professional and academic organisation.**

The goal of the Society is to oversee postgraduate education programmes leading to the orthopaedic specialist diploma. The Society is also responsible for a CME programme consisting of a yearly congress and a national day of postgraduate teaching. The annual meeting attracts over 1,000 attendees each year. Emphasis is placed on instructional courses by renowned international and national invited experts and on free paper sessions given by members. Many prizes are distributed for the best papers and studies supporting evidence-based medicine concepts are especially rewarded. The Society also distributes travel awards to surgeons in training to go abroad for specialized fellowship activities. The Swiss registry for implants is a major project in which the Society has invested much effort and means. As a professional organisation, the Swiss society also has a watchdog role to ensure the best possible, including economics, orthopaedic care throughout the country.

The development of modern orthopaedics and traumatology is strongly linked with Switzerland. The precision mechanics industry allowed, early on, the spawning of instrument and implant manufacturers. The Jura region, in the northern part of Switzerland, is traditionally the watchmaking region. This came about because the farmers, kept inactive during the long winters, then turned their attention to machine crafts. This led to the modern precision machine and watch industry. This is also where the manufacturers providing the AO group, founded in 1958 by Maurice E. Muller of SICOT fame, began with their implant and instrument industry.

The AO group has become a large organisation providing education throughout the world for the care of musculoskeletal trauma. The courses organised every year in Davos in December attract more than two thousand surgeons, participating in the various, increasingly specialized, courses.

### **The evolution of the Orthopaedic Specialist**

There are 37 orthopaedic services in the 189 Swiss hospitals, of which five are the University Services of Geneva, Lausanne, Bern, Basel and Zurich. The thirty-seven services have been recognized by the federal health authorities and offer training opportunities or programmes at various levels.

The Swiss orthopaedic specialist training programme, as approved by the Health Ministry, involves a two-year basic surgical rotation. One year must be devoted to general surgery and the other year can be in any surgical speciality. The resident then has to pass a general surgery examination in the form of an MCQ. After having successfully passed this exam the candidate can embark on four years of orthopaedic and traumatology training. One of these years must be spent in a University service. This will take the resident through rotations in general reconstructive surgery, adult and paediatric trauma, children's orthopaedics, hand surgery, sports medicine and rehabilitation, among the major topics. During the training the resident must accomplish certificates in X-ray protection, insurance medicine and orthotics, amongst his many obligations. At the end of the training, and provided a surgical log of about 400

operations in all fields of orthopaedics is fulfilled, the resident will then have to pass an examination. The examination starts with a written MCQ which, if passed, gives access to the oral examination, which is in two parts. The first part is a surgical skills test, where the candidate must demonstrate knowledge of surgical anatomy and technique in the anatomy laboratory, and the second part is a series of case discussions with experts. Once the examination is passed the candidate is recognized as an orthopaedic specialist. Most people then go on to work in hospitals as junior consultants, taking full responsibility of operative care under the supervision of a chief surgeon. Later, one may elect for an academic career in a University setting, become chief of orthopaedics in a regional hospital, or choose solo or group practice and work in private hospitals and clinics.

For surgeons in practice, a CME programme is in place and a quota of points must be achieved each year. Points may be obtained by attending national or international congresses and by attending seminars and reading journals. The Swiss Society is delegated by Swiss Federal health authorities to supervise and organize the CME activities. All training centres must provide a curriculum, freely available on the internet, and are evaluated by the residents in training every year. Training centres that fail to achieve minimal standards are inspected for quality and followed up, again this activity behoves the Swiss Society.

#### **Collaborative efforts with other international organisations**

The Swiss orthopaedic community interacts actively with SICOT and sends participating delegates for presentations to all major meetings. This interaction with international societies is considered vital to the development of Orthopaedics and Traumatology in Switzerland. Almost all the practising orthopaedic specialists have, at some time during training or immediately after, sojourned abroad for fellowships or further specializations, maintaining thereby vitally important international relations. The major Swiss training centres also accept fellows from all over the world to further education and enhance contacts.