

**Reproductive Medicine Act monitoring**

**Key results 2022**

Bern, 15 June 2024



## 1 Introduction: Reproductive Medicine Act monitoring

The Reproductive Medicine Act (RMA) specifies the conditions under which techniques of medically assisted reproduction may be used in Switzerland. On 1 September 2017, a partial revision of the RMA came into force, involving in particular the legalisation of preimplantation diagnosis.

Also included in the revised Act are provisions concerning evaluation (Art. 14a RMA). Whether the Act fulfils its purpose is to be determined by a review of its effectiveness.<sup>1</sup> To provide a basis for the evaluation of the legislation, the Federal Office of Public Health (FOPH) is also conducting a monitoring programme. This programme systematically collects data on reproductive medicine in Switzerland, thus creating transparency. Büro Vatter (policy research and consultancy) was requested to carry out data collection and processing for this monitoring. The most important results are published online by the FOPH.

Thematically, this report is structured in accordance with the FOPH web page. No figures or tables are included; instead, for each section, reference is made to the analyses and explanations provided by the FOPH on the web page “Reproductive Medicine: facts & figures”.<sup>2</sup>

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<sup>1</sup> <https://www.bag.admin.ch/bag/en/home/medizin-und-forschung/fortpflanzungsmedizin/wirksamkeitspruefung-fmedg.html>; (accessed 17 May 2022)

<sup>2</sup> <https://www.bag.admin.ch/bag/en/home/zahlen-und-statistiken/zahlen-fakten-zu-fortpflanzungsmedizin.html>; (accessed 17 May 2022)

## 2 Medical practice in the area of reproductive medicine

<https://www.bag.admin.ch/bag/en/home/zahlen-und-statistiken/zahlen-fakten-zu-fortpflanzungsmedizin/medizinische-praxis-im-bereich-fortpflanzung.html>.

### 2.1 Assisted reproductive techniques

<https://www.bag.admin.ch/bag/en/home/zahlen-und-statistiken/zahlen-fakten-zu-fortpflanzungsmedizin/medizinische-praxis-im-bereich-fortpflanzung/verfahren-der-fortpflanzungsmedizin.html>.

*Couples starting IVF treatment.:* In 2022, 3,203 couples started in vitro fertilisation (IVF) treatment. Compared to 2021 (3,473 couples), there was a decrease of 7.8%.

*Reason for IVF treatment.:* In almost all cases, the reason for starting IVF treatment was infertility. In 2022, only 20 couples started IVF treatment to avoid the risk of transmitting a serious genetic disease. Since 2017, when data on this reason for treatment was first collected, the number rose steadily until 2021 (2021: 61 couples). It fell for the first time in 2022.

*IVF treatment overall.:* The total number of couples undergoing IVF treatment in a given year decreased relative to the previous year. In 2022, it was 6,619 couples, compared to 6,934 in 2021. The total number of treatment cycles was also down at 12,439 (2021: 13,226). IVF embryos from 2,912 couples were preserved; again fewer than the previous year (2021: 3,095). Before 1 September 2017, preservation of embryos was only permitted in exceptional cases. In the revised legislation, preservation of embryos was legalised and made subject to the same requirements as preservation of impregnated ova (Art. 16 para. 1 RMA).

*Preimplantation diagnosis (permissible since 1 September 2017).:* Here, a distinction is to be made between testing for specific genetic diseases (preimplantation genetic diagnosis, PGD) and screening for chromosome abnormalities (preimplantation genetic testing for aneuploidy, PGT-A). 13.4% of all couples undergoing treatment in 2022 used the preimplantation diagnosis (2021: 10.1%). Compared to previous years, the proportion thus increased markedly overall. A PGD was requested somewhat less in 2022 than in 2021: in 2021, 36 couples underwent PGD, in 2022 it was 31. In addition, both PGD and PGT-A were performed for 48 couples (compared to 38 in 2021). Demand for PGT-A, on the other hand, continued to grow: from 623 couples in 2021 to 807 in 2022. In the previous year, there was no polar body diagnosis, whereas it was performed for two couples in 2022.

*Couples undergoing treatment with donor sperm:* a minority of couples in treatment used donor sperm. In 2022, 102 couples completed IVF with donated sperm cells; a similar number to that of the two previous years (2020: 101, 2021: 111). By contrast, there was a marked increase in insemination with sperm cells: from 245 couples in 2021 to 307 couples in 2022. This is due to the eligibility of female married couples for this treatment since 1 July 2022

(“marriage for all”). In the second half of the year, 70 same-sex couples underwent insemination with donated sperm cells.

## 2.2 Handling of embryos from in vitro fertilisation

<https://www.bag.admin.ch/bag/en/home/zahlen-und-statistiken/zahlen-fakten-zu-fortpflanzungsmedizin/medizinische-praxis-im-bereich-fortpflanzung/umgang-mit-embryonen-nach-in-vitro-fertilisation.html>

*Embryos developed:* For several years up to 2016, the total number of embryos developed per year was between roughly 18,000 and 19,000. Thereafter, the total rose sharply, reaching 33,945 in 2018. After a slight decrease in 2019, the number of embryos hit a new record total of 37,511 in 2021. In 2022, the number was somewhat lower at 35,605. The increase after 2017 is most likely attributable, in particular, to two changes in the legislation. Firstly, up to twelve embryos may now be developed per treatment cycle (previously three; Art. 17 para. 1 RMA). Secondly, the preservation of embryos is now no longer only permissible in exceptional cases (Art. 16 para. 1 RMA).

*Embryos preserved:* As a result of these changes in the legislation, the number of embryos preserved also increased dramatically: 251 embryos were preserved in 2016 and 13,233 in 2021, with a slight fall to 12,714 in 2022.

*Embryos transferred:* Conversely, the same period saw a marked decrease in the number of embryos transferred – from 14,659 in 2016 to 9,320 (2022). The decline seen over the previous years is attributable to two developments. Thus, after the partial revision of the RMA, decreasing numbers of embryos, on average, were transferred per cycle than previously: in 2016, two or three embryos were transferred simultaneously in almost two thirds (66%), and one individual embryo in only a third of all cases (34%). In contrast, only one embryo was transferred in 85% of all cases in 2021, and in 88% in 2022. Secondly, the number of transfers initially declined from 2017: from 2009 to 2016, more than 8,500 transfers were recorded each year; since then, the figure has decreased, with 7,891 transfers recorded in 2019. The number of transfers subsequently rose to 9,115 by 2021. In 2022, the number did not rise again, although it was still higher than in 2019 at 8,290.

*Embryos destroyed:* Compared to 2016, the total number of embryos destroyed has increased by a factor of five: while 3,297 embryos were destroyed in 2016, the total rose to 17,313 in 2022. As in previous years, by far the most frequent reason for destruction was failure of embryo development (12,602 embryos).

## 2.3 Pregnancy and birth after in vitro fertilisation

<https://www.bag.admin.ch/bag/en/home/zahlen-und-statistiken/zahlen-fakten-zu-fortpflanzungsmedizin/medizinische-praxis-im-bereich-fortpflanzung/schwangerschaft-geburt-in-vitro-fertilisation.html>

*Birth rate:* Of all treatment cycles started in 2022, 18% resulted in a birth. The birth rate had previously risen slightly from 17% in 2017 to 19% in 2019. It has remained steady at 18% since 2020.

*Births after IVF with preimplantation diagnosis:* In 2021, as in previous years, the number of births after IVF treatment did not increase again. In 2021, there were 2,403 registered births, in 2022 the number was 2,289, which was slightly up from 2020 (2,122). Overall, the number of (singleton or multiple) births after IVF with preimplantation diagnosis again increased markedly over previous years: 337 such treatments resulted in a birth (singleton or multiple) in 2022; in 2020 there were 54 and 240 births in 2021). 306 births followed IVF with PGT-A, 14 occurred after PGD and 17 after PGD combined with PGT-A.

*Multiple births after IVF:* Since the entry into force of the revised RMA, the number of multiple births has decreased. In 2017, 295 IVF treatments resulted in a twin birth and 6 in a triplet birth. In 2021, only 96 sets of twins and one set of triplets were born following IVF treatment. In 2022, another 84 sets of twins were born, while there were no triplets for the first time since the measurement sequence began in 2007. The proportion of singleton births has increased from 84% to 96% since 2017. For comparison, of all births recorded in Switzerland in 2022, over 98% were singleton births, with multiple births accounting for just under 2% (source: Swiss Federal Statistical Office).

*Premature births:* 294 births after IVF in 2022 occurred before the end of the 37th week (2021: 286). The proportion of premature births thus decreased from 21% of all births after IVF in 2017 to 13%, although it was again slightly higher than 2021 (12%).

## 2.4 Preservation of reproductive cells

<https://www.bag.admin.ch/bag/en/home/zahlen-und-statistiken/zahlen-fakten-zu-fortpflanzungsmedizin/medizinische-praxis-im-bereich-fortpflanzung/konservierung-eigenvorsorge-und-spende.html>

Note: due to late registration there may be changes to the figures for previous years regarding the number of reproductive cells for preservation. These changes will be made on the internet platform, but they are not included in the published short reports from previous years.

*Oocytes and ovarian tissue preserved:* Individuals may have their reproductive cells preserved as a precautionary measure under the RMA. The maximum preservation period is generally 10 years (Art. 15 RMA). As of 31 December 2022, oocytes or ovarian tissue was preserved from a total of 2,971 women, representing another increase over 2021 (2,502). Preservation was undertaken for medical reasons in 1,068 cases (2021: 928), and for other reasons in 1,903

cases (2021: 1,574). The increase is thus primarily attributable to preservation for other reasons.

*Sperm and testicular tissue preserved.:* As of 31 December 2022, sperm or testicular tissue was preserved from 6,154 men, representing an increase (2021: 5,836). In 4,670 cases, the preservation was for medical reasons (2021: 4,544). Sperm or testicular tissue was preserved from 1,456 men for other reasons (2021: 1,292). The increase thus applies to both categories, whereby it is somewhat greater in the latter case.

### 3 Actors in reproductive medicine

<https://www.bag.admin.ch/bag/en/home/zahlen-und-statistiken/zahlen-fakten-zu-fortpflanzungsmedizin/akteure-der-fortpflanzungsmedizin.html>

*Physicians with a licence.:* The number of physicians with a licence for reproductive medicine in accordance with Art. 8 RMA has once again increased – from 79 in 2017 to 95 in 2022 and 103 in 2023. 69 of them are authorised to carry out preimplantation diagnostic procedures. In 2017 – the year in which preimplantation diagnosis was legalised – 15 were authorised to conduct procedures of this kind.

*Laboratories conducting genetic testing on embryos.:* In 2022, seven genetic laboratories in Switzerland were authorised to conduct genetic testing on embryos; this number has remained unchanged since 2017. Six laboratories carried out tests of this kind in 2022.

### 4 Sperm donor-conceived children

<https://www.bag.admin.ch/bag/en/home/zahlen-und-statistiken/zahlen-fakten-zu-fortpflanzungsmedizin/kinder-aus-samenspende.html>

*Reported births registered.:* Since 2001, physicians performing IVF have been required to report births of sperm donor-conceived children to the Federal Office for Civil Registration (EAZW), so that the children can subsequently obtain information about the donor. In the EAZW donor data registry, a total of 3,661 births were registered from 2001 to the end of 2018; these may be multiple births. Since then, there has been a further marked increase in the number of births registered: a total of 4,524 births at the end of 2022 and 4,671 births were included in the EAZW registry on 31 December 2023. 147 births were thus newly registered in 2023 (2022: 150).

*Registered sperm donors.:* In the period from 2001 to the end of 2019, 776 sperm donors were registered following births reported to the EAZW. By the end of 2022, the total number of registered sperm donors had risen to 837, and to 888 by the end of 2023. In 2022, 51 new

donors were thus registered (2021: 23). That is the biggest increase since the measurement sequence began. This is most likely due to increased demand for treatment with donated sperm resulting from the eligibility of married female couples for sperm donations.

*Children's requests for information.:* In 2020, for the first time, one child conceived using donated sperm cells requested information from the EAZW on the donor, in accordance with Art. 27 para. 1 RMA. The donor concerned agreed to make contact. In 2021, two further requests were received. In one of these cases, the donor agreed to make contact. In 2022, there were also two requests. In the same year, one donor agreed to make contact, in one case the donor declined contact. In 2023, two applications were submitted, one from a child having reached the age of majority and one from a minor. In both cases the donor agreed to make contact.

## 5 Sources used for RMA monitoring

As far as possible, monitoring relies on existing data sources. Only a small proportion of the information is specially collected for the monitoring programme, using direct surveys of physicians licensed to conduct activities in accordance with Art. 8 para. 1 RMA. Monitoring is based on the following data sources.

- *FIVNAT:* Fécondation In Vitro National (FIVNAT) is a committee of the Swiss Society for Reproductive Medicine (SGRM) which collects in vitro fertilisation (IVF) data. Some of this data has also been published for many years by the Swiss Federal Statistical Office; for this reason, some IVF statistics go back as far as 2007.
- *Physicians with a licence:* These are physicians who use assisted reproductive techniques, preserve reproductive cells or arrange the supply of sperm cells and therefore require a licence under Article 8 RMA. For monitoring purposes, they are directly surveyed, inter alia, on insemination using preserved sperm cells, on the precautionary preservation of reproductive material by individuals, and on donated sperm cells stored by them. Information is thus collected on activities requiring a licence which are not directly connected with IVF treatment.
- *Cantonal licensing authorities:* Responsibility for enforcement of the RMA lies with the cantonal licensing authorities, who are surveyed for monitoring purposes. They provide, inter alia, information on licence holders.
- *EAZW:* The Federal Office for Civil Registration (EAZW) manages data in accordance with the RMA on sperm donors and children conceived through sperm donation. The first data available for monitoring relates to 2018.
- *SFSO:* The SFSO criminal justice statistics cover offences against the criminal provisions of the RMA. Up to 2021, however, no convictions based on these provisions are recorded.
- *FOPH:* The FOPH grants licences to laboratories which perform genetic testing on reproductive cells or embryos. These laboratories require authorisation under Article



8 of the Federal Act on Human Genetic Testing (HGTA). For monitoring, data on these laboratories is obtained from the FOPH.