

TOWARDS A MORE EGALITARIAN AND INCLUSIVE GENITAL ANATOMY EDUCATION

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BACKGROUND

There are myths, misconceptions and taboos and inequalities among female, male and intersex genitalia (1). Current social changes around issues of gender and sexuality, including the visibilization of LGBTIQ+ individuals, highlight the lack of egalitarian and diversity-inclusive content in health care curricula (2). Sexual health in general and more specifically the physiology of the sexual response cycle, including pleasure, are often neglected in undergraduate medical curricula (3). The lack of training on the aforementioned topics holds a possible negative impact on sexual and reproductive healthcare, inequalities in access to healthcare, as well as the maintenance of harmful practices and beliefs, such as Female Genital Mutilation/Cutting (FGM/C) or non-consented intersex genital surgical interventions.

Geneva University, and Hospitals in collaboration with SANTE SEXUELLE SUISSE and in partnership with the state ministry of education and local NGOs, have developed, since 2017, *Sciences, Sex, Identities (SSI)*, (www.unige.ch/ssi), a scientific and educational program aiming at promoting sexual health and gender equity through research and education. Using interdisciplinary, inclusive, sex-positive and evidence-based data, we have developed and shared trainings and pedagogical tools with teachers, 2nd year medical students within the *Reproduction unit*, health professionals, teenagers and their parents. **Since 2021-2022, SSI has collaborated with UNIGE's Units of Anatomy and Histology to integrate its tools within the anatomy and histology practicals of 2nd year medical training.**

2ND YEAR MEDICAL STUDENTS

LECTURES

FOR A HISTORY OF FEMALE GENITAL ORGANS

This 2hrs lecture aims at sensitizing medical students to a multidisciplinary perspective, including history, biology and medicine, as well as to the history of sexuality, reproduction and the impact of gender stereotypes on scientific knowledge and medical practices.

SEXUAL AND GENDER DIVERSITY

This 2hrs lecture introduces and differentiate the concepts of biological sex, gender and sexual orientation. Through case studies students learn about health and access to health inequities experienced by a larger proportion of LGBTIQ+ individuals.

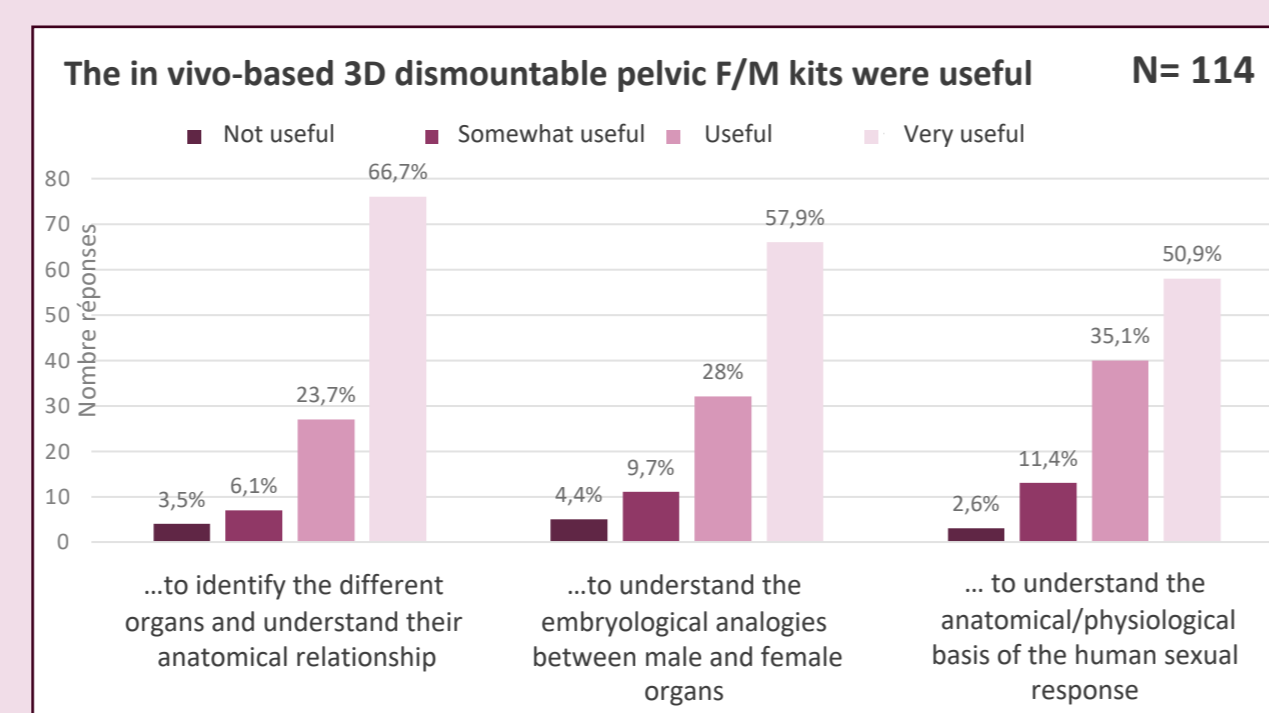
ANATOMY AND HISTOLOGY PRACTICALS

Research has shown that 3-dimensional (3D) printed anatomical models facilitate learning compared to other methods or in combination with other modalities, increasing global knowledge, acquisition of spatial knowledge and long-term knowledge retention (5, 6). We have produced prototypic MRI-based 3D male and female pelvic models in 2020 (1) and developed V2 models (A), based on *Chinese human visible body data* (7), in 2022, including internal organs and erectile structures, visible publicly in Sketchnote 3D (B).



ANATOMY PRACTICALS

The V2 3D M/F pelvic kits and genital molds of external genitalia, purchased from SEX-ED+, from cisgender and transgender individuals, with or without surgical or hormonal modifications, have been integrated in anatomy practicals and their relevance for medical student was assessed.



135 2nd year medical students filled a questionnaire to evaluate the relevance of using genital molds and in vivo-based 3D kits during their anatomy practicals.

Fig C1. Genital anatomy and diversity
Fig C2. 3D anatomy, embryological analogies and the sexual response

HISTOLOGY PRACTICALS

The histology of neurovascular structures of female and male erectile/tumescent tissues has been integrated in the histological practicals to address cellular involvement in the sexual response, the relevance of this for medical students was assessed.

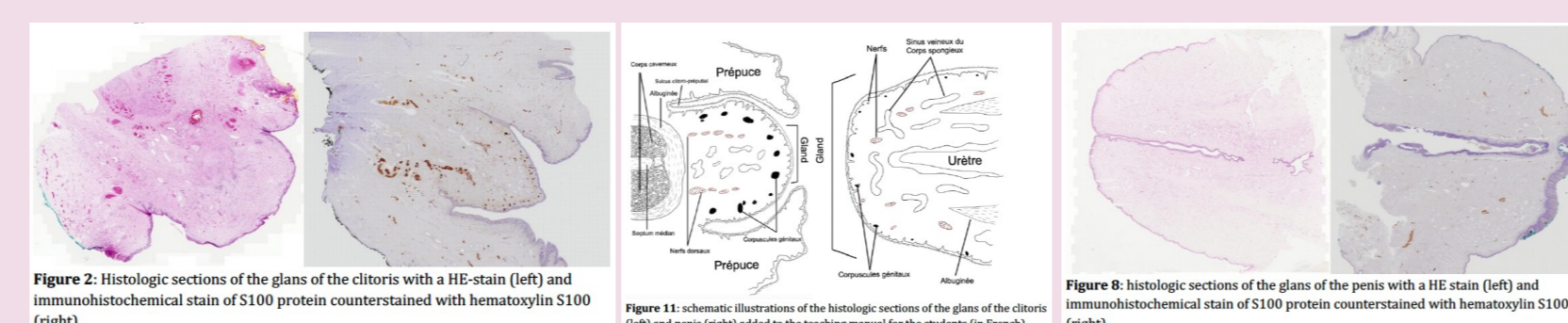


Fig D. Excerpts from the updated histology manual for 2nd year reproduction unit.

57 2nd year medical students replied to a survey. All of them responded that receiving information on clitoral and penile histology was important for their knowledge. 36 participants provided a short written feedback (Table 2).

BIOLOGY SCHOOLS TEACHERS

E-LEARNING – BIOLOGY AND SEXUALITY



Biology & Sexuality is an interdisciplinary, inclusive, sex-positive e-learning course on the development of biological sex, genital anatomy and its diversity, pubertal and psychosexual development, and the physiology of sexual response, aimed at biology teachers, sexual health educators and health professionals.

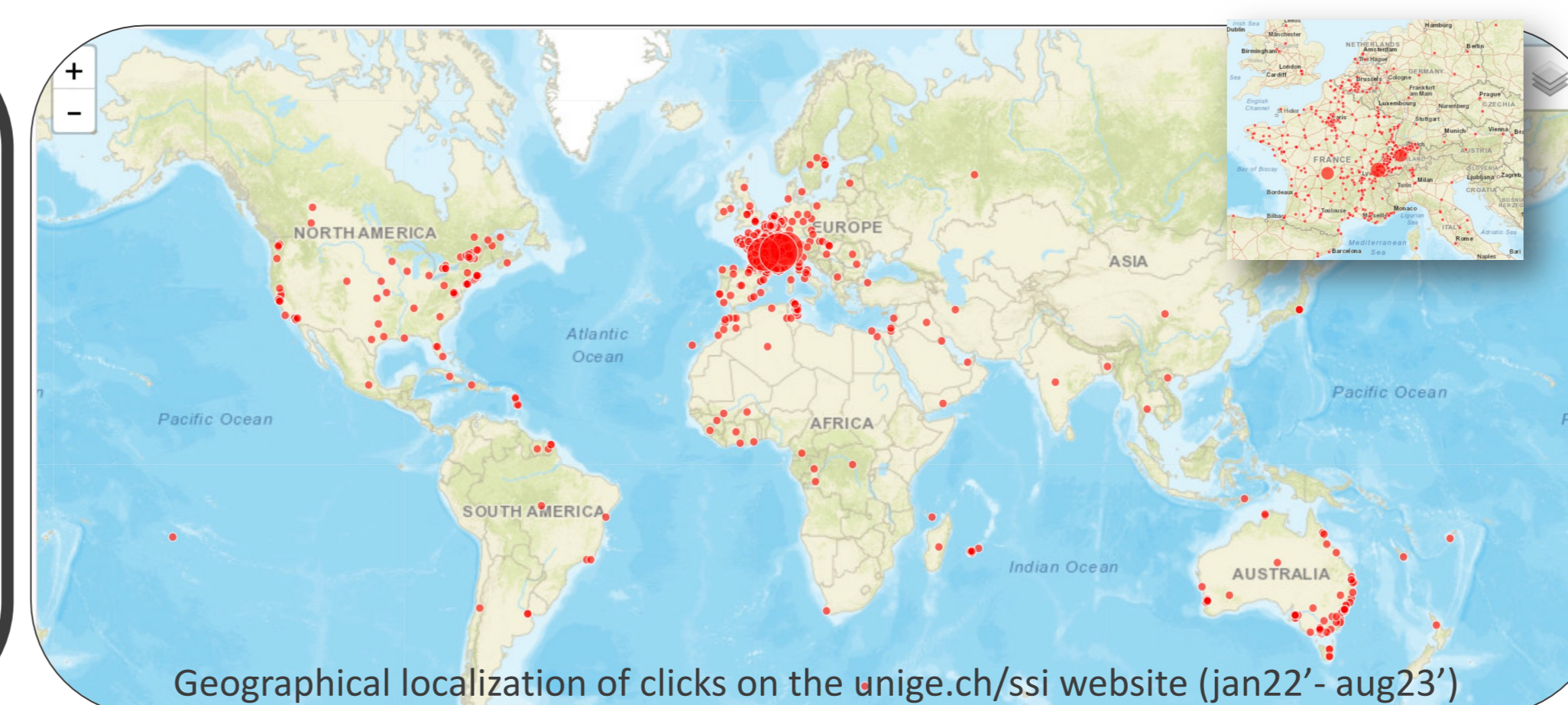
RECORDED CONFERENCES - ONLINE

2 full day conferences of lectures available free on our website



CONCLUSION & NEXT STEPS

Our work, has been presented in swiss schools and universities, as well as in national and international scientific meetings and the media. **More than 400K people in >50 countries are estimated to have accessed our material. Specifically, more than 60% of medical students found very useful to include diverse genital moldings and 3D pelvic kits in anatomy practicals, including 3D models and histological sections of erectile tissues.** We believe that dissemination of evidence-based sex-positive and inclusive knowledge in schools and during medical training can contribute to change attitudes that lead to sexist or homo-bi-trans*phobic discriminations, promote sexual health and improve access to care. Our future objectives are to formally evaluate knowledge and attitudes of learners and to translate our tools in swiss languages and english.



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3. Criniti, S., M. Andeloux, M. B. Woodland, O. C. Montgomery, and S. Ursineta Hartmann. "The State of Sexual Health Education in U.S. Medicine." *American Journal of Sexual Education* 9, no. 1 (January 2, 2014): 65–80.
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5. Ye, Zhen, Aishe Dun, Hanming Jiang, Cui Fang Nie, Shulan Zhao, Tao Wang, and Jing Zhai. "The Role of 3D Printed Models in the Teaching of Human Anatomy: A Systematic Review and Meta-Analysis." *BMC Medical Education* 20, no. 1 (December 2020): 335.
6. Yammine, Kaisar, and Claudio Violato. "The Effectiveness of Physical Models in Teaching Anatomy: A Meta-Analysis of Comparative Studies." *Advances in Health Sciences Education* 21, no. 4 (October 2016): 883–95.
Wu, Y., Jill P. J., M. Hipspos, Greet Mommien, Koshir F. Dabholwala, Xin Hu, Li-Wen Tan, Shao Xiang Zhang, and Wouter H. Lamers. "Interactive Three-Dimensional Teaching Models of the Female and Male Pelvic Floor." *Clinical Anatomy* 33, no. 2 (2020): 275–85.

PUBLIC OUTREACH

EDUCATIONAL VIDEOS

Genitalia

This 10 videos series aims to deconstruct myths and taboos on genitalia and their impact on practices of genital modifications, whether consented or not. *Fr, Subtitled in 8 languages*



C'est pas mon genre

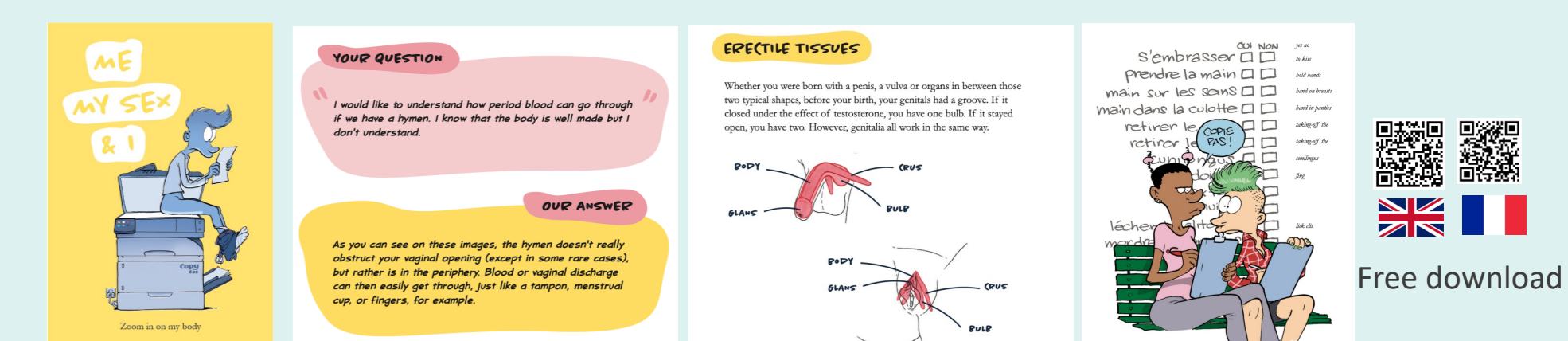
This 3 episodes fictional mini-series aims to define and distinguish the concepts related to biological sex and gender. They also expose the limitations of a strictly binary vision on these issues. *French*



ILLUSTRATED BOOKLETS

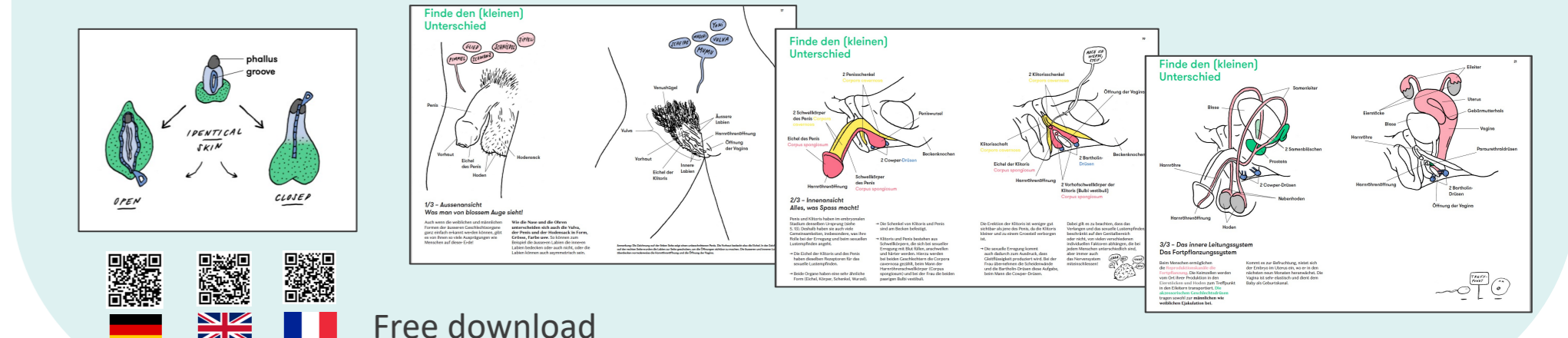
Me, my sex and I

A sex positive, inclusive and free, illustrated booklet for teenager on genital anatomy and its diversity, the physiology of the sexual response, consent.



Sexesss

An informative free illustrated booklet on biological sex, sex development, its variations and genital anatomy.



PARENTS EDUCATION

Café de parent !

An interactive session in schools for groups of parents who wish to learn more about how to talk about sex and sexuality with their children (primary and secondary schools).

