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# Finding Endometriosis using Machine Learning FEMaLe

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#### Legislation

Legislation H2020 Framework Programme – Regulation (EU) No 1291/2013 of the European Parliament and of the Council of 11 December 2013 establishing Horizon 2020 - The Framework Programme for Research and Innovation (2014-2020) (OJ 347, 20.12.2013, p. 104).

Euratom Research and Training Programme (2014-2018) – Council Regulation (Euratom) No 1314/2013 of 16 December 2013 on the Research and Training Programme of the European Atomic Energy Community (2014-2018) complementing the Horizon 2020 – The Framework Programme for Research and Innovation (OJ L 347, 20.12.2013, p. 948).

H2020 Specific Programme – Council Decision 2013/743/EU of 3 December 2013 establishing the Specific Programme Implementing Horizon 2020 - The Framework Programme for Research and Innovation (2014-2020) (OJ L 347, 20.12.2013, p. 965).

Rules for Participation (RfP) – Regulation (EU) No 1290/2013 of the European Parliament and of the Council of 11 of December 2013 laying down the rules for the participation and dissemination in Horizon 2020 – the Framework Programme for Research and Innovation (2014-2020) (OJ L 347, 20.12.2013, p.81).

Financial Regulation (FR) – Regulation (EC, Euratom) No 966/2012 of the European Parliament and of the Council of 25 October 2012 on the financial rules applicable to the general budget of the European Union (OJ L 298, 26.10.2012, p.1).

Rules of Application (RAP) – Commission Regulation (EC, Euratom) No 1268/2012 of 29 October 2012 on the rules of application of 1 Regulation (EC, Euratom) No 966/2012 of the European Parliament and of the Council on the financial rules applicable to the general budget of the Union (OJ L 298, 26.10.2012, p.1).

### FEMALE WEBSITE

### **Executive summary**

This document provides a general overview of the structure and contents of the FEMaLe project website. The link to the website is: https://findingendometriosis.eu/.

FEMaLe website reflects, at the time of writing this report, the current status and the planned content and features evolution that will be developed along with the project progress during the first 18 months. Possible modifications and improvements might be identified in the future to address any needs which is not identified at this stage of the project.

The website provides the main point of initial contact and information to the public and to other researchers. According to what is requested in WP10, the website has been designed to be professional, market facing, crawlable, responsive and it is planned to be regularly maintained using different formats (e.g., webinars, video clips, practical guides, white papers, collaterals, banners, brochures etc.).

It is intended to publish both general content on the project, but also links to the technical non-confidential deliverables (when these become available).

The website also provides the consortium members with the link to the private area which is to be used as a space for collaborative work to facilitate and enhance the activity of the consortium.

The coordinator of the project – Aarhus University – hosts and manages the FEMaLe website. The initial website was launched December 2020 and was concluded in March 2021.

### 1. FEMaLe homepage

The main website is envisioned firstly as a presentation of the project. It comprises all project's essential info: short explanation of the project's objectives and goals, work divided into work packages, project's timeline and milestones and project partners.

The first section of the website is dedicated to this purpose and is inviting the visitors to learn more about the project and how it will achieve its goals.

The website will be updated regularly based on the communication and dissemination plan driven by WP9.

The overall available content, that is candidate for publishing, has been collected and analysed to form the information base for the first iteration of the WEB portal. The way it is currently organized in the various mock-ups and presented in the following page is based on a typical structure derived from other EU projects.

The FEMaLe website will be further developed to promote the project. This included project logo, project publications, presentations, factsheets, the FEMaLe Twitter account, project reports and posters.

This deliverable report will highlight some pages, features, and concepts.

#### 1.1. Homepage

The homepage of the portal represents the front-end message of the FEMaLe project to communicate the **project objectives**, summary of latest project activity and indications on where to find on the website the **project results** containing all the essential information concerning the project activity that can be published on the public Internet.

The homepage is organized according to the following design model:

#### Three pillars of the project's actions:

- 1. Awareness
- 2. Research
- 3. Innovation.

#### Top of the page (Figure 1)

- Graphical identity of FEMaLe (background image), see upper left side.
- Menu: About, Awareness, Research, Innovation, Resources, Contact, Twitter, Instagram, LinkedIn



Figure 1: Header and Menu.

#### 1.2 Awareness

For Awareness, the section serves the purpose of:

- Uncovering the myths and misconceptions of the endometriosis in everyday modern society.
- Increasing awareness of equity and marginalized social groups dealing with endometriosis.
- Showcasing patient's stories about dealing with endometriosis (developed in synergy with partner TIEF (Patients' Association in Hungary), who provided the patients' stories to support the raising of awareness).

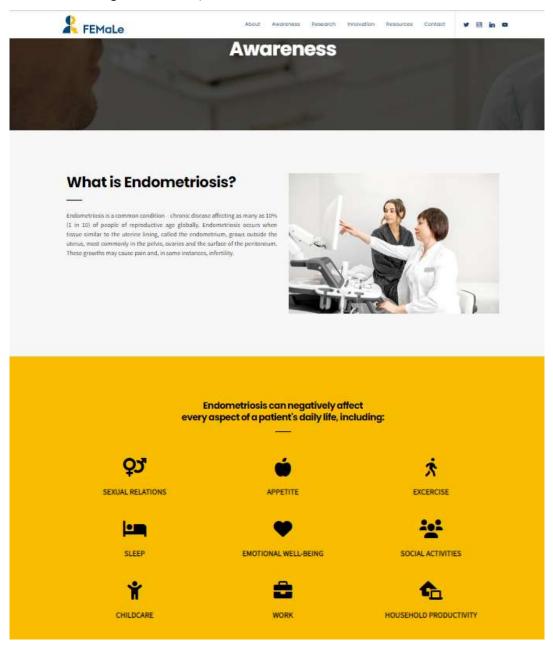
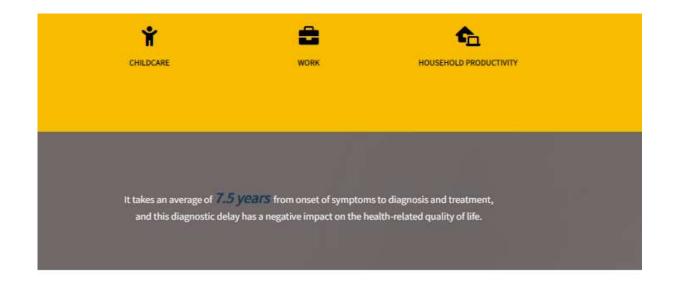


Figure 2: Awareness section



## Project's aim

The FEMALE project is aimed at increasing education and disease awareness for patients, healthcare providers, and the public to remove stigma associated with endometriosis. It will bring forward a deeper understanding of such a complex disease as endometriosis is through evidence based public health campaigns and training programs for healthcare providers that will improve knowledge and address the existing stigma.





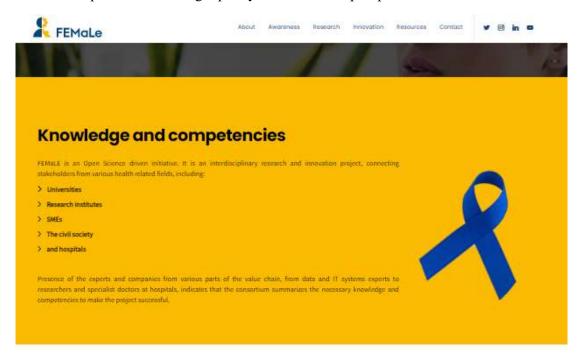


Figure 3: Project aim

#### 1.3 Research section

For Research, the section showcases:

- The Open Science part of the project, it being an Open Science driven initiative,
- The project's interdisciplinarity and how it connects different stakeholders from various health related fields,
- The project's projected impact, which is measured by its scientific value, with a goal of a lasting impact of the research upon both direct and indirect beneficiaries,
- Also, the impact, which is expected by utilizing the holistic approach, which is personcentered and with a goal to give insight into the underlying biology of the disease, enable new therapies and create high quality evidence to help improve care.



## Interdisciplinarity



Figure 4: Knowledge and competencies, Interdisciplinary

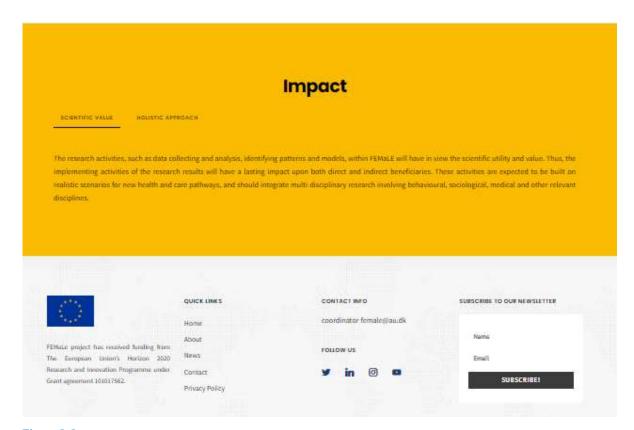
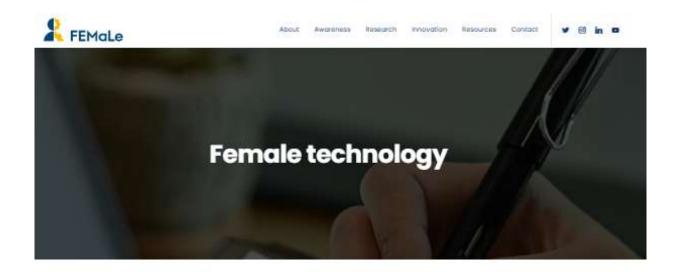


Figure 5: Impact

#### 1.4 Innovation

For Innovation, the section serves the purpose of:

- Female technology showcasing how the femtech tools and various health software and techenabled products can cater to female biological needs, different femtech solutions that the project will deliver that will help people with endometriosis, as well as clinical decision support tools that will serve as a template for a range of precision medicine applications from novel R&D diagnostics to practical clinical and lifestyle decision support tools to be used by healthcare providers and patients,
- Machine Learning side of the project, that works directly towards the personalization of the healthcare delivery in Europe. By integration of personal data donation together with big data analytical tools, technological capabilities will empower and engage people in their own health and life, while simultaneously introducing market potentials for digital health solutions. It showcases how the patterns in routinely collected healthcare data can be revealed to find and estimate the risk of disease for undiagnosed patients. The use of the patients' data should drive future diagnosis to help a greater number of patients receive proper care and treatment. This type of patient disease modelling and diagnostic prediction is made possible by artificial intelligence and machine learning.
- Clinical Decision Support tools three tools that FEMaLe project will develop to be tested in various clinical settings to demonstrate the power, potential and scope of the Scalable Multi-Omics Platform (SMOP), which facilitates the precision medicine. Those tools will be more predictive of individual disease risks and likely response to therapy.



Femtech or female technology refers to a healthcare industry which encompasses any digital or standard health tools aimed at women's health. The industry includes a range of health software and tech-enabled products that cater to female biological peeds such as:



This wide range of solutions improves healthcare for women in a range of women's specific conditions, including mentional health, sexual and moternal health, fertility, menoplasse and contraception, as well as a range of general health conditions that affect women disproportionally or otherwise, such as endometriosis.

Figure 6: FEMaLe Technology



About Awareness Research Innovation Resources Contact





## **Accelerating public** awareness

While this concept of a digital women's health category is relatively new, the dynamics underlying femtech are accelerating public awareness; company formation, and funding is growing. Therefore, the FEMaLe project found its place and purpose in solving some of these problems which femtech is referring to, because its role in women's health is more important than eyer.



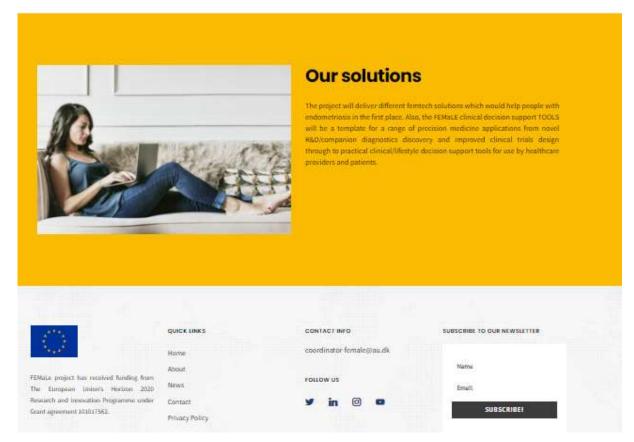


Figure 7: Accelerating public awareness

Lastly, the project's website serves as an informational/knowledge sharing hub, by utilizing its **Resources** section.

The section is envisioned as a go-to informational hub, where all resources that the project will create will be displayed, to empower the visitors to find the relevant information in as less steps as possible. This section contains videos of patients' stories, FEMaLe's presence in EEL webinar, as well as podcasts addressing endometriosis research. This section will grow during the project, by injecting all publications, peer-reviewed articles, videos, news from the project, thus allowing the visitor a comprehensive information about their interesting subtopic of the endometriosis preventions, diagnosis, and treatment.

Since its establishment in the first year of the project, the website acquired over 2,000 unique page views, and an amazing result of less than 50% bounce rate (45.04%) which means that 1 in 2 users which land on the website, stays on it for a longer period. This confirms the informational purpose of the website, meaning that the users who come to get informed about the endometriosis issue, do not immediately leave the website, which confirms to the Consortium that the users are finding the relevant and useful information on the platform.

Additionally, around 20% (19.4%) of the visitors are returning ones, which means that the users are actively returning to the platform to get more information or see new updates on the project and developments. More than half of the users landing on the website are *females*, according to the Google Analytics Gender report. This means that the right audiences are targeted with the website, and right users are reaching the proper information on the platform.

Additionally, approximately the same number of visitors (34.3% and 34.5%) are coming from direct channels (directly landing on the website from a link) and from referral channels (such as: endo.dk, theconversation.com, surgar-surgery.com or social media channels). This means that the backlinking from news articles and different actions from FEMaLers are bringing traffic to the website, thus raising the visibility of the project.

Throughout the rest of the project, the website will be constantly updated with new developments from the project, deliverables, news of the projects and every endometriosis event the partners participate in.