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| ***Table 3.1a Timing of the different Work Packages and their components (Gantt Chart)*** | | | | | | | | | | | | | | | | |
| **WPs/Tasks** | **YEAR 1** | | | | **YEAR 2** | | | | **YEAR 3** | | | | **YEAR 4** | | | |
| **WP1 – *The INPUT-HEART phenomapping platform*** | **Q1** | **Q2** | **Q3** | **Q4** | **Q1** | **Q2** | **Q3** | **Q4** | **Q1** | **Q2** | **Q3** | **Q4** | **Q1** | **Q2** | **Q3** | **Q4** |
| **Task 1.1**: Composing a database inventory |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| **Task 1.2**: Conceptual harmonisation of the available databases |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| **Task 1.3**: Completeness of the databases and communication of the federated learning procedure |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| **Task 1.4**: A blueprint for a phenomapping platform |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| **WP2 - *Cardiac imaging phenomapping for early cardiovascular risk prediction*** |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| **Task 2.1:** Software for standardizing the extraction and analysis of cardiac motion/deformation data |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| **Task 2.2:** Assessment of cardiac spatiotemporal motion/deformation abnormalities using the big population data |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| **Task 2.3:** Machine learning approaches for precision cardiac phenomaps |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| **Task 2.4:**  Deep phenotyping through personalized mechanistic modeling of cardiovascular physiology |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| **WP3 –** ***Circulating biomarkers (proteomics) for the early detection of heart disease and risk stratification*** |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| **Task 3.1:** Sample transfer to Olink Proteomics AB, Uppsala, Sweden |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| **Task 3.2:** Measurements of circulating biomarkers using PEA platform in the discovery and validation cohorts |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| **Task 3.3:** Integration of biomarkers profile and predictive modelling |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| **Task 3.4:** Developing a custom multiplex platform |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| **WP4 - *Machine learning for CV risk stratification and outcome prediction*** |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| **Task 4.1:** Exploratory phase |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| **Task 4.2:**  Pre-processing of the available training data |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| **Task 4.3:**  Selection of machine learning models |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| **Task 4.4:**  Design of the experimental procedure, implementation of the algorithms and model comparisons |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| **Task 4.5:**  Joint risk modelling |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| **Task 4.6:**  Models diagnostics and improving of code of the final machine learning |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |

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| **WPs/Tasks** | **YEAR 1** | | | | **YEAR 2** | | | | **YEAR 3** | | | | **YEAR 4** | | | |
| **WP5 – *Development of technological platform*** | **Q1** | **Q2** | **Q3** | **Q4** | **Q1** | **Q2** | **Q3** | **Q4** | **Q1** | **Q2** | **Q3** | **Q4** | **Q1** | **Q2** | **Q3** | **Q4** |
| **Task 5.1:** Initialization phase |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| **Task 5.2:** Development of research application including testing and deployment phases |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| **Task 5.3:** Development of the server |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| **Task 5.4:** Development of clinical application including testing and deployment phases |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| **WP6 – *Validation of the INPUT-HEART exercise and physical activity intervention*** |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| **Task 6.1:** Evaluation strategy and demonstration plan |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| **Task 6.2:** System demonstration and piloting |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| **Task 6.3:** Overall validation of the INPUT-HEART exercise intervention |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| **Task 6.4:** Data acquisition |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| **WP7 – *Machine learning and mechanistic modelling for identifying the most optimal exercise program characteristics*** |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| **Task 7.1.** Refining, enriching and optimizing the DSS |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| **Task 7.2.** Healthcare provider and patient dashboards |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| **Task 7.3:** Identification of a standardized method for quantification of personal exercise |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| **Task 7.4:** Mechanistic modelling of phenotypic plasticity in response to exercise intervention |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| **Task 7.5:** Machine learning algorithms to predict adherence and efficacy based on combined physiological, demographic and psychosocial aspects of the individual |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| **WP8 – *Dissemination and communication*** |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| **Task 8.1:** Preparation of dissemination, exploitation and communication plans |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| **Task 8.2:** Creation and maintenance of an INPUT-HEART website |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| **Task 8.3:** Dissemination of results to the scientific community |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| **Task 8.4:** Organization and coordination of outreach activities |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| **Task 8.5:** Providing training within the consortium and beyond |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| **WP9 – *Management and Ethics*** |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| **Task 9.1:** Project administration, communication and innovation management, resource monitoring |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| **Task 9.2:** Financial and progress reports |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| **Task 9.3:** Management of Intellectual Property Rights (IPR) |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| **Task 9.4:** Ethical and legal issues |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |

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