

Destination 1 – Staying healthy in a rapidly changing society

Calls for proposals under this destination are directed towards the Key Strategic Orientation KSO-D *‘Creating a more resilient, inclusive and democratic European society’* of Horizon Europe’s Strategic Plan 2021-2024. Research and innovation supported under this destination should contribute to the impact area *‘Good health and high-quality accessible health care’* and in particular to the following expected impact, set out in the Strategic Plan for the health cluster: *‘citizens of all ages stay healthy and independent in a rapidly changing society thanks to healthier lifestyles and behaviours, healthier diets, healthier environments, improved evidence-based health policies, and more effective solutions for health promotion and disease prevention’*. In addition, research and innovation supported under this destination could also contribute to the following impact areas: *‘High quality digital services for all’*, *‘Sustainable food systems from farm to fork on land and sea’*, and *‘Climate change mitigation and adaptation’*.

People’s health care needs are different, depending on their age, stage of life and socio-economic background. Their physical and mental health and well-being can be influenced by their individual situation as well as the broader societal context they are living in. Furthermore, health education and behaviour are important factors. Currently, more than 790 000 deaths per year in Europe are due to risk factors such as smoking, drinking, physical inactivity, and obesity. Upbringing, income, education levels, social and gender aspects also have an impact on health risks and how diseases can be prevented. Moreover, people’s health can be impacted by a rapidly changing society, making it challenging to keep pace and find its way through new technological tools and societal changes, which both are increasing demands on the individual’s resilience. In order to leave no one behind, to reduce health inequalities and to support healthy and active lives for all, it is crucial to provide suitable and tailor-made solutions, including for people with specific needs. Preventing diseases from developing in the first place is at the core of successful public health programmes in the future.

As set out in the Strategic Plan 2021-2024, destination 1 focuses on major societal challenges that are part of the European Commission’s political priorities. This is why destination 1 in the work programme 2021-2022 covered immediate urgencies, notably a better understanding and prevention of mental illness, prevention of obesity, digital empowerment in health literacy, understanding the transition from health to disease and making use of AI tools to predict the risk for onset and progression of chronic diseases. The work programme 2023-2024 will complete the ambitions of the Strategic Plan by focussing on holistic and integrated approaches to disease prevention and health promotion, notably healthy ageing, on a life course approach to physical and mental health starting in early childhood and on personalised approaches to prevention of diseases.

More specifically, research and innovation supported under this destination will provide new tools, digitally enabled solutions and evidence-based health and care services to prevent and delay progression of age-related diseases. Research and innovation will also provide tailor

made strategies and solutions to support children and adolescents adopting and maintaining person-centred healthy lifestyles. Specific measures will be developed to educate and empower citizens of all ages and throughout their life to play an active role in the self-management of their own health and self-care, to the benefit of an active and healthy ageing. This destination will also call for proposals specifically aiming to develop integrated and holistic personalised disease prevention strategies, making use of multiple data sources, including real-world health data. This initiative will build on the impressive advances made in the area of personalised medicine to treat diseases, but here the focus will be on personalised approaches to prevent rather than treat diseases.

Dialogue and coordination between stakeholders and policymakers as well as integration across different settings will be needed to develop more effective cross-sectoral solutions for holistic approaches to health promotion and disease prevention and deliver improved evidence-based health for all.

In view of increasing the impact of EU investments under Horizon Europe, the European Commission welcomes and supports cooperation between EU-funded projects to enable cross-fertilisation and other synergies. This could range from networking to joint activities such as the participation in joint workshops, the exchange of knowledge, the development and adoption of best practices, or joint communication activities. Opportunities for potential synergies exist between projects funded under the same topic, but also between other projects funded under another topic, cluster or pillar of Horizon Europe. In particular, this could involve projects related to European health research infrastructures (under pillar I of Horizon Europe), the EIC strategic challenges on health and EIT-KIC Health (under pillar III of Horizon Europe), or in areas cutting across the health and other clusters (under pillar II of Horizon Europe). For instance, with cluster 2 “*Culture, Creativity and Inclusive Society*” such as on health inequalities, on other inequalities affecting health, or on citizens’ behaviour and engagement; with cluster 4 “*Digital, Industry and Space*” such as on digital tools, telemedicine or smart homes; with cluster 5 “*Climate, Energy and Mobility*” such as on urban health or on mitigating the impact of road traffic accidents and related injuries; with cluster 6 “*Food, Bioeconomy, Natural Resources, Agriculture and Environment*” such as on the role of nutrition for health (incl. human microbiome, mal- and over-nutrition, safe food), personalised diets (incl. food habits in general and childhood obesity in particular) and the impact of food-related environmental stressors on human health (incl. marketing and consumer habits).¹⁷

Expected impacts:

Proposals for topics under this destination should set out a credible pathway to contributing to staying healthy in a rapidly changing society, and more specifically to one or several of the following impacts:

- Citizens adopt healthier lifestyles and behaviours, make healthier choices and maintain longer a healthy, independent and active life with a reduced disease burden, including at old ages or in other vulnerable stages of life.

¹⁷ Strategic Plan 2021-2024 of Horizon Europe, Annex I, Table 2.

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- Citizens are able and empowered to manage better their own physical and mental health and well-being, monitor their health, and interact with their doctors and health care providers.
- Children and adolescents are empowered to better monitor and manage their physical, social and mental health with a view to lifelong healthy lifestyles.
- Society benefits from reduced economic and health burden from avoidable sickness, disease and premature death. Efficiency is increased by targeting scarce resources in appropriate, cost-effective ways, to areas of high social return, contributing to an improvement and optimisation of health and well-being of citizens and reduction of health inequalities.
- Citizens' trust in knowledge-based health interventions and in guidance from health authorities is strengthened, including through improved health literacy, resulting in increased engagement in and adherence to effective strategies for health promotion, disease prevention and treatment, while digital literacy inequalities are minimised.
- Health policies and actions for health promotion and disease prevention are knowledge-based, people-centred, personalised and thus targeted and tailored to citizens' needs, and designed to reduce health inequalities.

The following call(s) in this work programme contribute to this destination:

Call	Budgets (EUR million)		Deadline(s)
	2023	2024	
HORIZON-HLTH-2023-STAYHLTH-01	40.00		13 Apr 2023
HORIZON-HLTH-2024-STAYHLTH-01-two-stage		80.00	19 Sep 2023 (First Stage) 11 Apr 2024 (Second Stage)
Overall indicative budget	40.00	80.00	

Call - Staying Healthy (Single stage - 2023)

HORIZON-HLTH-2023-STAYHLTH-01

Conditions for the Call

Indicative budget(s)¹⁸

Topics	Type of Action	Budgets (EUR million)	Expected EU contribution per project (EUR million) ¹⁹	Indicative number of projects expected to be funded
		2023		
Opening: 12 Jan 2023 Deadline(s): 13 Apr 2023				
HORIZON-HLTH-2023-STAYHLTH-01-01	RIA	40.00 ²⁰	15.00 to 20.00	2
Overall indicative budget		40.00		

General conditions relating to this call

<i>Admissibility conditions</i>	The conditions are described in General Annex A.
<i>Eligibility conditions</i>	The conditions are described in General Annex B.
<i>Financial and operational capacity and exclusion</i>	The criteria are described in General Annex C.
<i>Award criteria</i>	The criteria are described in General Annex D.

¹⁸ The Director-General responsible for the call may decide to open the call up to one month prior to or after the envisaged date(s) of opening.
The Director-General responsible may delay the deadline(s) by up to two months.
All deadlines are at 17.00.00 Brussels local time.
The budget amounts are subject to the availability of the appropriations provided for in the general budget of the Union for years 2023 and 2024.

¹⁹ Nonetheless, this does not preclude submission and selection of a proposal requesting different amounts.

²⁰ Of which EUR 24.00 million from the 'NGEU' Fund Source.

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<i>Documents</i>	The documents are described in General Annex E.
<i>Procedure</i>	The procedure is described in General Annex F.
<i>Legal and financial set-up of the Grant Agreements</i>	The rules are described in General Annex G.

Proposals are invited against the following topic(s):

HORIZON-HLTH-2023-STAYHLTH-01-01: The Silver Deal - Person-centred health and care in European regions

Specific conditions	
<i>Expected EU contribution per project</i>	The Commission estimates that an EU contribution of between EUR 15.00 and 20.00 million would allow these outcomes to be addressed appropriately. Nonetheless, this does not preclude submission and selection of a proposal requesting different amounts.
<i>Indicative budget</i>	The total indicative budget for the topic is EUR 40.00 million.
<i>Type of Action</i>	Research and Innovation Actions
<i>Eligibility conditions</i>	<p>The conditions are described in General Annex B. The following exceptions apply:</p> <p>In recognition of the opening of the US National Institutes of Health’s programmes to European researchers, any legal entity established in the United States of America is eligible to receive Union funding.</p> <p>If projects use satellite-based earth observation, positioning, navigation and/or related timing data and services, beneficiaries must make use of Copernicus and/or Galileo/EGNOS (other data and services may additionally be used).</p>
<i>Award criteria</i>	<p>The criteria are described in General Annex D. The following exceptions apply:</p> <p>The thresholds for each criterion will be 4 (Excellence), 4 (Impact) and 3 (Implementation). The cumulative threshold will be 12.</p>

Expected Outcome: This topic aims at supporting activities that are enabling or contributing to one or several impacts of destination 1 “Staying healthy in a rapidly changing society”. To that end, proposals under this topic should aim for delivering results that are directed at, tailored towards and contributing to all of the following expected outcomes:

- Citizens and patients will get effective, preventive, integrated, coordinated, evidence-based and people-centred high-quality health and care services to identify and tackle or prevent multi-morbidities, frailty, biologically or mentally reduced capacities, (sensory) impairments, dementia and/or neurodegeneration, fostering mental and physical health, wellbeing and quality of life. These could include, but are not limited to, assistive technologies, nutrition and physical activity, adaptation of work and workplace, health-promoting age-friendly working, home and community environments, better equality of access to health and care services through community-based and integrated care models, also digitally enabled.
- Primary and community-based health and care services will be better equipped to early identify people at risk of developing non-communicable diseases (NCDs) and multi-morbidities. They will have integrated and cost-effective intervention tools to help prevent, monitor and manage progression of age-related diseases, conditions and disabilities, while promoting healthy lifestyles, ageing in place²¹, as well as physical and mental wellbeing among the elderly.
- Older people, including those receiving long-term care, will be empowered to take an active role in the management of their own physical and mental health, as well as increase their social interactions and wellbeing through better health literacy, educational programmes, trainings and platforms, including with the help of innovative and digitally enabled solutions.
- Citizens, all relevant stakeholders, public authorities, cities and rural environments, as well as health care providers will be engaged to ensure the introduction to and the integration of age-friendly, mental and physical health promoting innovative care pathways and digitally enabled solutions into the daily life and wellbeing of the ageing population, with the aim of leaving no-one behind.

The proposals should provide appropriate indicators to measure performance and progress towards the relevant expected outcomes.

Scope: This topic aims to implement strategies and actions in line with the Green Paper on Ageing²², the EU Long-term care report²³, the ‘Healthier Together’ – EU Non-Communicable Diseases Initiative²⁴, the new EU Care Strategy²⁵, which strive to address demographic change and enable better health and care for Europe’s growing ageing societies, as well as to harness the potential of the Silver Economy²⁶. NCD prevention is highly relevant to reduce

²¹ ‘The ability to live in one’s own home and community safely, independently, and comfortably, regardless of age, income, or ability level’.

²² https://ec.europa.eu/info/sites/default/files/1_en_act_part1_v8_0.pdf

²³ <https://ec.europa.eu/social/main.jsp?catId=738&langId=en&pubId=8396>

²⁴ https://ec.europa.eu/health/non-communicable-diseases/overview_en

²⁵ <https://www.europarl.europa.eu/legislative-train/theme-promoting-our-european-way-of-life/file-european-care-strategy>

²⁶ A new multi-policy approach is recommended by the “Silver Economy Study”: the ageing population promises more economic growth and jobs. [Silver Economy Study: How to stimulate the economy by hundreds of millions of Euros per year | Shaping Europe’s digital future \(europa.eu\)](#)

the need for long-term care. New tools and integrated care models are needed, reinforcing primary, community- and home-based health and long-term care provision, through better early detection and management of diseases among older people in an increasingly ageing society and overburdened health and care systems.

The topic encourages the participation of small and medium-sized enterprises (SMEs), as well as of European, national and regional authorities and civil society, in order to strengthen the scientific and technological expertise of SMEs in the health and care domain, promote the European Health- and Age-Tech; and improve the uptake of innovative health and care solutions in the EU and Associated Countries.

The applicants should ensure that the developed solutions, technologies and adoption policies are driven by the needs of citizens and patients of old age and ensure their involvement. Co-creation, co-design with end-users and particular consideration of the diversity of the needs, mental and physical abilities, living and socio-economic conditions as well as life-situations of older people are required, including provision of training to citizens, patients, formal and informal carers.

The proposed research and innovation should focus on all of the following aspects:

- Consolidate high-quality effective, integrated, innovative and digitally enabled person-centred health and long-term care services and solutions, both in primary care, hospital and home settings, around older people's needs for physical and mental health, care and wellbeing, strengthened disease prevention, rehabilitation and for staying active and healthy as people age. Such integrated and holistic solutions could include, but are not limited to, integrated care solutions, serious games, connected wearables, ambient sensors, social robots, assistive technologies, age-friendly environments, diagnostic screenings, self-monitoring devices, robotics and others²⁷, tackling age-related physical and mental diseases and co-morbidities.
- Develop and provide evidenced-based new approaches, coordinated care models and pathways, for delivering effective, person-centred health and long-term care solutions at the system and community level. These should be based on the needs of healthy and vulnerable older people for increased physical, mental and nutritional resilience vis-à-vis inequality of access to health and care, rapidly changing societies and health and care systems, and ensure better skills, empowerment and improved health and digital literacy through appropriate trainings and activities.
- Support adoption and market innovation of novel health and care solutions, co-created with and designed for older age-related health conditions. The support could be provided through large-scale testing and deployment piloting, guidance on relevant HTA and CE procedures, demonstrating cost-effectiveness, as well as through stakeholder involvement and policy collaboration on European²⁸, local, regional²⁹, and

²⁷ EU-funded large-scale pilots on Active and Healthy Ageing <https://www.opendei.eu/healthcare-sector/>
²⁸ <https://digital-strategy.ec.europa.eu/en/policies/eip-aha> and <http://www.aal-europe.eu/> and <http://www.rscn.eu/>

international^{30,31} level, exchange of best practices (twinning), and, when relevant, collaboration with the EC-funded large-scale pilots on Active and Healthy Living³² and the Reference Sites Collaborative Network.

This topic addresses consortia including research partners and innovative technology providers, such as SMEs and/or organisations that can offer the range of activities required to address the objectives of the topic; the latter could for example be based on Digital Innovation Hubs, digital health accelerators, incubators and knowledge hubs, Centres offering Pilot Lines or similar technology, business and/or knowledge transfer organisations.

The proposals should be highly integrated, ambitious, go beyond simple networking and provide appropriate indicators to measure progress, impact, cost-effectiveness and adoption in the Europe. Dissemination and involvement of policymakers, both at national and regional level, as well as civil society organisations in a European wide geographical balanced matter is essential, as the results of this action are expected to have European wide impact.

Selected projects under this topic are strongly encouraged to participate in joint activities as appropriate. These joint activities could, for example, take the form of clustering of projects and involve joint coordination and dissemination activities such as the participation in joint workshops, the exchange of knowledge, the development and adoption of best practices and adoption strategies on regional, national and European level. The details of these joint activities will be defined during the grant preparation phase with the European Commission. Applicants should plan a necessary budget to cover this collaboration.

This topic requires the effective contribution of social sciences and humanities (SSH) disciplines and the involvement of SSH experts, institutions as well as the inclusion of relevant SSH expertise, in order to produce meaningful and significant effects enhancing the societal impact of the related research activities.

Applicants envisaging to include clinical studies should provide details of their clinical studies in the dedicated annex using the template provided in the submission system. See definition of clinical studies in the introduction to this work programme part.

Call - Staying Healthy (Two stage - 2024)

HORIZON-HLTH-2024-STAYHLTH-01-two-stage

Conditions for the Call

Indicative budget(s)³³

²⁹ Such as the Reference Sites Collaborative Network, <http://www.rscn.eu/>

³⁰ International cooperation EU-Japan: Digital health and ageing Smart living environments for ageing people. September 2021; DOI: 10.2759/13059; Luxembourg: Publications Office of the European Union: ISBN 978-92-76-38187-7

³¹ <https://idih-global.eu>

³² <https://www.opendei.eu/healthcare-sector/>

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Topics	Type of Action	Budgets (EUR million)	Expected EU contribution per project (EUR million) ³⁴	Indicative number of projects expected to be funded
		2024		
Opening: 30 Mar 2023				
Deadline(s): 19 Sep 2023 (First Stage), 11 Apr 2024 (Second Stage)				
HORIZON-HLTH-2024-STAYHLTH-01-02-two-stage	RIA	30.00	8.00 to 10.00	3
HORIZON-HLTH-2024-STAYHLTH-01-05-two-stage	RIA	50.00	8.00 to 12.00	5
Overall indicative budget		80.00		

General conditions relating to this call	
<i>Admissibility conditions</i>	The conditions are described in General Annex A.
<i>Eligibility conditions</i>	The conditions are described in General Annex B.
<i>Financial and operational capacity and exclusion</i>	The criteria are described in General Annex C.
<i>Award criteria</i>	The criteria are described in General Annex D.
<i>Documents</i>	The documents are described in General Annex E.
<i>Procedure</i>	The procedure is described in General Annex F.
<i>Legal and financial set-up of the Grant</i>	The rules are described in General Annex G.

³³ The Director-General responsible for the call may decide to open the call up to one month prior to or after the envisaged date(s) of opening.
The Director-General responsible may delay the deadline(s) by up to two months.
All deadlines are at 17.00.00 Brussels local time.
The budget amounts are subject to the availability of the appropriations provided for in the general budget of the Union for years 2023 and 2024.

³⁴ Nonetheless, this does not preclude submission and selection of a proposal requesting different amounts.

<i>Agreements</i>	
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Proposals are invited against the following topic(s):

HORIZON-HLTH-2024-STAYHLTH-01-02-two-stage: Towards a holistic support to children and adolescents' health and care provisions in an increasingly digital society

Specific conditions	
<i>Expected EU contribution per project</i>	The Commission estimates that an EU contribution of between EUR 8.00 and 10.00 million would allow these outcomes to be addressed appropriately. Nonetheless, this does not preclude submission and selection of a proposal requesting different amounts.
<i>Indicative budget</i>	The total indicative budget for the topic is EUR 30.00 million.
<i>Type of Action</i>	Research and Innovation Actions
<i>Admissibility conditions</i>	The conditions are described in General Annex A. The following exceptions apply: Applicants submitting a proposal under the blind evaluation pilot (see General Annex F) must not disclose their organisation names, acronyms, logos, nor names of personnel in Part B of their first stage application (see General Annex E).
<i>Eligibility conditions</i>	The conditions are described in General Annex B. The following exceptions apply: In recognition of the opening of the US National Institutes of Health's programmes to European researchers, any legal entity established in the United States of America is eligible to receive Union funding. If projects use satellite-based earth observation, positioning, navigation and/or related timing data and services, beneficiaries must make use of Copernicus and/or Galileo/EGNOS (other data and services may additionally be used).
<i>Award criteria</i>	The criteria are described in General Annex D. The following exceptions apply: For the second stage, the thresholds for each criterion will be 4 (Excellence), 4 (Impact) and 3 (Implementation). The cumulative threshold will be 12.
<i>Procedure</i>	The procedure is described in General Annex F. The following exceptions apply: This topic is part of the blind evaluation pilot under which first stage proposals will be evaluated blindly.

<i>Legal and financial set-up of the Grant Agreements</i>	The rules are described in General Annex G. The following exceptions apply: Eligible costs will take the form of a lump sum as defined in the Decision of 7 July 2021 authorising the use of lump sum contributions under the Horizon Europe Programme – the Framework Programme for Research and Innovation (2021-2027) – and in actions under the Research and Training Programme of the European Atomic Energy Community (2021-2025). ³⁵ .
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Expected Outcome: This topic aims at supporting activities that are enabling or contributing to one or several impacts of destination 1 “Staying healthy in a rapidly changing society”. To that end, proposals under this topic should aim for delivering results that are directed at, tailored towards and contributing to all of the following expected outcomes:

- Children, adolescents and their parents/carers are educated and empowered in prevention strategies involving personalised approaches and solutions (also through the use of digital tools) to manage, maintain and improve children’s and adolescents' own health, physical activity, nutrition habits, leisure needs, mental and social well-being, in full respect of the privacy of individuals.
- Children and adolescents, including those from vulnerable contexts, monitor their health risks, adopt healthy lifestyles at home, at school and in the community and interact with their doctors and carers (receiving and providing feedback), also through the means of digitally enabled solutions, better health literacy, training and critical thinking.
- Thanks to better co-creation, training, digital and health literacy, children, adolescents, parents and carers across Europe access and use person-centred, widely available solutions for children and adolescents’ health, care and wellbeing, appropriate to a rapidly changing and increasingly digitalised society, also considering the risk of digital addiction.

The proposals should provide appropriate indicators to measure the progress towards the relevant expected outcomes.

Scope: Laying the ground for a healthy life starts in childhood. Accordingly, and in line with the HealthyLifestyles4All Initiative³⁶, the ‘Healthier Together’ – EU Non-Communicable Diseases Initiative³⁷, and the Communication of the Commission on enabling the Digital Transformation of Health and Care^{38,39}, the main goal of the research and innovation should

³⁵ This [decision](#) is available on the Funding and Tenders Portal, in the reference documents section for Horizon Europe, under ‘Simplified costs decisions’ or through this link: https://ec.europa.eu/info/funding-tenders/opportunities/docs/2021-2027/horizon/guidance/ls-decision_he_en.pdf

³⁶ <https://sport.ec.europa.eu/healthylifestyle4all>

³⁷ https://ec.europa.eu/health/non-communicable-diseases_en

³⁸ <https://digital-strategy.ec.europa.eu/en/policies/ehealth>

³⁹ <https://digital-strategy.ec.europa.eu/en/library/communication-enabling-digital-transformation-health-and-care-digital-single-market-empowering>

be to promote healthier societies by developing holistic solutions that foster healthy lifestyles from early age with long-term impact(s).

Digitalisation poses risks but can also be a driving force for empowering young citizens, who are growing up in an increasingly digitised world, in taking an active role in the management of their own health conditions, mental and social well-being, and promote healthy lives and disease prevention, through innovative solutions, coordinated person-centred care models and better health literacy.

The topic encourages the participation of small and medium-sized enterprises (SMEs), as well as of European, national and regional authorities and civil society, in order to strengthen the scientific and technological expertise of SMEs in the health and care domain to promote the uptake of innovative health and care solutions in Europe.

The proposed research and innovation should focus on several of the following aspects:

- Develop and advance person-centred, evidence-based and coordinated disease prevention intervention solutions to support children and adolescents' health and care in an increasingly digital society. The effectiveness of the intervention solutions should be evaluated, inter alia, in terms of health outcomes, (comparative) cost-effectiveness, implementation facilitators and barriers. The target group should include children and adolescents up to 25 years of age from different socio-economic backgrounds.
- Develop and integrate innovative, privacy preserving tools and technologies, such as (but not limited to) activity trackers, sensors, serious games, platforms and robotics, Massive Open Online Courses (MOOCs) in coordinated and integrated care models, to help children and adolescents lead healthy, active and social lifestyles, prevent diseases, as well as to better monitor and manage their physical, social and mental health. Empower children and adolescents to navigate the health and care systems, interact with their doctors, formal and informal carers, social circles, as well as better manage their own health at home, in the community and at school, taking into account specific youth psychiatric risk factors, the risk of addiction, as well as the geographic, social and economic determinants of health and digital literacy inequities.
- Stimulate the adoption of person-centred approaches and solutions for better health, care and well-being of children and adolescents, by including stakeholders from all the relevant sectors (including but not limited to education, leisure, social innovation, healthcare, Medtech, media and citizens) in the co-creation, design, planning and adoption of the solutions, as well as the training of their end-users.
- Develop and disseminate evidence-based guidance and tools for children and adolescents promoting healthy balance between a sedentary digitised lifestyle and a more active non-digitised lifestyle in support of their physical, mental and social health and well-being on short- and long-term basis.

- Develop, implement (pilot and/or scale-up) and promote person-centred tools and interventions for better physical and mental wellbeing, addressing the risks of digital addiction and overconsumption, isolation and mental illness, by promoting physical, intellectual or artistic activities, social interaction and providing mental health support and treatment.

In all instances, gender as well as demographic, geographic and socio-economic aspects should be duly taken into account.

This topic requires the effective contribution of social sciences and humanities (SSH) disciplines and the involvement of SSH experts, institutions as well as the inclusion of relevant SSH expertise and the involvement of youth throughout the project in order to produce meaningful and significant effects enhancing the societal impact of the related research activities.

Moreover, greater involvement of non-health sectors directly affecting risk factors and determinants of health, for example (physical) environment, food and nutrition, security, education, sports, finance, industry is desirable/encouraged, as relevant.

Proposals should be highly integrated, ambitious, go beyond simple networking and provide appropriate indicators to measure progress and impact.

Selected projects under this topic are strongly encouraged to participate in joint activities as appropriate. These joint activities could, for example, take the form of clustering of projects and involve joint coordination and dissemination activities such as the participation in joint workshops, the exchange of knowledge, the development and adoption of best practices and adoption strategies on regional, national and European level. The details of these joint activities will be defined during the grant preparation phase with the Commission. Applicants should plan a necessary budget to cover this collaboration.

Applicants invited to the second stage and envisaging to include clinical studies should provide details of their clinical studies in the dedicated annex using the template provided in the submission system. See definition of clinical studies in the introduction to this work programme part.

HORIZON-HLTH-2024-STAYHLTH-01-05-two-stage: Personalised prevention of non-communicable diseases - addressing areas of unmet needs using multiple data sources

Specific conditions	
<i>Expected EU contribution per project</i>	The Commission estimates that an EU contribution of between EUR 8.00 and 12.00 million would allow these outcomes to be addressed appropriately. Nonetheless, this does not preclude submission and selection of a proposal requesting different amounts.
<i>Indicative budget</i>	The total indicative budget for the topic is EUR 50.00 million.

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<i>Type of Action</i>	Research and Innovation Actions
<i>Admissibility conditions</i>	<p>The conditions are described in General Annex A. The following exceptions apply:</p> <p>Applicants submitting a proposal under the blind evaluation pilot (see General Annex F) must not disclose their organisation names, acronyms, logos, nor names of personnel in Part B of their first stage application (see General Annex E).</p>
<i>Eligibility conditions</i>	<p>The conditions are described in General Annex B. The following exceptions apply:</p> <p>In recognition of the opening of the US National Institutes of Health’s programmes to European researchers, any legal entity established in the United States of America is eligible to receive Union funding.</p> <p>If projects use satellite-based earth observation, positioning, navigation and/or related timing data and services, beneficiaries must make use of Copernicus and/or Galileo/EGNOS (other data and services may additionally be used).</p>
<i>Award criteria</i>	<p>The criteria are described in General Annex D. The following exceptions apply:</p> <p>For the second stage, the thresholds for each criterion will be 4 (Excellence), 4 (Impact) and 3 (Implementation). The cumulative threshold will be 12.</p>
<i>Procedure</i>	<p>The procedure is described in General Annex F. The following exceptions apply:</p> <p>This topic is part of the blind evaluation pilot under which first stage proposals will be evaluated blindly.</p>
<i>Legal and financial set-up of the Grant Agreements</i>	<p>The rules are described in General Annex G. The following exceptions apply:</p> <p>Eligible costs will take the form of a lump sum as defined in the Decision of 7 July 2021 authorising the use of lump sum contributions under the Horizon Europe Programme – the Framework Programme for Research and Innovation (2021-2027) – and in actions under the Research and Training Programme of the European Atomic Energy Community (2021-2025).⁴⁰</p>

⁴⁰ This [decision](https://ec.europa.eu/info/funding-tenders/opportunities/docs/2021-2027/horizon/guidance/ls-decision_he_en.pdf) is available on the Funding and Tenders Portal, in the reference documents section for Horizon Europe, under ‘Simplified costs decisions’ or through this link: https://ec.europa.eu/info/funding-tenders/opportunities/docs/2021-2027/horizon/guidance/ls-decision_he_en.pdf

Expected Outcome: This topic aims at supporting activities that are enabling or contributing to one or several impacts of destination 1 “Staying healthy in a rapidly changing society”. To that end, proposals under this topic should aim at delivering results that are directed at, tailored towards and contributing to several of the following expected outcomes:

- Citizens have access to and use effective personalised prevention schemes and health counselling (including through digital means) that take into account their individual characteristics and situation. Individuals can be assigned to particular groups based on their characteristics, and receive advice adequate to that group. Stratification of a population into groups showing similar traits allows for effective personalised disease prevention.
- Health professionals use effective, tried and tested tools to facilitate their work when advising both patients and healthy individuals. Public health programme owners gain insight into the specificities and characteristics of disease clusters within the population through stratification. This can then be used to facilitate the identification of population groups with elevated risk of developing certain diseases and improve the programmes, update them and design effective strategies for optimal solutions and interventions.
- National and regional programmes make better use of funds, data infrastructure and personnel in health promotion and disease prevention, primary and secondary healthcare. They can consider the use of new or improved ambitious policy and intervention options, with expected high population-wide impact, for effective health promotion and disease prevention.
- Companies generate opportunities for new product and service developments to cater to the needs of the healthcare service and individuals.

Scope: Non-communicable diseases (NCDs) are responsible for the majority of the disease burden in Europe and are the leading cause of avoidable premature death. The human and financial cost of NCDs is high and expected to grow. Reducing the burden of NCDs requires a holistic approach and tackling health inequalities across the board. Preventing NCDs from developing in the first place will be at the core of successful public health programmes in the future.

Personalised approaches and the development of targeted interventions have led to an impressive progress in several fields of medicine and have been included in many treatments. However, the use of stratification and individualisation in guiding prevention strategies is still not widely in use even though examples of its potential are accumulating. Identifying people at risk of developing a particular disease before the disease starts to manifest itself with symptoms greatly improves treatment options. It is estimated that about two thirds of all NCDs are preventable, many affecting people who are unaware of their disease risks or do not have access to information pertaining to the management of the condition.

Personalised prevention is the assessment of health risks for individuals based on their specific background traits⁴¹ to recommend tailored prevention⁴². This can include any evidence-based method⁴³. Personalised prevention strategies complement general public health prevention programmes without replacing them, optimising the benefit of both approaches. Personalised prevention is ideally suited to the use of large data sets, computational and omics approaches, with design and use of algorithms, integrating in-depth biological and medical information, machine learning, artificial intelligence (AI) and ‘virtual twin’ technology, taking into account explainable and transparent AI⁴⁴.

The funded projects will work towards reducing the burden of NCDs in line with the ‘Healthier Together’ – EU Non-Communicable Diseases Initiative⁴⁵. This does not limit the scope of projects under this topic to particular diseases as any disease area of interest, co-morbidities and health determinants⁴⁶ can be addressed.

Accordingly, the proposed research is expected to deliver on all of the following points:

- Enable the understanding of areas of unmet need in NCDs prevention, possibly also addressing disease mechanism, management of disease progression and relapse. Providing new approaches for prevention, focussing on the digitally supported personalised dimension, that can be adopted and scaled up.
- Devise new or improved ambitious policy and intervention options, with expected high population-wide impact on the target groups in question. To be proposed and made available for effective health promotion and disease prevention including targeted communication strategies to successfully reach out to the risk groups.
- Design an integrated, holistic approach that includes several of the following aspects: genetic predisposition to NCDs, meta-genomics, epigenomics, the microbiome, metabolomics, sleep disorders, large cohorts, molecular profiling in longitudinal health screening, impact of lack of physical activity, novel predictive biomarker candidates, diets and nutrition, eating habits for designing customised dietary patterns (geographical variation), and the influence of choice environment on personal choices.
- Study the ethical, legal and social aspects as well as health economics of the personalised prevention tools and programmes being developed. Consider optimal health counselling and communication to the patients/citizens. Address legal aspects of balancing the right not to know and the obligation of helping people in danger.

Furthermore, the proposed research is expected to deliver on several of the following points:

⁴¹ (Epi-)genetic, biological, environmental, lifestyle, social, behavioural, etc.

⁴² Possibly along with digitally supported disease management schemes.

⁴³ For example: medication, diet programmes, early diagnostics, monitoring, lifestyle advice and modification, specific training/exercise, psychosocial interventions, meditation, etc.

⁴⁴ See: European strategic research agenda in artificial intelligence: <https://www.elise-ai.eu/work/agenda-and-programs>

⁴⁵ https://ec.europa.eu/health/non-communicable-diseases/overview_en

⁴⁶ Social and economic environment; physical environment; individual characteristics; behaviour.

- Develop and validate effective strategies to prevent NCDs and optimise health and well-being of citizens (including the most vulnerable). Propose the strategies to policymakers along with mechanisms to monitor their progress. The strategies need to be aligned with relevant national and European health laws and policies.
- Provide scientific evidence on interactions between the genetic predisposition to multifactorial diseases and environmental factors or environmental triggers. Propose scientifically supported personalised prevention strategies that ensure how to modify the environmental drivers of behavioural risk factors.
- Develop new computational tools combining and analysing comprehensive data with different dimensions⁴⁷ to identify risk factors and modifiers. Creating procedures and algorithms to combine information from different sources (with standardised common data models) to generate risk scores for several diseases and provide health promotion recommendations for the individual as advised by healthcare professionals. Furthermore, develop advanced computational modelling techniques⁴⁸ for predicting disease risk and predisposition (addressed together in an integrative approach) and identifying the optimal solution/intervention for different target groups and individuals.
- Develop tools and techniques to increase the efficiency and cost- effectiveness of on the one hand interventions, adjusting their scope, characteristics and resources, and on the other hand healthcare infrastructure and how it promotes and delivers health promotion, disease prevention, and care effectively to the different population groups.
- Design tools to collect various data to advance health promotion and disease prevention and strategies for providing omics essays for the general patient with a focus on cost-effectiveness and flexibility.
- Determine how to optimise the benefits of physical activity, smart monitoring of physical activity and sedentary behaviour with measurable data, addressing barriers to uptake and implementation of healthy lifestyles in daily life, understanding what promotion methods work and why, behavioural science to understand healthier choice environments. Balancing the ecosystem associated with the economic, social, and health consequences of NCDs. Affordability related consideration should be taken into account to ensure accessibility of new tools and techniques.
- Conduct data mining of real-world data and develop quantifiable and distinguishable indicators from wearables data, taking into account ‘light-weight’ AI means to ensure patient privacy and short reaction times.

⁴⁷ For example, genomic, biomarkers, metagenomics, diet, synthetic data, lifestyle, wearables (physical activity), mental health, gender, age, physical and social environment.

⁴⁸ Computational techniques, e.g., virtual twin; deep, fair and/or federated machine learning; AI and symbolic AI.

- Demonstrate with a practical prototype on a given health challenge: from multimodal data collection to identification of an effective prevention strategy to be tested and validated for one or several NCDs.

Where relevant, the projects should contribute to and create synergies with ongoing national, European and international initiatives such as the European Partnership for Personalised Medicine, the ‘Healthier Together’ - EU Non-Communicable Diseases Initiative⁴⁹, Europe’s Beating Cancer Plan and the Mission on Cancer, WHO’s 9 targets for NCDs, the EMA ‘Darwin’ network⁵⁰ etc.

This topic requires the effective contribution of social sciences and humanities (SSH) disciplines and the involvement of SSH experts, institutions as well as the inclusion of relevant SSH expertise, in order to produce meaningful and significant effects enhancing the societal impact of the related research activities.

Where relevant, activities should build on and expand results of past and ongoing research projects. Selected projects under this topic are expected to participate in joint activities as appropriate, possibly including also related projects from other call topics. This can take the form of project clustering, workshops, joint dissemination activities etc. Applicants should plan a necessary budget to cover this collaboration.

Applicants invited to the second stage and envisaging to include clinical studies should provide details of their clinical studies in the dedicated annex using the template provided in the submission system. See definition of clinical studies in the introduction to this work programme part.

⁴⁹ https://ec.europa.eu/health/non-communicable-diseases_en

⁵⁰ <https://www.ema.europa.eu/en/about-us/how-we-work/big-data/data-analysis-real-world-interrogation-network-darwin-eu>