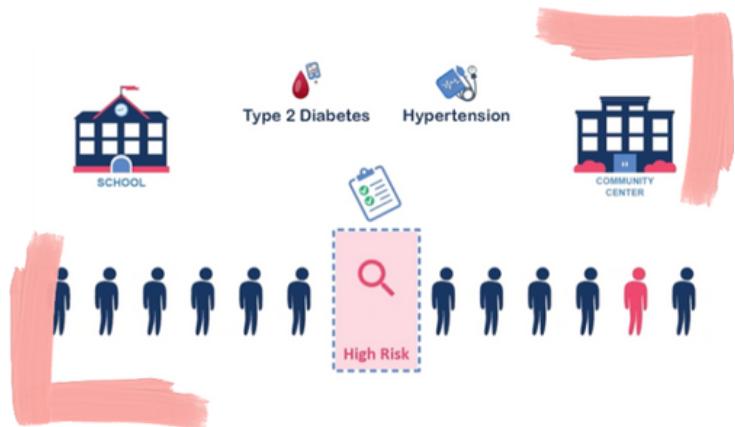


DigiCare4You digital tools for the two-stage screening procedure

DigiCare4You aims to improve the early prevention and management of Type 2 Diabetes (T2D) and hypertension (HTN). The project's overall objective is to assess the scalability and transferability of an intersectoral, innovative person-centred solution involving digital tools, aimed at empowering families and integrating community care services in Europe for the prevention and management of T2D and HTN. To do so, schools and Local Health Centers will be used as an entry point to screen families for pre-diabetes, T2D or hypertension via a digital screening tool.

The DigiCare4You solution consists of two core components. First, a **two-stage screening process** will be conducted to identify families at risk. Second, an **mHealth community-based intervention** will be developed for the participants deemed at risk from the screening process. The aim of DigiCare4You is to use **pre-existing** procedures and infrastructure to provide a low-cost solution that is replicable and scalable throughout Europe and beyond for the prevention and management of T2D and HTN.



That is why the **first stage** screening process will be conducted through pre-existing infrastructure already in place in each of the implementation countries to monitor children's periodic growth, usually conducted by school nurses or in collaboration with local community health centres. During the children's assessment process, parents and caregivers will be given a questionnaire to fill in on paper or digitally to assess their risk of developing **T2D** or **HTN**. Depending on the process in each of the four-implementation countries, parents will either be invited to the children's periodic growth assessment or will be contacted to fill out the form.



The questionnaire used will be the **FINDRISC** questionnaire, which was originally developed in Finland to identify people at high risk of developing T2D. It includes questions about age, body mass index, family history of diabetes, physical activity, consumption of fruits/vegetables, medication history and more. A FINDRISC score equal to, or greater than, **12** indicates a high T2D risk.

FINDRISC questionnaire point allocation:

Questions	Points					
	0	1	2	3	4	5
Age, years	<45	--	45-54	55-64	>64	--
BMI, kg/m ²	<25	>25 to 30	--	>30	--	--
Waist circumference (cm)						
Men:	<94	--	--	94 to <102	≥102	--
Women:	<80	--	--	80 to <88	≥88	--
Use of blood pressure medication	No	--	Yes	--	--	--
History of high blood glucose	No	--	--	--	--	Yes
Physical activity <4 hr/week	No	--	Yes	--	--	--
Daily consumption of vegetables, fruits, or berries	Yes	No	--	--	--	--
Family history of diabetes	No	--	--	Yes, 2nd degree relative		Yes, 1st degree relative

Once the first stage has been completed, the DigiCare4You web portal will list the risk score of developing diabetes and will generate a pdf feedback report file that includes the results of the first stage of the screening and material on healthy living which will be shared with the participants.

Those parents and children identified to be at high risk for T2D/HTN will be invited to a **second stage screening** where glycaemia and blood pressure will be measured at a local community health centre and where additional questionnaires will have to be answered. The screening results will be inputted into the DigiCare4You web portal that consists of a platform to insert new values and view those

already provided in the initial screening questionnaires as well as biochemical variables, to monitor the process of the project and the health condition of the participants.

Parents identified during this second stage screening as living with pre-diabetes or diabetes will then be invited to join the DigiCare4You **mHealth self-management intervention**, designed to promote **healthy** and **active lifestyles** for the entire family.



DigiCare4You's Work Package 4 (WP4) is responsible for the adaptation and implementation plan of the DigiCare4You solution. As part of WP4, partners from the **Centre for Research and Technology Hellas (CERTH)** developed the **web platform** described above to be used during the two-stage screening procedure. This web portal is a key milestone for the DigiCare4You project which enables the start of the digital screening process. The data collected via this platform, such as blood pressure, BMI, blood glucose and more, will be used for the evaluation and monitoring aspects of the project by comparing the effect of the DigiCare4You innovative solution before and after the interventions.



Healthcare professionals (HCPs) and participants from **Albania, Bulgaria, Greece and Spain** will use this digital platform to enter and view screening data, including information on demographics, lifestyle, medical status and anthropometric measurements.

One **focus group** for **end users** and another for **implementers** in each one of the four implementation countries were organised earlier in the project to discuss both the potential difficulties of adopting digital tools locally and the crucial elements that need to be considered to fine tune the digital tool for maximum effectiveness.

The **DigiCare4You web platform** differentiates itself from other digital screening tools by incorporating **identity management**, **decision support** and **visual analytics** features in an easy-to-use interface that will be used by both the HCPs and the participants. This digital screening tool consists of a web platform where participants and HCPs can fill in online the FINDRISC questionnaire for the first stage screening procedure and more specific medical questionnaires and tests for the second stage screening.



This platform provides a detailed, intuitive and easy-to-follow screening procedure for both implementers and users. The mHealth intervention on healthy lifestyle is being developed by METEDA, a DigiCare4You consortium partner. More information can be found here (<https://digicare4you.eu/news>). The applications and software programmes developed by METEDA (**MetaDieta**, **MyDiet**, **MetaClinic**, and **DiaWatch**) will help users develop a healthier lifestyle through personalised goals setting, self-monitoring and self-management of behavioural changes and health indices.



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