



Project I.T.A.M.A.

ICT Tools for the diagnosis of Autoimmune diseases in the Mediterranean Area



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Intervention strategy

Axis	Title	Specific objective	
Priority Axis I	Promote intelligent and sustainable growth through research and innovation	1.1 – Increase the activity for research and innovation to satisfy the improvement in the quality of life and the fruition of the cultural heritage	
Priority Axis II	Promote competitiveness in the cross border area	2.1 – Facilitate the creation and upgrading of companies (micro, small and medium) within the intervention sectors in the cross border area	
		2.2 – Facilitate the workers' mobility within the cross border area through the creation of stable networks	
Priority Axis III	Protection of the environment and promote the efficient use of resources	3.1 – Protection of the environment and promote the efficient use of resources	
		3.2 – Contribute in stopping the territorial and marine biodiversity loss within the area by maintaining and restoring the ecosystems within the protected areas	





Priority Axis I



1.1 - Increase the activity for research and innovation to satisfy the improvement in the quality of life and the fruition of the cultural heritage



Admissible actions

A

Interventions aimed at financing the costs related to the introduction of «non technological innovation» practices in favour of the productive system

B

Interventions aimed at supporting R&I activities to improve the quality of life and the fruition of the cultural heritage;

C

Interventions aimed at financing exchanges and mobility of researchers;

Expected result

1.1.1 – Innovative services, technologies and actions developed and/or upgraded jointly



Common territorial challenges

In Sicily and Malta autoimmune diseases have a high prevalence.

For celiac disease a prevalence of 1% is estimated and in 50% of cases has symptoms within the first 5 years of life, it occurs in both sexes with a higher incidence among women (60% more than men).

Extragastrointestinal symptoms, autoimmune complications related to delayed diagnosis result in high health costs.

Early recognition with an economic test applicable to the pediatric population can reduce costs.

The diagnosis of celiac disease is based on the recognition of symptoms, some serological tests and the diagnostic confirmation with histological examination of intestinal biopsies. The ESPGHAN guidelines report the possibility of avoiding biopsy for the diagnosis of celiac disease in genetically susceptible children



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*ICT Tools for the diagnosis of **A**utoimmune diseases in the **M**editerranean **A**rea*

Partnership

1. University of Palermo - Department of Physics and Chemistry (**Head**)
2. University of Messina
3. Minister of Health, Mater Day Hospital, Malta
4. AcrossLimits, Malta

5. Assessorato Salute Regione Sicilia, Palermo (**associate**)



Shared opportunities

Presence of specific and complementary expertise in Sicily and Malta of autoimmune diseases and applied to the ICT through the

Perspective validation required of the ESPGHAN guidelines. Screening with

Confidence Capacity by the health facilities of Malta for screening, as a function of the population, an ideal screening

Presence of patient associations, stakeholders, in both communities.



Overall Objective	Results	Specific Objectives	OUTPUTS	WP
Activation of a network between research and production environments of the healthcare sector through the development of ICT for the diagnosis of autoimmune diseases	Healthcare companies that adopt innovative Tools developed in the project	Implementation of ICT tools and services applied to the diagnosis of autoimmune diseases that respond to a structured application in the item of the quality of life and health of citizens	Companies that adopt DATABASE of metadata for the diagnosis of autoimmune diseases	WP3 Data acquisition and screening for celiac disease
			Companies that adopt Graphical user interfaces (GUI) for data collection and consultation	
			Number of children that will be screened for celiac disease	
	Instruments for Technology transfer of services and technologies developed in the project to companies in the sector		Companies that adopt dedicated biomedical software and innovative expert systems (DSS) to support the diagnosis of celiac disease	WP4 Development and application of DSS to support the diagnosis of celiac disease
			Companies who use the services for technology transfer	WP5 Technology and know how transfer services
			Workshops and interdisciplinary seminars for know how transfer	





Conclusions



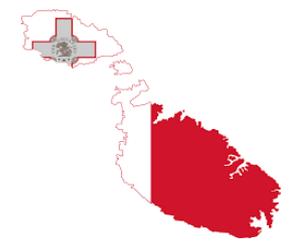
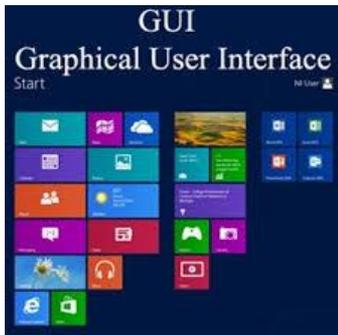
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Conclusions: target groups

Target group 1	<i>Health companies</i>	~ 130 + 3 (Sicily and Malta)
Target group 2	<i>Doctors</i>	~ 800 + 70 (Sicily and Malta)
Target group 3	<i>People to be screened</i>	~ 20000 maltese minors ~ 2000 sicilian minors

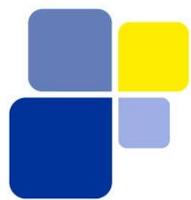


Conclusions: main outputs



- 1) **Common Challenge is enhancing health and quality of life**, by improving the diagnosis of autoimmune diseases (MAI), third in the world after cardiovascular and cancer for incidence, with a focus on the study of celiac disease in the Mediterranean.
- 2) **Overall Objective is activate a network between research and productive environments in the healthcare sectors** to develop innovative ICT Tools for the diagnosis of MAI, and related technology transfer tools.
*Expected change concerns the **anticipation of diagnosis time** through the optimization of the diagnostic path.*
- 3) **The two main outputs produced are:**
***Database and innovative ICT tools** to support the diagnosis of celiac disease for Healthcare delivery services;
Technology transfer services by modeling production processes based on the project's results for health companies and specialized enterprises;*
- 4) **Adopted approach is:**
 - interdisciplinary** (doctors, biologists, physicists, computer scientists, engineers)
 - cooperative** (universities, hospitals, institutions, PMI)
 - cross-border**: the MAI have both genetic and environmental risk factors, the advantage of comparative analysis with similar populations but with different lifestyles, such as Sicily and Malta, improves understanding of their pathogenesis in relation to genetic and environmental profiles.
- 5) **Project is original in three aspects:**
 - structural**: currently data interpretation from diagnostic tests is subjective and requires a double reading. Database with heterogeneous metadata test for the diagnosis of MAI and in particular celiac disease, available to the scientific community for epidemiological studies, development of automated diagnostic systems and Knowledge transfer has to be delivered;
 - procedural**: validation of diagnostic guidelines to possibly avoid biopsy in children has to be provided;
 - technological**: validation of an artificial intelligence-based system to support clinical decisions in celiac disease's diagnosis has to be developed.





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...grazie