

Tests, treatments and procedures at risk of inappropriateness in Italy
that Physicians and Patients should talk about.

Five Recommendations from the Italian Society of Human Genetics (SIGU)

<p>1</p>	<p>Don't perform genetic testing for mutations analysis in the 5,10-Methylene TetraHydrofolate Reductase (MTHFR) gene</p> <p>Since the risk of developing thrombotic events is conferred by the presence of hyperhomocysteinemia, it is considered more useful and valid, from the clinically point of view, consider the value of plasma homocysteine, which is also influenced by several other factors. The subjects heterozygous or homozygous for mutations in the MTHFR gene feel - with inappropriate perception - suffering from a rare genetic disease or being at high risk of thrombotic events. The most recent scientific literature strongly demonstrates the absence of predictive value of this test, both for venous thrombosis, and for other vascular diseases, and major specialized professional organizations advised not to use the test in the clinical practice.</p>
<p>2</p>	<p>Don't perform genetic tests directly to consumers, purchased on websites, pharmacies, gyms, beauty institutions, without a doctor's prescription.</p> <p>The public may be misled about the real benefit of these tests and it is often not aware of the limitations of the test. Without consulting a geneticist is also difficult to interpret correctly the test result. Finally, it is found that those who undergo the tests rarely obtain beneficial results, even changing their lifestyle or reducing the state of anxiety.</p>
<p>3</p>	<p>Don't perform genetic tests for monogenic diseases without specific indication both in the physiological procreation or by assisted reproduction technology (ART).</p> <p>Only in the case where the geneticist recognizes a reproductive risk for a specific monogenic disease, the genetic test for that single disease should be performed on the component at risk. Whether a monogenic autosomal recessive disease is present, the test should be extended to the partner only if the result is positive in the component at risk. Family and reproductive history should be collected in both components of the couple who want to procreate or who moves towards ART. Genetic testing should be offered only on the basis of family history or in consideration of screening provided for in the population or ethnic group at risk. In the absence of a positive familial anamnesis for monogenic diseases, the couple has the same risk for recessive diseases as in the general population.</p>
<p>4</p>	<p>Don't perform HLA genotyping in the presence of established diagnosis of celiac disease or for screening purpose.</p> <p>HLA-DQ2/DQ8 genotyping is appropriate only in cases of uncertain diagnosis and in subjects with increased risk, like family members of celiac patients (to exclude from subsequent repeated controls the subjects who are negative) and patients with a disease implying an increased risk of celiac disease (such as diabetes mellitus type 1, selective IgA deficiency, autoimmune thyroiditis, hepatitis autoimmune, Down syndrome, Turner syndrome, Williams syndrome). The test has a limited diagnostic value, because the at risk HLA alleles are also frequent in the healthy population and they are not themselves sufficient to determine the disease, which appears only after exposure to environmental triggers and in the presence of other genetic factors. The analysis of HLA susceptibility genes has mainly a negative predictive value, as the absence of the alleles at risk makes very unlikely the development of the disease. The purpose of the test is to evaluate whether to continue the follow-up in selected cases.</p>
<p>5</p>	<p>Don't perform screening tests of polymorphisms of factor V (Leiden) and Factor II (G20210A) in unselected patients, like all patients with only one episodes of venous thrombosis, in healthy subjects or in pregnant women with no specific anamnestic signs or before to start a treatment with oral contraceptives.</p> <p>According to national and international recommendations and guidelines, testing should not be performed outside of specific medical conditions, e.g.: episodes of venous thrombosis at an early age or the presence of strong familial history, with two or more affected relatives in the same branch of the family. The predictive value of these tests is limited. The communication of a possible increase of risk of the carriers can lead to anxiety not motivated and determine the inappropriate use of preventive therapies.</p>

Please note that these items are provided only for information and are not intended as a substitute for consultation with a clinician. Patients with any specific questions about the items on this list or their individual situation should consult their clinician.

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How this list was created

Genetic tests are growing and represent one of the major activities of the services of Medical Genetics. The last SIGU census showed that in 2011 were made more than 260,000 molecular genetic tests (+ 6% compared to 2007). Genetic tests are often expensive (on average about € 1,000) and have important consequences on patients and their families. SIGU is committed in the definition of the correct indication to order a diagnostic genetic test, suggesting primarily the need for counseling by medical geneticists and specialists and defining the standards required for the laboratories that provide genetic testing (<http://www.sigu.net/show/documenti/5/1/linee%20guida>). The Executive Board of SIGU, in agreement with the coordinators of the SIGU Working Groups (Public Health, Clinical Genetics, Cytogenetics, Molecular Genetics, Pharmacogenetics, Forensic Genetics and Epigenetics), focused on testing performed more frequently and for which it is essential define the appropriateness: Deficit-methylene Tetrahydrofolate-reductase (MTHFR, 18.526 tests performed in 2011); generic diagnosis of Mendelian diseases in anticipation of pregnancy or in the process of ART; susceptibility to celiac disease (HLA-DQ2 / DQ8, 11,824 tests); Deficit factor V (F5 Leiden, 24.834 tests) and Deficit factor II (20.393 tests).

Sources

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Slow Medicine, an Italian movement of health professionals, patients and citizens promoting a Measured, Respectful and Equitable Medicine, launched the campaign **“Doing more does not mean doing better-Choosing Wisely Italy”** in Italy at the end of 2012, similar to Choosing Wisely in the USA. The campaign aims to help physicians, other health professionals, patients and citizens engage in conversations about tests, treatments and procedures at risk of inappropriateness in Italy, for informed and shared choices. The campaign is part of the Choosing Wisely International movement. Partners of the campaign are the National Federation of Medical Doctors' and Dentists' Orders (FNOMCeO), that of Registered Nurses' Orders (FNOPI), the Academy of Nursing Sciences (ASI), National Union of Radiologists (SNR), Tuscany regional health agency, PartecipaSalute, Altroconsumo, the Federation for Social Services and Healthcare of Aut. Prov. of Bolzano, Zadig. www.choosingwiselyitaly.org. www.slowmedicine.it

The **Italian Society of Human Genetics (SIGU)** brings together professionals in Italy dealing with Human Genetics and Medical Genetics. This discipline plays quite a relevant role within the National Health System. Indeed services of Medical Genetics (including more than 500 centers of Clinical Genetics and Genetics Laboratory) are engaged in the diagnosis and investigation of all the diseases due to genetic alterations (more than 7000), which may be due to individual genes (monogenic diseases) or up to whole chromosomes (chromosome disorders). More than 1000 members SIGU are active in all Italian regions, two thirds of whom are under the age of 50, most women (73%), including profiles of biologist and medical doctor that are represented as 73 % and 12%, respectively.

For more details: www.sigu.net