

TheraGuide 5-FU™

TheraGuide 5-FU™ is the first and only comprehensive test for predisposition to 5-FU toxicity caused by variations in the *DPYD* and *TYMS* genes. It employs full sequencing of the *DPYD* gene and analysis of the *TYMS* gene.

1 in 4 individuals

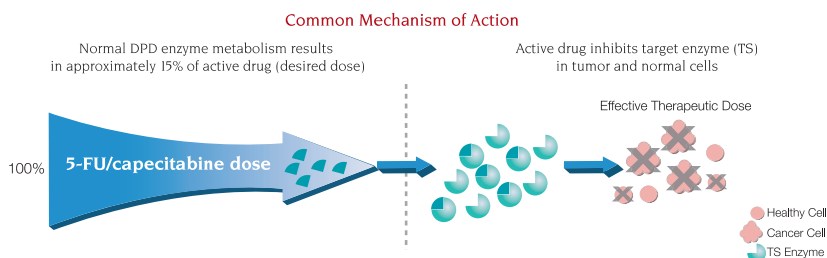
carries variations in either the *DPYD* or *TYMS* genes that will increase his/her risk of dose-limiting toxicity. A 60% risk of toxicity to 5-FU-related therapies is conferred by these genetic variations.



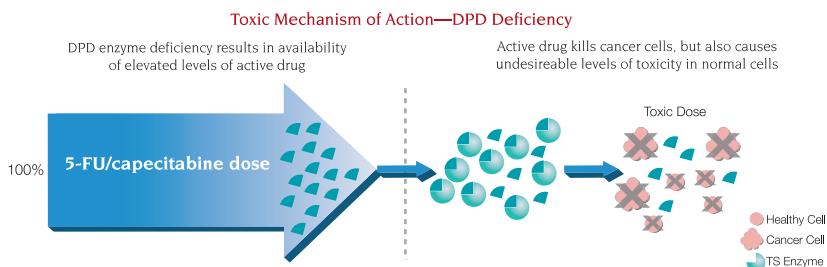
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5-Fluorouracil and capecitabine are two of the most frequently prescribed chemotherapeutic drugs for patients with cancers of the gastrointestinal tract, breast, and head and neck. In most patients, nearly 85% of 5-FU administered is metabolized by dihydropyrimidine dehydrogenase (DPD), rendering about 15% of the dose active.



However, individuals with complete or partial DPD deficiency have a strongly reduced capacity to metabolize 5-FU and therefore experience severe, and sometimes life-threatening, toxic effects from the increased levels of active drug.



Testing for DPD deficiency, and thus identifying patients with an increased risk for toxicity to 5-FU and capecitabine, lends itself to the unique opportunity to prescreen patients and to minimize, or even eliminate, these toxicities. Furthermore, DPD deficiency is now recognized formally as a contraindication for the use of capecitabine and other fluoropyrimidines, lending additional support to the necessity of developing a prescreening program for a DPD deficiency.^{1,2,3}

Bottom Line: "From an ethical point of view, the screening of patients for the presence of DPD deficiency prior to the start of treatment with fluoropyrimidines is warranted."¹ Full sequence analysis of the *DPYD* gene is the most comprehensive method available for identifying patients with DPD deficiency.

- 1 Van Kuilenburg. Screening for Dihydropyrimidine Dehydrogenase Deficiency: To Do or Not To Do, That's The Question. *Cancer Investigation*. 2006;24:215-17.
- 2 <http://www.fda.gov/medwatch/SAFETY/2003/mar03.htm#xeloda>.
- 3 <http://www.merck.com/mmpe/lexicomp/fluorouracil.html>.



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