

## Is Grapefruit “The Forbidden Fruit” for Patients with Long QT Syndrome?

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**Introduction:** Numerous drugs prolong the QT interval and cause long QT syndrome (LQTS) by blocking a specific potassium channel named “IKr.” Patients with congenital LQTS are at increased risk for this iatrogenic complication and are strongly advised to avoid all medications that block IKr. Recently, some flavinoids contained in grapefruit juice were shown to block IKr in cell preparations and prolong the QT interval in healthy volunteers. Consequently, one could argue that, until proven otherwise, patients with LQTS should avoid drinking grapefruit. **Methods:** We studied 19 patients with congenital LQTS and 9 age- and gender-matched healthy volunteers. All participants drank one liter of fresh pink grapefruit juice as quickly as possible and remained under electrocardiographic surveillance for 3 hours. The effects of grapefruit on heart rate, QT and QTc were measured. **Results:** As expected, the QTc of patients with congenital LQTS was longer at baseline than the QTc of healthy volunteers. However, grapefruit juice did *not* affect the heart rate, QT or QTc in any patient with congenital LQTS or in any volunteer at 1, 2 or 3 hours (Table). **Conclusions:** Drinking a single large bolus of grapefruit juice does *not* appear to cause QT-prolongation in patients with LQTS. Studies including larger number of patients and repeated drinking of grapefruit juice should be conducted to determine the long-term clinical significance of grapefruit juice for patients with LQTS.

Effect of grapefruit on QTc interval		
	Controls	LQT Syndrome
	Median [25 <sup>th</sup> - 75 <sup>th</sup> Percent.]	Median [25 <sup>th</sup> - 75 <sup>th</sup> Percent.]
Baseline	416 [401 - 425]	447 [412 - 485]
1 hour	417 [397 - 423]	453 [428 - 476]
2 hours	419 [407 - 430]	443 [422 - 481]
3 hours	421 [409 - 435]	435 [419 - 472]