For Patients

THE TILT TABLE TEST

When you walk, exercise, or stand up, the somatic (voluntary) muscles in your legs and abdomen work as a pump to push blood up from the lower part of your body back into the main circulation of your body, including into vital organs such as the heart. Since this interaction can affect your blood pressure and heart rate, an orthostatic vitals test will not produce the most accurate results. However, the tilt table moves your body into an upright position without the use of your muscles, so it does produce more reliable information about how your body reacts to changes in position. Some consider it "the gold standard" of testing for dysautonomias.

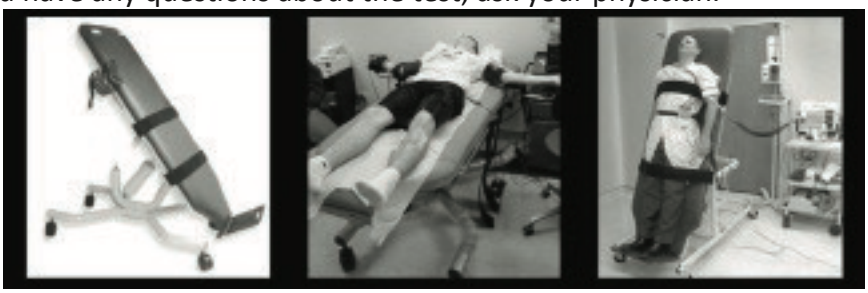
Most regional medical centers around the country have tilt table test capabilities, but it is helpful to know that there is wide variation in both procedural protocols and cost. The test is usually performed under the supervision of an electrophysiologist, a cardiologist that specializes in the electrical signals of the heart. Make sure the electrophysiologist who supervises your tilt table test follows updated protocols for administering the test. One way to make sure updated protocols are followed is to share the physician information found in this chapter.

Costs can vary widely between facilities. Usually the medical center charge is between $1,000 and $6,000. If there is more than one location in your area that has the capability of running the test, call the billing offices of all the locations to find out what they charge for the procedure.

The test is fairly easy, and if done properly involves minimal risk. Usually you are asked to rest for a period of time after an IV is inserted. When the resting phase is done, they will take a baseline resting measurement of your blood pressure and heart rate. Then the table slowly moves into an upright position with your feet resting on a small platform. Safety straps, like seatbelts, are used to ensure you do not fall.

The test length may vary, but throughout the duration of the test your blood pressure and heart rate are regularly monitored. Should you become symptomatic, have a pronounced drop in blood pressure, or begin to faint, the test should be ended immediately to reduce your risk of fainting.

After the test there is a recovery time. In some autonomic labs IV fluids are also administered. If you have any questions about the test, ask your physician.



Tilt table testing usually is done with a motorized tilt table.

Tilt table testing is used to evaluate patients with a complaint of fainting or inability to tolerate prolonged standing.

For physicians

THE TILT TABLE TEST

Tilt table testing is done to see if standing up (orthostasis) provokes a gradual, progressive fall in blood pressure (orthostatic hypotension), a period of blood pressure instability followed by a sudden fall in blood pressure (neurally mediated hypotension), an excessive increase in pulse rate, as in postural orthostatic tachycardia syndrome (POTS), or autonomically mediated syncope (also known as neurally mediated syncope, neurocardiogenic syncope, or vasovagal syncope).

The testing itself is simple. The patient lies on a stretcher-like table, straps like seat belts are attached around the abdomen and legs, and the patient is tilted upright at an angle. The exact angle used varies from center to center and may be from 60 degrees to 90 degrees. The tilting goes on for up to 45 minutes (this varies from center to center).

If the patient tolerates the tilting for this period, then the patient may receive a drug, such as isoproterenol or nitroglycerine, which may provoke a sudden fall in blood pressure or loss of consciousness.

As soon as the test becomes positive, such as by a sudden fall in blood pressure, the patient is put back into a position lying flat or with the head down. Sometimes fluid is given intravenously. Consciousness rapidly returns once the patient is put back down; however, symptoms such as a sense of imbalance, disorientation, or headache can continue for hours or even days later.

Tilt table testing is a provocative test. The doctors are hoping to reproduce the patient's problem in a controlled laboratory situation.

The testing is quite safe when done by experienced personnel, in a setting where emergency backup is available.

There are some disadvantages of tilt table testing. One is a false-positive test result, especially when a drug is used. In a false-positive test, the results of the test are positive, but some healthy people can have a positive test result, so that a positive test result might not actually mean that anything really is "wrong." More importantly, a false-positive result would lead the doctor to

conclude that the condition is fainting, a relatively benign situation, whereas the patient actually has a serious medical problem. This is why a tilt test must be used as a tool in combination with a comprehensive clinical assessment to support a definitive diagnosis.

Another disadvantage is that most tilt table testing does not provide information about disease mechanisms.

“Augmented” tilt table testing involves measurements of physiological functions, such as forearm vascular resistance, and sampling blood for assays of norepinephrine and adrenaline levels. This can be especially helpful for the evaluation of autonomically mediated syncope, as tracking plasma adrenaline and norepinephrine is the only way to detect differential changes in activities of the sympathetic adrenergic and sympathetic noradrenergic systems—sympathoadrenal imbalance—which seems to be a key factor in fainting reactions.

Augmented testing can provide information about mechanisms; however, few centers regularly offer this form of tilt table testing.

If you do not already have access to augmented tilt testing it may be helpful work to add augmented tilt testing at your facility. Standard tilt table testing is not useful in patients with a persistent fall in blood pressure each time they stand up (orthostatic hypotension), because the results are a foregone conclusion: the blood pressure will fall progressively during the tilting. Augmented tilt table testing, however, can help determine if the orthostatic hypotension results from a form of sympathetic nervous system failure.