Objective: Diabetes in pregnancy has been associated with a paradoxically reduced risk of neonatal death in twin pregnancies. Risk “shift” may be a concern in that the reduction in neonatal deaths may be due to an increase in fetal deaths (stillbirths). This study was aimed to clarify the impact of diabetes on the risk of perinatal death (neonatal death plus stillbirth) in twin pregnancies. Methods: This was a retrospective cohort study of twin births (n=561,157), using the U.S. matched multiple birth data 1995-2000 (the available largest such dataset). Cox models were applied to estimate the adjusted hazard ratios (aHR) of perinatal death accounting for twin cluster-level dependence. Results: Comparing diabetic versus non-diabetic twin pregnancies, overall perinatal mortality rates were significantly lower [2.1% versus 3.3%, aHR 0.70 (95% confidence intervals 0.63-0.78)], and both stillbirth and neonatal mortality rates were lower. The lower perinatal mortality in diabetic pregnancies was due to a survival benefit in very preterm (<32 weeks) [aHR 0.55 (0.48-0.63)] and very low birth weight (<1500 g) [aHR 0.61 (0.53-0.69)] births. In contrast, diabetes was associated with an elevated risk of perinatal death and stillbirth in mild preterm (32-36 weeks) or normal birth weight (>=2500 g) twins. Conclusion: Diabetes appears to be “protective” against perinatal death in twin pregnancies ending in very preterm or very low birth weight births. Prospective studies are required to clarify whether this may be a true effect or an artifact of unmeasured confounders, and distinguish the effects of pre-gestational vs. gestational diabetes.