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| **Equation** | **Interpretation** |
|  | [4-13C] malate, equivalent to [1-13C] malate |
|  | Enrichment in carbons 2 and 3 of malate |
|  | Whole-body endogenous glucose or palmitate production |
|  | Whole-body gluconeogenesis |
|  | Fraction of gluconeogenesis derived from pyruvate |
|  | Fractional triose enrichment |
|  | Doubly-labeled glucose arising from the condensation of two singly labeled trioses, correcting for doubly labeled glucose arising from one doubly labeled triose condensing with an unlabeled triose |
|  | Rate of pyruvate carboxylase anaplerosis relative to TCA cycle flux |
|  | Fractional contribution of glucose to the TCA cycle |
|  | Absolute rate of gluconeogenesis from pyruvate |
|  | Absolute TCA cycle flux |
|  | Absolute rate of glycolytic carbon entry into the TCA cycle |
|  | Absolute rate of entry of carbons from oxidized fatty acids into the TCA cycle |