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See [https://tauruspet.med.yale.edu/staff/edm42/courses/ENAS\\_915\\_2014/papers/Rescigno-use%20of%20models%20PMB%202004%20%200031-9155\\_49\\_19\\_014.pdf](https://tauruspet.med.yale.edu/staff/edm42/courses/ENAS_915_2014/papers/Rescigno-use%20of%20models%20PMB%202004%20%200031-9155_49_19_014.pdf) . Accessed on 27 March 2023.

**Abstract:** Extensive use of models in pharmacology, in physiology and in radiotherapy raises some questions on the nature and utility of models in general and of compartmental models in particular. In this paper I will define in a simple and logical way a set of useful pharmacokinetic parameters and show how their estimation depends on the assumed model. A special problem arises when some parameters are not identifiable; in that case I will show how it is possible to determine a range for them. Two examples are used to illustrate how to compute the value of the identifiable parameters and the range of the non-identifiable ones, when the available experimental data are not sufficient to identify a model.

**KEYWORDS:** differential equation, model, pharmacokinetics, compartment, steady state, volume distribution,