

External validation

External [validation](#) is the action of [testing](#) the original [prediction model](#) in a set of new patients to determine whether the [model](#) works to a satisfactory degree.

To assess whether a [prediction model](#) is accurate, demonstrating that it predicts the [outcome](#) in patients on whom the model was developed is not sufficient. As the prediction formula is tailored to the development data, a [model](#) may show excellent performance in the development population but perform poorly in an external cohort

External validation mainly provides [evidence](#) on the generalizability to various different patient populations. ... It entails validating the model on new patients who were included in the same study as patients from the development cohort but sampled at an earlier or later time point.

For relatively small data sets, [internal validation](#) of [prediction models](#) by [bootstrapping](#) may not be sufficient and indicative for the model's performance in future patients. External validation is essential before implementing prediction models in clinical practice.

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Last update: **2024/06/07 02:50**

