**Validation** is the process of establishing documentary evidence demonstrating that a procedure, process, or activity carried out in testing and then production maintains the desired level of compliance at all stages. In the pharmaceutical industry, it is very important that in addition to final testing and compliance of products, it is also assured that the process will consistently produce the expected results.[[1]](https://en.wikipedia.org/wiki/Validation_(drug_manufacture)#cite_note-1) The desired results are established in terms of specifications for outcome of the process. Qualification of systems and equipment is therefore a part of the process of validation. Validation is a requirement of food, drug and pharmaceutical regulating agencies such as the US FDA and their [good manufacturing practices](https://en.wikipedia.org/wiki/Good_manufacturing_practice) guidelines. Since a wide variety of procedures, processes, and activities need to be validated, the field of validation is divided into a number of subsections including the following:

* Equipment validation
* Facilities validation
* HVAC system validation
* [Cleaning validation](https://en.wikipedia.org/wiki/Cleaning_validation)
* [Process Validation](https://en.wikipedia.org/wiki/Process_Validation)
* Analytical method validation
* Computer system validation

Similarly, the activity of qualifying systems and equipment is divided into a number of subsections including the following:

* Design qualification (DQ)
* Component qualification (CQ)
* Installation qualification (IQ)
* Operational qualification (OQ)
* Performance qualification (PQ)