What Is Translational Research?

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Defining Translational Research (TR)

The National Cancer Institute at the National Institutes of Health defines Translational Research (TR) as: “A term used to describe the process by which the results of research done in the laboratory are used to develop new ways to diagnose and treat disease.”

In practice, TR focuses on the practical application of basic science. It puts research findings to productive use for the benefit of human well being as quickly as possible.

What’s the difference between Translational and Applied Research?

Critics argue that putting research into practice is simply applied research (as opposed to the basic science approach of speculative or ‘pure’ research that can take decades to produce substantive findings).

Advocates of TR argue that most applied research simply delivers incremental improvements on previous research findings, whereas TR takes a broader integrative approach that can involve multiple disciplines.

Phases of TR

While the need to expedite basic research knowledge to practical patient benefit has been prominent in clinical research for decades, the 2009 launch date of the *American Journal of Translational Research* underscores the relatively recent prominence of TR. The National Institutes of Health (NIH) had taken the lead a few years earlier with the launch of the Clinical and Translational Science Award (CTSA) program in 2006, alongside a budget commitment of $500 million to fund up to 60 translational research centers.

The body of work continues to grow, but with just over a decade of broader acceptance in the research community, standardized TR practices may still be a few years away.

Initially, two distinct phases were recognized:

• T1 – developing new disease treatments, drugs, and equipment based on basic science discoveries (“bench to bedside”)

• T2 – Improving community and clinical practice utilization of proven therapies (“bedside to community”). This phase is often seen as being the purview of public health scientists seeking to maximize application of research findings in the community.

There has been a more recent subdivision of T2 into a third phase (T3) that separates clinical research to clinical practice (T2) and clinical practice to broader community improvements (T3).

Barriers to Adoption

Critics remain adamant that TR is just a relabeling of applied research, and without a body of evidence to support the claimed superiority of TR research practices; the distinct methodology continues to struggle. In addition, the cultural differences between research scientists and clinicians, especially around training, research goals, and remuneration policies, can lead to internal conflict.

The multidisciplinary nature of most TR projects can delay both the timeline for getting from “bench to bedside”, and for publishing the results of that work. This has greater consequences when attempting to attract research funding away from the more established categories of basic and applied research.

Cite this article

Enago Academy, What Is Translational Research?. Enago Academy. 2013/12/12. https://www.enago.com/academy/what-is-translational-research/