

Key Takeaways



The preclinical study is a stage of drug development that precedes clinical trials, and by the present protocol, is mostly conducted in animal models. However, it's becoming evident that the preclinical stage can now be partially transferred to in silico research. At its current state, this method is more reliable and resource-saving. Redefining the approach to preclinical studies is an upcoming event that will happen within ten years.



There are vanishingly few clinically validated drugs that reliably extend healthy human longevity. Clinical trials are less than 1% succeeding in humans after animal trials. At the same time, developments in AI and modeling sphere are pushing market to better results which promises further revision of research approach.



While clinical studies generally dominated the attention of investors, the global Preclinical Market Size is projected to grow an average CAGR of **8.1%** compared to only **5.9%** of clinical trials. The difference in growth can be explained by the USA **21st Century Cures Act, which accelerated the approval process for advanced drugs and medical devices.**



The global Preclinical Studies and Clinical Trials Market Size accounted for \$48.8B in 2020 and is projected to grow **an average CAGR of 6% from 2020 till 2026 to reach \$70.5B.** Despite increasing interest in recent years, the industry remains underestimated and has high growth potential.



The cost of developing a new drug increased tremendously in the last 50 years, **being up to 25 times higher in 2020s than in 1970s and is only projected to grow.** This partially explains a relatively new longevity drugs are in clinical trials pipeline.

Key Takeaways



While few of clinical trials examined dealt with aging directly, **the vast majority of clinical research is dealing with age-related conditions** due to higher market interest in precision drugs for specific disease. **Longevity trials** are focused on **increasing individuals lifespan and increasing life quality** at a later age. Most of them are now focused on fighting **cell senescence and restoring regenerative potential**.



Modern attitude to clinical trials is partially cocervative, some companies do not disclose information regarding their research to fortify their market position. That is why **any information database is not complete**. Current analytical case study is based on **self-prepared database consisting of all publically open trials**.



Out of nine recognized hallmarks of aging, only two, namely **altered intercellular communication and mitochondrial dysfunction, have drugs that passed onto Phase 3** of clinical trials. This means that while the need for such medicines is recognized, **the progress of obtaining viable products is still quite slow**.



The recent growth of clinical trial market is fueled by the synergy of 4 factors - **vaccine trials on rise, remote trials increase, clinical trials disruptions, and new technologies**. While first 2 market trends are projected to level off after the COVID-19 pandemic, the latter ones are here to stay, promising continued development of the industry.



Clinical trials is a continuously expanding field of scientific study. Although most of them do not bring successful results, the whole field of **modern therapeutics is based on their paradigm**. Lately, more and more innovative ways of conducting research in this field emerge, thus leading to potential reorganization of the whole process. **Enormous funding of drug development sphere** will persuade continuous progress and development as result, **requiring deeper analytics for precise overview**.
