

Reductionism is a philosophical and scientific approach that attempts to understand complex systems by breaking them down into their simplest components, assuming that the whole can be fully explained by the behavior of its parts.

□ In biomedical science: Reductionism focuses on isolated molecular mechanisms (e.g., a single gene, protein, or signaling pathway) to explain complex diseases like cancer, atherosclerosis, or depression.

△ Criticism: While useful for mechanistic insight, reductionism often oversimplifies, ignoring the interactions, feedback loops, and systemic context that define real biological and clinical phenomena.

In short: reductionism sees the tree, but often misses the forest.

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