Transforming disease-based medication to personalized healthcare through regenerative medicine

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Stem cells are naturally occurred in our body and capable of repairing injured tissues. When an organ is injured, it will release some cellular molecules or chemicals, attracting stem cells to the injured site for repairing. But, if an organ is constantly insulted and the damage is overwhelming the capacity of stem cells for functional repair, a non-functional repair will take place, leading to scar tissue formation and cessation of tissue injury signaling releasing. Dr. Kang's team developed a new technology to reestablish the tissue injury signals in chronic ischemic heart tissue. This, in combination with the Revotek's newly invented 3D bioprinting of blood vessels using isolated fat tissue mesenchymal stem cells, constitutes a novel approach for rejuvenation of the naturally occurred self-repair process. This newly developed regenerative medicine technology has been approved to be effective and safe in monkey models of cardiovascular diseases and is readily to translated to human patients. This new technology would enable transform disease-based medication to personalized healthcare in medical practice.

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