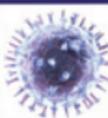
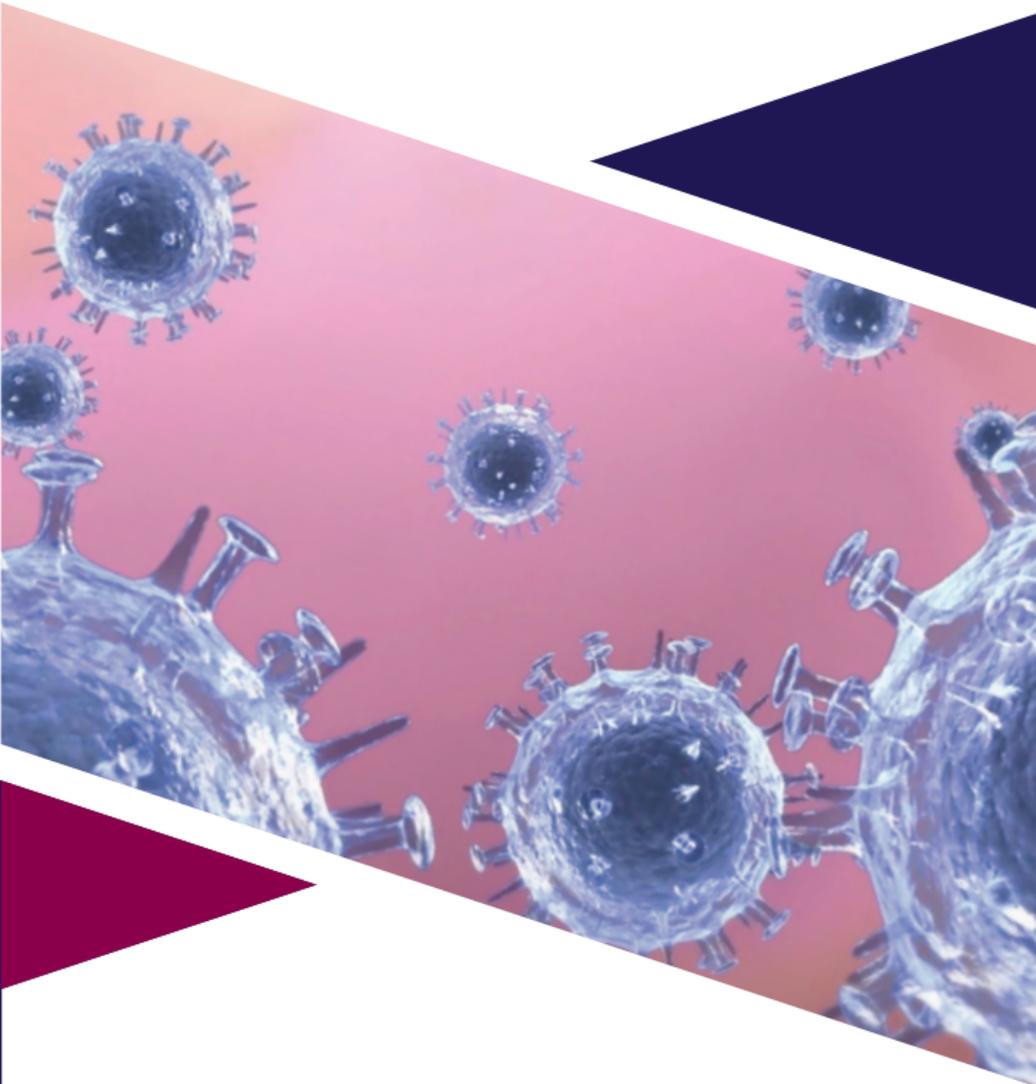


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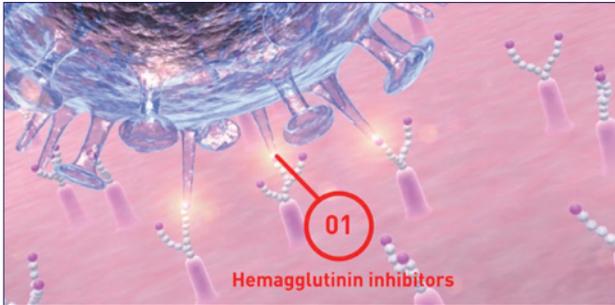
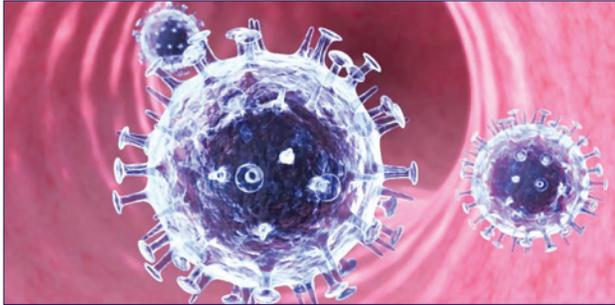
A Closer Look at the 5 Stages of the Influenza Virus Life Cycle



Influenza's virulence is driven by a cycle of viral infection, replication, shedding, and spreading.

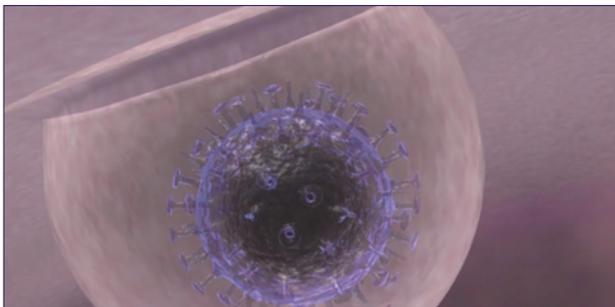
Once in the body, the viral life cycle allows it to multiply fast and shed new virus ready for the next host, including more cells of your body and other people around you.

STAGE 1: VIRAL ENTRY

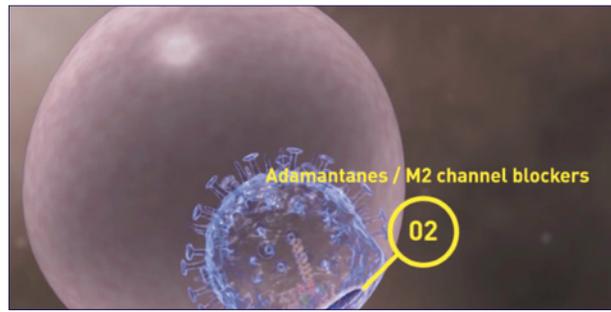


After the virus is breathed into the airways, a viral glycoprotein called hemagglutinin facilitates its intrusion into a host cell.

STAGE 2: VIRAL UNCOATING AND RELEASE OF CORE COMPONENTS

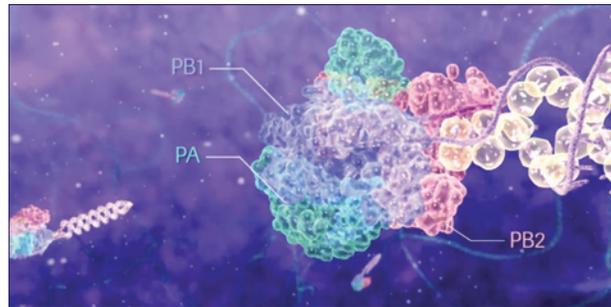


Then, viral genetic material is transported into the nucleus.

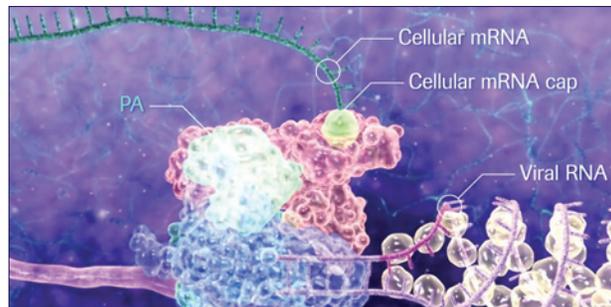


Adamantanes/M2 channel blockers facilitate release of viral core components.

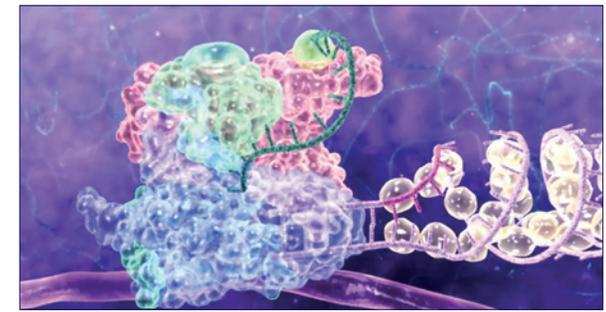
STAGE 3: VIRAL REPLICATION



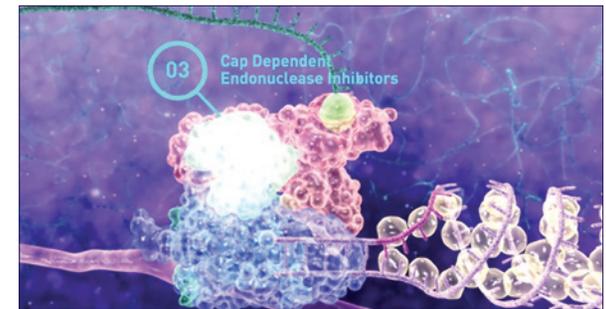
Once there, the influenza RNA polymerase complex composed of three subunits PA, PB1, and PB2 is responsible for both viral messenger RNA transcription and viral replication.



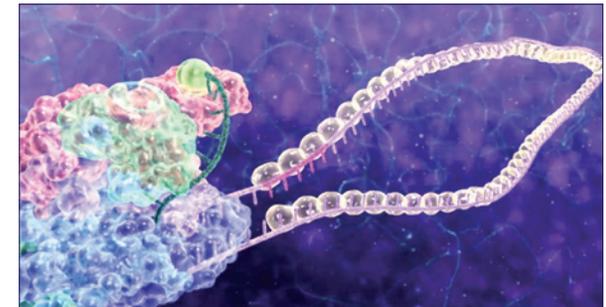
However, the influenza virus doesn't have all it needs to replicate its own genomic material. It requires one small piece of the host cell messenger RNA called a cap to trigger viral transcription.



It steals this cap in a process called cap snatching. The thief is the PA subunit that possesses cap dependent endonuclease activity. Once the host cap has been stolen, transcription of viral messenger RNA can be initiated.

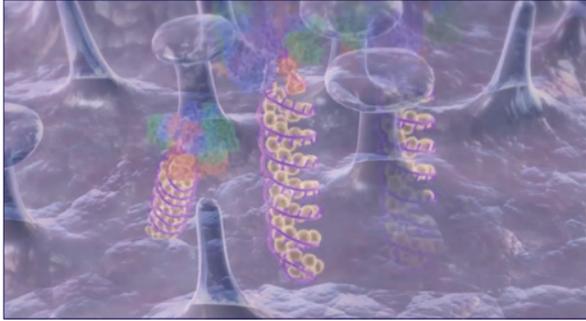


Cap dependent endonuclease inhibitors block cap snatching.



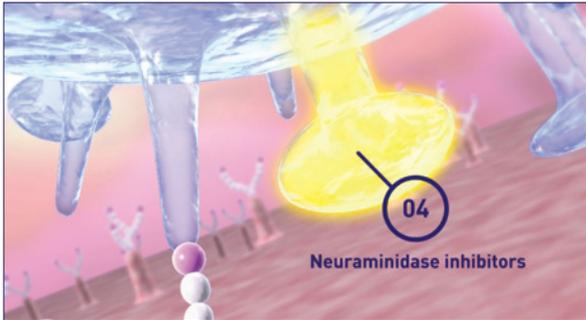
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STAGE 4: NEW VIRUS ASSEMBLY

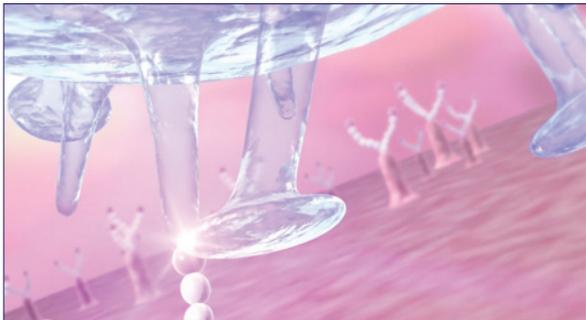


Following viral protein synthesis and RNA genome replication, all new viral components are finally assembled at the cell membrane and initiate the budding of new viral particles.

STAGE 5: VIRAL RELEASE



Finally, viral neuraminidase cuts the viral particle free for it to infect other cells.



Neuraminidase inhibitors block viral release from the host cell.

*Doing now what
patients need next*

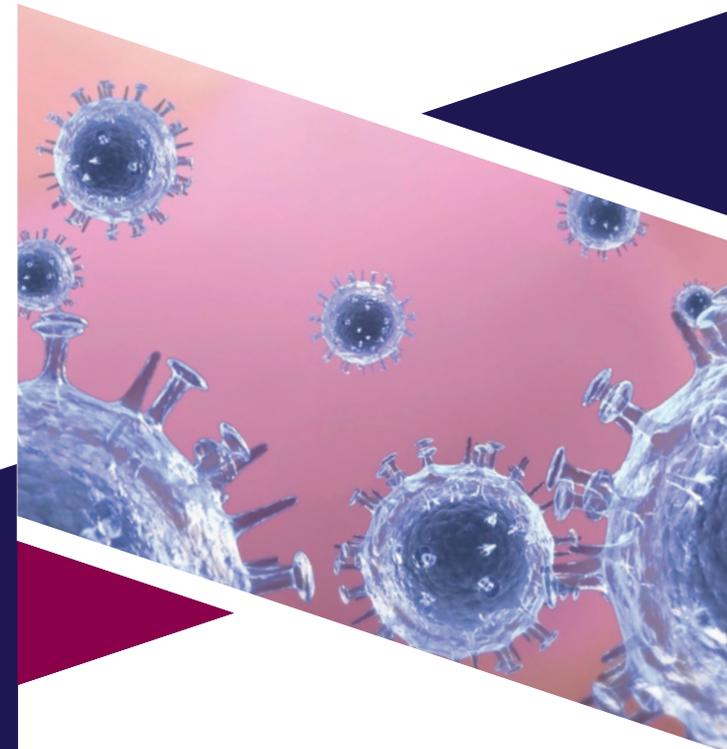
1. Davis AM, *et al.* Virol J. 2014;11: 167. **2.** Einfeld AJ, *et al.* Nat Rev Microbiol. 2015;13(1): 28-41. **3.** von Itzstein M. Nat Rev Drug Discov. 2007;6(12): 967-974.

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