HEPATITIS DELTA CONNECT
hepdconnect.org

Hepatitis D
Treatment and Clinical Trials

What current treatments are available for hepatitis D?

Hepcludex (formerly Myrcludex B) is the first drug in the world to be approved for treatment of hepatitis delta. It was approved for prescription in Europe in July of 2020 and Gilead Sciences will be working to seek approval in other parts of the world throughout 2022 and 2023. Prior to the introduction of Hepcludex, pegylated interferon (PEG-IFN) has often been and continues to be used in hopes of stimulating the body's immune system to fight the virus. A small percentage of patients (<30%) experience remission when injected with PEF-IFN weekly over 48 weeks. Oral nucleosides (antivirals) approved for hepatitis B have no effect on hepatitis D, but many other drugs are being investigated for their effectiveness in treating hepatitis delta.

What new drugs are in clinical trials for hepatitis D?

Drug	Mechanism	Company	Clinical Trial Phase	Designations
Lonafarnib + Ritonavir	Prenylation Inhibitor	Eiger BioPharma, USA	Phase III (Fully enrolled - data expected by end of 2022)	FDA Breakthrough Therapy Designation FDA Fast Track Designation FDA Orphan Drug Designation EMA Orphan Drug Designation EMA PRIME
Hepcludex (Formerly Myrcludex B)	Entry Inhibitor	Gilead Sciences, Inc.	Monotherapy: Conditional approval by EMA & Biologics License Application filed with FDA - ongoing Phase III trials; w/ PEG-IFN: Phase 2B trials	EMA PRIME FDA Breakthrough Therapy Designation FDA Orphan Drug Designation Promising Innovative Medicine (PIM) Designation by British MHRA
Lambda (Pegylated Interferon)	Immune Response Stimulator	Eiger BioPharma, USA	Phase III Enrolling	FDA/EMA Orphan Drug Designation FDA Fast Track Designation FDA Breakthrough Therapy Designation
JNJ 3989 + Nucleos(t)ide Analog	RNA Interference Compound	Janssen Research & Development, LLC	Phase II Recruiting	N/A
REP 2139 - Mg (in combination with PEG-IFN and Tenofovir)	HBsAg Inhibitor	Replicor, Canada	Phase II planning in progress (Europe)	N/A
ATI-2173 (in combination with Tenofovir)	ASPIN	Antios Therapeutics	Phase 2	N/A
GI-18000	Immune Response Stimulator	GlobeImmune, USA	Pre-clinical	N/A

Lonafarnib + Ritonavir PHASE 3

Lonafarnib is a "prenylation inhibitor" that works by targeting the protein assembly process, which prevents new virus from being created. In a recent study, Lonafarnib combined with Ritonavir showed promise in reducing hepatitis D virus levels.

Hepcludex (formerly Myrcludex B) PHASE 3 (PHASE 2B W/ PEG INTERFERON)

Hepcludex is an “entry inhibitor” that works by stopping the virus from entering and infecting hepatocytes (liver cells) and breaking the cycle of reinfection. It has shown activity against the hepatitis B virus, and has been approved for treatment of hepatitis D. The purpose of the Phase III trials is to evaluate the long-term effects of this drug. Phase 2B trials are ongoing to test the efficacy of Hepcludex with pegylated interferon.

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Pegylated Interferon Lambda (PEG-IFN-λ) PHASE 3 ENROLLING

Pegylated Interferon Lambda is a type III interferon that works by activating the body's own immune system to fight the virus. A recent study showed the ability of combination therapy with ritonavir and Lonafarnib to reduce hepatitis D virus levels.

JNJ 3989 PHASE 2 ENROLLING

JNJ 3989 is an RNA interference compound that works by targeting transcription of viral RNA, specifically those deriving from HBV cccDNA, which could also impact HDV infection. A new phase II study is currently evaluating the safety and efficacy of JNJ-3989, when combined with a treatment like Entecavir or Tenofovir, in people who are co-infected with HBV and HDV.

Rep 2139 (in combo w/ PEG IFN & Tenofovir) PHASE 2 PLANNING

REP 2139 is a "nucleic acid-based amphipathic polymer (NAP)", taken as a pill, that works by preventing infected liver cells from releasing hepatitis B virus into non-infected liver cells. It is being evaluated for use in combination with PEG-IFN and Tenofovir.

ATI-2173 (in combo with Tenofovir) PHASE 2

ATI-2173 is an "Active Site Polymerase Inhibitor Nucleotide" (ASPIN). This is a fairly common type of antiviral, used in HCV and HBV, and even being researched for coronavirus. This drug works to stop RNA transcription. ATI-2173 has significant potential to be a key component of a synergistic combination therapy to cure HBV. Combining ATI-2173 with a chain-terminating drug such as Tenofovir or Entecavir could shut down the HBV polymerase and all viral replication.

GI-18000 PRE-CLINICAL

GI-18000 is an "immune response stimulator" that works by causing the host's T-cells to target and fight the infected liver cells.

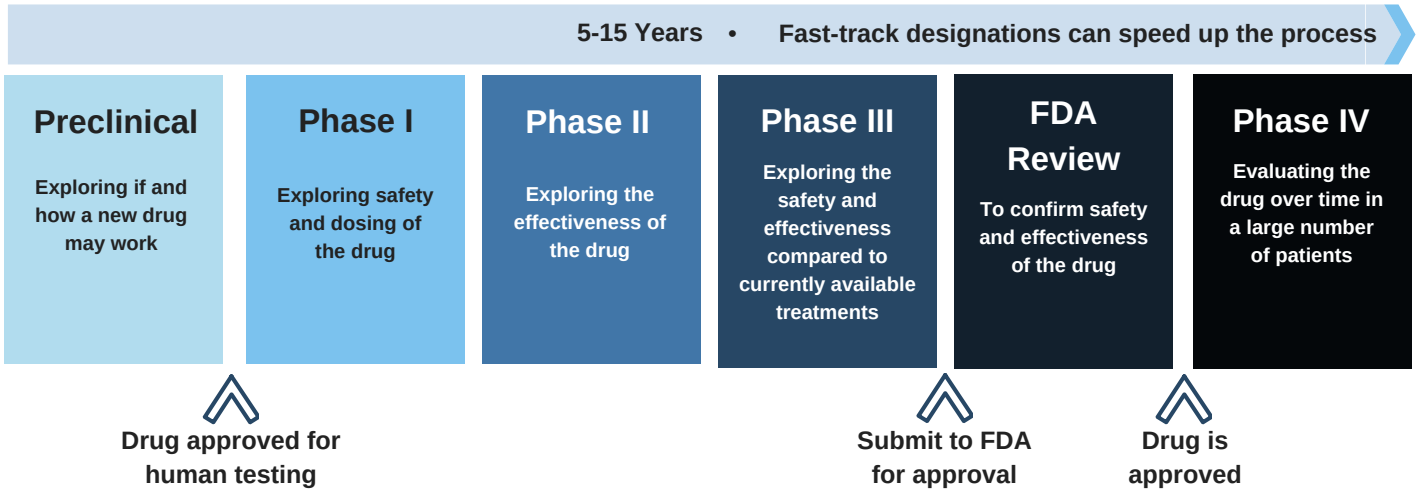
How can people locate clinical trial sites?

Patients can search open and upcoming clinical trials on the **Clinicaltrials.gov** website. For an updated and detailed list of hep delta clinical trials, visit our helpful guide, found at https://www.hepb.org/research-and-programs/hepdeltaconnect/clinical-trials/. Patients should also discuss the possibility of participating with their doctors, and see if their doctor can connect them with a local trial.

How long will it take for new treatments to be available to all patients?

In the United States, new drugs must go through a multi-phase clinical trial process in order to test a drug's usefulness, safety and effectiveness before it is made available to all patients. Drugs face many obstacles during this process and not all of them make it to the patient market. While this process can take anywhere from 5-15 years, fast-track and priority designations can speed up the process.

Clinical Trial Process



HEPATITIS B FOUNDATION

The Hepatitis B Foundation is a national nonprofit research and disease advocacy organization for hepatitis B. It established Hepatitis Delta Connect as a dedicated program in 2016 to provide information and support for those affected by hepatitis D.