

# Hepatitis B



Hepatitis B (HBV) is a virus that infects the liver and is one of the major causes of liver scarring or cirrhosis and liver cancer.

When HBV has been present for longer than six months, it is known as chronic hepatitis B (CHB). In Australia, the highest prevalence of CHB occurs in Aboriginal and Torres Strait Islanders and Australians who were born in the Asia-Pacific region and Sub-Saharan Africa. While there are highly effective treatments for HBV, treatment is usually long-term or lifelong and there is no cure. An effective vaccine against HBV is available and is crucial to the global campaign to eliminate the virus.

## The Doherty Institute's expertise

HBV is a major focus for the Peter Doherty Institute for Infection and Immunity (Doherty Institute), with a broad spectrum of activities spanning public health, discovery research and clinical care.

### Public Health

The Doherty Institute is home to the World Health Organization (WHO) Collaborating Centre for Viral Hepatitis. Led by Associate Professor Ben Cowie from The Royal Melbourne Hospital it is one of only four such Centres in the world designated to assist the WHO in disease surveillance, clinical guidance, and prevention of viral hepatitis. The Doherty Institute is also home to the WHO Regional Reference Laboratory for Hepatitis B (Western Pacific Region), which is responsible for laboratory and technical support and assisting countries in the region with research and training in HBV.

The Doherty Institute's epidemiology team conducts research and monitoring relating to the impact of HBV locally, nationally and globally. Activities include support for Victoria on national viral hepatitis surveillance, and

leading the Hepatitis B Mapping Project that provides a benchmark for achieving National Hepatitis B Strategy 2014-2017 targets and priorities.

The Royal Melbourne Hospital's Victorian Infectious Diseases Reference Laboratory (VIDRL) at the Doherty Institute provides numerous specialised molecular tests for detecting various markers of HBV infection, including assays for diagnosis and the identification of treatment failure.

### Research

There are numerous active research projects on HBV, including identifying new biomarkers of liver cancer, and prevention of mother-to-child transmission led by Professor Stephen Locarnini, a Royal Melbourne Hospital researcher, and multiple groups are working towards a cure for HBV. The Doherty Institute hosts the secretariat for the International Coalition to Eliminate Hepatitis B (ICE-HBV), led by Associate Professor Peter Revill, also a Royal Melbourne researcher, which aims to support the discovery of a safe, affordable, scalable and effective cure, available to all persons living with HBV.

**240**  
million

Approximately 240 million people  
worldwide are living with CHB  
and 232,600 in Australia

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Director of the WHO Collaborating Centre for Viral Hepatitis, Associate Professor Ben Cowie from The Royal Melbourne Hospital.

More than  
**680K**  
people

die each year globally due to complications from HBV including cirrhosis and liver cancer

Associate Professor Steven Tong, a Royal Melbourne Hospital clinician researcher, in collaboration with VIDRL and University of Melbourne Professor Katherine Kedzierska, studies HBV in Aboriginal and Torres Strait Islander people and has established a large cohort study in the Northern Territory to understand local virus strains, the immune response to the virus and why they often cause more severe disease.

Director of the Doherty Institute, University of Melbourne Professor Sharon Lewin, together with Dr Joe Sasadeusz from the The Royal Melbourne Hospital's Victorian Infectious Diseases Service (VIDS), studies the natural history of HIV-infected individuals co-infected with HBV, with the aim of understanding how the two viruses interact, how liver disease develops and the

identification of HBV drug resistance. These studies are part of a large collaborative program with Chulalongkorn University in Bangkok, Thailand.

## Clinical care

VIDS physicians and nurses provide inpatient and outpatient care for people with viral hepatitis, conduct clinical trials of new hepatitis treatments, and provide education, capacity building and outreach to support management of HBV by general practitioners.

Statistics sources: The Kirby Institute,  
World Health Organization

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