



# Year 11: Stem Cells Teacher Information Booklet

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## About the Perkins

### About the Perkins

The Harry Perkins Institute of Medical Research, commonly known as The Perkins, is the largest medical research institute in Western Australia working on diseases such as cancer, diabetes, heart disease, and rare genetic diseases.

With over 250 researchers located in three hospital campuses, the Perkins is uniquely positioned to fast track the development of new discoveries and treatments. Researchers at the Perkins are driven to find new ways of diagnosing and treating diseases.

### About the Lotterywest BioDiscovery Centre

The Lotterywest BioDiscovery Centre connects students, teachers, and members of the community to the world of medical science and the research happening at the Perkins. Through school visits, community events, and educator resources, we are dedicated to ensuring all Western Australians become more active participants in medical research.

### Where to find us

We are located in Nedlands at **6 Verdun St, Nedlands 6009**. See the map below.

### Bus parking

Bus parking is organized through QEII parking. Should you require to park your school bus for the day please contact:

- [Nicolette.Staal@health.wa.gov.au](mailto:Nicolette.Staal@health.wa.gov.au),
- [Qeii.parking@health.wa.gov.au](mailto:Qeii.parking@health.wa.gov.au)

Or alternatively, call on: (08) 6457 7248



## Parking Map





## About your Session

### Stem Cell Research at the Perkins

Liver cancer is the third-most deadly form of cancer in the world – and it's only becoming more prevalent. Unlike most cancers, the mortality rate for liver cancer is increasing, with researchers expecting a rise of 29% by 2030. There are very few nerves running through the liver, meaning that the cancer has a greater chance of reaching later stages before the patient receives a diagnosis.

Liver cancer research at the Perkins is led by Professor George Yeoh and focuses on the biology of the Liver Progenitor Cell (LPC). LPCs are a type of stem cell found in the liver and have the potential to become either Hepatocytes (Liver Cells) or Cholangiocytes (Bile Duct Lining Cells).

Liver cells have the capacity to regenerate, making it a sturdy organ! However, when the liver loses its ability to regenerate normally, LPCs activate and contribute to repairing the organ.

Research at the Perkins has a long-term goal of using LPCs in the treatment of liver cancer and other liver diseases. In the future, patients may be able to receive a transplant of LPCs to extend the window until a full liver transplant can be done. LPCs may eventually be able to replace a transplant altogether! For now, researchers are focusing on the small-scale, working to understand the biology of LPCs. Understanding what makes these cells grow and differentiate is the first step in developing the therapies of the future.

### What this session covers

This session includes an insight into the developments and progress in stem cell research. It incorporates fun, competitive explorations. Students will be guided by researchers through the laboratory techniques used to thaw, prepare and stain cells used for investigating liver cancer. Students will learn how research procedures and stem cells have provided a more accurate understanding of how to manage disease.



## Curriculum Links

Year 11 Human Biology Curriculum Unit 2: Reproduction and Inheritance		
SU Statements:	SHE Statements:	SIS Statements
Stem cells have the ability to divide by mitosis and differentiate into many different tissues, depending on the level of cell potency.	The use of genetic screening to assess the risk of inherited disorders has implicit ethical considerations	Conduct investigations safely, competently and methodically for the collection of valid and reliable data.



## Terms and Conditions of Booking

### Price

Visits are priced at \$50 per student for a group of 20 or more students. For a group of less than 20 students, a minimum fee of \$1,000 applies. Feel free to contact the education team to organise school sharing opportunities. Cost will be shared proportionately if multiple schools attend a singular day.

For bookings over multiple days, each day will be priced independently.

Once your booking has been confirmed, a \$100 per session booking fee will be issued within 10 business days. For bookings in the next calendar year, this booking fee will be issued in the new year, unless requested otherwise.

### Numbers

At the time of making your booking, provide an estimate of the number of students that will be attending. You will be emailed a reminder two weeks before your visit to confirm student numbers.

It is the responsibility of the organising teacher to confirm final numbers at least one week prior to their booking. A decrease in the number of participants will not be accepted after this point and schools will be invoiced accordingly.

### Photo Consent Policy

The Harry Perkins Institute of Medical Research may use photos taken during the session for publicity purposes unless otherwise agreed upon. The school can opt-out of this arrangement through the booking confirmation form, or through written notice to the education team at any time before or after the excursion.

### Timing

Sessions run from 9:30 am – 2:30 pm. Alternative times must be arranged ahead of the session.



## Cancellation Policy

The Lotterywest BioDiscovery Centre at the Harry Perkins Institute for Medical Research requests one month's notice for the cancellation of a school's booking. If this notice is not given, the school will be charged at 50% of the original cost of the excursion or session.

Cancellations will not be accepted with less than one week's notice.

## Shared Classes

If the total number of students in a shared class drops below 20, all schools attending that day will split the \$1000 minimum fee proportionally to the number students attending.

## Duty of Care

School staff are to always remain with students. Staff at the Harry Perkins of Medical Research do not hold duty of care over school students and are not responsible for personally caring for students. Should there be any attendee with a medical condition, disability, mobility issue or special learning requirements, the school is required to attend with two adults who can accept responsibility for duty of care.



## On the Day

### What your students need to bring

Students must bring their own food and drink. Pens and workbooks are provided.

**Note:** On-site cafés are not accessible for students or staff during their visit.

### PC2 Compliance

All teachers and students must comply by expectations for our Physical Containment Level 2 (PC2) as set by the Institutional Biosafety Committee (C-IBC). This means students and staff must wear fully enclosed shoes, and all hair/fringes tied back and off face. Phones, bags, food or drink (including water) are not permitted in the PC2 lab area.

### Working With Children Check Confirmation

It is a condition of employment at the Lotterywest BioDiscovery Centre that all demonstrator staff have a current Working With Children Card.