



Bring active learning to your lab, classroom, or online course with our easy-to-use software platforms, interactive content, and hardware.

Our customizable education systems provide all the experiments, hardware, software, and lessons you need to teach and create a stimulating learning environment that guides your students to connect theory and practice.

Students can record and analyze their own biological signals, deepening their understanding of scientific concepts - from introductory to advanced studies.

#### A typical education system consists of:

- PowerLab multi-purpose data acquisition hardware
- An expansive range of transducers and accessories suitable for experiments
- Learning software including self-guided exercises with blended learning options

Our pedagogically designed software is proven to increase student engagement and improve pass rates, and is flexible to suit your specific teaching and technological requirements.\* \*Hogarth, K., (Sept. 2017). *Immersive Learning in Nursing Education*.

#### Highlights

- Active learning exercises for deepening student understanding
- Ready-to-teach exercises
- Complete tools for cardiovascular, respiratory, and psychophysiology teaching exercises plus more
- Reliable, easy-to-use systems with research-grade hardware and blended learning software
- Customizable systems with cost-effective kits for specialty areas

#### Creating a custom education system is easy:



Active learning software  
and multimedia content

+



**PowerLab**

High performance data acquisition

+



Education kits and transducers

#### Courses and Content

Anatomy • Animal Physiology • Biology • Chemistry • Exercise Physiology • Human Physiology  
Medicine • Neuroscience • Nursing • Pharmacology • Psychophysiology



# Flexible, Multi-Purpose Education Kits

Choose from a range of education kits to suit your specific teaching requirements and budget. Created with focus and flexibility in mind, our education kits have been designed to align with the latest Lt and Lt LabStation lessons and content, ensuring that you have everything you need for your teaching labs.

All Education Kits can be matched with your choice of software, lessons, and PowerLab. To create your custom teaching solution we highly recommend using our online Lab Builder: [adi.to/labbuilder](https://adi.to/labbuilder)



**PTK30**

## Human Physiology Kit

Suitable for investigating and recording a number of physiology laboratory lessons on human subjects. Capable of performing experiments including but not limited to respiratory rate, grip force, blood pressure, heart sounds, reaction timing, and reflexes requiring mechanical stimulation.

### Recommended:

Lt: Medicine, Nursing  
Lt or Lt LabStation: Human Physiology  
PowerLab 26T or 15T

### Kit contains:

- Respiratory Belt Transducer
- Grip Force Transducer (DIN)
- Cardio Microphone
- Sphygmomanometer with 3 Cuffs
- Push Button Switch
- Dry Earth Strap
- Tendon Hammer



**PTK17**

## Reflex Kit

Suitable for recording reflex actions as a result of mechanical or electrical stimulation. Used for human tendon jerk, reflex, and nerve stimulation experiments.

### Recommended:

Lt or Lt LabStation: Human Physiology  
PowerLab 26T or 15T

### Kit contains:

- Tendon Hammer
- Goniometer
- Recording Bar Electrode
- Stimulating Rod with Cable





PTK39

## Animal Physiology Kit

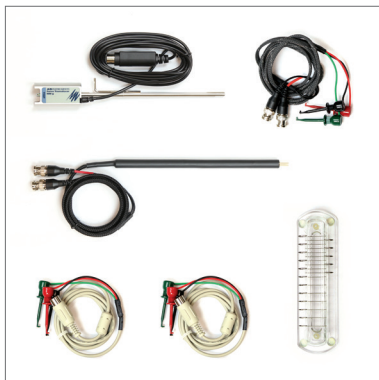
Suitable for conducting experiments using isolated non-human animal nerve, skeletal, smooth, and cardiac muscle preparations. Capable of performing experiments including but not limited to earthworm action potentials, contractile force of smooth, cardiac, and skeletal muscle, stimulation, and drug influences on sciatic-gastrocnemius neuromuscular junction, as well as compound and extracellular actions potentials of insect sensory and ventral nerves.

### Recommended:

Lt or Lt LabStation: Animal Physiology PowerLab 26T or 15T

### Kit contains:

- Teaching Force Transducers: (0-50g), (0-500g)
- Animal Nerve Stimulating Electrode
- Nerve Chamber (no cables)
- Shielded Lead Wires (5 Micro-Hooks, 25cm)
- Stimulator Cable (BNC to Micro-Hooks, 1.5m)
- Differential Pod Input Cable (DIN to Micro-Hooks, 1.5m)
- Muscle Holder
- Manipulator and Stand



PTK11

## Nerve and Muscle Kit

Suitable for conducting experiments using isolated animal nerve, skeletal, smooth and cardiac muscle preparations. Capable of performing experiments including but not limited to earthworm action potentials, and contractile force of smooth and cardiac muscle.

### Recommended:

Lt or Lt LabStation: Animal Physiology PowerLab 26T or 15T

### Kit contains:

- Teaching Force Transducer (0-500g)
- Animal Nerve Stimulating Electrode
- Nerve Chamber
- Stimulator Cable
- Differential Pod Input Cables (2)



PTK38 (China, India, Southeast Asia only)

## Animal Teaching Kit

Suitable for conducting a variety of non-human animal physiology related experiments. Capable of performing experiments including but not limited to muscle contractile force, blood pressure, spirometry, and extracellular neuronal signals. The *Animal Physiology Kit* replaces this kit in other regions.

### Recommended:

Lt or Lt LabStation: Animal Physiology PowerLab 26T or 15T

### Kit contains:

- Bridge Pod
- Spirometer Pod
- Headstage EX
- BP Transducer/Cable Kit
- Teaching Force Transducer (0-50g)
- Respiratory Flow Head (10L)
- Stimulator Cable (BNC to Alligator clip)
- Stimulator Cable (4mm shrouded to Alligator clip, 2m)
- Shielded Lead Wires (5 Alligator Clip, 1m)
- Differential Pod Input Cable (2)
- Din to Audio Adapter Cable



## PTK19

## Nerve and Muscle Kit II

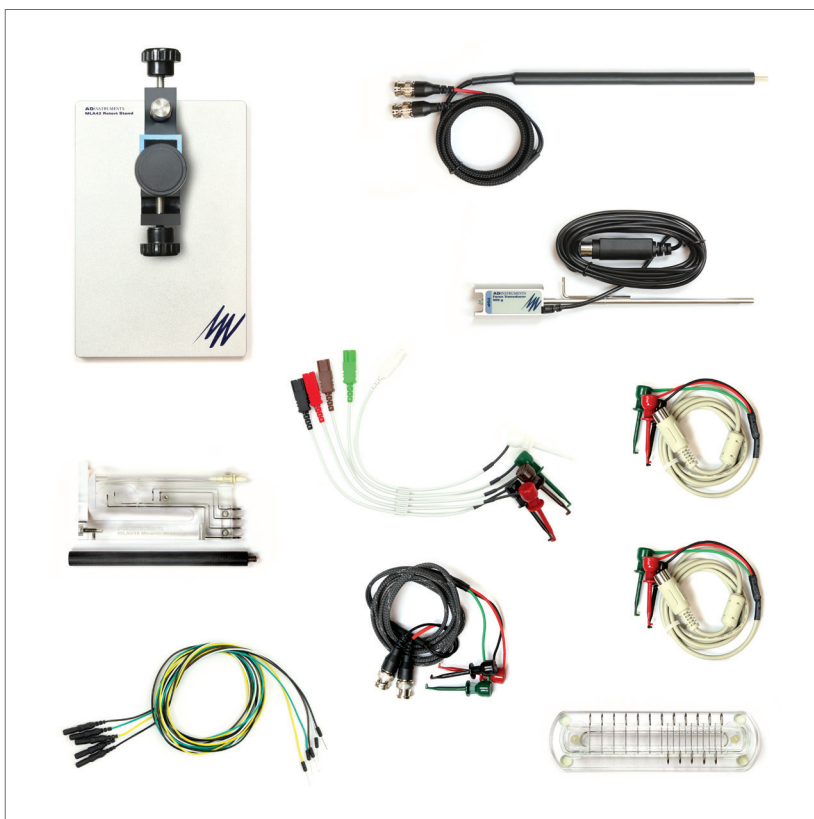
Suitable for conducting experiments using isolated non-human animal nerve, skeletal, smooth and cardiac muscle preparations. Capable of performing experiments including but not limited to earthworm action potentials, contractile force of smooth, cardiac, and skeletal muscle, stimulation and drug influences on sciatic-gastrocnemius neuromuscular junction, as well as compound and extracellular actions potentials of insect sensory and ventral nerves.

**Recommended:**

Lt or Lt LabStation: Animal Physiology  
PowerLab 26T or 15T

**Kit contains:**

- Teaching Force Transducer (0-500g)
- Animal Nerve Stimulating Electrode
- Nerve Chamber
- Stimulator Cable
- Differential Pod Input Cables (2)
- Shielded Lead Wires (Alligator)
- Muscle Holder
- Manipulator with Stand



## PTK29

## Nerve and Muscle Kit III

Suitable for conducting experiments using isolated non-human animal nerve, skeletal, smooth and cardiac muscle preparations. Capable of performing experiments including but not limited to earthworm action potentials, contractile force of smooth, cardiac, and skeletal muscle, stimulation and drug influences on sciatic-gastrocnemius neuromuscular junction, as well as compound and extracellular actions potentials of insect sensory and ventral nerves.

**Recommended:**

Lt or Lt LabStation: Animal Physiology  
PowerLab 26T or 15T

**Kit contains:**

- Teaching Force Transducer (0-500g)
- Animal Nerve Stimulating Electrode
- Nerve Chamber
- Stimulator Cable
- Differential Pod Input Cables (2)
- Shielded Lead Wires (5 Micro-Hooks, 25cm)
- Needle Electrodes (5) 29 gauge
- Muscle Holder
- Manipulator with Stand



## MLA242

## Exercise Breathing Consumables

Suitable for collecting expired air from human subjects. One consumable kit per PowerLab setup is recommended.

**Recommended:**

Lt or Lt LabStation: Human Physiology  
PowerLab 26T or 15T

**Kit contains:**

- Flow Head Adapter (20)
- Modified Tubing Adapter (20)
- One-way valve mouthpieces (20)
- Douglas Bags (20)
- End cap (20)





#### PTK32

### Education Psychophysiology Kit

Suitable for measuring Psychophysiological responses in humans. Capable of performing experiments including but not limited to EEG, blood pressure, electrodermal response, skin temperature (0°C to 50°C), ventilation rate, and directional specific light intensity.

#### Recommended:

Lt LabStation: Exercise Physiology  
PowerLab 26T

#### Kit contains:

- EEG Flat Electrodes
- GSR Amp
- Finger Electrodes
- Thermistor Pod
- Skin Temperature Probe (2m)
- Respiratory Belt Transducer
- Light Meter and Probe
- Sphygmomanometer



#### PTK12

### Electrodermal Activity Kit

Suitable for galvanic skin response and skin temperature recordings in human subjects. Capable of performing psychophysiology-related experiments but not limited to the Stroop effect, biofeedback, electrodermal response, and classical conditioning.

#### Recommended:

Lt or Lt LabStation: Human Physiology  
PowerLab 26T

#### Kit contains:

- GSR Amp
- Finger Electrodes
- Thermistor Pod
- Skin Temperature Probe (2m)



#### PTK15

### EOG Kit

Suitable for recording horizontal and vertical eye movement and position. Ideal for conducting experiments investigating slow-tracking, saccades and more.

#### Recommended:

Lt or Lt LabStation: Human Physiology  
PowerLab 26T or 15T

#### Kit contains:

- EOG Pod
- Shielded Lead Wires
- Disposable ECG Electrodes (100)



#### PTK31

### Skin Temperature Kit

Suitable for recording continuous skin temperature on human subjects for biological measurements of temperature in the range of 0°C to 50°C.

#### Recommended:

Lt: Medicine, Nursing  
Lt or Lt LabStation: Human Physiology  
PowerLab 26T or 15T

#### Kit contains:

- Thermistor Pod
- Skin Temperature Probe



#### PTK14

### Exercise Physiology Kit

Suitable for conducting respiratory gas analysis and metabolic measurements in student laboratories investigating the effects of exercise. Capable of recording respiratory variables and determining metabolic rate of human subjects.

#### Recommended:

Lt or Lt LabStation: Exercise Physiology  
PowerLab 26T

#### Kit contains:

- Gas Analyzer
- Respiratory Flow Head
- Spirometer
- Face Mask Kit (Small and Medium mask)
- Flow Head Adapter
- Tubing Adapter
- Breathing Tube
- Gas Mixing Chamber
- Desiccant Cartridge
- Metabolic Module (Win & Mac)



#### PTK10

### Human Respiratory Kit

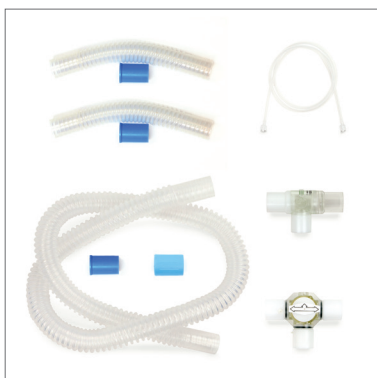
Suitable for performing respiratory experiments on human subjects. Capable of recording inhalation and exhalation parameters such as minute ventilation and tidal volume, as well as PIF, PEF, FVC and FEV1.

#### Recommended:

Lt: Medicine, Nursing  
Lt or Lt LabStation: Human Physiology  
PowerLab 26T or 15T

#### Kit contains:

- Spirometer Pod
- Respiratory Flow Head
- Disposable Respiratory Kit (5)
- Clean Bore Tubing
- Flow Head Adapter



#### PTK20

### Exercise Breathing Kit

Suitable for collecting expired air from the Exercise Physiology Experiments. Capable of collecting expired air for recording respiratory variables and determining metabolic rate.

#### Recommended:

Lt or Lt LabStation: Human Physiology, Exercise Physiology  
PowerLab 26T or 15T

#### Kit contains:

- K-valve (low resistance, non-rebreathing, 2-way)
- 3-way directional manual stopcock
- Tubing to connect Douglas bag
- Tubing Adapter
- Flow Head Adapter
- Clean-bore Tubing with tubing adapter (2)
- Clean-bore Tubing with tubing adapter



#### PTK25

### Wireless Heart Rate Kit

Suitable as an economical choice for teaching applications that require wireless measurement of heart rate from moving subjects. Can be used alone or in conjunction with other equipment to synchronize with recordings such as ECG, HRV and spirometry.

#### Recommended:

Lt or Lt LabStation: Human Physiology, Exercise Physiology  
PowerLab 26T or 15T

#### Kit contains:

- Polar Receiver Interface Cable (3m)
- Polar Transmitter w/Chest Straps





#### PTK23-D

### Pharmacology Kit II (Dual Heating)

Suitable for conducting isolated tissue and pharmacological experiments. Ideal for passive and stimulated isolated tissue preparations, including drug titrations, drug metabolism and kinetics, dose responses, washout experiments, muscle force and stress measurements.

#### Recommended:

Lt or Lt LabStation: Pharmacology  
PowerLab 26T or 15T

#### Kit contains:

- Radnoti Student Teaching Bath System:
  - 25 mL Single Tissue Organ Bath Chamber
  - Lab Stand Support Rod and Base
  - Student Perfusate and Water Beakers
  - Glass tissue hook (for tissue strips)
  - Glass "L" Lower supports (for vessels <20mm)
  - Triangle-Shaped Upper Supports (for vessels <20mm)
- STB Hot Plate Universal
- Circulation Pump
- Transducer Positioner
- Teaching Force Transducer (0 - 50g)



#### PTK28-D

### Isolated Heart Kit (Dual Heating)

Suitable for measuring the isometric force from a small, isolated perfused (Langendorff) heart. Ideal for conducting pharmacological investigations using the Langendorff technique on an isolated small animal heart (mice, rat, guinea pig or rabbit).

#### Recommended:

Lt or Lt LabStation: Pharmacology  
PowerLab 26T or 15T

#### Kit contains:

- Radnoti Student Heart System:
  - Student Heart Chamber (100mL)
  - Aortic Cannula Tip (22 Gauge) for mouse hearts
  - Aortic Cannula Tip (14 Gauge) for rat/guinea pig hearts
  - Aortic Cannula Tip (Glass, 3.0mm) for rabbit hearts
  - Heating Coil (10mL) with Bubble Trap (5mL)
  - Dual heating temperature maintenance system
- Teaching Force Transducer (0-50g)
- Manipulator



#### PTK13

### Pharmacology Kit

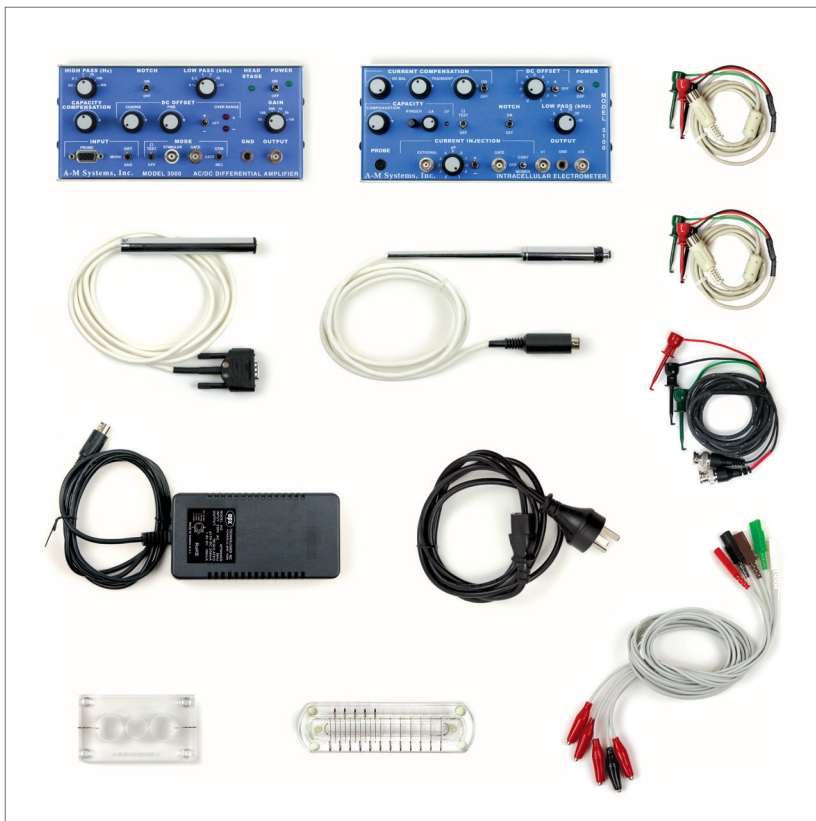
Suitable for conducting isolated tissue and pharmacological experiments. Ideal for dose-response pharmacological investigations on isolated tissue.

#### Recommended:

Lt or Lt LabStation: Pharmacology  
PowerLab 26T or 15T

#### Kit contains:

- Single Chamber Organ Bath (25mL)
- Bridge Pod
- Teaching Force Transducer (10mg-25g)



PTK34

## Neuroscience Kit

Suitable for conducting extracellular or intracellular recordings in neuroscience teaching laboratories. Capable of performing experiments including but not limited to intracellular and extracellular muscle and nerve recordings, stimulation evoked synaptic responses (EPSP), and electroretinograms of *Drosophila*, snail, and crayfish models.

### Recommended:

Lt or Lt LabStation: Neuroscience  
PowerLab 26T or 15T

### Kit contains:

- AC/DC Differential Amplifier (with headstage)
- Intracellular amplifier
- Nerve Chamber
- Alga Chamber

A PowerLab and LabChart software is required (additional Modules suggested).

### Upgrade options include:

- Audio Monitor
- Analog Stimulus Isolator.



PTK18

## Biochemistry Kit

Suitable for investigating basic principles of animal and plant biology and biochemistry. Ideal for experiments related to buffering, ion dissociation, titration, photosynthesis, and cellular respiration.

### Recommended:

Lt or Lt LabStation: Biochemistry  
PowerLab 26T or 15T

### Kit contains:

- pH Pod
- pH Electrode
- Galvanic Oxygen Electrode (SMRT)
- T-type Pod
- General Purpose T-type Thermocouple
- Reflective Drop Counter



MLA415

## Biopotential Accessories Kit I

Suitable for preparing skin for biopotential measurements such as EEG, EOG, EMG and ECG. Provides consumable products for biopotential and nerve recordings on human subjects.

### Recommended:

Lt: Medicine, Nursing  
Lt or Lt LabStation: Human Physiology  
PowerLab 26T or 15T

### Kit contains:

- Disposable ECG Electrodes (1000)
- Electrode Cream (3)
- Abrasive Gel (3)
- Alcohol Swabs (1000)
- Electrode Paste (3)



MLA416

## Biopotential Accessories Kit II

Suitable for preparing skin for biopotential measurements such as EEG, EOG, EMG and ECG. Provides consumable products for biopotential and nerve recordings on human subjects.

### Recommended:

Lt: Medicine, Nursing  
Lt or Lt LabStation: Human Physiology  
PowerLab 26T or 15T

### Kit contains:

- Disposable ECG Electrodes (1000)
- Electrode Paste (3)
- Alcohol Swabs (1000)
- Abrasive Gel (3)



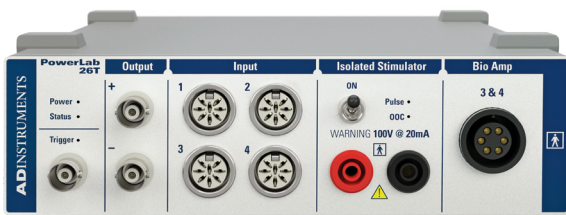


# PowerLab

High performance  
data acquisition  
for your life science  
classroom experiments

PowerLab is the ideal data acquisition (DAQ) solution for life science classroom experiments. PowerLab supports engaging, hands-on learning with simple set-up and good quality data.

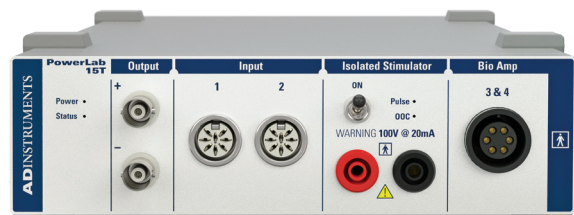
Simple to set up, PowerLab connects directly to Windows and Apple computers via USB port and is designed to handle repeated and heavy use by students while maintaining data accuracy and reliability. The T Series PowerLab is an economically priced high quality DAQ unit with built-in, fully isolated, two-channel bio amplifier, isolated stimulator, separate non-isolated analog inputs, and a differential-mode analog output.



PL26T04

## PowerLab 26T

Integrated data recording featuring a dual Bio Amp, an isolated stimulator, trigger input, 4 analog inputs, 8 digital inputs and 8 digital outputs. Independent ADCs for each channel to keep data perfectly in sync.



PL15T02

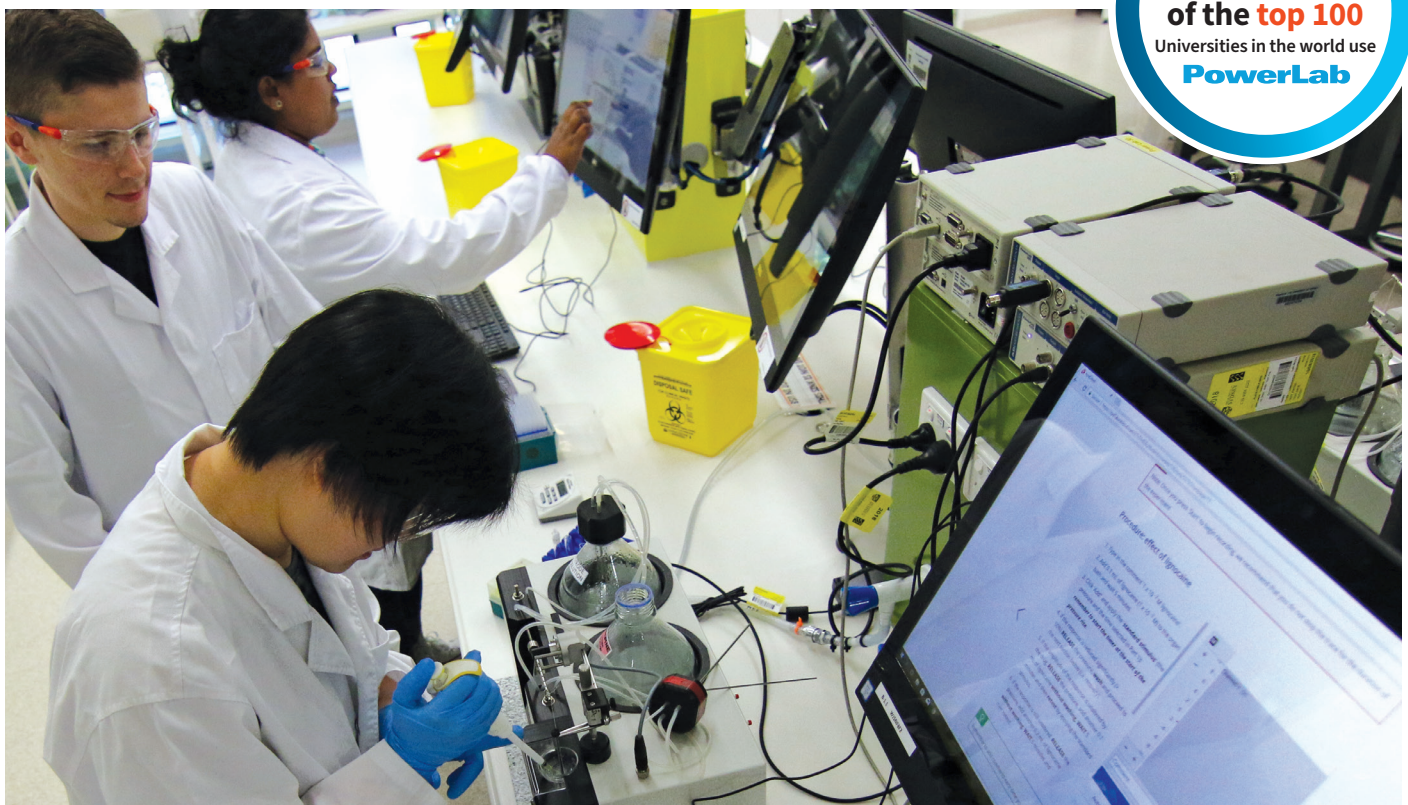
## PowerLab 15T

Entry level integrated data recording featuring a dual Bio Amp, an isolated stimulator and 2 analog inputs. Independent ADCs for each channel to keep data perfectly in sync.

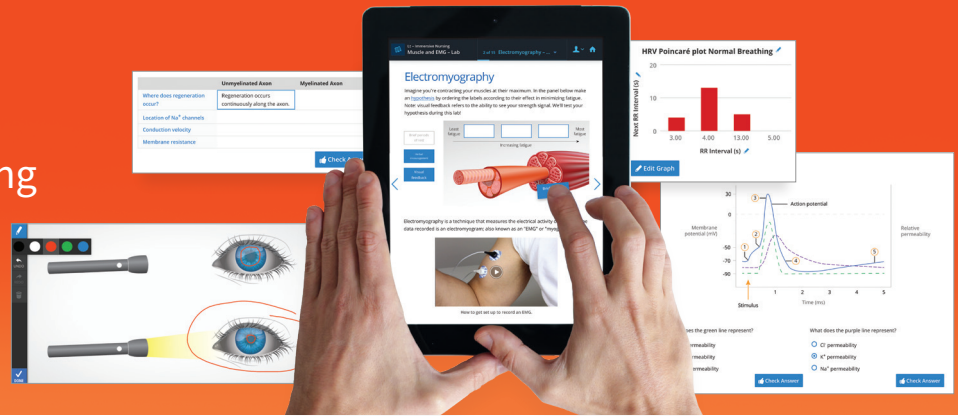


*"PowerLab simply WORKS. It never crashes or has to be rebooted, and is 100% reliable."*

- Dr. Giovanni Casotti, Professor of Biology, West Chester University, USA



Lt is a cloud-based learning platform that bridges the gap between theory and practice



Do you run labs or teach health professional courses?

Lt may be exactly what's missing from your current educational framework:

- Content** Lt has over **500** fully editable nursing, medicine and physiology lessons.
- Software** Create, customize and deliver your own interactive content that students can access anywhere.
- Hardware** Students can record and analyze physiological signals in Lt using PowerLab, to reinforce theory through experimentation.

Building media-rich lessons is simple. Drag-and-drop a range of content types to create interactive exercises, including multiple choice questions, short form written answers and image annotation.

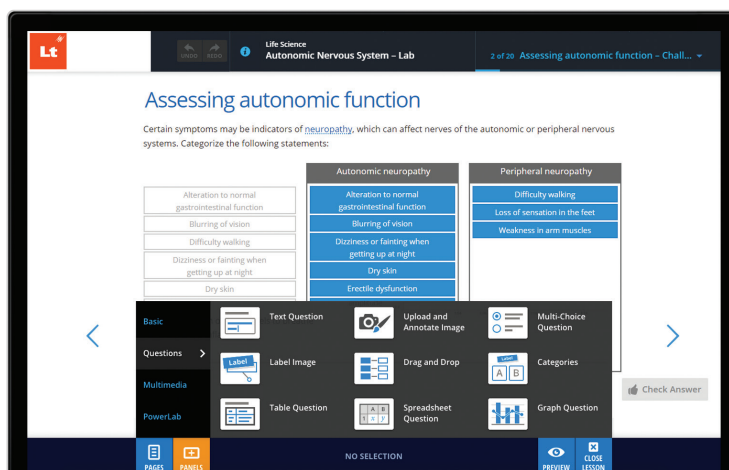
-  Improved efficiency
-  Increased student engagement
-  Improved results in theory and clinical practice
-  Increased student pass rates

#### Courses and content:

- Anatomy
- Animal Physiology
- Biology
- Chemistry
- Exercise Physiology
- Human Physiology
- Medicine
- Neuroscience
- Nursing
- Pharmacology
- Psychophysiology

*"Lt contains so much content that I can draw from and use immediately, like background information, additional experiments, pre-made modules. I can just press a button and use them - it's great!"*

- **Dr Marvin O'Neal**,  
Undergraduate Biology  
Professor, Director of  
Introductory Laboratories,  
Stony Brook University, USA



Share content and workload with your fellow educators and teaching assistants. Set varying levels of access to allow others to review content, add content, or publish revisions online. Lt's cloud-based platform means students can learn on almost any device that connects to the internet. Whether they use iOS or android, tablet, mobile or laptop, lessons will be resized and optimized to look great.

**We've matched professionally developed lessons with the right lab equipment to provide a true-to-life, practical learning experience for your students.**

Our lab and healthcare collections include ready to teach lessons which can include a combination of a tutorial, a pre-lab prep, and a lab. Each media-rich lesson is designed to maximize engagement and suit diverse learning styles, with a strong focus on student outcomes. Use our lessons off the shelf or tailor any lesson to suit your curriculum and your teaching preferences. Lessons can be grouped, and ordered per your course needs.



**90 DAY FREE TRIAL**

Sign up today for a free  
90 day trial at [adi.to/lt](https://adi.to/lt)





Planning labs and lectures  
is easy with over  
**500** interactive  
and fully customizable  
life science lessons

*"It has enabled us to  
achieve better academic  
standards and more  
satisfied students."*

- **Dr Michael Morris**,  
Senior Lecturer: Physiology,  
University of Sydney, Australia



## Patient Case Library

Educators teaching in pre-health or health professional courses gain instant access to our Patient Case Library. Prepare your students for clinical practice with real patient cases for an authentic learning experience.

The Library consists of **31 patient packs**, each containing resources based around **a real patient's experience** that can be easily copied to lessons you are creating without the need or cost of creating your own.

### What's in a Patient Pack?

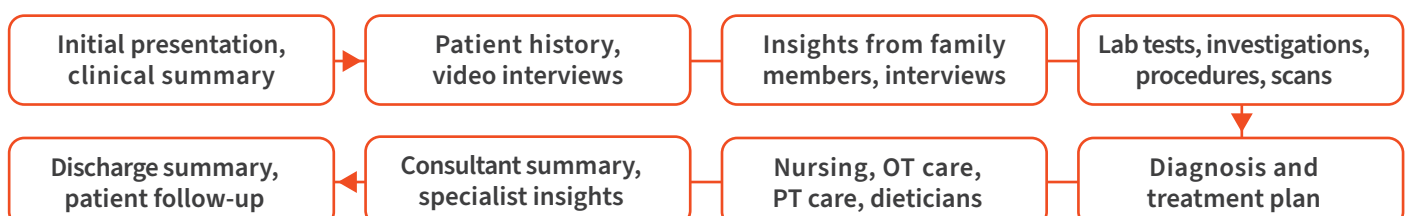
Each patient's medical story is different, so each case has different content to use in your teaching. A typical patient pack can include:

- A short clinical summary (similar to a medical letter) and a chronological clinical summary
- Video interviews with patients and relatives as well as health care professionals (Consultant, Nurse, OT, PT, Specialized Technicians and Dieticians). Each video includes subtitles and a captioned summary
- Lab test results: SI and non-SI units
- Video of clinical examinations and medical procedures, including subtitles and captions
- Specialized investigations such as chest X-rays, ECGs, MRI, and CT scans
- A discharge summary
- Suggested teaching topics

### Combine different patient resources and incorporate your own content to:

- Teach pathophysiology
- Alternate teaching cases across years
- Illustrate a scientific concept, such as how to read an MRI
- Compare different presenting symptoms for the same condition
- Follow a patient's story through your curriculum, building the case's complexity, or examining different aspects of a patient's condition
- Provide supplementary cases for students to expand and consolidate their learning

### Typical patient journey



Lt LabStation is a laboratory-based learning platform that allows you to run labs without headaches

Do you run life science labs?

Lt LabStation may be exactly what's missing from your current educational framework:

Developed using the same technology as Lt, our online learning solution, Lt LabStation gives you and your students a modern lab experience in a package designed to be beautiful, effortlessly capable, and adaptable to your teaching style.

Lt LabStation gives you access to our media-rich life science education content with real time data recording and analysis when paired with a PowerLab.

Lt LabStation gives you the flexibility to incorporate our library of professionally developed content and experiments to suit your laboratory course. Or create, edit and access your own lessons online from anywhere with a web browser, then export your lessons so your students can work offline in the lab.

### Courses and content:

- Human Physiology
- Psychophysiology
- Exercise Physiology
- Animal Physiology
- Biology
- Neuroscience
- Pharmacology

*"Lt LabStation is great - our students don't need to make a profile or sign in, and labs aren't dependent on an internet connection."*

- **Charles Crawford**, Teaching Assistant,  
Human Performance Laboratory,  
The University of Texas at Austin, USA



Create and edit lessons online anywhere



Over 150 ready to teach high quality lab lessons



Real time data recording and analysis



Improved efficiency in the lab



Increased student engagement and success

### 30-DAY FREE TRIAL

Sign up today for a free trial to experience Lt LabStation:  
[adstruments.com/try-ltlabstation](http://adstruments.com/try-ltlabstation)



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