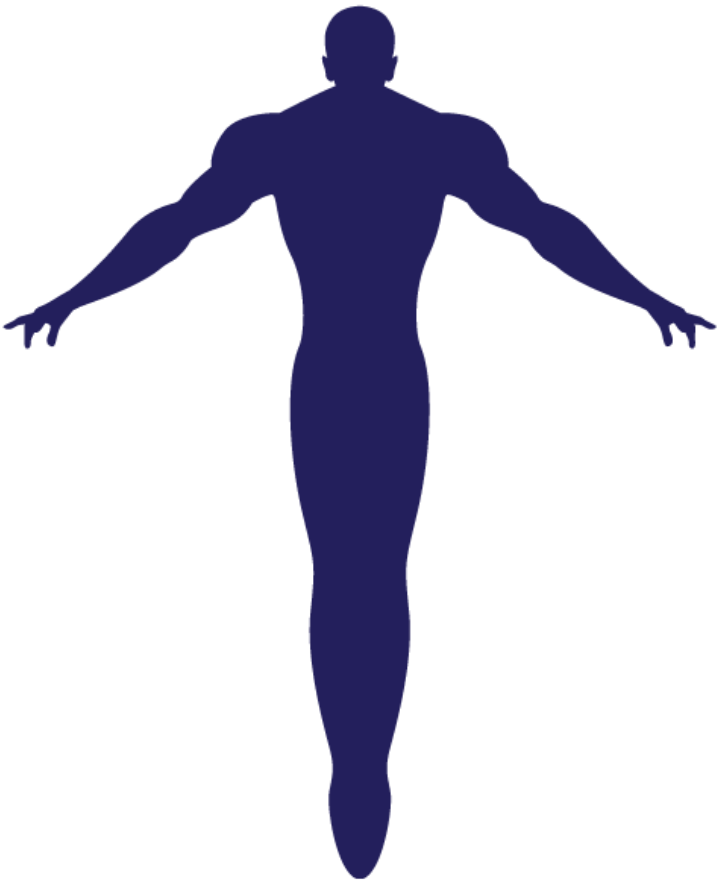
BioAtlas

Manual User



MEDICAL HARBOUR

by AFYA DIGITAL HEALTH

1. Introduction

The BioAtlas is a platform for anatomical teaching and study, where students can interact with the human body in a virtual environment through two modules available in: Topographic Anatomy, Systemic Anatomy, Complete Anatomy, Physiology, Embryology, Cytology, Membrane Transport, Histology, Radiology and Medical Simulator.

A solution that adapts to various technological tools of the market that allows us to navigate through 3D Interactive Digital Content using any Web browser or Mobile App, Android or iOS.

1.1 Description

Our modules facilitate clinical training with high quality standards and guarantee that the teaching is always achieved, without counting on the great interactivity of the user with a platform full of animation in 2D and 3D. The integration with real cases provides greater wealth in clinical training and knowledge. The details and the possibilities of visualizing the structures and rich contents will attract more attention, leading to more effective educational results. Thousands of structures are meticulously segmented to provide the most accurate real 3D anatomy in any module display.

1.2 Indication of Use

The BioAtlas platform is recommended for micro and macro anatomical studies, being indicated for various sectors, such as: Graduation in Health, Technical Courses, Medical Education, Hospitals, Pharmacies and Publishers. Furthermore, the platform is indicated for the visualization of anatomical structures and physiological interaction with animations and explanatory content for general health students.

2. Platform

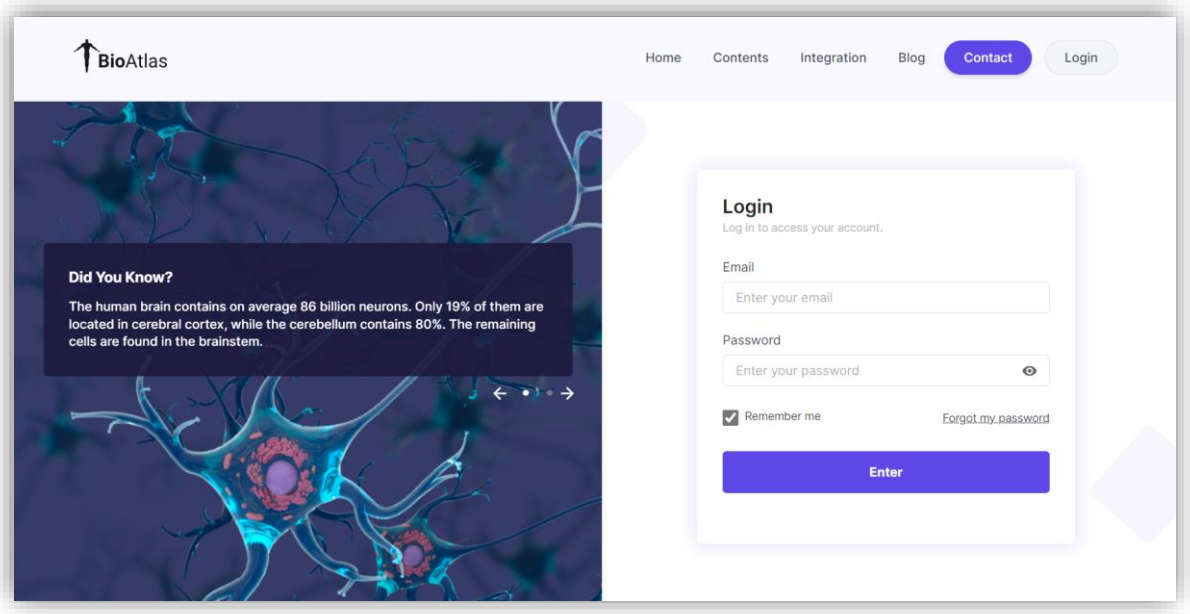
The platform can be accessed by any web browser without the need for plugins or extensions and does not require installation on Desktop, available via mobile in the application on the Android or IOS operating systems, on the Play Store and App Store, respectively providing freedom of use and access in any place only using the internet.

2.1 Access

The platform does not require installation on your computer, being likewise, it can also be accessed through any web browser by Link: (https://bioatlas.medicalharbour.com/), Android or IOS, on the Play Store and App Store respectively for realization of download, with the help of the internet.

2.2 Login

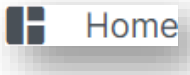
The login page directs the user to insert the email and the login password without entering the platform. Information previously provided by support time where the user can change the password after the first access, by clicking on the “Remember-me” button.



2.3 Profile

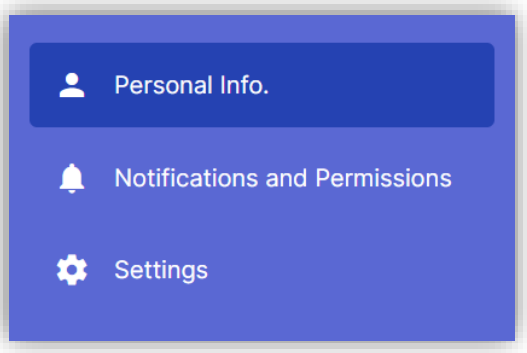
To access the platform, the right upper edge of your fabric will have.

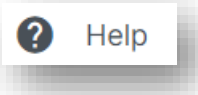
an icon  circle a (avatar). After selecting, the same expands and shows us options, such as: Home, Profile, Help and Sair.



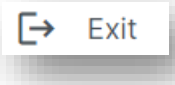
The Home button returns to the initial screen of the BioAtlas.

Selecting the Profile area, the user will be directed to a table with configuration options, mentioned in the image below:





This option directs the user to the customer support and support site (https://medicalharbour.zendesk.com/hc/pt-br), where or Someone opens a request for help at our support time.



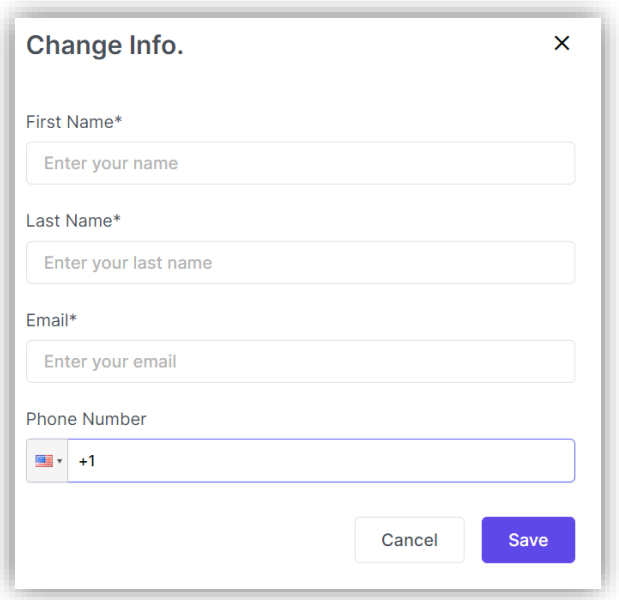
The Sair button will log off the BioAtlas user, returning to the Login area.

2.3.1 Data Change

Personal data:

In given people you will have access to the data of your BioAtlas profile, for example: Name, E-mail, Telephone and Senha. In this area it is possible to change the Profile data according to the button on the image above in the upper right corner (Change data) and in the lower right corner it is possible to change the path of access on the button (Edit).

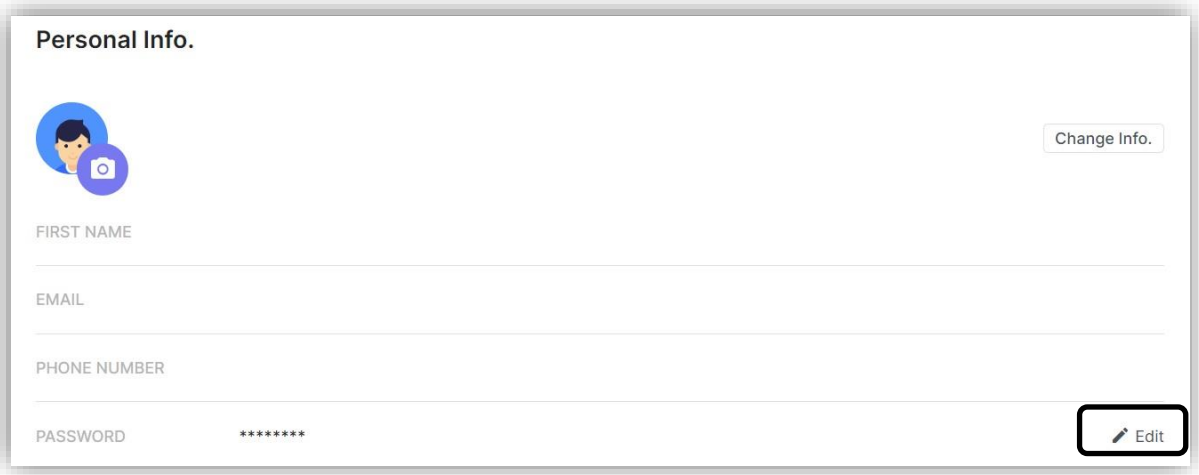
The button will open a data editing menu as below:

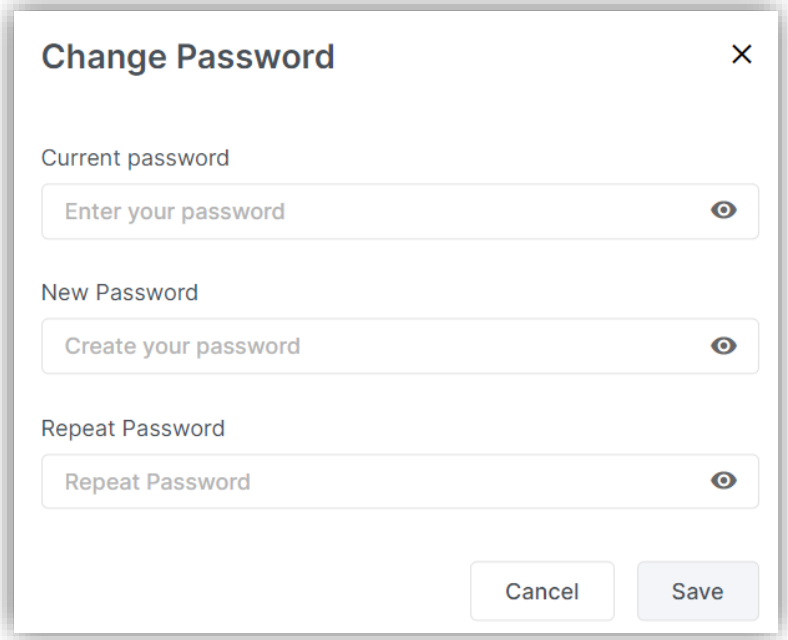


After changing the desired data, it is necessary to click on save, to confirm the changes.

2.3.2 Password change:

In the personal data area, a sign editing button will be displayed, as shown in the image above, after selecting the option, a pop-up will appear with the option to change your sign.

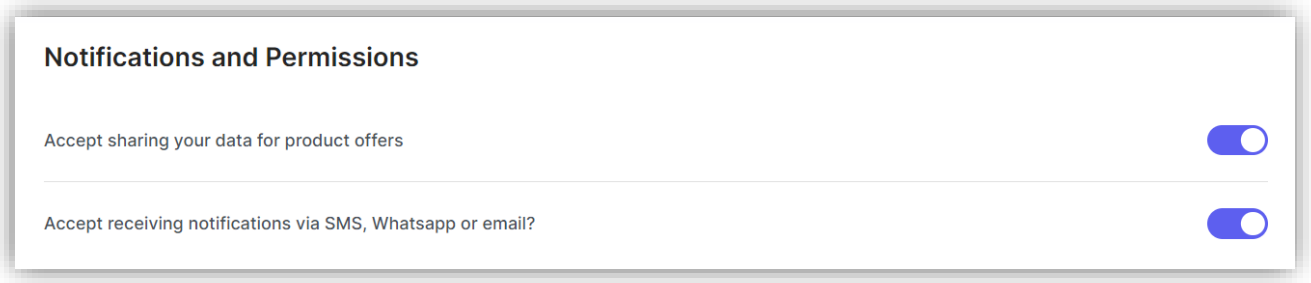




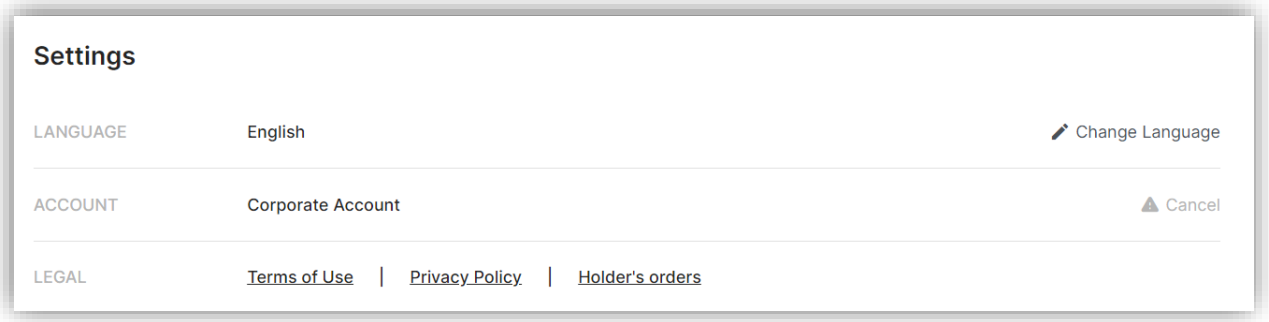
To change the access password to the platform, it is necessary to enter the current password and enter a new password, repeating the corresponding fields below, as above and confirming the selection on the (Save) button.

2.3.3 Notifications and Permissions:

By selecting this option, it is possible to enable and disable data sharing for product offerings or receiving notifications via SMS, Whatsapp or e-mail.



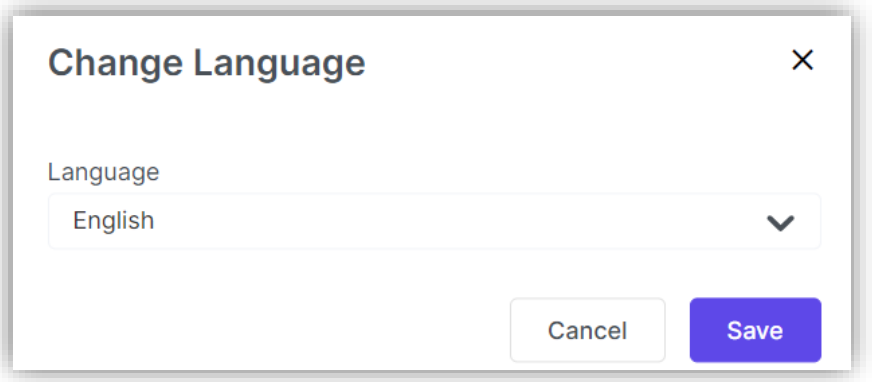
2.3.4 Settings:



In the configuration area we have the option to change the language and account information.

2.3.5 Languages

Located in the configuration area on the profile page, it is possible to change the language of the platform.



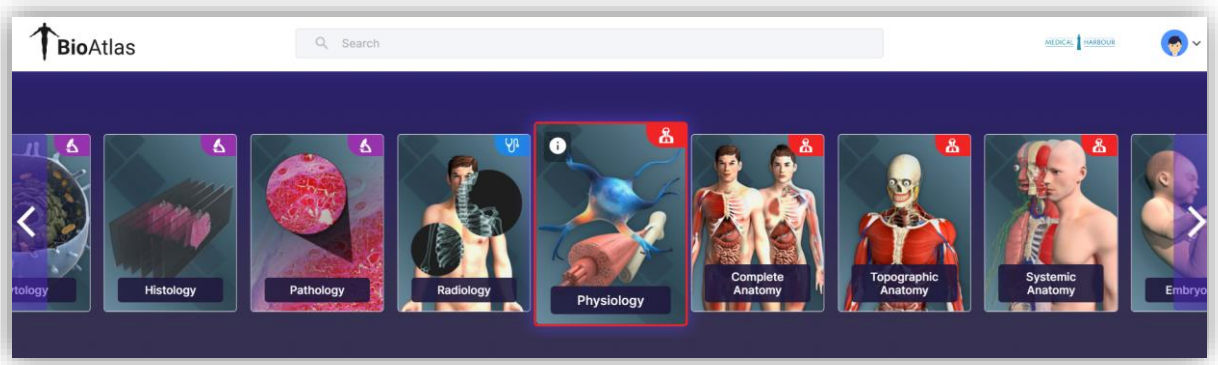
The BioAtlas is available in three languages: Portuguese, English and Spanish, to change it, just select the desired language and click on the save button.

Portuguese: Terminologia Anatômica Internacional da SBA:Society Brazilian Anatomy.

Inglês: TAP – Panamerican Anatomical Terminology.

English: International Anatomical Terminology da FIPAT: The Federative International Program for Anatomical Terminology

3. Main Screen (Home)



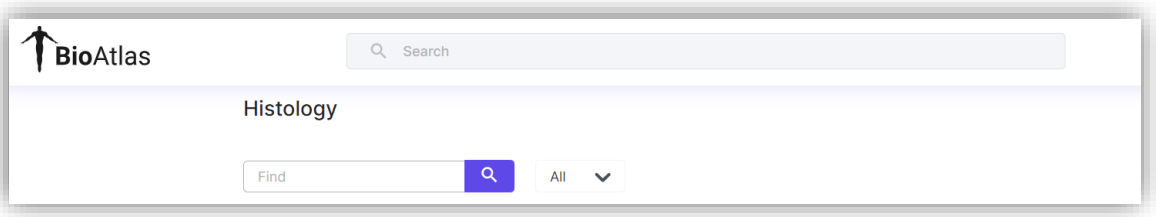
At home of the BioAtlas or user will have access to all the content provided by the platform through “Cards” - which are illustrative figures that facilitate the identification of two modules, duly named intuitively giving you a preview of the content that can be accessed to follow.

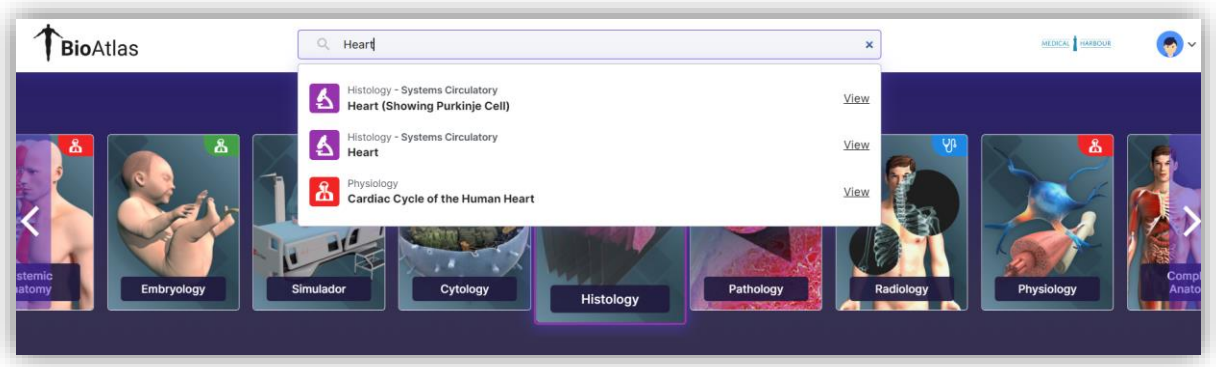
The cards are distributed in the contents of Topographic Anatomy, Systemic Anatomy, Complete Anatomy, Physiology, Embryology, Cytology, Histology, Pathology, Radiology and Simulation. In the cards there is a brief story on the subject in which you click on the exclamation icon on the upper left edge of the card. All the cards have their own descriptions on the icon .

All the structures present in the Cards present the icon on the lower edge, which, when clicked, opens the description of the selected windows and on the upper edge directly with the mouse or the same option to open the link in a new one without dating the main one. Entering, inside the selected card, on the upper left edge, clicking on the icon with 3 points (menu), it expands and displays the names of the tools completely or, using the mouse, it displays only or no names of the tools.

3.1 Search Field

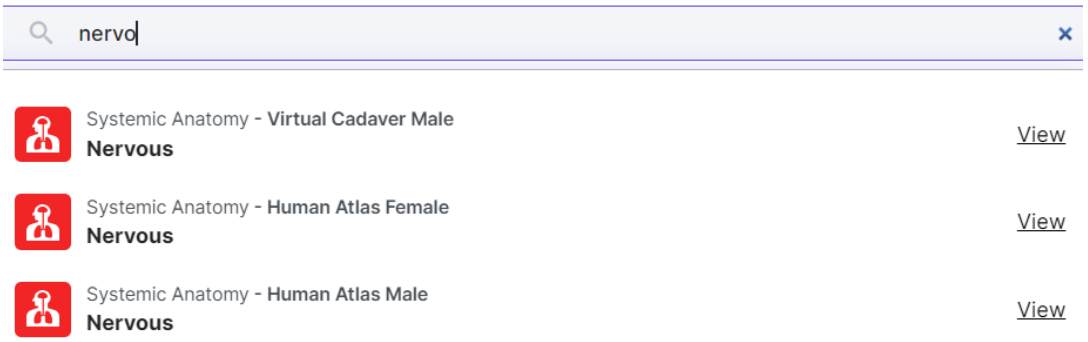
On the main page of the BioAtlas, the user will be faced with two different magnifying glasses. Both have the functionality of the window; it is not intuitive for the user to quickly write and search the content that they want to see.





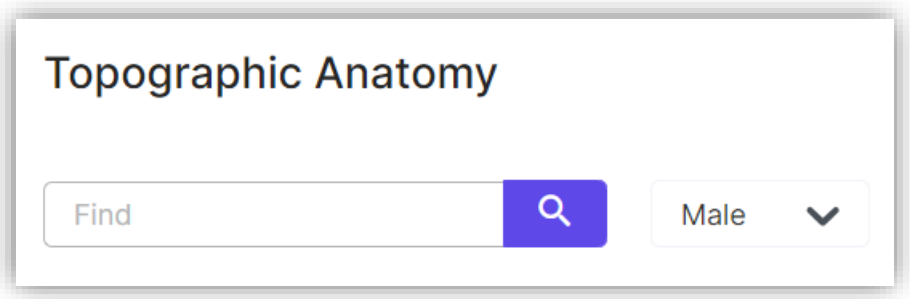
One of them is centralized on the top of the page and can be used for the purpose of searching for regions and anatomical structures and other contents contained in our entire BioAtlas system, being a general search for the entire platform.

Example:



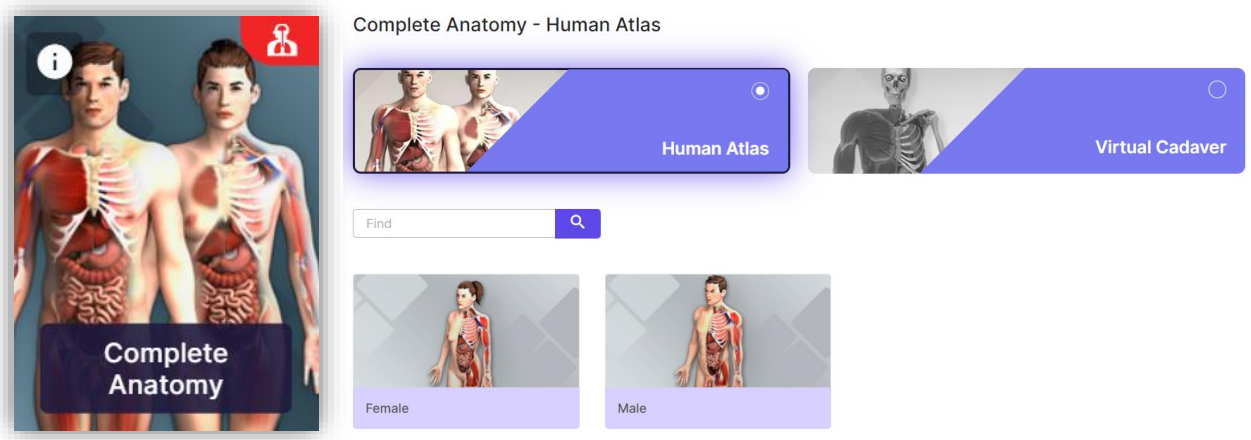
A Second magnifying glass will appear when a desired module is selected. There will always be a search magnifying glass within two modules with the purpose of quickly searching for subsequent content within the main module in which the user is exploring. As for example: the user selects the Histology module, consequently all the contents of the histological slides of the module will be displayed and by typing in the field of the magnifying glass, the type of slide and desired structure will be located quickly.

4. Module Specifications



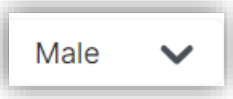
4.1 Complete Anatomy:

The Human Atlas contains two 3D models, one male and one female with about 2400 objects of all the anatomical systems of the human body cataloged and with an advanced organization system. The atlas, which was developed with the highest quality of textures, guarantees an impressive set of data that can be used as a reference during a case discussion, a surgical plan, an anatomy y classroom.



4.1.1 Human Atlas

This content category represents a 3D model of the male and female human body organized according to the Systemic and Complete Anatomy. For each anatomical object it is possible to visualize its name in Portuguese, English and Spanish according to the International Anatomical Terminologies. Furthermore, descriptive supporting texts are also available, in the three languages, of all the anatomical systems.



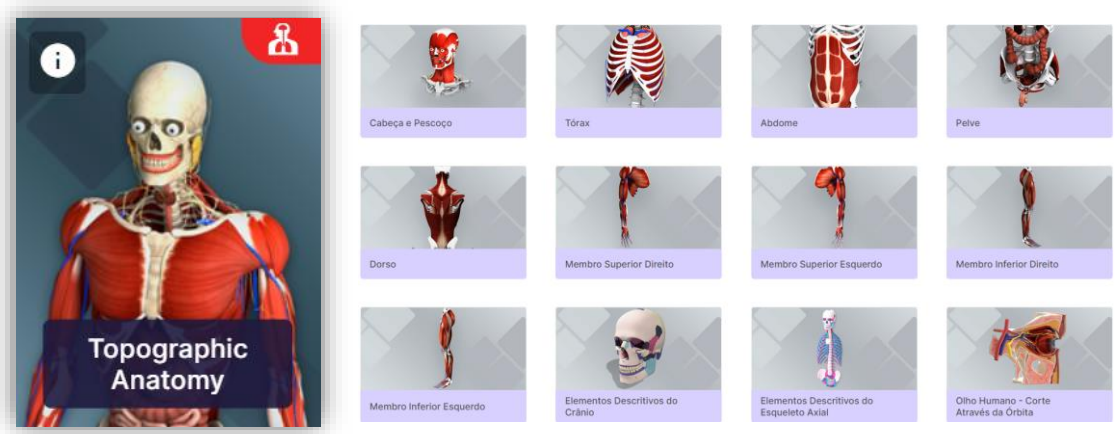
With this button we can change to the Male or Female human atlas.

4.1.2 Virtual Cadaver

This category of content presents a 3D model with 261 objects of a Virtual Cadaver developed with about 1800 real images of the human body (Visible Human project). These images are segmented into fabricated objects, reconstructed volumetrically, and worked to maintain the fairest possible proportions and textures of a corpse of a human body. Male: Human body with more than 250 objects, Integumentary system, Muscular system, Skeletal system, Articular system, Lymphatic system, Digestive system, Respiratory system, Circulatory system, Urogenital system.

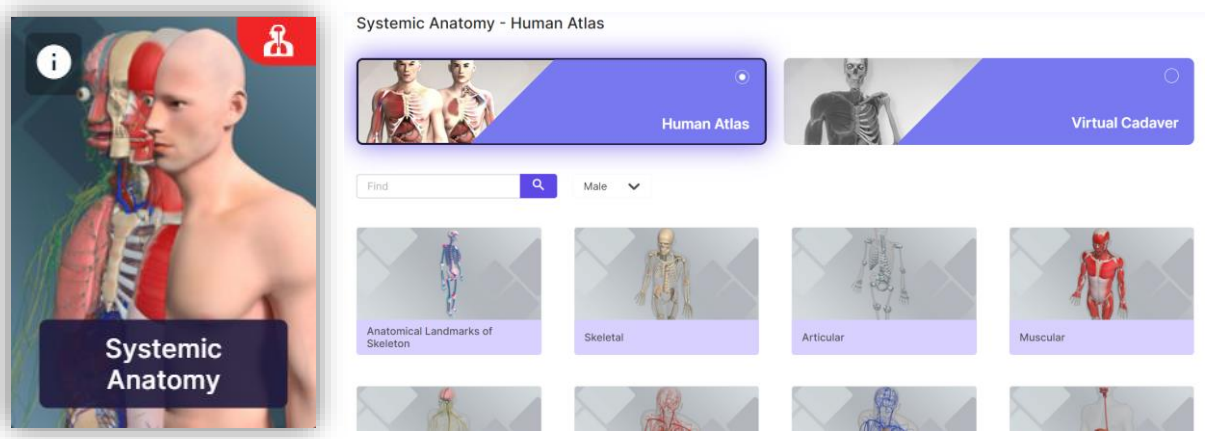
4.2 Topographic Anatomy

This module presents anatomical regions divided according to the topography and specific regions of study.



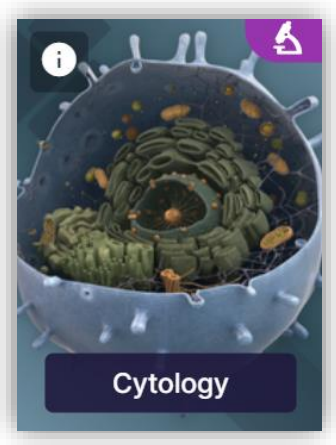
4.3 Systemic Anatomy

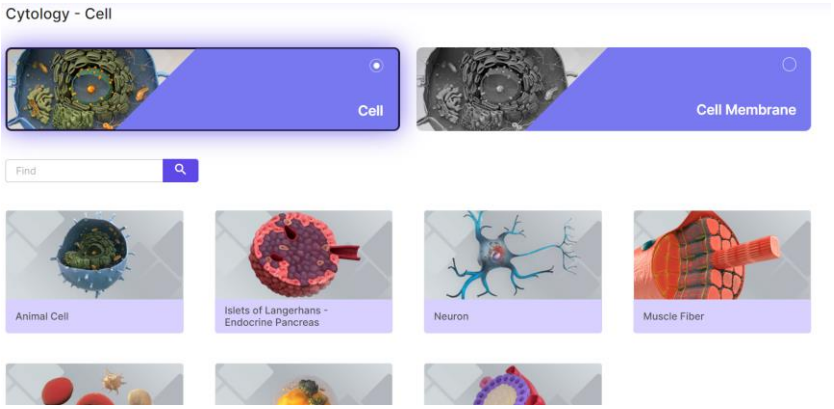
The contents of the two modules of Systemic Anatomy in this content category were separated into the Masculine and Feminine model and organized according to the Anatomy of all systems: Topographic and Complete, except for: Masculine and Feminine, Integumentary System, Muscular System, System Skeletal, Articular system, Nervous system, Lymphatic system, Digestive system, Respiratory system, Arterial system, Venous system, Endocrine system, Urogenital system.



4.4 Cytology

Cytology is the science that studies cells and their organelles, as well as their functions and importance in the constitution of two living beings and encompassing their internal structures. The module is composed of 2 parts: Cells and Cell Membrane.





4.4.1 Cell

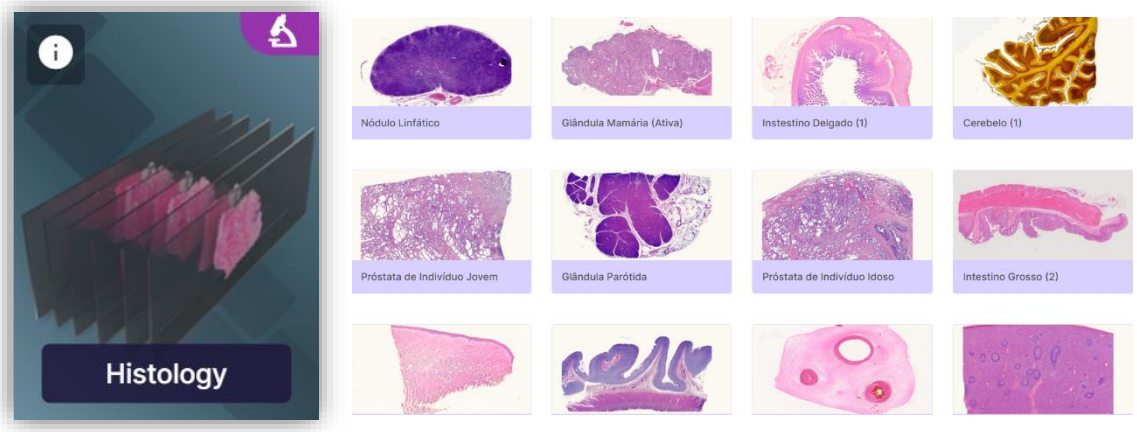
This content represents the cell types and their functions in the constitution of two living beings. Encompassing several structures with specific metabolic functions and organelles responsible for guaranteeing the proper functioning of two biological mechanisms. No count is present: Complete Animal Cell, Ilhotas de Langerhans - Endocrine Pancreas, Neuron, Muscle Fiber, Blood Cells, Adipose Cell and Thyroid Follicle.

4.4.2 Cell Membrane

This content is directed to membrane transport and microbiological processes that occur in the cell membrane such as: Primary Active Transport - Sodium and Potassium pump, Secondary Active Transport - Counter transport, Secondary Active Transport - Cotransport, Passive Transport - Facilitated Diffusion, Passive Transport - Diffusion Simple and Cell Membrane.

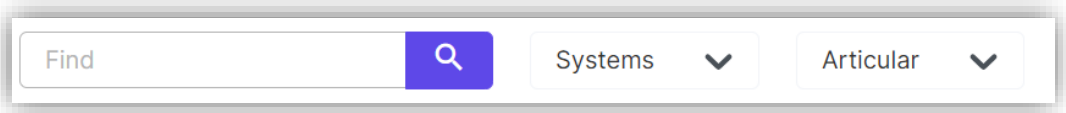
4.5 Histology

Histology is the science that studies the formation and composition of cells, organs, and biological tissues, in addition to investigating their individual functions and how they are related to the proper functioning of the organism. This module allows the user to view images of 127 digitized human tissue sheets in high resolution. In addition, this content is categorized in Fabrics (24 sheets), Systems



(100 sheets) and Sensory Organs (3 sheets).

Option to search for altering the catalog of the sheets as below:

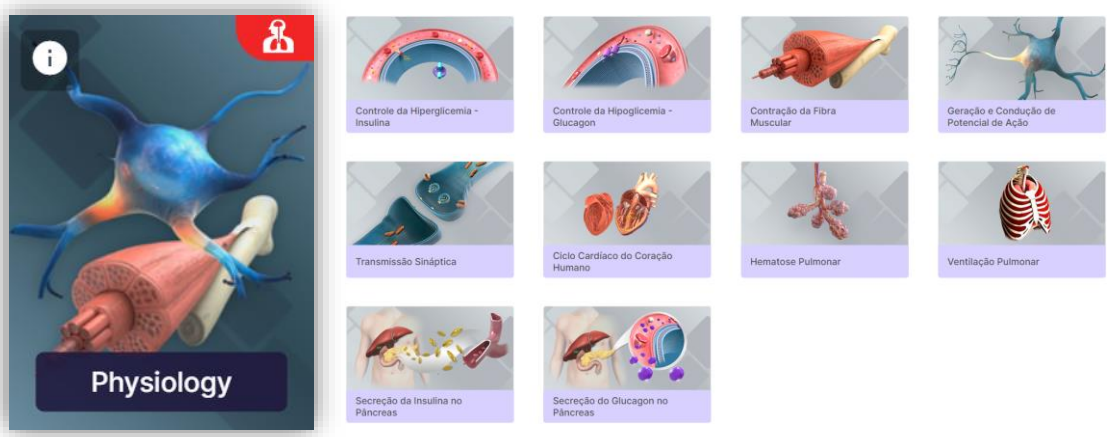


The module two fabrics and systems divided into:

Tissues: Epithelial and Connective.

4.6 **Physiology:**

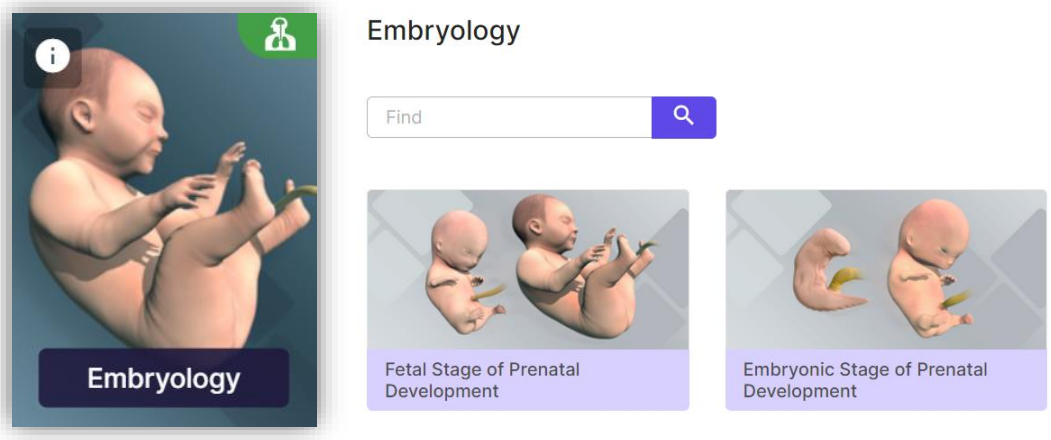
Circulatory, Articular, Digestive, Endocrine, Integumentary, Lymphatic, Muscular, Nervous, Respiratory, Urogenital and Skeletal. Also, each slide was described according to the type of tissue (human), coloration (hematoxylin-eosin, Giemsa, silver, Wright's stain and only hematoxylin) and type of cut (scrubbing, only longitudinal, only transverse, transverse, and longitudinal and sagittal). Physiology.



This module represents physiology, a science that studies the functioning of the human body through two internal biological processes, integrating the physical-chemical and anatomical knowledge to understand the behavior of the organism. The module is composed of Control of Hyperglycemia - Insulin, Control of Hypoglycemia - Glucagon, Muscle Fiber Contraction, Generation and Conduction of Action Potential, Synaptic Transmission, Cardiac Cycle of the Human Heart, Pulmonary Hematosis, Pulmonary Ventilation, Insulin Secretion in the Pancreas, Secretion of Glucagon in the Pancreas.

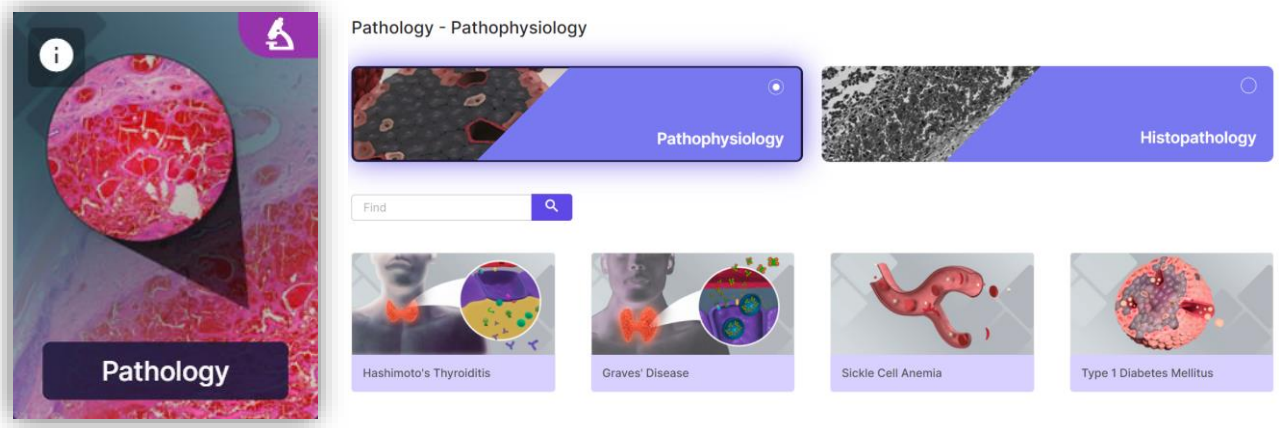
4.7 Embryology

The Embryology module allows the user to view and interact with 2 animated 3D content with 11 structures of the Embryonic Development Period containing 5 dinners from the 4th to 8th week of gestation. Fetal Development Period containing 4 dinners around the 9th week at birth, corresponding to the last 7 months of gestation. Also, with the objective of facilitating the learning and study, this module it has descriptive texts of support.

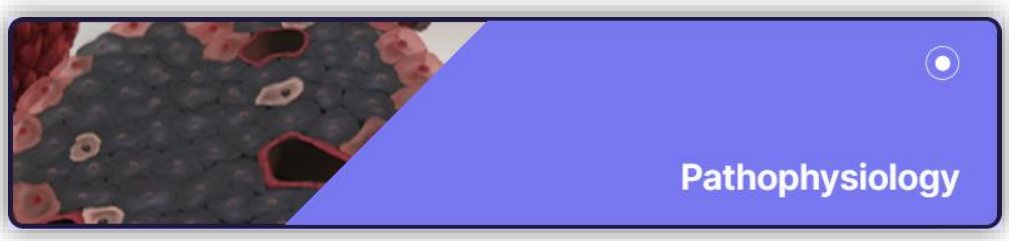


4.8 Pathology

The Pathology module is separated into two parts: Physiopathology and Histopathology studies pathological diseases and processes considering their basic mechanisms, biochemical structural alterations and functions in cells, tissues, and associated organs.

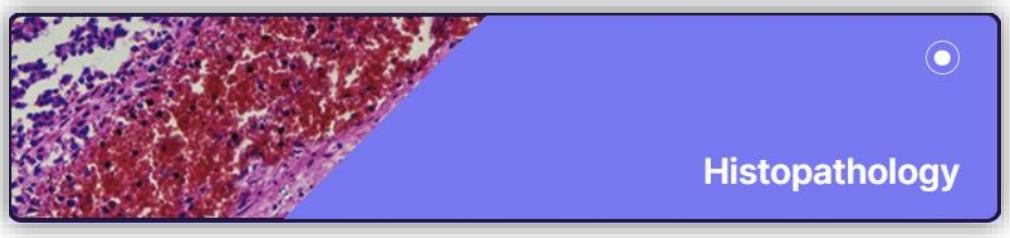


4.8.1 Pathophysiology



This content is directed to the content of interactive animation of pathophysiology and pathological disorders that are understood from a comparison with healthy processes, using knowledge of other sciences, such as Physiology, Cytology, Histology, etc. thus presenting some of the processes such as: Sickle Cell Anemia, Type 1 Diabetes Mellitus and Type 2 Diabetes Mellitus.

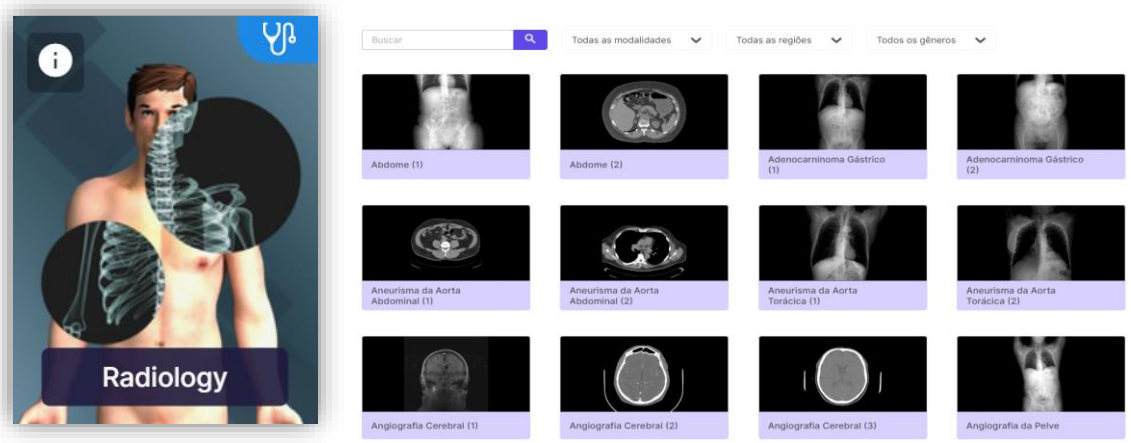
4.8.2 Histopathology



Histopathology is the science that studies microscopy of tissues with specific pathologies. This module allows the user to view images of 100 digitized human tissue sheets in high resolution. Also from that, this content is categorized in Respiratory System Diseases (17 sheets), Cardiovascular Respiratory System Diseases (2 sheets), Blood Circulation Disorders (9 sheets), Tumor (19 sheets), Nervous System Diseases (3 sheets) , Diseases of the Genital System (10 sheets), Inflammation (14 sheets), Lesion and Repair of Cells and Tissues (15 sheets), Diseases of the Endocrine System (3 sheets), Immunological Diseases (6 sheets) illnesses do Sistema Muscular e Skeletal (2 blades).

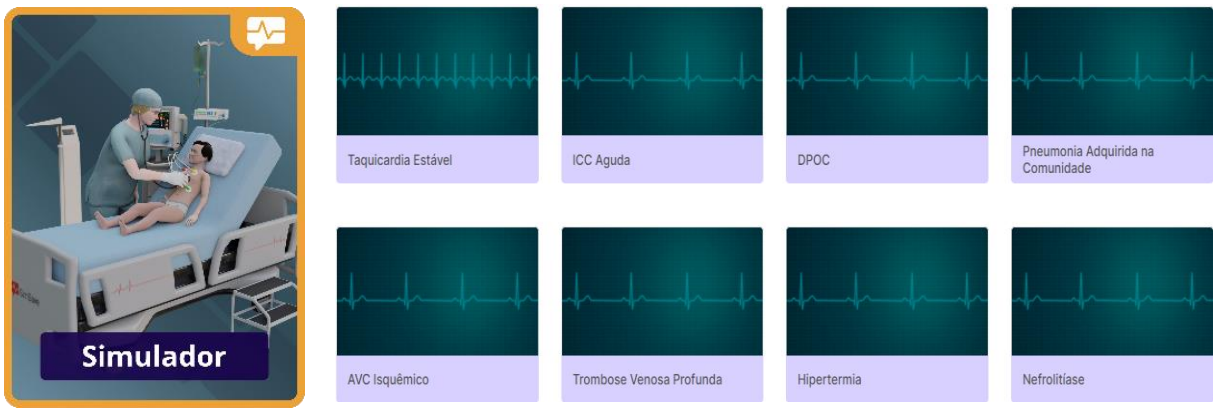
4.9 Radiology

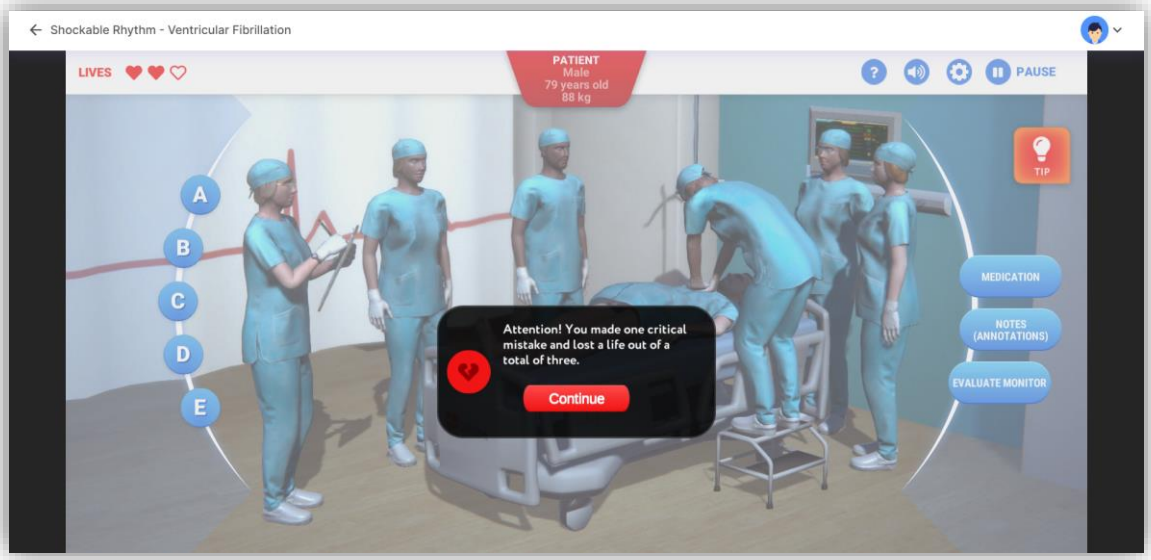
This module represents the medical specialty of radiological images that is capable of diagnosing, accompanying, controlling, and assisting in the treatment of diseases through specific exams. This module, they were contemplated images of Computed Tomography, Magnetic Resonances, Angioplasties and X-rays more than 200 exams cataloged by modalities, regions, and gender.

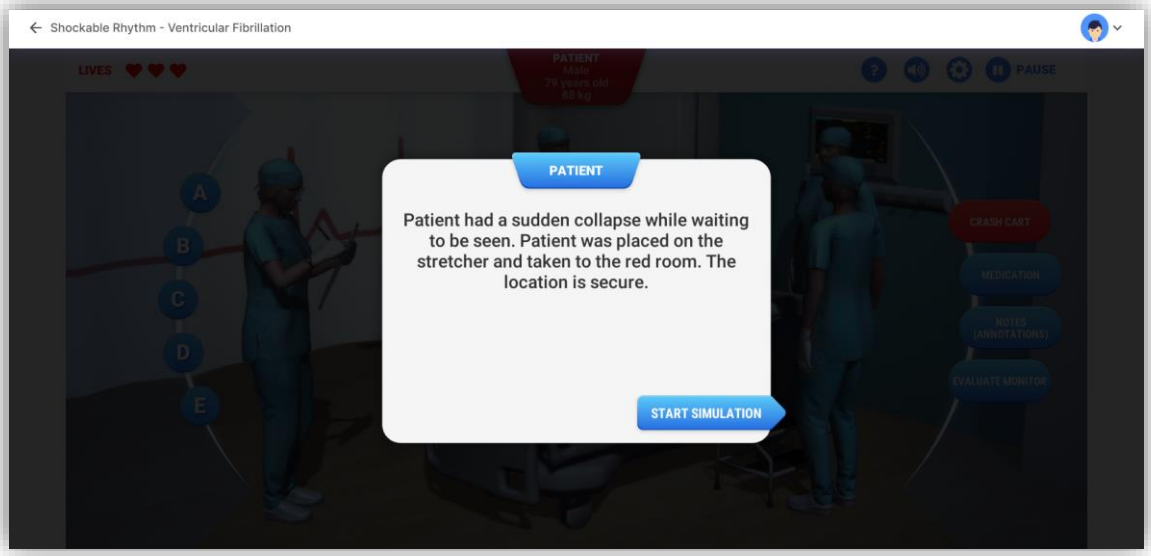


4.10 Simulação

This module has an ACLS care simulator, with scenarios based on problems that promote clinical reasoning. Constituting various cases that help in the development and training of clinical and pedagogical knowledge. The simulator has 41 cases cataloged by: Cardiology/Cardiology Emergencies, Prompt Relief, Pneumology, Infectious Diseases, Neurology, Vascular and Rheumatism/Autoimmune.



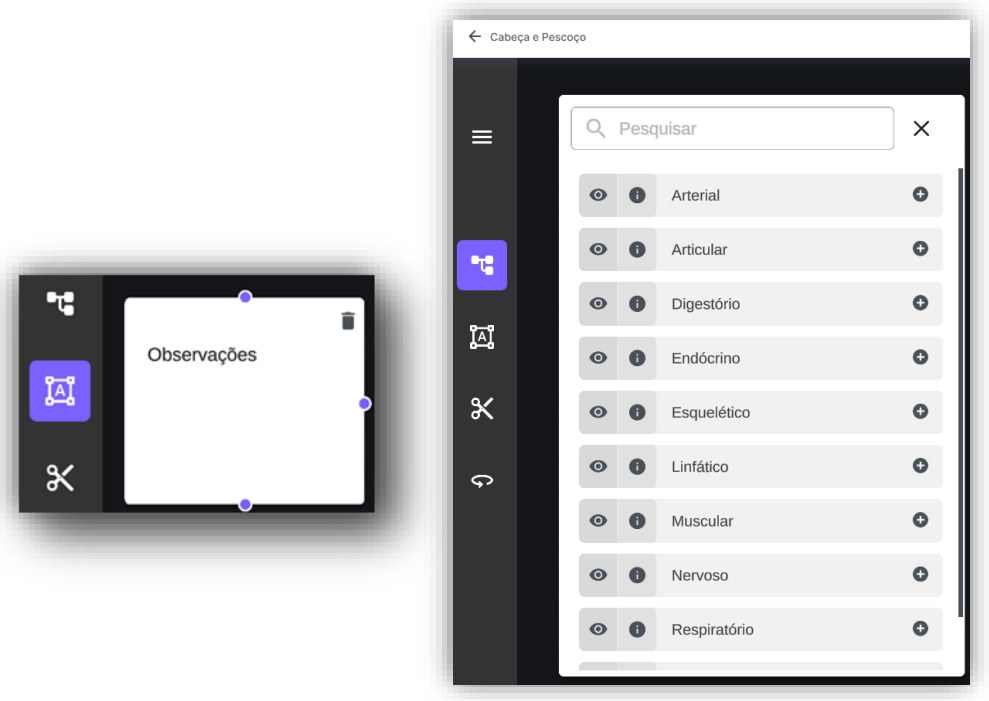

Shockable Rhythm - Ventricular Fibrillation
LIVES
PATIENT
Male
79 years old
88 kg
PAUSE
TIP
A
B
C
D
E
MEDICATION
NOTES (ANNOTATIONS)
EVALUATE MONITOR
Attention! You made one critical mistake and lost a life out of a total of three.
Continue


Shockable Rhythm - Ventricular Fibrillation
LIVES
PATIENT
Male
79 years old
88 kg
PAUSE
PATIENT
Patient had a sudden collapse while waiting to be seen. Patient was placed on the stretcher and taken to the red room. The location is secure.
START SIMULATION


Shockable Rhythm - Ventricular Fibrillation
LIVES
PATIENT
Male
79 years old
88 kg
PAUSE
TIP
A
B
C
D
E
MEDICATION
NOTES (ANNOTATIONS)
EVALUATE MONITOR

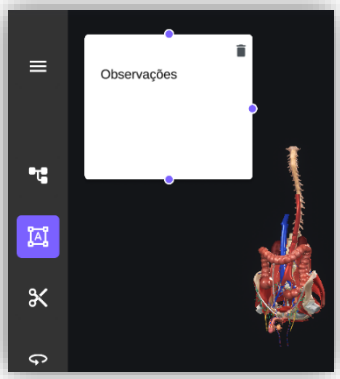
Tools

On the left side of the canvas, the following tools are observed: structure tree, text box, cut and automatic rotation, as we will see below.

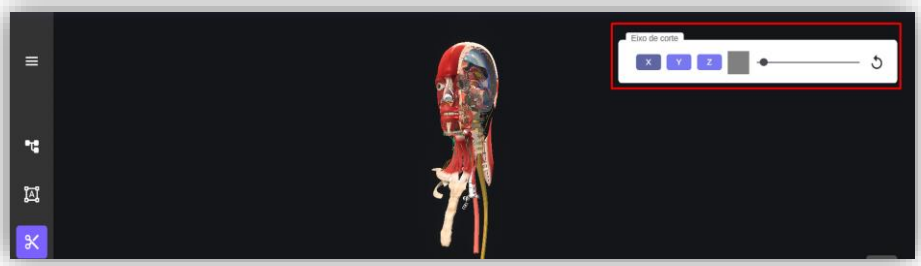


Structure tree: clicking with the mouse opens a search window, showing suggestions of the selected member. As it opens, it still shows a column of suggestions: the icon (i) that when clicked shows the description, the mouse to isolate the selected structure and on the right side of the line there is a + sign that when clicked opens a list of suggestions of the selected structure and the Scrolling did not sing from there to help in the investigation.

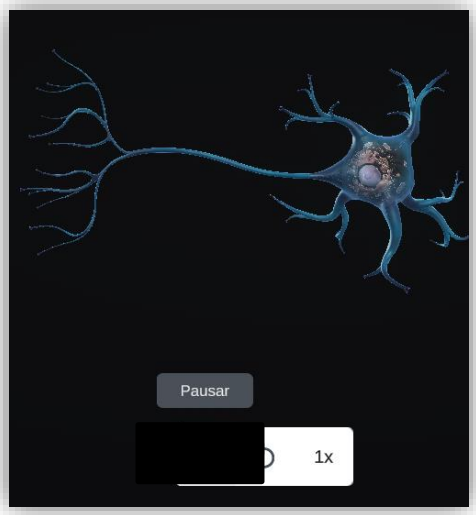
Text box: With the mouse clicking, this box will open on the plane where you can make annotations. Only when you date or program this annotation will not be saved, only temporary annotations.

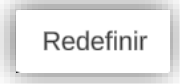


Cut: Clicking on the upper right opens a scale with the options of cuts: x-sagittal, y-axial, z-coronal or select one of the options of the scale with the ball in the center to be able to move to perform the cut.



Rotate: Clicking opens an icon with a suggestion: pause, restart and speed. The member is in non-planar rotation movement.





Redefine: clicking returns to the initial position and the structures.

Focus: To select the area of interest in the structure, the objective of the tool is to centralize the image giving a more objective view.

Select several: This option allows us to select more than one structure of the member, clicking with the mouse.

Hide: Selecting the structure of the member with this function makes it “invisible” without the member showing up

Isolate: Selecting a structure with the same shape on the workspace plan and the other structures “somem” you can turn to or click or redefine.

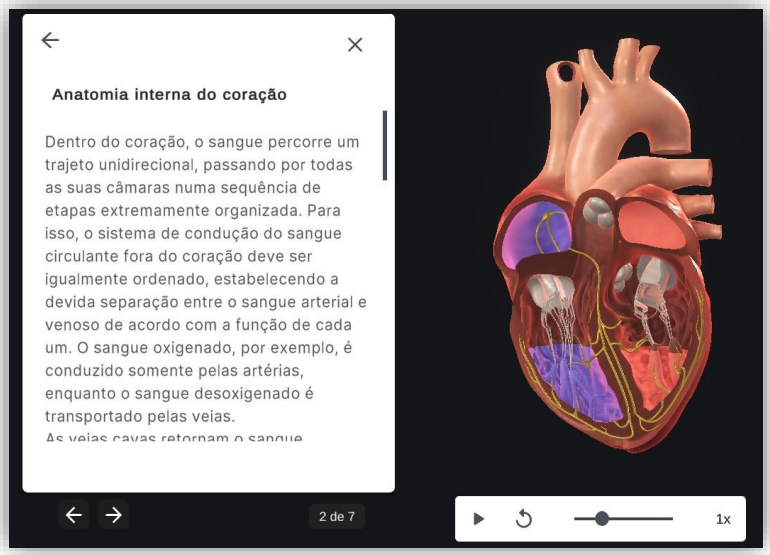
Recentralize: Lower right side shows re-centering, clicking returns to the initial position of opening the module, that is, the structure returns to the initial position.

Enlarge: The image becomes wider, that is, larger (zoom).
To decrease: Reduces the image, that is, making it smaller.

Anatomical description of body parts.

The Cards trace information on the contents related between the regions and systems, highlighting the orientations of anatomical studies. The physiology module has a phase that alters the animation and consequently the content, explaining what happened in the organ for understanding and interpretation of the study.

* ***Observation:*** *Only the Physiology module presents phases with images of interactive animations.*


Anatomia interna do coração
Dentro do coração, o sangue percorre um trajeto unidirecional, passando por todas as suas câmaras numa sequência de etapas extremamente organizada. Para isso, o sistema de condução do sangue circulante fora do coração deve ser igualmente ordenado, estabelecendo a devida separação entre o sangue arterial e venoso de acordo com a função de cada um. O sangue oxigenado, por exemplo, é conduzido somente pelas artérias, enquanto o sangue desoxigenado é transportado pelas veias.
As veias cavas retornam o sangue
2 de 7
1x

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