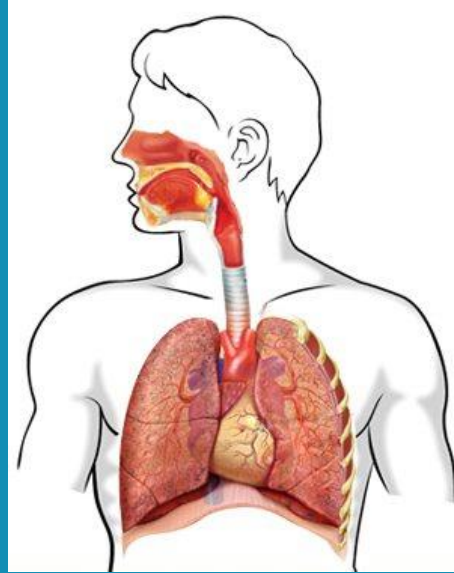


Impact of Immobility on the Respiratory System

Pulmonary Complications Associated with Immobility





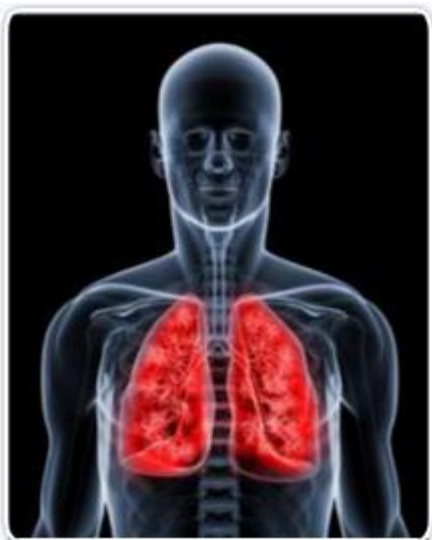
Client Details

Industry: Medical Device Manufacturer

Department: Emergency

Audience: Caregivers

Location: Germany



Project Details

The course focuses on the impact of immobility within the pulmonary system and some of the complications associated with it.



Course Requirements

Tool: Lectora

Number of modules: 1

Quiz: Yes

Interactivity level: Medium (Level 2)

Audio: Yes

Translation: No

Course duration: 45 minutes

Compliance: SCORM 1.2

The client wanted the course to be graphically rich so as to effectively explain the anatomy of the respiratory system. They also wanted us to create the internal assessments and final quiz questions for the course.



Content Details

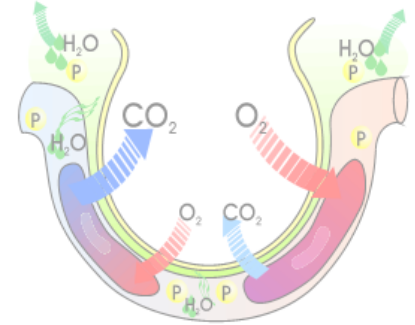
- Source content** PPT with audio notes
- Content clarity** Average
- Content Type** Facts and Procedure
- Images** Yes
- SME assistance** Yes

- Carbon dioxide is **20 times** more diffusible than oxygen
- Perfusion (Q)
- Ventilation (V)

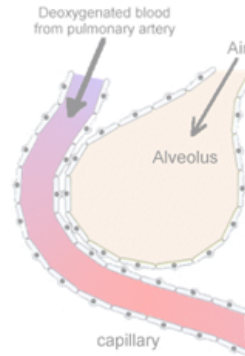
Flow of air versus flow of blood :
V/Q ratio

- **V/Q mismatch = Shunt**

Gravity and Body Position play a major role in the efficiency of gas exchange



- Diffusion of gases occurs due to differences in partial pressure - **P**
- Gases diffuse across the thin walls of the alveoli and capillaries
- Diffuse from areas where partial pressure is **greater** to area where partial pressure **lower**



Normal measurements in arterial blood

PaO₂ 10.0 - 13.3 kPa (oxygen)

PaCO₂ 4.7 - 6.0 kPa (carbon dioxide)



Challenge

Voice over sync in Lectora

The client wanted the course to be developed using the authoring tool Lectora.

In order to explain the anatomy of the human respiratory system effectively, it was essential for voice over to sync with the onscreen animation.



CommLab Solution

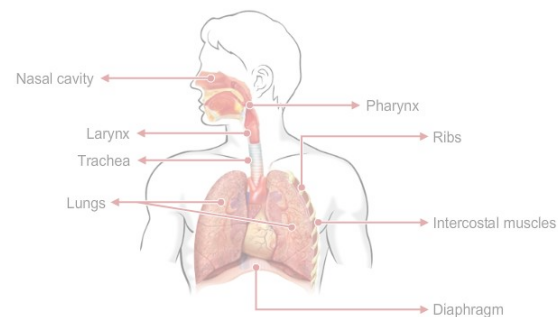
Use of Flash

As syncing voice over is difficult in Lectora, CommLab decided to develop all the screens which contained animations and required voice overs using the tool Flash.

Using Flash would increase the course development cost but audio sync with animation would result in a quick and easy learning experience.

Anatomy of the Respiratory System

Anatomy of the respiratory system - thoracic cavity and the upper airways.





Challenge

Multiple images – Highlighted in single animation

The client wanted an animation representing the Respiratory system highlighting the upper and lower airways.

The client required the animation to continuously depict the inspiration and expiration and also zoom out three images from the animation.

The client wanted all the images to stay onscreen even after the animation stopped, so that the images were clearly visible to the learners at one place.

It wasn't possible to keep all the three images on-screen at the same time due to limited onscreen space.



CommLab Solution

Rollovers to enlarge the images

To address the client's need, CommLab created the animation showing the respiration process in a continuous loop.

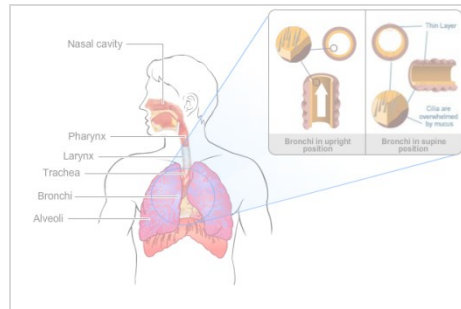
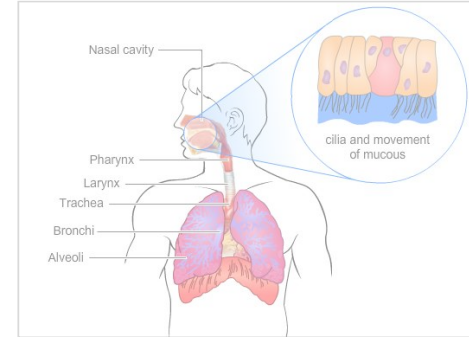
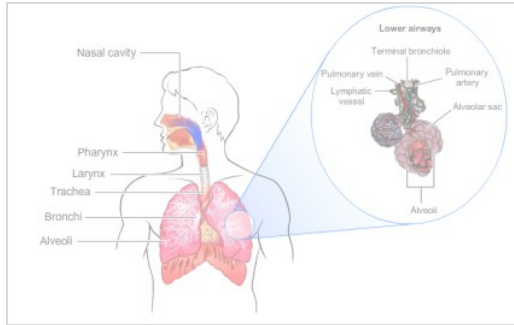
The three images were shown one by one in the animation. After the animation stopped, we had *Rollovers* appear at the bottom of the screen.

The learner could place the mouse pointer on the rollovers to view the respective enlarged image. Thus learner could view them even after the animation ended.

Check the screenshots of the animation and the rollovers in the next slide.



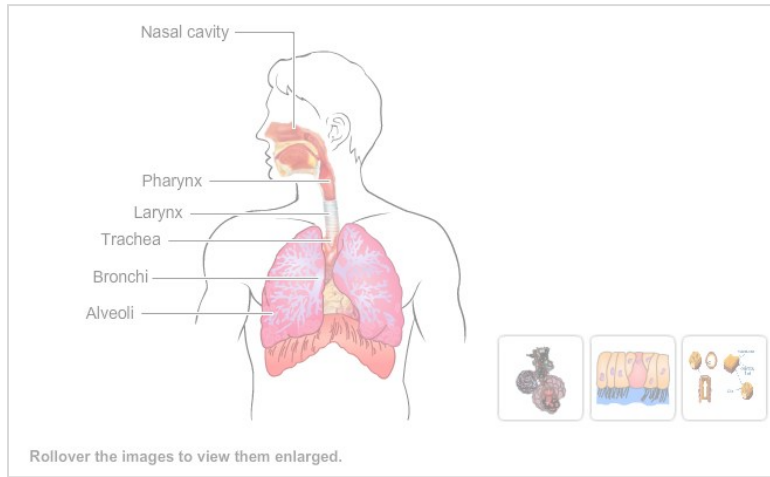
Screenshots of the animation showing the three images



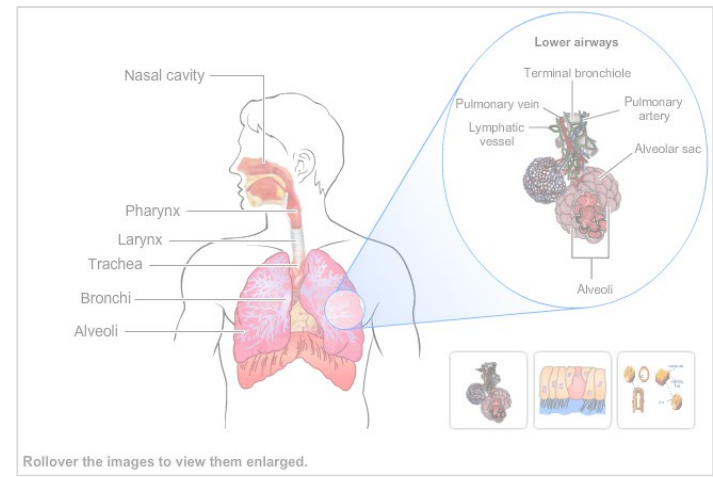


CommLab Solution

Screenshot of the completed animation with rollovers at the bottom of the screen



Screenshot showing the enlarged image when the image is rolled over

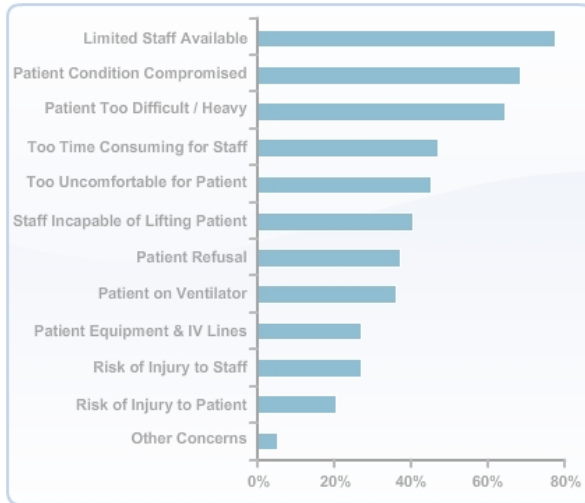




Instructional

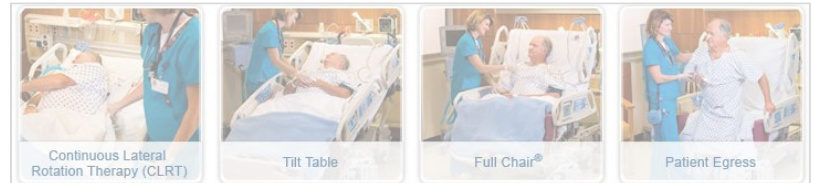
Relational visuals to present facts

Relational visuals were used to present the survey of Critical Care Medicine.



Click on Images

A Click on Images strategy was used to explain the procedure of mobilizing the patients in ICU. The learner could view more information by clicking on the image.



Click the images to learn more



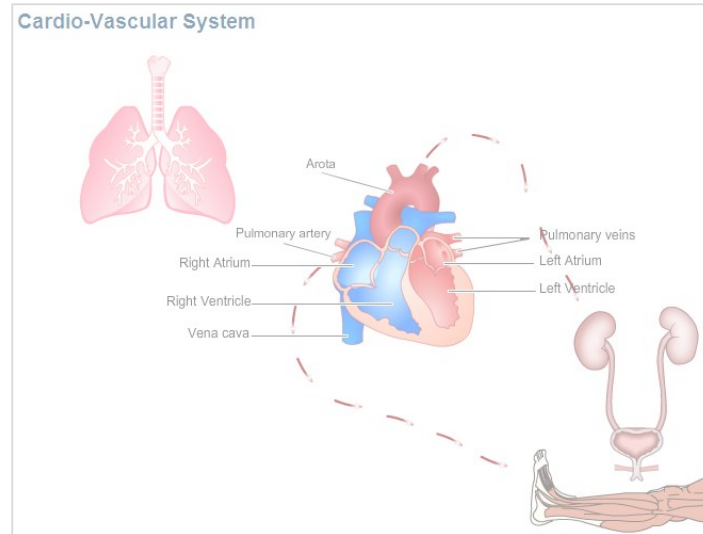
Visual

Animations and Graphs to represent Factual information

Animation was used to show the anatomy and physiology of the respiratory system and the cardio-vascular system.

Graphical representation of information helped in keeping the learners engaged.

Below is the screenshot of the animation showing the cardio-vascular system and blood flow





Client Feedback

“Good work on animations, they have exceeded our expectations.”