

Script Virtual reality education intervention VESSEL

Phase 1

Phase 1: Welcome to our virtual ward! Here, everything revolves around how to best recover after a stroke. I am AXON-101, your personal guide.

Together, we will look at how a stroke occurs and how you can prevent one in the future. A distinction is made between ischemic and haemorrhagic strokes. Today we will focus on the ischemic type.

But before we start, let's practice grasping objects and pressing buttons. For that, I'll just move them over to the practice pedestal!

Here, try grasping this ball and placing it on the pedestal!

Phase 1.2: Very good, remember this grip. And now press my button. It's that simple! You'll need this hand movement again shortly. Let's get back to the topic. I'd like to show you something: Attention, I'm moving you into the preview room! This person has suffered a stroke. He noticed that his arm had no strength left and his hand could no longer grasp things. Other possible symptoms include speech disturbances, visual disturbances, or coordination problems. These symptoms usually occur very suddenly during a stroke.

Phase 1.3: Let's take a closer look at the body now and search for the origin. Please press the button in front of you to enlarge the view. Seeing the brain this close feels unfamiliar. In this area, the oxygen and nutrient supply was interrupted because of reduced blood flow. But why did this happen? To understand that let's go one level deeper into the brain. Please press the button once more to dive in further.

Phase 2

Phase 2: What you see here is a very dense network of arteries that supply the brain with blood, transporting oxygen to the neurons. These vessels are very finely structured and can react sensitively when deposits or foreign bodies accumulate. Over here, we can see how an ischemic stroke can occur. Blood flow is suddenly interrupted, causing a lack of oxygen in the brain. If we look more closely into the artery, we see a blood clot that formed in the body and is blocking a narrow point in the brain.

But there is also another way such a stroke can be triggered. Over here, these deposits on the vessel walls are called plaque. They develop over a longer period and can be influenced by various lifestyle factors.

Phase 2.4: I can imagine that was quite a lot to take in at once. Let's return to the preview room to discuss how to prevent further strokes. Press the button to return to the preview room.

Phase 3

Phase 3: Together with my colleague LUMA-B3, we have prepared a quiz for you.

I am LUMA-B3. Various objects will appear on the pedestal shortly. Pick up this object and place it in my scan area. Then decide whether the object should be rated as positive or negative for the risk of another stroke and press the thumbs-up or thumbs-down accordingly. Afterwards, confirm your selection by pressing OK. Let's get started!

Phase 3.2: This is a cigarette. Is it beneficial or harmful for health after a stroke?

Correct. Cigarettes have a negative effect on the entire body, especially on the inner vessel walls that we looked at earlier. They promote inflammatory processes and encourage the formation of plaque, which increases the risk of another stroke. Every cigarette contributes to vessel damage, and this damage cannot be undone.

Phase 3.3: This is a plate of roasted vegetables. Is this food beneficial or harmful for health?

Correct. Vegetables contain many antioxidants that can have an anti-inflammatory effect. A balanced diet can also positively influence cholesterol levels, reduce the risk of vascular deposits, and help stabilise blood sugar.

Phase 3.4: This is a glass of red wine. Is it beneficial or harmful for health?

That's right! The alcohol in red wine raises blood pressure, making the vessels more susceptible to deposits and clots. Any potential positive effects of the red pigment in red wine do not sufficiently offset this negative effect.

Phase 3.5: This is aspirin, a blood-thinning medication. Is it beneficial or harmful for health?

That's also correct. This medication reduces blood clotting and can thereby lower the risk of a vessel blockage. It is important to take it regularly and as coordinated with a doctor, since both overdosing and underdosing can cause undesirable effects, such as bleeding.

Phase 3.6: This is a sneaker. Is it beneficial or harmful for health?

Correct. Regular physical activity has many positive effects on vascular health. The World Health Organisation recommends about 2.5 hours of moderate exercise per week. You reach this level when you start to sweat lightly or become slightly out of breath, for example while cycling, Nordic walking, or brisk walking.

Phase 3.7: This is a dumbbell. Is it beneficial or harmful for health?

You're right! Even though you should only resume strength training after consulting a doctor, strength training is very beneficial for recovery. According to the World Health Organisation, you should do strength training twice a week.

Phase 3.8: Great, we were able to classify all the factors. Now you may understand why you should stay active, but I think nature is a better place to become active. Press my button when you're ready to travel there!

Phase 4

Phase 4.1: Already better. You have just heard a great deal of information about strokes and how you can influence your risk of experiencing another one. Now it's your turn: What activities bring you joy? Pick up this brush and paint your favourite activity onto the canvas, onto this paper. When you're done, simply place the brush/pen in the cup.

Now it's your turn: you can now put your favourite activity onto the canvas yourself. To do this, press on the canvas and start painting right away! Or you can choose one of the pre-painted pictures.

Now you can start painting.

When you're finished, pick up the painting and place it on the easel.

Phase 4.2: No matter which drawing was submitted: Very good! Doing activities together is not only more fun, but it also makes it easier to stick with it. Whether with friends or in a club, both help because you motivate each other! Even within the clinic, there are ways to stay active. Here are a few tips you can incorporate into your daily routine.

If possible, take the stairs instead of the elevator next time.

While on the phone, you can move around the room or take short walks through the building. You can also combine a trip to the bathroom with a few laps around the ward. Every activity is important and helps you get fit again faster. What matters is not so much the specific

activity, but consistency. Please coordinate this with the ward staff if you plan to leave the ward.

We are almost at the end now. Now it's your turn. When will you be active next?

Calendar: Tonight / Tomorrow morning / Tomorrow evening / I don't know yet

Phase 4.3: If 1–3: That's a great idea! Especially now, physical activity is very important for the brain to recover well.

Phase 4.4: If 4: Take the time you need. But don't forget how important physical activity is at this stage!

Phase 4.5: And now we're already at the end! Thank you for participating. We hope it's now a little clearer what a stroke actually is and what you can do to prevent one. If you have further questions, you can always turn to your caregiving staff, your therapists, or your doctors. You can now return to the real world and take off the headset.