**Activity 4: Case study answers**

**Case study: Jim**

At age 56, Jim had a stroke.

He is diabetic.

After the stroke, he had left-sided weakness and was not able to move the limbs on his left side unassisted. Physiotherapy sessions helped him to slowly regain movement.

He had difficulty swallowing.

Watch the [video](https://www.nhs.uk/conditions/stroke/recovery/) where Jim talks about his recovery.

**Your task:**

* Research how having diabetes affects the risk of developing pressure injuries.
* Explain how high Jim’s risks of developing pressure injuries were during his recovery. Explain why.
* Suggest how the risks could be lowered.

Be prepared to share your answers as part of a class discussion.

Indicative content

* **Numbness on left side:** During recovery, Jim was at risk of developing pressure injuries. It was likely that he was not able to reposition without support, meaning pressure at bony prominence locations would not get the blood supply to skin layers making them high-risk areas for pressure injury development. Numbness on the left side of his body meant that he was probably unaware of pain sensations.
* **Diabetes:** Jim is diabetic, which further increases the risk. Diabetes often causes vascular complications like peripheral arterial disease (PAD), which restricts blood flow to the extremities. Reduced blood flow decreases oxygen and nutrient delivery to the tissues, slowing wound healing and increasing vulnerability to tissue ischemia (lack of oxygen). Pressure on bony prominence areas may cause tissue death more quickly in someone with poor circulation. Hyperglycaemia (high blood sugar) impairs the body’s normal wound-healing process by:
  + reducing the efficiency of white blood cells (immune function), which increases the risk of infection;
  + slowing the production of collagen, which is essential for tissue repair;
  + prolonging the inflammatory phase of wound healing.

Therefore, even minor skin damage, like a blister caused by friction, may worsen into a pressure injury in someone with poorly managed diabetes.

* **Difficulty swallowing:** Jim will have had problems eating and drinking so was at risk of poor nutrition and dehydration, which are also risk factors for pressure injuries.  
  The risks could be lowered in the following ways:
  + Frequent repositioning to relieve pressure on bony prominences. Healthcare staff may have to assist Jim with this movement.
  + Staff should use slings, slide sheets or hoists during transfers to prevent shear and friction injuries.
  + Staff should conduct regular inspections of high-risk areas to identify early signs of redness or injury.
  + Jim’s diabetes should be managed to avoid complications.
  + Jim’s diet needs to be high in calories and protein. Nutritional supplements or tube feeding can be used if needed.
  + Jim should receive sufficient fluid intake to keep his skin hydrated, using alternative methods (e.g. thickened liquids) if swallowing remains an issue.

**Case study: Bhavin**

Bhavin is 71. He was diagnosed with Motor Neuron Disease (MND) three years ago.

His condition has deteriorated, and he is doubly incontinent and has a catheter bag secured around his lower leg. He is unable to move unaided, using a powered wheelchair which supports his head. His Body Mass Index (BMI) is 17.

Bhavin has moved into a nursing home for round the clock specialist care. A hoist is used to move Bhavin into his wheelchair from his bed.

**Your task:**

* Research the symptoms of advanced MND.
* Analyse the impact MND may have on Bhavin’s skin and pressure risk.
* Explain how the risks could be lowered.

Be prepared to share your answers as part of a class discussion.

Indicative content

* MND is a rare neurological condition that causes the degeneration (deterioration and loss of function) of the motor system (the cells and nerves in the brain and spinal cord which control the muscles in our bodies). This results in weakness and wasting of the muscles.
* The main symptoms of MND **(the impact on Bhavin’s skin or pressure risk)**:
  + Muscle wasting **(will greatly affect Bhavin’s ability to reposition without assistance)**.
  + Muscle weakness **(will greatly affect Bhavin’s ability to reposition without assistance)**.
  + Fasciculations **(involuntary contractions of part of a muscle, will cause friction and shearing)**.
  + Speech problems **(unable to communicate independently)**.
  + Swallowing problems and excessive saliva **(drooling)**.
  + Cramps and muscle spasms **(spasticity)**.
* In the later stages of MND, the muscles weaken in the chest, back and neck, and people experience difficulties with breathing.
* The analysistask(text highlighted in **bold**) identifies information relating to the impact on Bhavin’s skin and his pressure injury risk. Bhavin is likely to be unable to reposition without support, meaning pressure at bony prominence areas will not get the blood supply to skin layers making them high-risk areas for pressure injury development.

**Additional factors:**

* Bhavin is likely to have no speech or unclear speech to communicate areas of pain from pressure points. Although he may have a synthetic voice in a speech-generating communication device, he may not have the ability to use this at the advance stage of MND.
* Bhavin is underweight and will have less subcutaneous fat, meaning less cushioning and protection, particularly at bony prominence points.
* Bhavin is likely to be doubly incontinent, meaning he is at a higher risk of damages to the tissue integrity of the skin, leaving Bhavin susceptible to skin breakdown, pressure injuries and infections. Bhavin uses a catheter bag which is placed next to the skin on the lower leg when seated. If this is tightened and not moved, the risk of pressure injuries in this area is also a possibility.
* Using a hoist may cause friction/shear on fragile skin points.

**Some ways to lower the risk of pressure injuries:**

* Ensure Bhavin is frequently repositioned when in bed and when seated in his wheelchair. Use turning schedules to ensure pressure is alternated from high-risk areas (e.g. sacrum, buttocks, heels).
* Check that his wheelchair provides adequate pressure relief support, such as gel or air-filled cushions, and ensure proper alignment and weight distribution to reduce localised pressure on bony prominences.
* Pressure-relieving equipment can be used, e.g. a pressure-relieving mattress for his bed and cushion in his wheelchair to prevent sores on his sacrum and buttocks.
* During transfers, staff should ensure the hoist sling is used properly to prevent dragging or pulling the skin. Slide sheets should be used when repositioning Bhavin in bed.
* Healthcare staff should conduct regular skin inspections for early signs of redness, discoloration or skin breakdown, especially in areas with high pressure and use barrier creams or moisture-absorbing pads to protect the skin from incontinence-related damage. They should also check skin folds and creases for moisture associated skin damage from excess saliva.
* Secure the catheter with a securement device to prevent pulling and ensure the catheter tubing does not press against the skin for prolonged periods.
* Since Bhavin’s BMI is 17 (underweight), he needs to receive a high-calorie, high-protein diet with adequate vitamins and minerals to support skin integrity and wound healing.