

CASE EXAMPLE – SÉRGIO

F5 Corpus VS - ROHO Contour Select® - ROHO Adaptor Pads®

PATIENT PROFILE & HISTORY

Demographics

Sérgio F. is a 47-year-old male, previously employed as a Republican National Guard officer in Portugal. A divorced father of three children who live with their mother, he lives independently with support from his caregiver. His daily routine involves rehabilitation sessions in a nearby clinic, reading, studying topics of interest, and occasionally visiting a nearby coffee shop.

To analyze real-world functional barriers, two in-person assessments were performed with support from a multidisciplinary team including Mobilitec Group.

Diagnosis/ Condition:

Sérgio F. sustained severe burn injuries affecting 85% TBSA, including 70% second- and third-degree burns. The injury resulted from a wildfire-related accident leading to extensive skin destruction, contractures, and functional limitations. His post-burn recovery was prolonged and medically complex.



Prolonged stay in an intensive care unit (ICU) due to:

- 118 days in a coma due to the severity of the burns and associated systemic complications
- A post-traumatic amnesia period that lasted 11 weeks post-recovery from the coma
- Multiple plastic and reconstructive surgical interventions, including extensive skin grafting and excisions
- Pressure garment therapy for scar management to minimise keloid and hypertrophic scar formation
- Psychological trauma, presenting as post-traumatic stress disorder (PTSD), depression and altered self-image.

Classified as having 95% permanent disability, with considerable impairments in:

Musculoskeletal function:

- Pre-existing right knee and acromion-clavicle joint replacement from a prior occupational injury.
- Cervical arthrodesis (C2–C6 levels) potentially affecting head and neck mobility.

Respiratory dysfunction:

- Persistent breathing difficulties, likely exacerbated by burn-related lung injury and scarring.

Neuromuscular and mobility impairments:

- Reduced fine motor control, most notably in the left upper limb
- Unable to ambulate independently and completely reliant on a wheelchair for mobility
- Transfers possible only on level surfaces with the assistance of grab bars
- Severe standing limitations, attributed to structural overloading of the upper body

Sleep & Sensory Considerations:

- Suffers from heat intolerance and excessive sweating requiring frequent bed linen changes
- Uses a cervical support collar with embedded gel pads for postural repositioning and scar pressure therapy

Activities of Daily Living (ADLs) and Lifestyle Limitations:

- Heavily dependent on assistance for hygiene-related tasks, though continent with no bowel/bladder involvement.
- Spends the majority of his time indoors with rehabilitation and caregiver assistance
- Weekend stays at home with the 2 youngest children
- Strong social isolation tendencies due to avoidance of sunlight exposure and psychological distress



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Current Wheelchair & Wheelchair Cushion

Uses a standard lightweight manual wheelchair with low opportunities for individualization and which shows after 2 years of use significant wear. The wheelchair doesn't have a specific positioning system with just a basic foam cushion and standard upholstery backrest resulting in a feeling of discomfort and pain (6 out of 10 in subject scale of pain on buttocks, arms and back).

The Morse Fall Scale was applied, resulting in a score of 50 (see appendix). The assessment highlighted the risk of a fall with emphasis on secondary diagnosis, ambulatory aid and gait/transferring items.

Given the complexity of his medical profile, a multidisciplinary team consisting of an occupational therapist, physiotherapist, burn-specialized nurse, product specialist, rehabilitation engineer, and assistive technology specialist conducted a comprehensive assistive technology evaluation.



SEATING CHALLENGES



Seating challenges at intervention

Pressure-related concerns:

- High risk of pressure injuries, particularly along the ischial tuberosities and sacral region, due to prolonged seating durations and reduced mobility
- The current seating cushion failed to provide adequate pressure relief, further increasing the risk of skin breakdown

Postural instability:

- The limited adjustability of his existing wheelchair setup contributed to poor positioning habits, increasing pain and discomfort

Restricted maneuverability and accessibility:

- Difficulty driving a manual wheelchair, particularly over long distances
- Inability to navigate environmental barriers, such as a slope near his residence, which restricted his movement outside the home

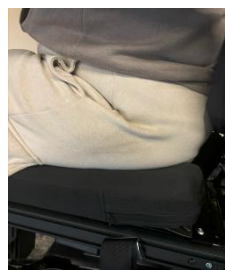
SEATING GOALS

Seating goals with power wheelchair and cushioning intervention

- F5 VS, standing function for better pressure redistribution specially at his back and buttocks. Tilt, recline and leg rest functions, to increase comfort and ease of repositioning considering skin integrity. Potential benefits related with bone health, bowel, bladder, and cardiorespiratory functions.

Sergio trialed the Permobil F5 Corpus VS, a front-wheel drive standing power wheelchair, along with;

- ROHO Contour Select Cushion (with air-cell technology) for pressure redistribution
- Permobil Corpus seating system with custom contouring for spinal stability
- ROHO Adaptor in armrests and knee supports to minimize localized pressure points



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OUTCOME



Pressure care

The ROHO Contour Select showed decreased peak pressure and overall improved contact area. Power standing also enabled Sérgio to independently reposition into a standing position to offload the pelvic area.



Increased comfort

Sérgio F., subjectively reported greater comfort citing a cooler seating surface with reduced pressure sensitivity. The cushions air-cell technology effectively lowered skin friction and heat.



Enhanced functional independence

Improved reach capabilities enabled greater engagement in home-based activities (e.g. cooking, retrieving stored objects).

Increased ability to maneuver independently outdoors, overcoming previously unpassable barriers such as slope gradients near his home.



Psychosocial benefits

Sérgio cited more confidence with standing functions enhanced his perception of independence, fostering motivation for greater social participation.



BEFORE



AFTER

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PRODUCT INFORMATION AND BENEFITS



Permobil F5 Corpus VS

A Front wheel power wheelchair with power standing (2 modes of standing: sit-to-stand and lay-to-stand) programmed degree to degree in 4 checkpoints, 35cm power seat elevator, 50° tilt, 180 recline and leg elevation 90°-180° with possibility to drive at 12km/h. The product supports 136kg user weight and Sérgio has 108kg. With Power Platform electronics, it is possible to program and personalise all the parameters' (drive, seating, etc.) to clients needs. Use of the MyPermobil App is important to monitor use of power functions and any technical issues. This product has a biomechanical backrest which is very important to reduce shear forces. Sergio also tested the Bodilink Headrest and felt comfortable with reduced friction.

Key benefits:

- Ability to drive the wheelchair safely and comfortably, while preventing secondary complications
- Ability to drive on different terrains
- Increased participation in occupations and activities

ROHO® Contour Select®

The ROHO Contour Select cushion shapes the body of the client thanks to Dry Floatation technology and contours to the body while seated, helping reduce pressure. This cushion has different height cells all over the surface, contouring to the hips and pelvis which helps the client feel more stable. The ISOFLO Memory Control unit locks air into each of the four compartments, providing pelvic stability by minimizing side-to-side and front to back motion.

Key benefits:

- Ideal for pelvic stabilization and thigh support
- Improves pressure redistribution and seating position.

ROHO® Adaptor® Pads

As reported, Sérgio has hypersensitivity and pain all over his body. Two of the critically impacted body parts are his arms and knees (he underwent an innovative treatment on his left arm combining his own cells with karp cells). Sérgio needs a solution which provides comfort and helps the skins microclimate. He tried ROHO Adaptor Pads on both the 410mm armrest and knee supports, and they offered increased comfort in comparison to vinyl or gel.

Key benefits:

- Improved comfort
- Protects against shear and friction
- Protects skin and soft tissues.



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RESEARCH REFERENCES

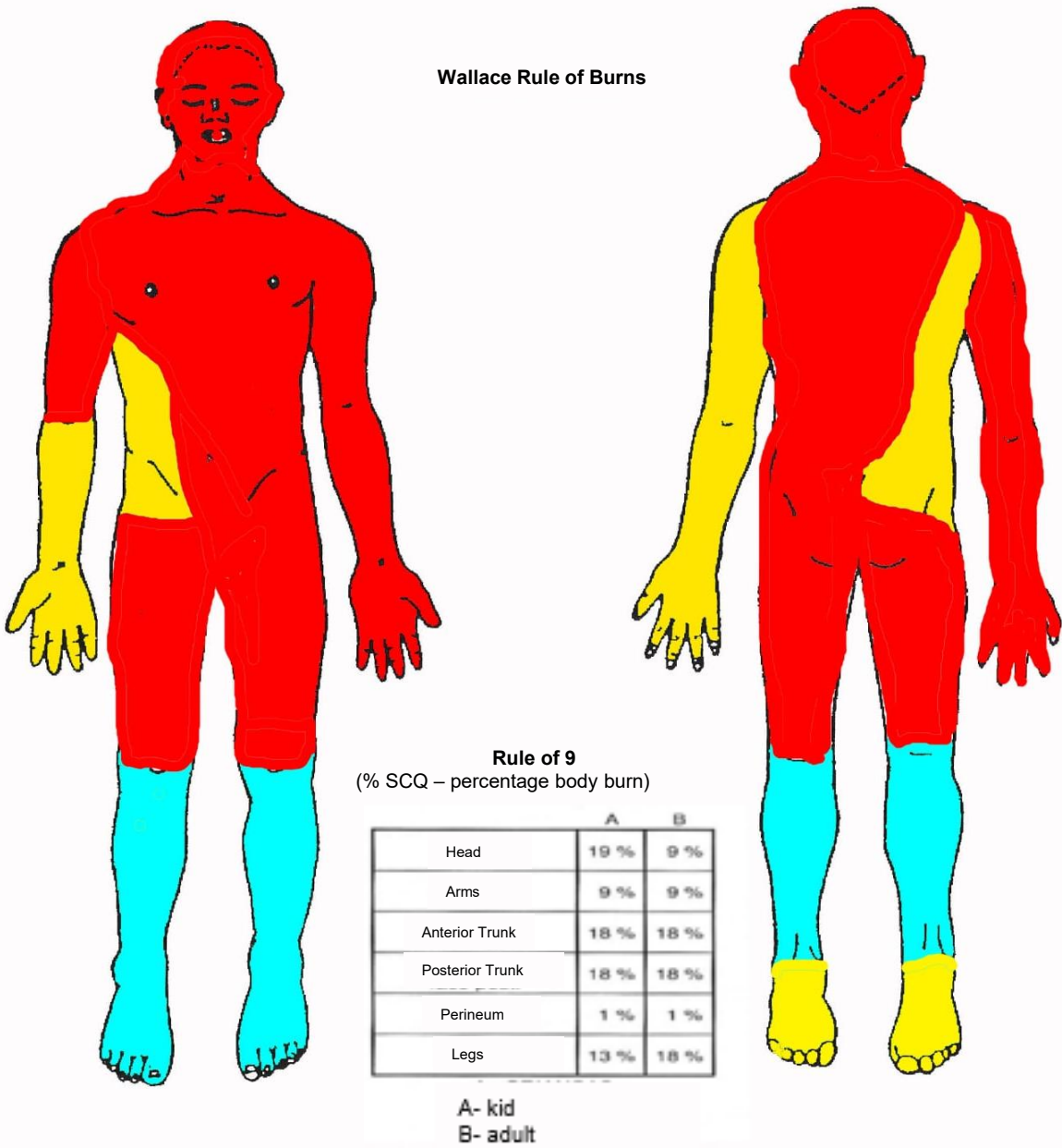
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APPENDICES

Wallace Rule of Burns



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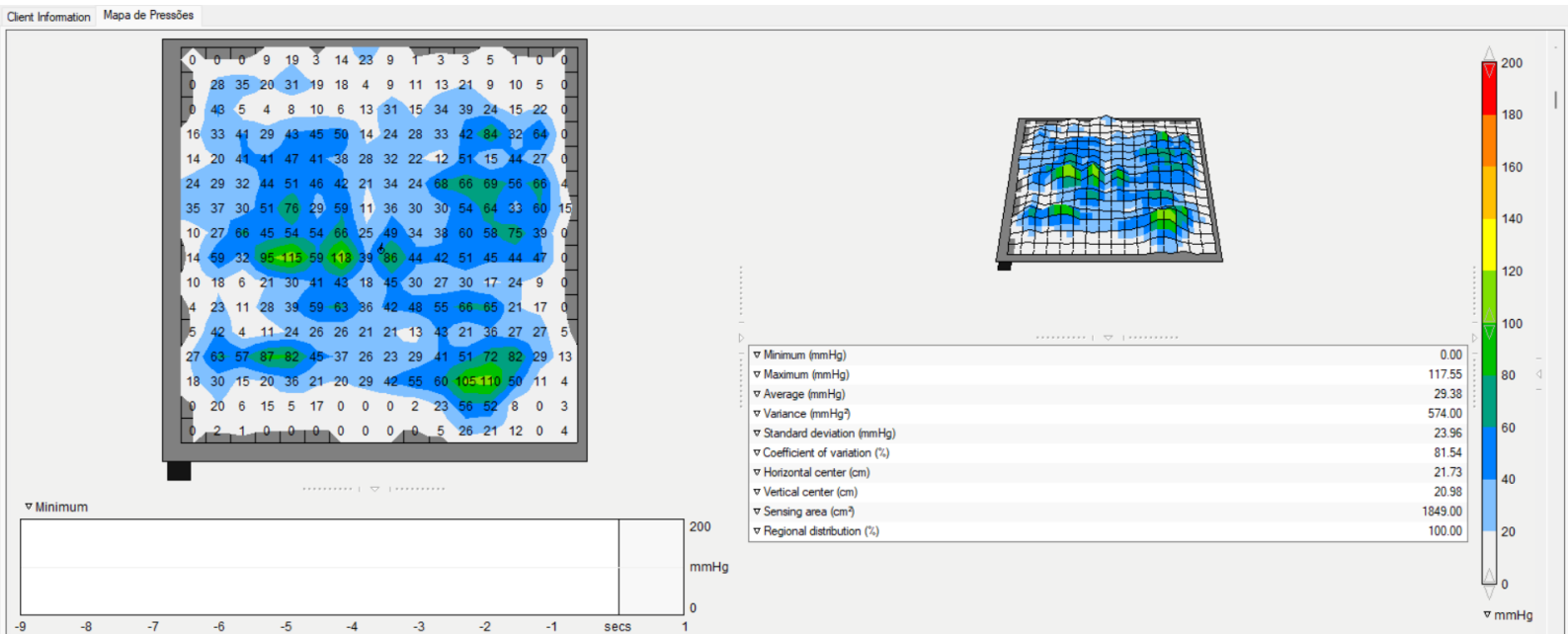
Red – 3º burn
Yellow – 2º burn
Blue – 1º burn

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APPENDICES

FSA Pressure Mapping – ROHO Contour Select



FSA Pressure Mapping – Previous standard Foam Cushion

