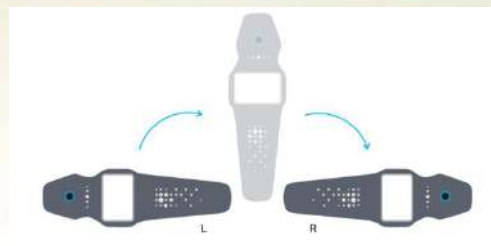


SUMMER SCHOOL '26











The implementation is a challenge

- Develop tools for organization activity.

Hospital Asociado Universitario

Guadarrama

Informes de Rehabilitación

Fecha: 20/03/2026

Proceso

DCA

TOTAL PACIENTES: 92

✓

Planta 0: 0

✓

Planta 1: 32

✓

Planta 2: 28

✓

Planta 3: 24

✓

Planta 4: 8

Nº. PACIENTES: 24

Nº. Pacientes con Robots: 14

% Pacientes con Robots: 58%

Cama	Planta	Paciente	Edad	Sexo	NHC	Grupo	Proceso	FINGR	GDS	FMA_ES	FMA_EI	MOCA	ARMEQ	LEXO	TYMO	NUSTEP	PABLO	DESINTEY	FESIA
107	1		74	H	65642	G2	DCA	10/03/2026	1			11	No	No	No	No	No	No	No
113	1		79	M	65571	G2	DCA	02/03/2026	1	55	29	11	No	No	No	No	No	No	No
115	1		82	M	65532	G2	DCA	23/02/2026	1	61	33		No	No	No	No	No	No	No
118	1		82	H	65546	G3	DCA	25/02/2026	1	4	17		No	No	No	No	No	SI	No
121	1		57	M	65495	G2	DCA	13/02/2026	1	0	0		No	SI	No	No	No	No	No
122	1		78	M	65575	G1	DCA	02/03/2026	1	63	32		No	SI	No	SI	No	No	No
131	1		53	H	65554	G2	DCA	26/02/2026	1	66	34		No	SI	No	No	No	SI	No
132	1		73	H	65602	G2	DCA	04/03/2026	1	66	18		No	No	No	No	No	No	No
136	1		70	H	65492	G3	DCA	17/02/2026	1	0	0		No	No	No	No	No	No	No
137	1		90	H	65446	G2	DCA	05/02/2026	1	60	26		No	SI	No	No	No	SI	No
140	1		60	M	65584	G2	DCA	03/03/2026	6	23	4		No	No	No	No	No	No	No
201	2		79	M	65547	G3	DCA	25/02/2026	1	3	2		No	No	No	No	No	SI	No
204	2		76	H	65632	G2	DCA	09/03/2026	1	47	29		SI	SI	No	No	No	SI	No
205	2		75	M	65551	G3	DCA	26/02/2026	1	0	0		No	No	No	No	No	No	No
212	2		56	M	65562	G2	DCA	27/02/2026		65	34		No	No	No	SI	No	No	No
230	2		84	H	55227	G2	DCA	06/02/2026	3	35	15		No	No	No	No	No	SI	No
238	2		81	M	65483	G3	DCA	12/02/2026	1	46	34		No	SI	No	No	No	No	No
305	3		83	H	65553	G2	DCA	26/02/2026	1	65	34		No	No	No	No	No	SI	No
307	3		78	H	65669	G2	DCA	13/03/2026	1	66	34		No	No	No	No	No	No	No
308	3		71	H	65482	G3	DCA	12/02/2026	1	26	26		No	SI	No	No	No	No	No
328	3		89	M	65601	G2	DCA	04/03/2026	1	0	0		No	No	No	No	No	No	No
332	3		77	H	65343	G3	DCA	21/01/2026	1	0	0		No	No	No	No	No	SI	No
336	3		68	H	65051	G2	DCA	11/03/2026	1	5	4		No	SI	No	No	No	SI	No
422	4		87	H	65609	G2	DCA	05/03/2026	2	40	25		No	No	No	No	No	No	No

- Identifying empowering therapists.

Stroke rehabilitation at Guadarrama

At Guadarrama, we believe that recovery is driven by intensity, expertise, and innovation. Our neurorehabilitation programs are built around:

1. Forced Use Therapy according to Utley/Woll to maximize neuroplasticity and functional recovery.
2. Advanced neurorehabilitation technologies that support evidence-based treatment.
3. Intensive rehabilitation, with more than 3 hours of therapy per day whenever clinically appropriate.
4. A coordinated multidisciplinary team including physiotherapists, occupational therapists, speech and language therapists, and neuropsychologists.
5. Functional rehabilitation integrated into daily activities across the unit, promoting independence and real-world skill transfer.



Stroke rehabilitation at Guadarrama

Forced Use Utley/Woll

Forced Use Therapy according to Utley/Woll is an evidence-based neurorehabilitation approach designed for people with neurological impairments following stroke, traumatic brain injury, spinal cord injury, and other neurological conditions. Its primary goal is to restore lost motor functions and improve independence in daily life.



Why Forced Use

After a neurological injury, many patients develop **"learned non-use"**, meaning they stop using the affected limb because movement is difficult or inefficient. As a result, they increasingly rely on the less affected side, reinforcing compensatory movement patterns.

We try to avoid this from the beginning training with Forced use in acute patients.





A therapy day at
Guadarrama.



Stroke rehabilitation at Guadarrama.



We begin with IVS3.

- Activate motor cortex.
- Positive feedback of movement.
- Improve neuroplasticity.

We can use it in combination with:

- SAES.
- tSCS



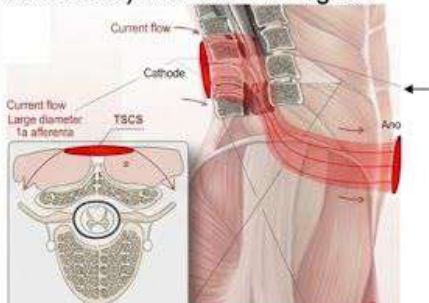
SAES: Sensory Afferent Electrical Stimulation.

- Neuromodulation.
- Sensory Re-education.

Modality	Effect	Parameters	Justification/Evidence
SAES. Afferent Sensitive Stimulation. Application with a conductive glove or sock made of silver fiber.	<i>Preparatory:</i> Apply one hour before performing sensorimotor therapy. <i>Chronic</i> and subacute Hemiparesis. <i>Hemineglect.</i> Effects: Stimulation of A-β nerve fibers (deep superficial sensitivity), inducing neuroplasticity, through cortical excitation of the affected hemisphere. Rebalance interhemispheric communication.	Freq: 50-100 HZ Pulse: 200ms-300 μs Intensity: Sensitive Threshold Time: 30 min Type: Rectangular 	(Schwenker, 2022) (Shariffar S, 2018) (Villar Ortega E, 2024) (Villar Ortega E A. E.-C., 2022)





MODALITY	EFFECT	PARAMETERS	JUSTIFICATION/ EVIDENCE	
tSCS. Spinal transcutaneous electrical stimulation. Cervical and lumbar. <i>Recommended to combine with functional training.</i> <i>Also used preparatory use for motor activity.</i> Main indication for motor activation and tone control in spinal cord injury. Neuromodulation in stroke.	CERVICAL Electrode at C5 or C6, T1 and two anodes (applied with a bifurcated lead) on clavicles, near acromion. Apply conductive gel and adhesive tape to minimize displacement during activity.  LUMBAR Electrode at D11 or L1 and two anodes (applied with a bifurcated lead) on Anterosuperior Iliac Spines (highest consensus) or abdominal region. 	Modulation of interneurons and spinal motoneurons via activation of posterior dorsal roots (Afferents Ia VII). Synaptic plasticity. Activation of posterior roots of the spinal cord to: ○ Facilitate residual descending transmission (second motoneuron injury). ○ Activate spinal motor programs (remnant reticulo-spinal and cortico-spinal pathways). ○ Stabilize reflexes and improve sensorimotor integration. Spinal proprioceptive circuits facilitating movement.	In spinal cord injury, frequencies between 15-60 Hz. Pulse duration 0.1-1ms. Frequency: 30 Hz – 50 Hz • 30Hz: Motor effect. • 50Hz: Tone modulation. Pulse width: 400 μs -1ms Intensity: subthreshold or motor threshold. Current: Continuous biphasic rectangular. Duration: 30 min. Wait at least one hour before applying subsequent electrical stimulation.	(D. V. Skvortsova, 2023) Gait speed and improvement in LE (Lower joint range of motion (MMII becomes LE). (Moshonkina TR, 2022)



Stroke rehabilitation at Guadarrama.



Forced Use activating
lower and upper
extremities.

i.e. Bridging for stability on
scapula and hip in
transverse and frontal
plane of movement.



Stroke rehabilitation at Guadarrama.



Activating lower and upper
extremities with Forced Use.

Push Up Stride variation.

Practicing movements and
strengthening.



Stroke rehabilitation at Guadarrama.



Activating lower and upper
extremities with Forced Use.

Push Up variation with
inclination and harder
exercises.



Stroke rehabilitation at Guadarrama.



Repetition, repetition,
repetition...

and then more with
ArmeoSpring, Lexo...

we achieve more repetitions
than conventional therapy.



Stroke rehabilitation at Guadarrama.



Functional training before
final activity.



Stroke rehabilitation at Guadarrama.



Final activity
development

