

# Clinical evaluation after surgery using the PERLA® TL system for the treatment of spinal deformities.

<b>Submission date</b> 15/01/2025	<b>Recruitment status</b> Recruiting	<input checked="" type="checkbox"/> Prospectively registered <input type="checkbox"/> Protocol
<b>Registration date</b> 16/01/2025	<b>Overall study status</b> Ongoing	<input type="checkbox"/> Statistical analysis plan <input type="checkbox"/> Results
<b>Last Edited</b> 06/08/2025	<b>Condition category</b> Musculoskeletal Diseases	<input type="checkbox"/> Individual participant data <input checked="" type="checkbox"/> Record updated in last year

## Plain English summary of protocol

### Background and study aims

Spinal deformities are abnormal curvatures or shapes of the spine that can affect individuals of all ages. These deformities can be congenital, developmental, or acquired due to various conditions such as neuromuscular disorders, degenerative changes, or trauma. They can cause pain, functional impairment, and in severe cases, significant health complications. The most common types of spinal deformities include scoliosis, hyperkyphosis and lordosis. Spinal deformities are a diverse group of conditions that can significantly impact an individual's life. Adolescent Idiopathic Scoliosis (AIS) and Adult Spinal Deformity (ASD) are two most common. Treatment approaches may vary internationally. Depending on the type/severity of the curvature and the patient's stage of growth (if applicable), the treatment includes conservative treatment (observation, bracing, physical therapy/exercise, etc) and surgical options. It is important to note that the treatment approach should be individualized based on the patient's specific condition, curve severity, and skeletal maturity (if applicable). The decision-making process should involve a multidisciplinary team, including spine surgeons, pediatricians (if applicable), and physical therapists. Posterior screw fixation is an established surgical technique for the treatment of spinal instabilities and deformities. Perla® TL / Perla® TL MIS spine system is a thoracic, lumbar, and sacral posterior osteosynthesis system on the market since 2020. It was designed to adapt to the patient's anatomic variations. This Post-Market Clinical Follow-Up (PMCF) study will assess the system when used to treat spinal deformity in two separate groups of patients: the ASD group and the AIS group. Each group will be analyzed independently. The patients are divided into these 2 groups because they represent the majority of the patients with spinal deformities requiring spine surgery. This study aims to confirm the safety, performance and clinical benefit of the Perla® TL/ Perla® TL MIS system in these two populations.

### Who can participate?

Patients scheduled for surgery with the Perla® TL system to treat spinal deformities (ASD or AIS), who are willing and able to comply with follow-up visits and fill out questionnaires.

What does the study involve?

The pre-operative visit data, the surgical data, discharge data and post-operative data at 2-6 months, 12 months ( $\pm 2$  months), and 24 months ( $\pm 2$  months) will be collected prospectively. All these visits are done as per the standard of care (SoC) in the selected sites. Only the patients' questionnaires collected at the preoperative visit and at the follow-up visit PO (SRS-22r, SAQ, ODI, BP-VAS, LP-VAS, EQ-5D) are not always performed in SoC by the sites. There is no risk for the patient to complete the additional questionnaire for the study.

What are the possible benefits and risks of participating?

There are no direct medical benefits for the patients participating, but the data collected may help other patients.

There is no risk in participating in this study. The risks associated with Perla® TL are the same whether or not the patients take part in the study (surgery already planned as per SoC).

Where is the study run from?

Spineart SA (Switzerland)

When is the study starting and how long is it expected to run for?

May 2024 to December 2028. February 2025 (first SIV) to June 2028 (Close out visit).

Who is funding the study?

Spineart SA (Switzerland)

Who is the main contact?

clinic@spineart.com

## Contact information

### Type(s)

Public, Scientific, Principal investigator

### Contact name

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## Additional identifiers

### Clinical Trials Information System (CTIS)

Nil known

### ClinicalTrials.gov (NCT)

Nil known

**Protocol serial number**

P79\_CLD001

## Study information

**Scientific Title**

Evaluation of clinical and radiographic outcomes following spinal surgery using the Perla® TL posterior osteosynthesis system for the treatment of spinal deformities over a period of up to 24 months.

**Acronym**

PERLA® TL Deformity

**Study objectives**

The study's aim is to collect clinical evidence to confirm, under MDR 2017/745, the safety, performance and clinical benefit of the Perla® TL system (approved on the market under the MDD since 2020). The purpose is to confirm that the Perla® TL system is as performant and safe compared to performance data for similar other currently marketed systems and profits from an acceptable benefit/risk profile for its intended use. The study is evaluating two separate groups of patients: Adult Spinal Deformities (ASD) and Adolescent Idiopathic Scoliosis (AIS). Each group will be analyzed independently by evaluating the Patient Reported Outcomes (PRO) and assessing radiological image's quantitative parameters pre-and post-surgery.

**Ethics approval required**

Ethics approval required

**Ethics approval(s)**

1. approved 31/12/2024, Comité de protection des personnes Ouest III (CHU La Milétrie, POITIERS, 86021, France; +33 (0)5 16 60 42 27; cpp-ouest3@chu-poitiers.fr), ref: 2024-A02379-38
2. approved 17/02/2025, CEIm Fundació Sant Joan de Déu (Fundació Sant Joan de Déu, C/ Santa Rosa 6, Esplugues de Llobregat - Barcelona, 08950, Spain; +34 93 600 97 32 (Ext.: 77808); frecerca.ceic@sjd.es), ref: Cl. PS-13-24

**Study design**

Prospective non-randomized international multicentric post-marketing clinical follow-up study

**Primary study design**

Interventional

**Study type(s)**

Treatment

**Health condition(s) or problem(s) studied**

The Perla® TL / Perla® TL MIS, including various types of implant, is suitable for the stabilisation of spinal segments in the surgical treatment of chronic instabilities or deformities of the thoracic, lumbar, and sacral spine of Adolescent Idiopathic Scoliosis (AIS) and Adult Spinal Deformities (ASD)

**Interventions**

This is a prospective, international, multicentric post-market clinical follow-up study (PMCF) on patients receiving Perla® TL to treat spinal deformities. The study is divided into 2 independent non-randomized groups which are the ASD (group 1), and the AIS (group 2).

It has been demonstrated that posterior screw fixation is an established surgical technique for the treatment of TL spine instabilities due to spinal deformities, mainly scoliosis, hyperkyphosis and lordosis. The methodology of this PMCF study includes data collection of patient questionnaires ODI or SRS-22r scores (depending on the group), EQ-5D and VAS (leg and back), discharge and return to work/school, radiological images and safety events reporting.

## **Intervention Type**

Device

## **Phase**

Phase IV

## **Drug/device/biological/vaccine name(s)**

Perla® TL/ PERLA®TL MIS system

## **Primary outcome(s)**

The clinical benefit of the Perla® TL system will be demonstrated on the Performance Analysis Set by evaluating the Patient Reported Outcomes (PROs) at 12 months post-operatively using the Oswestry Disability Index (ODI) self-reported questionnaire for the ASD (Group 1) and the SRS-22 (Scoliosis Research Society) for the AIS (Group 2).

For Group 1 (ASD): The benefit will be confirmed by comparing the ODI scores between preoperative (V1) with scores of 2-6 months visit (V4) and 12 months visit (V5) post-operative.

For Group 2 (AIS): The benefit will be evaluated by comparing the SRS-22 questionnaire scores between pre-operative (V1) with scores of 2-6 months visit (V4) and 12 months visit (V5) post-operative.

## **Key secondary outcome(s)**

1. To confirm the performance of the Perla® TL system within 24 months post-operatively by quantitatively comparing and assessing the radiological images (Coronal Cobb Angle, Coronal Alignment, Thoracic Kyphosis angle, Lumbar Lordosis angle, Pelvic Incidence, Sacral Slope, Pelvic Tilt, Sagittal Vertical Axis and Odontoid to Hip Axis angle) of the pre-operative visit (V1), discharge (V3), 2-6 months visit (V4), 12 months visit (V5) and 24 months visit (V6).
2. To confirm the clinical benefit of the Perla® TL system within 24 months post-operatively by quantitatively comparing the scores of the PRO questionnaires VAS (back and leg), EQ-5D, Spinal Appearance Questionnaire "SAQ" (only AIS group) and the SRS-22r (only AIS group) or ODI (only ASD group) from baseline (V1) and all post-operative visits (V6).
3. The safety will be assessed by analysing the number of different types of Adverse Event incidences during the study.

## **Completion date**

31/12/2028

## **Eligibility**

**Key inclusion criteria**

Patients must meet all the below inclusion criteria (for screening):

1. Patients scheduled for surgery with the Perla® TL system to treat spinal deformities (ASD or AIS)
2. Patients who are willing and able to comply with follow-up visits and fill out questionnaires
3. Written voluntary informed consent signed by the patients and if applicable, their legal representative (for minors)

Per-operative inclusion criteria (for enrolment):

Patients with the surgery completed with the Perla® TL system

**Participant type(s)**

Patient

**Healthy volunteers allowed**

No

**Age group**

Mixed

**Lower age limit**

10 years

**Upper age limit**

99 years

**Sex**

All

**Key exclusion criteria**

1. Adult deprived of their freedom by administrative or legal decision or under guardianship
2. Patients with a contraindication as per IFU

**Date of first enrolment**

19/03/2025

**Date of final enrolment**

28/02/2026

**Locations****Countries of recruitment**

France

Spain

**Study participating centre**

**Hôpital Privé Francheville**

4 Pl. Francheville

Périgueux

France

24000

**Study participating centre****Clinique Charcot**

51 Rue Commandant Charcot

Sainte-Foy-lès-Lyon

France

69110

**Study participating centre****Hospital San Joan de Deu**

Passeig de Sant Joan de Déu, 2

Esplugues de Llobregat, Barcelona

Spain

08950

**Study participating centre****Hospital de La Arrixaca Murcia**

Ctra. Madrid-Cartagena, s/n

El Palmar, Murcia

Spain

30120

**Study participating centre****Hospital del Niño Jesús**

C/ Menéndez Pelayo, 65, Retiro

Madrid

Spain

28009

**Study participating centre****Hospital Nuestra Señora del Rosario**

C/ Principe de Vergara 53

Madrid

Spain

28006

**Study participating centre**  
**Hospital del Mar**  
Marítim de la Barceloneta, 25, 29  
Ciutat Vella  
Barcelona  
Spain  
08003

## Sponsor information

**Organisation**  
Spineart (Switzerland)

**ROR**  
<https://ror.org/05sz2c652>

## Funder(s)

**Funder type**  
Industry

**Funder Name**  
Spineart (Switzerland)

## Results and Publications

### Individual participant data (IPD) sharing plan

The dataset generated and analysed during the current study will be available upon request from [clinic@spineart.com](mailto:clinic@spineart.com). The type of data that will be shared: clinical data of the study. Dates of availability: up to 2040. Participants will be required to provide consent. All subjects' data are pseudo-anonymized. There are no ethical or legal restrictions.

### IPD sharing plan summary

Available on request

### Study outputs

Output type	Details	Date created	Date added	Peer reviewed?	Patient-facing?
<a href="#">Participant information sheet</a>	Participant information sheet	11/11/2025	11/11/2025	No	Yes