ESD Subtype Identification Algorithm (ESD-SIA)

Purpose

To synthesize results from the full battery of tools and observational data into a **clear diagnostic subtype** within the Empathy Spectrum Disorder framework.

This tool offers a **structured algorithm** to:

- Assign an ESD subtype (Type A–F)
- Identify domain-specific empathy dysregulation
- Generate a clinical empathy profile for treatment planning

Required Inputs

Use data gathered from the following tools:

Tool	Metric
ESDI	Emotional, cognitive, and behavioral empathy dysregulation scores
Polyvagal Profile Assessment (PPA)	HRV patterns, vagal flexibility
CAES-R	Emotional, cognitive, behavioral, and congruence gap scores
NEA Task	In-session empathy activation and regulation
EROG	Interpersonal empathy behavior under pressure
DE-S	Strategic empathy, detachment, manipulation

Step-by-Step Algorithm

STEP 1: Generate Subscale Scores

From each tool, calculate:

- **EE** (Emotional Empathy)
- **CE** (Cognitive Empathy)
- **BE** (Behavioral Empathy)
- **EG** (Empathic Congruence Gap)
- **HRV** (Autonomic Regulation)
- **DE-S Total** (Dark Empathy traits)

STEP 2: Populate Decision Matrix

Variable	Low	Moderate	High
Emotional Empathy	EE ≤ 20	21–35	≥ 36
Cognitive Empathy	CE ≤ 20	21–35	≥ 36
Behavioral Empathy	BE ≤ 15	16–20	≥ 21
Empathic Gap (EG)	≤ 10	11–14	≥ 15
DE-S	≤ 20	21–35	≥ 36
HRV Pattern	Flat/Low	Variable	Flexible/Strong

STEP 3: Apply Subtype Logic

Criteria	Subtype
EE low + CE low + BE low + Flat HRV	**Type A** (Hypoempathic)
EE high + CE mid/low + EG high + HRV spikes	**Type B** (Hyperempathic)
EE low + CE high + EG high + DE-S high + Normal HRV	**Type C** (Rational Empath)
EE & CE fluctuating + BE erratic + EG mid-high	**Type D** (Oscillating / Dysregulated)
EE low + CE low/mid + HRV flat + NEA detachment	**Type E** (Shutdown / Avoidant)
CE high + EE low + DE-S > 45 + manipulative behavior	**Type F** (Dark Empathy)

Clinician Summary Sheet Output

Domain	Score/Notes
Emotional Empathy (EE)	
Cognitive Empathy (CE)	
Behavioral Empathy (BE)	
Empathic Gap (EG)	
HRV / PPA Interpretation	
Dark Empathy (DE-S)	
NEA Observations	
EROG Summary	
Final Subtype	