**SNS COLLEGE OF ALLIED HEALTH SCIENCE, COIMBATORE –35**
(Affiliated to the Tamil Nadu Dr M.G.R Medical University, Chennai)
**B.Sc. CARDIOPULMONARY PERFUSION CARE TECHNOLOGY**

**PUZZLE**
**SUBJECT: 1401-PHYSIOLOGY**
**UNIT – I – BLOOD**

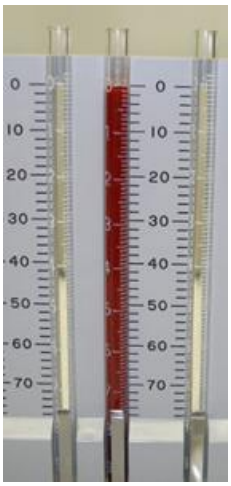
# Detective Puzzle: "The Case of the Sinking Cells"

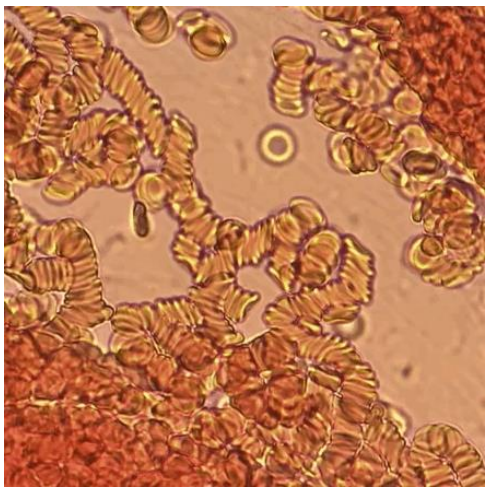
## Instructions

- **Team size:** 3–5 students per group.
- **Objective:** Solve the mystery of a patient's unusual blood test by piecing together clues.
- **Format:** Teams receive a case, 5 reasoning questions, and a simple diagram. Discuss and answer all questions in 20 minutes

## Case Puzzle: The Case of the Sinking Cells

A 35-year-old woman visits the clinic with joint pain, low-grade fever, and fatigue. Her doctor orders a special blood test. In the lab, her blood is placed in a tall, thin tube. After one hour, the red cells have settled much farther down the tube than expected. The lab notes that this test is often used to check for inflammation, but it does not point to a specific disease. The provided diagram shows red blood cells forming stacks and settling at the bottom of the tube.



## Questions:

1. **Detective Work:** What is the most likely blood test being described, based on the procedure and diagram?
2. **Clue Analysis:** What does a faster rate of red cell settling suggest about the patient's body?
3. **Microscopic Evidence:** What is the name of the red cell formation seen in the diagram, and why does it happen?
4. **Functional Impact:** Name two conditions (one inflammatory, one non-inflammatory) that could cause this test to be elevated.
5. **Management Plan:** How might this test help a doctor monitor a patient's illness over time?

# Rubric (10 Marks Total)

| Criteria | Marks | Description |
|---|---|---|
| Test Identification | 2 | Correct deduction of the blood test based on clues |
| Interpretation of Result | 2 | Logical explanation of what a fast settling rate means |
| Red Cell Formation | 2 | Correct naming and explanation of rouleaux formation |
| Causes of Elevation | 2 | Two plausible causes (one inflammatory, one non-inflammatory) |
| Clinical Use | 2 | Feasible explanation of how the test is used to monitor illness |