

Debate Preparation Manual

Should ELISA screening be mandatory? Everything you need to argue either side, and the science you must get right to argue either one.

DATE Friday, September 18, 2026	CLASSES All three	QUESTION Should ELISA screening be mandatory?
SIDES You will be assigned one	PREPARE Both sides	BRING This manual, completed

YOUR CHARGE TODAY

You will be assigned a side on the day, which means you prepare both. An argument you cannot state in its strongest form is an argument you do not understand.

YOU TURN IN

- **Two prepared arguments** for each side, filled in below.
- **One counterargument** you genuinely find hard to answer.
- **Your own position**, written before the debate and again after.

Time: Prepared at home, argued in class.

GREEN RULE You write here. Nothing else on the page is yours to fill in.	GOLD GROUND Given to you. Do not re-derive it. Controls and reference values live here.	GREY GROUND Instructions from Mr. Mendoza. Read before you start the step.	RED GROUND Safety. Read it before you touch any material.
--	---	--	---

WHY THIS MATTERS

The ELISA is one of the most used tests in all of medicine. It screens donated blood, confirms infections, measures hormones, and finds allergies. When a test result comes back as a number rather than a yes or no, an assay like this one usually produced it.

READ THIS

You cannot argue about a test you cannot describe. Before any position, you have to be able to say what an ELISA actually does. Fill this in from Friday's lecture without looking it up.

THE SCIENCE FIRST · YOU COMPLETE THIS

In four steps, what happens in an ELISA well?

What is the wash step for, and what happens to the result without it?

What does the colour at the end actually measure?

WHY THIS MATTERS

A test used on people who are unlikely to have a condition produces mostly false alarms, even when the test itself is excellent. That is not a flaw in the chemistry. It is arithmetic, and it is the single most misunderstood idea in diagnostic testing.

READ THIS

This is the part both sides get wrong, so whichever side you are given, knowing it is an advantage.

Sensitivity is how good a test is at catching people who do have the condition. **Specificity** is how good it is at clearing people who do not. A screening test is usually tuned for high sensitivity, which means it accepts some false alarms on purpose.

Now the part that surprises people. If a condition is rare, then even an excellent test produces **more false positives than true positives**, because there are so many more people without the condition than with it. Nothing is wrong with the test. It is arithmetic.

CONTROL GROUP · ALREADY SET UP FOR YOU

A worked example, given to you. Suppose a condition affects 1 person in 1,000, and the test catches 99 out of 100 true cases and wrongly flags 2 out of 100 healthy people.

Test 100,000 people. About 100 have the condition, and the test finds about 99 of them. About 99,900 do not, and the test wrongly flags about 2 percent of them, which is about 1,998 people.

So about 2,097 people get a positive result, and only 99 of them actually have it. Roughly one positive in twenty-one is real. This is exactly why a positive screen is followed by a confirmatory test and is never, on its own, a diagnosis.

YOUR TURN · YOU COMPLETE THIS

Redo that arithmetic for a condition affecting 1 person in 100 instead of 1 in 1,000. How many of the positives are real now?

What does your answer suggest about WHO a screening programme should be offered to?

READ THIS

Build the **FOR** case. Write the strongest version, whether or not you agree with it. You will not know your assigned side until the day.

THE FOR CASE · YOU COMPLETE THIS

Early detection: what changes for a patient found early rather than late?

Protecting others: which conditions affect people beyond the patient, and how?

Fairness of access: how can a mandatory programme reach people a voluntary one misses?

Cost: what does a late diagnosis cost, in money and in life, compared to a screening programme?

READ THIS

Build the **AGAINST** case. Write the strongest version, whether or not you agree with it. You will not know your assigned side until the day.

THE AGAINST CASE · YOU COMPLETE THIS

Consent: what does mandatory mean for a person's right to decide about their own body?

False positives: using your arithmetic from SEC 02, what happens to the people wrongly flagged?

Privacy: who else learns the result, and what could they do with it?

Trust: what happens to people's willingness to seek care if testing stops being a choice?

READ THIS

Finish with the two things that actually get graded: the objection you find hardest, and where you stand.

YOUR POSITION · YOU COMPLETE THIS

The single strongest point against your own view, written in its best form:

Your honest answer to it, or an honest statement that you do not have one yet:

Where you stand BEFORE the debate:

Where you stand AFTER the debate. Changing your mind in response to evidence is worth full marks:

CONTROL GROUP · ALREADY SET UP FOR YOU

The rule for the debate itself. You may attack an argument. You may not attack a person. Every claim about what a test can do must match what we learned it does on Friday, and I will stop the debate to correct a science error on either side.

Terms you will need

- **Sensitivity:** of the people who have it, the share the test catches.
- **Specificity:** of the people who do not have it, the share the test clears.
- **False positive:** a positive result in someone who does not have the condition.
- **False negative:** a negative result in someone who does.
- **Screening test:** cast wide, tuned to miss little, expects confirmation.
- **Confirmatory test:** run after a positive screen, more specific, slower or costlier.
- **Informed consent:** agreeing to a procedure after being told what it involves and what it risks.

Where to read more

- CDC, cdc.gov, on screening programmes and what each one is for.
- MedlinePlus, medlineplus.gov, on what a specific lab test means.
- NHGRI, genome.gov, on genetic discrimination and the protections that exist.

The claim ceiling for this debate

Everything argued in this room is a classroom argument about policy. Nobody in this debate diagnoses anybody, and no position taken here is medical advice or a statement about any real person's health.