document.getElementById('riskForm').addEventListener('submit', function(e) {

e.preventDefault();

const age = parseFloat(document.getElementById('age').value);

const gender = document.getElementById('gender').value;

const race = document.getElementById('race').value;

const tc = parseFloat(document.getElementById('tc').value);

const hdl = parseFloat(document.getElementById('hdl').value);

const sbp = parseFloat(document.getElementById('sbp').value);

const bpTreatment = document.getElementById('bpTreatment').value === 'yes';

const smoker = document.getElementById('smoker').value === 'yes';

const diabetes = document.getElementById('diabetes').value === 'yes';

if (isNaN(age) || isNaN(tc) || isNaN(hdl) || isNaN(sbp)) {

alert("Please enter valid numeric values for all fields.");

return;

}

const lnAge = Math.log(age);

const lnAgeSq = Math.pow(lnAge, 2);

const lnTc = Math.log(tc);

const lnHdl = Math.log(hdl);

const lnSbp = Math.log(sbp);

let xBeta = 0;

let S0\_10 = 0.9144; // Default baseline survival

if (gender === 'male' && race === 'africanAmerican') {

xBeta =

-24.35715 +

0.88941 \* lnAge +

0.25411 \* lnAgeSq +

0.51092 \* lnTc +

(-0.83642) \* lnHdl +

0.42191 \* lnSbp +

0.47654 \* (bpTreatment ? 1 : 0) +

0.50361 \* (smoker ? 1 : 0) +

0.21558 \* (diabetes ? 1 : 0);

S0\_10 = 0.8954;

} else if (gender === 'male' && race !== 'africanAmerican') {

xBeta =

-29.08598 +

0.76551 \* lnAge +

0.65665 \* lnAgeSq +

0.79384 \* lnTc +

(-0.60351) \* lnHdl +

0.50604 \* lnSbp +

0.34275 \* (bpTreatment ? 1 : 0) +

0.96187 \* (smoker ? 1 : 0) +

0.66051 \* (diabetes ? 1 : 0);

S0\_10 = 0.9144;

} else if (gender === 'female' && race === 'africanAmerican') {

xBeta =

-29.09743 +

1.33514 \* lnAge +

0.09673 \* lnAgeSq +

0.15403 \* lnTc +

(-0.55625) \* lnHdl +

0.39568 \* lnSbp +

0.19337 \* (bpTreatment ? 1 : 0) +

0.50668 \* (smoker ? 1 : 0) +

0.34534 \* (diabetes ? 1 : 0);

S0\_10 = 0.9597;

} else {

xBeta =

-29.09743 +

1.33514 \* lnAge +

0.13825 \* lnAgeSq +

0.92974 \* lnTc +

(-0.77225) \* lnHdl +

0.66157 \* lnSbp +

0.55135 \* (bpTreatment ? 1 : 0) +

0.85061 \* (smoker ? 1 : 0) +

0.51548 \* (diabetes ? 1 : 0);

S0\_10 = 0.9665;

}

const risk = (1 - Math.pow(S0\_10, Math.exp(xBeta))) \* 100;

const riskPercent = Math.min(risk, 100).toFixed(1);

let category = '';

let advice = '';

if (riskPercent < 5) {

category = "Low";

advice = "You're doing great! Keep up the healthy habits.";

} else if (riskPercent <= 7.5) {

category = "Borderline";

advice = "Talk to your doctor about lifestyle changes.";

} else if (riskPercent <= 20) {

category = "Intermediate";

advice = "Consider regular check-ups and improving diet/exercise.";

} else {

category = "High";

advice = "Consult a healthcare provider for a prevention plan.";

}

document.getElementById('riskPercent').textContent = riskPercent;

document.getElementById('riskCategory').textContent = category;

document.getElementById('riskAdvice').textContent = advice;

document.getElementById('result').classList.remove('hidden');

});