Code and Output

```
% Ask the user for input on SpO2 and body temperature
spo2_before = input('Enter SpO2 level before exercise (%): ');
temp_before_f = input('Enter body temperature before exercise (F): ');
temp_before = (temp_before_f - 32) * 5/9; % Convert Fahrenheit to Celsius
spo2_after = input('Enter SpO2 level after exercise (%): ');
temp_after_f = input('Enter body temperature after exercise (F): ');
temp_after = (temp_after_f - 32) * 5/9; % Convert Fahrenheit to Celsius

% Define exercise intensity levels
x = 1:0.1:10;

% Define the effect of exercise on different organs as a function of exercise intensity
y_heart_before = 30*(1 - exp(-0.2*x));      % Heart rate increases by 30% of baseline
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y_lungs_before = 40*(1 - exp(-0.3*x));      % Oxygen consumption increases by 40% of baseline
y_muscles_before = 50*(1 - exp(-0.4*x));    % Oxygen uptake increases by 50% of baseline

y_heart_after = 30*(1 - exp(-0.2*x))*((spo2_after/100)/(spo2_before/100))^0.25*((temp_after+273.15)/(temp_before+273.15))^0.15;
y_lungs_after = 40*(1 - exp(-0.3*x))*((spo2_after/100)/(spo2_before/100))^0.25*((temp_after+273.15)/(temp_before+273.15))^0.15;
y_muscles_after = 50*(1 - exp(-0.4*x))*((spo2_after/100)/(spo2_before/100))^0.25*((temp_after+273.15)/(temp_before+273.15))^0.15;

% Perform cubic spline interpolation
xq = linspace(min(x), max(x), 1000);
yq_heart_before = interp1(x, y_heart_before, xq, 'spline');
yq_lungs_before = interp1(x, y_lungs_before, xq, 'spline');
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yq_muscles_before = interp1(x, y_muscles_before, xq, 'spline');

yq_heart_after = interp1(x, y_heart_after, xq, 'spline');
yq_lungs_after = interp1(x, y_lungs_after, xq, 'spline');
yq_muscles_after = interp1(x, y_muscles_after, xq, 'spline');

% Plot the effect of exercise on different organs before exercise
figure;
hold on;
plot(xq, yq_heart_before, 'r', 'LineWidth', 2);     % Heart rate before exercise
plot(xq, yq_lungs_before, 'g', 'LineWidth', 2);     % Oxygen consumption before exercise
plot(xq, yq_muscles_before, 'b', 'LineWidth', 2);   % Oxygen uptake before exercise
xlabel('Exercise Intensity (METs)');
ylabel('Effect on Organ (%)');
title('Before Exercise');
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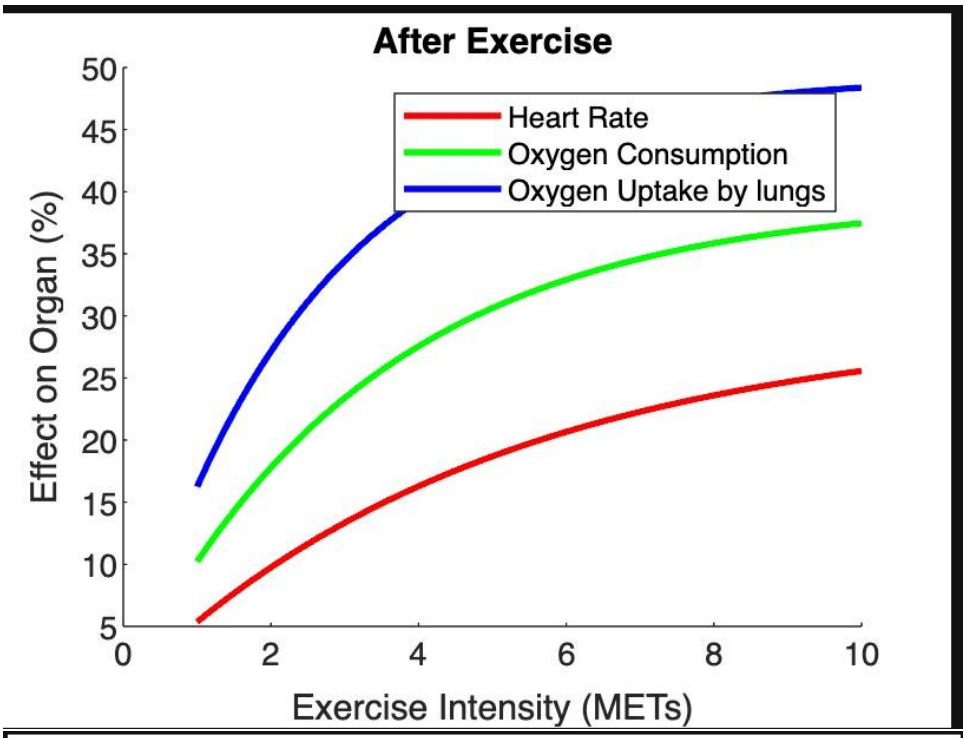
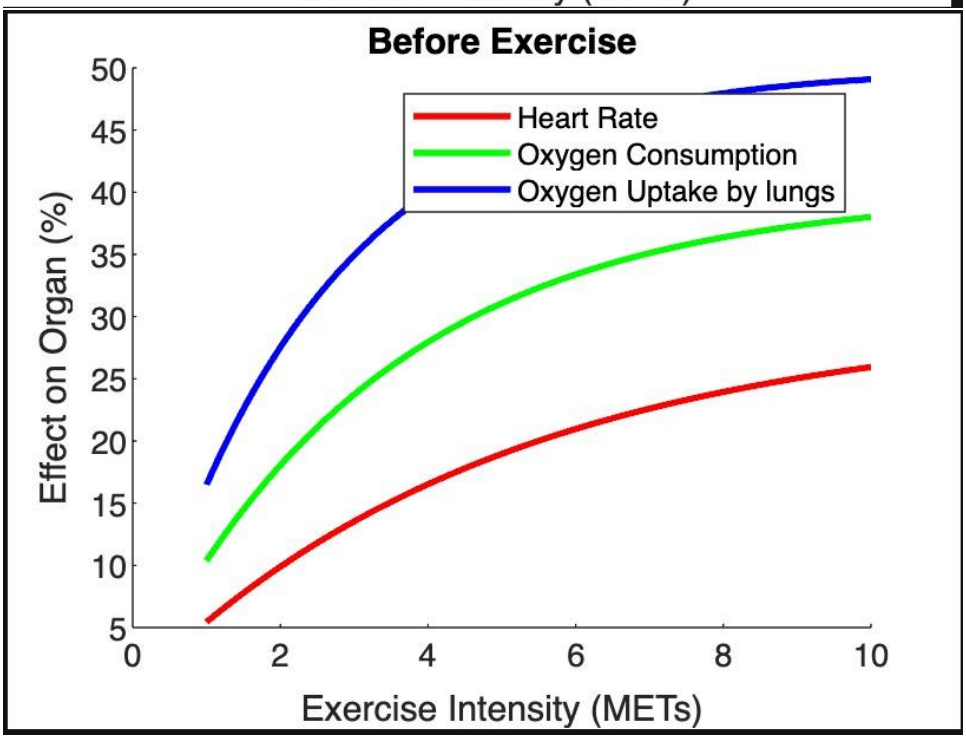
```
legend('Heart Rate', 'Oxygen Consumption', 'Oxygen Uptake by lungs');

% Plot the effect of exercise on different organs after exercise
figure;
hold on;
plot(xq, yq_heart_after, 'r', 'LineWidth', 2);    % Heart rate after exercise
plot(xq, yq_lungs_after,'g','Linewidth',2);
plot(xq,yq_muscles_after,'b','Linewidth',2);
xlabel('Exercise Intensity (METs)');
ylabel('Effect on Organ (%)');
title('After Exercise');
legend('Heart Rate', 'Oxygen Consumption', 'Oxygen Uptake by lungs');
```


After Exercise
Heart Rate
Oxygen Consumption
Oxygen Uptake by lungs
Effect on Organ (%)
Exercise Intensity (METs)
50
45
40
35
30
25
20
15
10
5
0
2
4
6
8
10


Before Exercise
Heart Rate
Oxygen Consumption
Oxygen Uptake by lungs
Effect on Organ (%)
Exercise Intensity (METs)
50
45
40
35
30
25
20
15
10
5
0
2
4
6
8
10