BODY MASS INDEX (BMI)

- BMI is a number calculated from your weight and height.

  \[ \text{BMI} = \frac{\text{weight, kg}}{\text{height, m}^2} \]

- The number is used by medical professionals to screen for health problems.

Source: [http://www.cdc.gov/healthyweight/assessing/bmi/childrens_bmi/about_childrens_bmi.html](http://www.cdc.gov/healthyweight/assessing/bmi/childrens_bmi/about_childrens_bmi.html)

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BLOOD PRESSURE (BP)

- Each time your heart beats, it pumps blood into your arteries.
- Blood pressure is the force of blood pushing against the walls of the arteries as your heart pumps blood.
- Written as a ratio:
  - systolic pressure (when your heart beats)
  - diastolic pressure (when your heart rests)
- 110/70 mmHg is read 110 over 70 millimeters of mercury.
- BP used to screen for health problems.

Source: [http://www.heart.org/HEARTORG/Conditions/HighBloodPressure/AboutHighBloodPressure/Understanding-Blood-Pressure-Readings_UCM_301764_Article.jsp](http://www.heart.org/HEARTORG/Conditions/HighBloodPressure/AboutHighBloodPressure/Understanding-Blood-Pressure-Readings_UCM_301764_Article.jsp)

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PULSE RATE

- Your pulse rate is the number of times your heart beats per minute.
- As with BMI and BP, your pulse rate is used to screen for health problems.
**SCATTERPLOT RELATIONSHIPS**

Positive trend/correlation

**# of Hours Studied versus Test Grade**

<table>
<thead>
<tr>
<th>Hours studied</th>
<th>Test grade</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>40</td>
</tr>
<tr>
<td>2</td>
<td>60</td>
</tr>
<tr>
<td>4</td>
<td>80</td>
</tr>
<tr>
<td>6</td>
<td>100</td>
</tr>
<tr>
<td>8</td>
<td>120</td>
</tr>
</tbody>
</table>

Series 1

Negative trend/correlation

**Pulse Rate After Exercise**

<table>
<thead>
<tr>
<th>Time (minutes)</th>
<th>Pulse rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>140</td>
</tr>
<tr>
<td>5</td>
<td>120</td>
</tr>
<tr>
<td>10</td>
<td>100</td>
</tr>
<tr>
<td>15</td>
<td>80</td>
</tr>
</tbody>
</table>

Series 1
No trend/correlation

Money Spent at Mall

Line of best fit

# of Hours Studied versus Test Grade

Dollars Spent at Mall

Hours at Mall

Test grade

Hours studied
Do you think that there is a relationship between:
- BP and BMI?
- Pulse rate and BP?
- BMI and pulse?

Do you think there is a difference in the relationships between the male and female data?