Spirometry and Race
Manual
NAME: _____ Week 4 Lab

Background

From the readings, you should be able to define the following terms:

- spirometer
- lung volume
- calibrate

From the readings, you should be able to describe:

- what a spirometer is testing
- when 'racial corrections' were first used in spirometer data
- what 'race' has the larger lung volume
- the historical and ongoing significance of this race correction
- how race is assigned by people who administer spirometer tests

Activities

1. The tool and the test

As a group we will explore actual spirometers and explore our own lung volume.

A. Calibration or correction definitions

calibration:

correction:

B. Calibration of scales/balances

- Using calibration weights, we will determine which of our scales/balances need to be calibrated.

- You will be given a chance to practice "re-zeroing" the human scale.

- Is "zeroing" a balance with a weigh dish on it a *calibration* or a *correction*?

C. Correcting

- In the pre-lab you calculated your BMI and your blood volume. Which was corrected for gender? Does this make sense/is this a valid correction?

- "heart healthy" blood pressure values are corrected for age. Does this make sense/is this a valid correction?

- Should BMI, blood volume or blood pressure values be corrected for race or ethnicity?

2. Assigning race

There are 3 sets of photos of faces. For each face, write in the corresponding box is that individual is black (B), white (W), or Hispanic (H). Yes, you must commit. Do this as quickly as you can.

Group A

black _____ # white _____ #Hispanic _____

Group B

black _____ # white _____ #Hispanic _____

Group C

black _____ # white _____ #Hispanic _____

We will share and compare. Did everyone have the same mix of black, white, and Hispanic faces?

3. Patient data

Using this data below to determine the health of the individuals below.

- Calculate what % predicted their FVC value is for each race.
- Indicate if they are healthy or not for each race. An individual who scores above 80% of predicted is considered healthy.

Patient code	Age Gender Height	FVC (L)	Predicted Caucasian	% predicted Caucasian	Healthy?	Predicted Black	% predicted Black	Healthy?
1	48 F 65”	3.14	3.7			3.05		
2	48 F 65”	2.47	3.7			3.05		
3	48 F 65”	2.85	3.7			3.05		
4	48 M 65”	2.88	4.30			3.51		
5	48 M 65”	3.48	4.30			3.51		
6	48 M 65”	2.47	4.30			3.51		

(Values generated using https://www.cdc.gov/niosh/topics/spirometry/refcalculator.html)

For what patients does race determine if they are considered healthy or not?

Are you surprised that the CDC asks for racial information?