

## Procedures to Determine Sensitivity and Specificity

### 1. Applying the rationale to *behavior*:

Positive “test result”/actual goal behavior is present (individual meets recommendations)/“true positive cases” = no necessity to intervene, that is, to motivate individuals to become active.

Negative “test result”/actual goal behavior is absent (individual does not meet recommendations)/“true negative cases” = need to intervene, that is, individuals are actually inactive.

|                          |                     | “Truth”/actual goal <i>behavior</i> |                                     |
|--------------------------|---------------------|-------------------------------------|-------------------------------------|
|                          |                     | Present (meeting recommendation)    | Absent (not meeting recommendation) |
| “Test result” /<br>Stage | Positive (A, M)     | a = “true positive“                 | b = “false positive“                |
|                          | Negative (PC, C, P) | c = “false negative“                | d = “true negative“                 |

*Note.* PC = Precontemplation, C = Contemplation, P = Preparation, A = Action, M = Maintenance.

Sensitivity =  $a / [a + c]$  = how good the test is at identifying people performing the recommended goal behavior. Specificity =  $d / [b + d]$  = how good the test is at identifying individuals not performing the recommended goal behavior.

### 2. Applying the rationale to *intention*:

|                         |                    | “Truth”/actual <i>intention</i>               |  |
|-------------------------|--------------------|---|--|
|                         |                    | To perform goal behavior                      |  |
|                         |                    | Present<br>(intending to meet recommendation) | Absent (not<br>intending to meet recommendation) |
| “Test result”/<br>Stage | Positive (P, A, M) | a = “true positive“                           | b = “false positive“                             |
|                         | Negative (PC, C)   | c = “false negative“                          | d = “true negative“                              |

*Note.* PC = Precontemplation, C = Contemplation, P = Preparation, A = Action, M = Maintenance.

Sensitivity =  $a / [a + c]$  = how good the test is at identifying people intending to meet the recommended goal behavior. Specificity =  $d / [b + d]$  = how good the test is at identifying individuals not intending to meet the recommended goal behavior.

### 3. Applying the rationale to *initiation and maintenance*:

|                         |              | “Truth”/ actual goal behavior <i>maintenance</i>   |  |
|-------------------------|--------------|--|--|
|                         |              | Present<br>( <i>maintaining</i><br>recommendation) | Absent<br>( <i>initiating</i><br>recommendation) |
| “Test result”/<br>Stage | Positive (M) | a = “true positive“                                | b = “false positive“                             |
|                         | Negative (A) | c = “false negative“                               | d = “true negative“                              |

*Note.* PC = Precontemplation, C = Contemplation, P = Preparation, A = Action, M = Maintenance.

Sensitivity =  $a / [a + c]$  = how good the test is at identifying people maintaining the recommended goal behavior. Specificity =  $d / [b + d]$  = how good the test is at identifying individuals initiating the recommended goal behavior.