

# IP Implicit Association Test

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## BACKGROUND

The Implicit Association Test (IAT) was developed by Nosek, Greenwald and Benaji at Harvard University to study peoples' reactions and associations that are outside of our "conscious awareness." Explicit attitudes can be accessed consciously with introspection, and are generally measured with self-report. Implicit attitudes must be measured more indirectly, as people are often unaware that they have these attitudes or associations. Both types of attitudes and associations have been demonstrated to influence behavior.

The IAT was initially designed to study racial bias. However, versions of the IAT are now used to examine a variety of social attitudes, including those connected with bias and stereotypes which impact medical care and quality. There are dozens of tests in the area of social cognition and a growing number in the domain of mental health. Two decades of study of the IAT have demonstrated that by bringing the unconscious attitudes to the conscious level, people can seek out experiences that will specifically help them to offset or even overcome that bias.

UCLA worked with Project Implicit to develop and test one IAT to examine implicit role associations which could lead to bias regarding physicians and nurses in leadership positions. Researchers at Project Implicit served as consultants, assisting us to develop a virtual environment for examining the implicit biases that may exist among health care professionals. The link to assessment:

<https://implicit.harvard.edu/implicit/launch?study=/user/emily/clients/stuber/samplehealthiat.expt.xml>

## IMPLEMENTATION

- A. Tool Name:** IP Implicit Association Test
- B. Participants:** Health professional students, clinicians, and faculty at any level, including undergraduate.
- C. Setting:** Completed online, individually. The IAT can be used within an IPE course setting for measurement of pre/post biases. It can also be used for individual assessment with subsequent classroom or small group discussion.
- D. Requirements:** The IAT is done on line, individually, so requires a computer with internet connection for each participant.
- E. IPEC Competencies:** In the "Roles and Responsibilities" competency domain the IAT assists in "identifying and describing abilities and

contributions to the IP team and recognizing how others' skills and knowledge overlap". In the "Collaboration" domain the IAT assists in assessing: "working effectively with IP team members to enhance care"; and in the "Values/ethics for Interprofessional Practice", the IAT addresses: "respect the unique cultures, values, roles and responsibilities of other health professions".

**F. Administration:** The IAT measures the strength of associations between concepts (e.g., black people, gay people) and evaluations (e.g., good, bad) or stereotypes (e.g., athletic, clumsy). The main idea is that making a response is more automatic and therefore faster when items which are closely related, explicitly or implicitly, share the same response key.

When doing an IAT participants are asked to quickly sort words or pictures in the center of the screen into categories that are on the left and right hand side of the computer screen by pressing the "e" key if the word or picture belongs to the category on the left and the "i" key if the word or picture belongs to the category on the right. The IAT has five main parts.

In the first part of the IAT the participant sorts words relating to the concepts (e.g., fat people, thin people) into categories. So if the category "Fat People" was on the left, and a picture of a heavy person appeared on the screen, the participant would press the "e" key.

In the second part of the IAT you sort words relating to the evaluation (e.g., good, bad) or attribute (e.g., athletic, clumsy). So if the category "good" was on the left, and a pleasant word appeared on the screen, the participant would press the "e" key.

In the third part of the IAT the categories are combined and the participant is asked to sort both concept and evaluation words. So the categories on the left hand side might be Fat People/Good and the categories on the right hand side might be Thin People/Bad. It is important to note that the order in which the blocks are presented varies across participants, so some people will do the Fat People/Good, Thin People/Bad part first and other people will do the Fat People/Bad, Thin People/Good part first.

In the fourth part of the IAT the placement of the concepts switches. If the category "Fat People" was previously on the left, now it would be on the right. Importantly, the number of trials in this part of the IAT is increased in order to minimize the effects of practice.

In the final part of the IAT the categories are combined in a way that is opposite what they were before. If the category on the left was previously Fat People/Good, it would now be Fat People/Bad.

The IAT score is based on how long it takes a person, on average, to sort the words in the third part of the IAT versus the fifth part of the IAT. We would say that one has a stronger implicit positive association with thin people relative to fat people if they are faster to categorize words when Thin People and Good share a response key and Fat People and Bad share a response key, relative to the reverse.

**Participants receive the following instructions on screen prior to taking the IP IAT assessment:**

- In this test, you will be presented with a set of words or images to classify into groups.
- This task requires that you classify items as quickly as you can while making as few mistakes as possible.
- Going too slow or making too many mistakes will result in an uninterpretable score.
- The items that you will classify include group of words associated with various categories. The following is a list of categories and the items that belong to each of those categories.

Category	Items
<b>Leader</b>	Self-confident, Independent, Leader, Assertive, Ambitious
<b>Supporter</b>	Team-player, Collaborative, Supporter, Responsive, Assistant
<b>Nurse</b>	Nurse Anesthetist, Midwife, Nurse Practitioner, Clinical Nurse Specialist, Registered Nurse
<b>Doctor</b>	Pediatrician, Internal Medicine MD, Family Medicine MD, Surgeon, Obstetrician

- To complete the test, you will keep your index fingers on the 'e' and 'i' keys to enter your rapid response.
- Two labels at the top will tell you which words or images go with each key.
- Each word or image has a “correct” classification.
- You should attempt to make the “correct” classifications as much as possible.
- The test gives no results if you go slowly -- Please try to go as fast as possible.

**G. Recommended uses:**

As an assessment tool – Students can take the IP IAT at the start and end of an IPE experience or at the start and end of a year to assess the individual student response to the experience or year. This is a formative assessment, meant to inspire introspection and, hopefully, growth.

As an instructional tool – Students can take the IP IAT at home on their own, and then reflect on the results. The reflection may be written, and handed in as homework, or as part of a discussion in a large or small group teaching format. Since the IAT must be done individually to give useful data, it is not effective to do the IAT in a classroom setting unless everyone does it on their own computer.

Alternatively, group data can be collected to give feedback to the students as to where the group is and how they compare to others in their group. This can only be done if arrangements are made with Project Implicit to collect data. In the free version data are only available to the participant.

For evaluating a course or program – The IP IAT may be used to evaluate the impact of an experience or course on implicit associations of the participants. The participants in the course or experience would complete the IP IAT before and after the learning experience. Data collected would allow evaluation as to whether or not participants had changed their implicit associations over time. Of course, it is not necessarily true that the IPE was the reason for the change. Use of the IP IAT in this way would require contacting with Project Implicit for them to collect and report data collected from use of the IP IAT.

In the classroom – At UCLA, medical, nursing and dental students enrolled in a Systems-Based Healthcare course used the IAT for discussion in the classroom. Students were asked to read the following article: *van Ryn M, Saha S. Exploring unconscious bias in disparities research and medical education. JAMA : the journal of the American Medical Association. 2011;306(9):995-996* and *Green A, Carney D, Pallin D, et al. Implicit Bias among Physicians and its Prediction of Thrombolysis Decisions for Black and White Patients. Journal of General Internal Medicine. 2007;22(9):1231-1238*, and were asked to complete the IAT independently. Faculty tutors facilitated discussion with students about Implicit Association and how biases are formed.

**H. Strategies for providing results to students:** At the end of the online assessment participants are given immediate feedback as to the presence and strength of implicit associations. They may be told that the data suggest:

- No implicit associations between the category leader or supporter and the category doctors or nurses or

- Mild, moderate, or strong association between leader and nurses and/or supporter and doctors or
- Mild, moderate or strong association between leader and doctor and/or supporter and nurses

These findings suggest that the participant was or was not slower in response depending on how the words in the categories “leader” or “supporter” were paired with words in the categories “doctor” or “nurse”.

- I. **Challenges:** People who take the Implicit Association Test frequently question the results. The associations detected by the IAT are not generally explicit, and may be contrary to what the participants “know” they believe. It is important to talk about the results in terms of the associations learned from experience, and seen in the media, and not a reflection of being a “bad” or bigoted person. This then allows some discussion of the potential results of having implicit associations of which one is not conscious, but that are impacting one’s behavior and decisions. The articles can help set the results in a clinical context. Participants can then think about the impact on the interprofessional team if both nurses and doctors carry implicit associations that suggest doctors should be in leadership (and not collaborative) roles, and that nurses should be in supportive (but not self-confident) roles.

## References

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3. Sabin J, Rivara F, Greenwald A. Physician implicit attitudes and stereotypes about race and quality of medical care. *Medical Care.* 2008;46(7):678-685.
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