

FREQUENTLY-ASKED QUESTIONS ABOUT THE MEN'S LACROSSE RATING PERCENTAGE INDEX

Introduction

The Rating Percentage Index (RPI) originally was created in the late seventies at the request of the Division I Men's Basketball Committee. It is one of the many tools used in the selection process.

The basic factors of the RPI and their weighting are the same for every sport:

1. Division I Winning Percentage – 25%
2. Strength of Schedule – 50%
3. Opponents' Strength of Schedule – 25%

Non-Division I opposition includes Division I provisional or reclassifying schools in their exploratory or first year as they transition to full Division I status. These teams may petition to be included in the RPI in year one, provided their schedule meets Division I minimums. Also, a bonus/penalty system is used for some sports, but not men's lacrosse.

What makes up the primary RPI number?

The three factors listed above all count toward a calculation. Anyone with a calculator and access to the results of all Division I games (and a lot of time!) can compile the RPI rankings by using the following formula:

FACTOR 1- *Division I Winning Percentage*: Take the team's won-lost percentage against Division I opponents only.

Example: Team A was 22-7 (.7586 win %) in all games, but was 18-7 (.7200 win %) against Division I opponents. For RPI purposes, the .7200% is used.

FACTOR 2. *Strength of Schedule*: Take each opponent's won-lost percentage against other Division I teams excluding the team in question (in this case, Team A), and then average these percentages.

Example: Add together the won-lost percentages of all of Team A's 25 Division I opponents (again, excluding games against Team A and non-DI opponents). For Team A's opponents, the sum of their percentage was calculated at 14.7575. Now divide 14.7575 by 25 (the number of Team A's Division I opponents) to determine the average of .5903, which is also the opponents' success percentage.

FACTOR 3. *Opponents' Strength of Schedule*: The strength of each opponent's schedule is measured by using the same formula from Factor 2 for each opponent, then averaging these percentages. This recognizes the fact that two opponents with equal won-lost records may have played far different schedules.

Example: First figure the Factor 2 percentages for all of Team A's 25 Division I opponents and add these 25 percentages together. For Team A's opponents, the sum of these percentages was 14.3075. Now divide 14.3075 by 25 (the number of Team's A's Division I opponents) to determine the average of .5723, which is also the opponent's strength of schedule.

Total: *Finding the RPI*: Take each factor times the percentage weight of the category and add the three numbers for a total.

Factor 1 is $.7200 \times .25 = .1800$

Factor 2 is $.5903 \times .50 = .2952$
Factor 2 is $.5723 \times .25 = .1431$
Team A's primary RPI is .6183

Why is the lacrosse RPI formula the same as basketball?

While the RPI originally was created for basketball, the basic premise of the formula remains true for any sport – rankings are based on whom a team plays and whom it beats. Although other factors are unique to different sports, it also is true that almost any discussion by schools, media or fans about why a team was or was not selected, usually involve that team's record or strength of schedule. When teams or leagues provide supplemental data to the committee, it almost always notes the team's excellent record, its success outside the conference and/or the strength of the league or non-conference schedule.

How much does the committee depend on the RPI compared with other factors?

The RPI is just one of many factors used by the committee. Each committee member must weigh each factor available and make his or her own decision regarding its importance. Clearly, the RPI will be more helpful to a committee member when evaluating a team out of his/her region, especially if he/she has never seen them play. If a committee member is evaluating two or more teams, a wide difference in RPI rank can be a factor. How "wide" is "wide"? A good rule of thumb is 20 or more ranking places, as well as the actual mathematical difference between RPI rankings.

Why doesn't the RPI factor in past NCAA tournament success?

The sports committees using the RPI have long believed past tournament performance and/or potential professional talent should not be a factor when selecting or seeding teams. One of the original criteria in the selection of participants for any NCAA championship is "Eligibility and availability of student-athletes...". No matter how well a team or league is able to "reload" every year, the sports committees are obligated to only look at student-athletes on the current roster, not those who may have helped a team advance in the championship the previous year(s). That philosophy would make it very difficult for an emerging team to receive a fair evaluation if it had no recent tournament history. No selection process at any level of sport, collegiate or professional, uses past success as a factor in determining participation in a playoff or championship.

Why doesn't the RPI factor in the various national polls or season statistics?

While none of the above is part of the current RPI, the committee may receive this data from the NCAA staff as part of the entire package they are given for the selection meeting. This is another situation in which adding factors to the existing RPI would require a complicated process to determine exactly how to add them to the ratings, the mathematical factor and impact on existing factors.

How much is too much?

Many factors have been considered as possible elements of the RPI. But the issue then becomes how much objectivity is lost by adding more subjective factors to the formula? Introducing new factors would require a decision as to the weight of each new factor, its numeric value in the overall formula and the potential weighting reduction of existing factors. Adding some or all of these factors to the RPI could be done, but the risk would be a more confusing formula, less objective ratings and an eventual request for more factors to further refine the system.

Some of the conference rankings really seem out of whack. How can the RPI rankings be so different from the perceptions some have of the various leagues?

The key thing to remember about league RPIs is every team has an equal impact on the conference ranking. A league with three or four outstanding teams can end up ranked in the middle of the pack if the same league also has three or four very poor teams. The teams essentially cancel out each other. Thus, a conference with few top 20 RPI teams, but also none below 150, can have a higher league ranking than a conference with more top teams but also a few 150-200 schools. Those who offer opinions about which are the top conferences tend to compare the top four or five teams with the top four or five of other leagues. There is nothing wrong with this type of evaluation, just as there is nothing wrong with a mathematical evaluation that takes into account all teams in one league. The factors that determine the “best” league always will vary depending upon who does the evaluating, and what region of the country they are from.

What is the best way to improve a team or conference RPI?

The simple, but correct answer to this common question is schedule and beat non-conference teams ranked higher in the RPI. But playing a tough non-league schedule only helps if the team or league wins most of those games. The best conference plan is to have the coaches honestly evaluate their team, then schedule teams in a higher-ranked conference against which they think their team has a realistic chance of winning...this does not necessarily mean playing just top teams in a particular league. The weaker teams should try to schedule the weaker teams in the stronger league. The catch to this plan is that most leagues already try to schedule this way, thus making it more difficult for weaker leagues to find games against stronger teams. It also almost always means playing the stronger team on their court. Playing tough opponents at neutral sites, such as early-season tournaments, also can help.

Is it better for a conference to play more or fewer league games than non-conference contests?

It depends on the conference’s ability to schedule strong, non-conference opponents and the overall strength of the league. A strong conference, with an across-the-board commitment to playing solid, non-conference opponents, usually is better off playing more league games, taking advantage of its’ teams expected out-of-league record. A weaker league has a better chance of improving its’ RPI by playing fewer league games and more non-conference, **IF** there is a total commitment by all teams to upgrade every non-conference schedule. Every league must carefully analyze what non-conference teams will be added by decreasing conference games, or dropped by increasing league games before making this decision.

Can the current RPI formula cause a “regional bias” in the team or conference rankings?

Because of location, many conferences only play a small percentage of other leagues in their non-conference schedule. If the number of potential teams is small, the possibility that these teams will “beat up each other” could mean there would be fewer outstanding records to catch the committee’s eye, resulting in less at-large selections for teams in that part of the country. Mathematically, it certainly can be argued that with fewer teams available it is possible all the teams in that region could “bunch up” with similar records. Those in other parts of the country, however, could argue that if the great majority of these teams are strong clubs, it also reduces the opportunity to play very weak teams that hurt the strength of schedule element of the RPI. If the committee is asked to look past BOTH a team’s Division I won-lost record AND its’ strength of schedule, what other factors should it then consider? By eliminating or reducing the impact of these two factors on selection, elements like perception or reputation may play a larger role in the process. While that might benefit the traditional powers, it

would make it more difficult for emerging teams to be considered, even those in that particular region. Should different parts of the country be considered for selection using different criteria? During its deliberations, the committee frequently has discussed scheduling limitations for many parts of the country and always has factored that into the decision process.

Does the committee select all of the teams for the championship?

No. The committee only selects the best remaining teams once the conference champions or automatic qualifiers from eligible leagues have been determined by those conferences. Each year, there is a possibility that the regular-season champions are upset in their conference tournament, allowing teams with poor records and/or bad RPIs to represent their league. For the committee to select each team, all automatic qualification would have to be eliminated

Would the Selection Committee be better off without the RPI?

In the early years, committees had no RPI, but now an RPI is part of the material supplied during the selection meetings. It would be difficult to imagine a committee meeting without any type of statistical data to aid the group in its deliberations. If there was no RPI, what type of data should the committee receive? What if they only were supplied with each team's won-lost record? How would a committee member compare two teams with similar records but no common opponents? What if the committee received printouts of all included teams and its game results? Even knowing all a team's opponents, how would a committee member compare schedules? Without some type of mathematical ranking, it would appear an "RPI-less" committee could run the risk of selecting teams based on reputation rather than facts. An emerging program from a perceived mid- to lower-level conference, experiencing a breakthrough season, might be completely overlooked unless the committee representative from that area could make a compelling argument without a lot of hard data. By contrast, a traditional powerhouse, experiencing a down year, might sneak into the field based solely on reputation and history. Those who wish to do away with the RPI, must be able to offer an alternative set of data for the committee to use.

One Final Note

While it no doubt is clear from reading this document that the authors believe the RPI is an excellent tool for the Division I Men's Lacrosse Committee, it also must be said that at no time has the NCAA staff or the committee ever desired to use the RPI as the sole factor in determining selection or seeding. There never will be a better way to select teams than the current committee process, no matter how many mathematicians, statisticians or others try to improve a computer rating system.

About the authors

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