

AKT Standard Setting FAQs

1. How is the standard set?

The pass mark has been set using Angoff's modified methodology since the first MRCGP Applied Knowledge Test, AKT1. This is the most widely used approach to standard-setting for multiple-choice tests. A wide range of subject matter experts take part in the judging including AiTs, newly qualified GPs, GP Trainers, MRCGP examiners, Training Programme Directors, Deanery representatives, the BMA, as well as Lay and Patient representatives.

After detailed instructions and examples of scoring, each participant individually judges all the 200 questions in the AKT and scores the likelihood of the "just passing candidate" getting each question correct.

The scores are collated and a mean score calculated with one standard error of measurement added.

2. How is the standard maintained from one exam to the next?

To derive an equivalent pass mark for subsequent AKTs, the standard is maintained by a method called 'linear equating'. This pass mark calculation is compiled by an independent expert psychometric team. In essence, the performance of the cohort on a group of common 'anchor' questions is compared to the cohort's performance on non-common questions within the test.

This linear equating process is an internationally validated method. By monitoring the performance on common questions, it is possible to gauge whether the non-common questions are easier or more difficult compared to previous AKTs. If necessary, an adjustment can be made to the pass mark to keep the standard constant.

3. How often do you repeat your standard-setting?

The Angoff procedure is repeated *at least* once every three years. It is undertaken more frequently if test circumstances change. For example, in October 2014, when a calculator was made available to all candidates and the time permitted for candidates to complete an AKT was extended.

To date, the Angoff procedure has taken place in:

- October 2007
- October 2009
- October 2010
- January 2013
- October 2014
- October 2015
- October 2016
- October 2018
- November 2021

The next standard setting meeting is scheduled for November 2024.

4. Why does the pass mark vary?

The exam team aim to construct all AKTs to be of as similar a standard to each other as is possible to predict - for example, by having the same proportions of questions on any given topic and by looking at the difficulty of questions.

However, no two exams composed of 200 questions testing the application of medical knowledge can be of an identical level of difficulty. The pass mark varies slightly from exam to exam because it needs to reflect the subtle differences in how easy or difficult the different questions are.

There are no 'arbitrary' decisions about pass marks. To maintain the standard and therefore be fair to all candidates and patients, the pass mark is raised for easier examinations and lowered for more demanding ones, using the technique of linear equating.

We take independent expert psychometric advice on linear equating the standard between tests using internationally accepted and published methods, consistent with other postgraduate medical (and non-medical) exams. These methods are approved by the GMC and on several occasions over the years have been reviewed and re-approved by external international assessment experts.

5. Is the pass mark intentionally different between the January, April and October exams?

There is no intentional alteration to exam difficulty at different times of the year. It is simply a consequence of selecting an exam of 200 mainly different items that creates some slight differences in the level of challenge set.

The required passing score must reflect the measured 'level of difficulty'.

Example 1:

- Candidate 1 and Candidate 2 - of the same good capability
- Take two different exams - Exam A and Exam B
- At different times in the year - May and October

We want both to be able to pass - even if Candidate 2 takes exam B in October (an exam that is measured to be slightly harder than exam A as sat by Candidate 1 in the previous May).

Example 2:

- For example, if the pass mark was always set at a fixed 60% each sitting
- But the questions in paper A were slightly easier than questions in paper B
- That would make it easier for candidates sitting paper A to pass the exam than candidates sitting paper B.

- So, we have to reliably adjust the pass mark in line with the difficulty of the questions (in this case, have a slightly higher pass mark for paper A than for paper B).

6. Do you pass a fixed proportion of the candidates?

No, this is not a 'norm-referenced' exam. This means that the pass mark is not determined with reference to the mean score, nor with reference to a pre-determined proportion of candidates passing the examination.

Instead, this is a 'criterion-referenced' exam to which we apply a 'criterion-referenced' standard. The pass mark is set to reflect the level of competence required for independent practice as a GP.

In theory, we could see a 100% pass rate if all the candidates demonstrated that they had met or exceeded that level of competence and 0% if none of the candidates demonstrated the required level of competence.

7. What does it mean if a result states that a candidate has been unsuccessful by only 0.5%?

The AKT exam consists of 200 questions with no negative marking. FAQ1 of this document highlights how the standard is set.

A total score which is a single mark below this cut-score translates to being below the pass mark by 0.5% (1/200). It is important to remember that the AKT is a criterion-referenced examination as outlined in FAQ 6 and therefore any score below the designated pass mark (however small) is deemed to have not met the standard required to confer a CCT.

The pass mark for an individual AKT is recommended only after a thorough quality assurance review of all the questions. Candidate scores are machine marked and there can be no alteration of a pass mark for individual candidates. This applies even when it is recognised by the Educational Supervisor that a candidate is doing well in all other aspects of their workplace-based performance.

The final pass mark for an individual AKT is set by a formal standard setting process which is subjected to external scrutiny in the form of an Exam Board. Conferment of a Certificate of Completion of Training (CCT) entitles the doctor to practice independently with no further supervision, and the decision to award a CCT must be based on sound evidence, including achieving a passing score in the AKT.

8. How confident are you that the AKT is an accurate assessment?

The accuracy of an examination is tested by estimating its reliability. This is expressed as a coefficient, on a scale from 0 to 1. A value of 0.8 is widely accepted as the minimum desirable for single best answer examinations such as the AKT and a value of 0.9 is recognised as being at the forefront of international best practice.

The AKT consistently shows values very close to 0.9 as estimated by Cronbach's alpha Coefficient. The mean and median alpha for all AKTs combined (AKT 1-34) is 0.9.

When the standard is set, account is taken of the inherent error of measurement, which becomes smaller as the test reliability increases.

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We welcome feedback on this document via exams@rcgp.org.uk